

Submission of Supplemental Projects for Inclusion in the Local Plan

Superseded – refer to slide 78

Need Number: DOM-2018-0001

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 7/25/2019

Previously Presented:

Need – 9/13/2018

Solution – 10/11/2018

Project Driver:

Customer Service

Specific Assumption Reference:

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

Problem Statement:

DEV Distribution has submitted a request to serve a new datacenter campus in Loudoun County with total load in excess of 100 MW. Customer requests service by 9/1/2020.

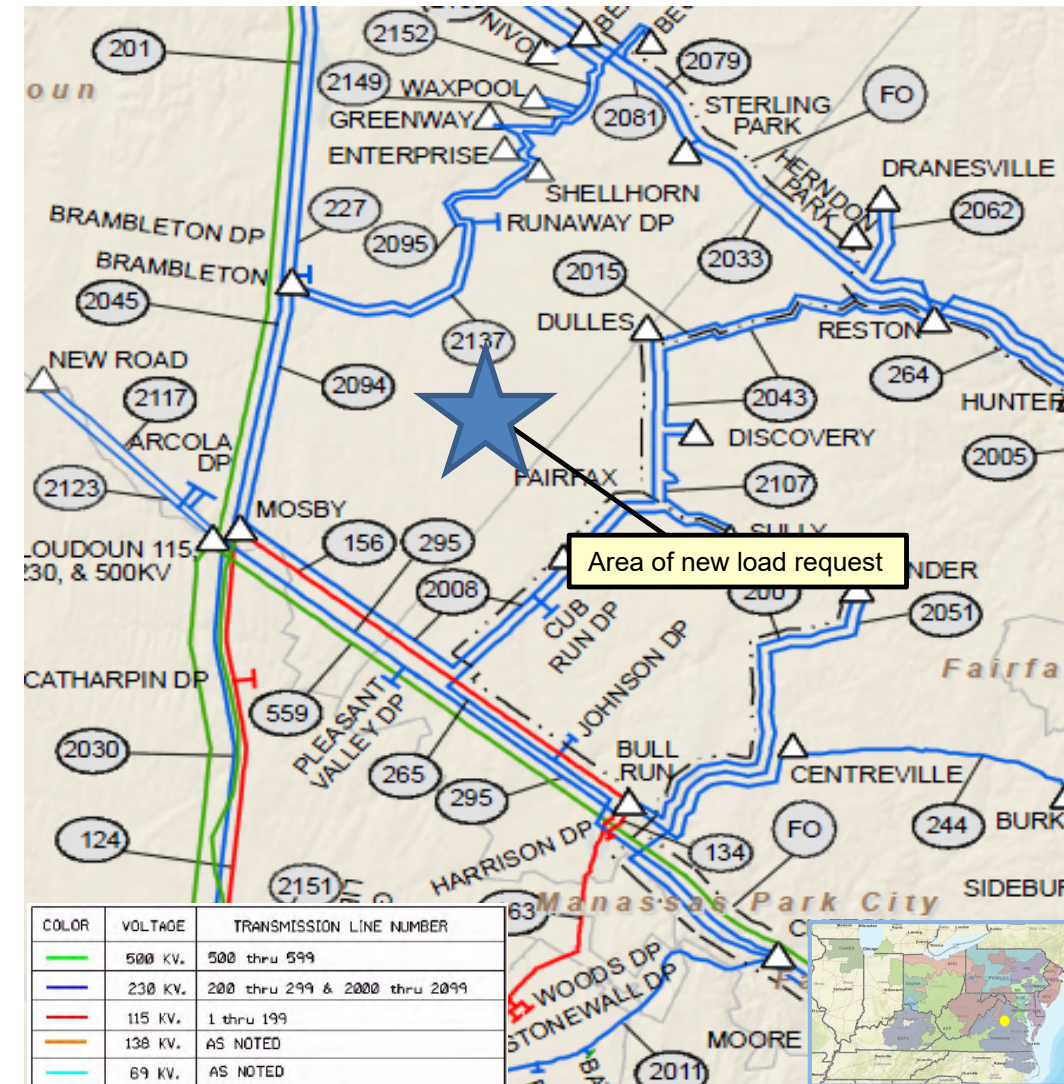
Projected 2023 load

Summer: 150 MW

Winter: 150 MW

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

Dominion Transmission Zone M-3 Process Evergreen Mills 230 kV Delivery



Superseded – refer to slide 79

Dominion Transmission Zone M-3 Process Evergreen Mills 230 kV Delivery

Need Number: DOM-2018-0001

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 7/25/2019

Selected Solution:

With total projected load of 150 MW, we are proposing to construct a new Evergreen Mills Switching Station. It will require four transmission lines to terminate at the station in order to avoid a violation of mandatory NERC reliability criteria. Cut and extend both Line No.2183 (Brambleton-Poland Road) and Line No.2172 (Brambleton-Yardley Ridge) into and out of the proposed station. At Evergreen Mills Station, six (6) 230 kV breakers in a ring bus arrangement would be installed to meet the Transmission Planning criteria.

The customer has requested four (4) additional 230 kV breakers to be installed for additional redundancy and will be responsible for excess facilities charges.

Estimated Cost: \$27.8 M

Normal Service cost: \$22.8 M

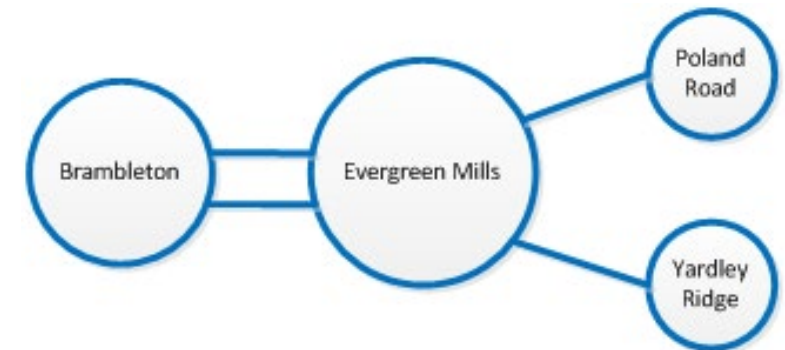
Excess Facilities cost: \$5.0 M

Projected In-Service: 9/1/2020

Supplemental Project ID: s1750

Project Status: Conceptual

Model: 2023 RTEP



Dominion Transmission Zone M-3 Process Opal 230 kV Delivery

Need Number: DOM-2018-0004

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 7/25/2019

Previously Presented:

Need – 9/13/2018

Solution – 11/8/2018

Project Driver:

Customer Service

Specific Assumption Reference:

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

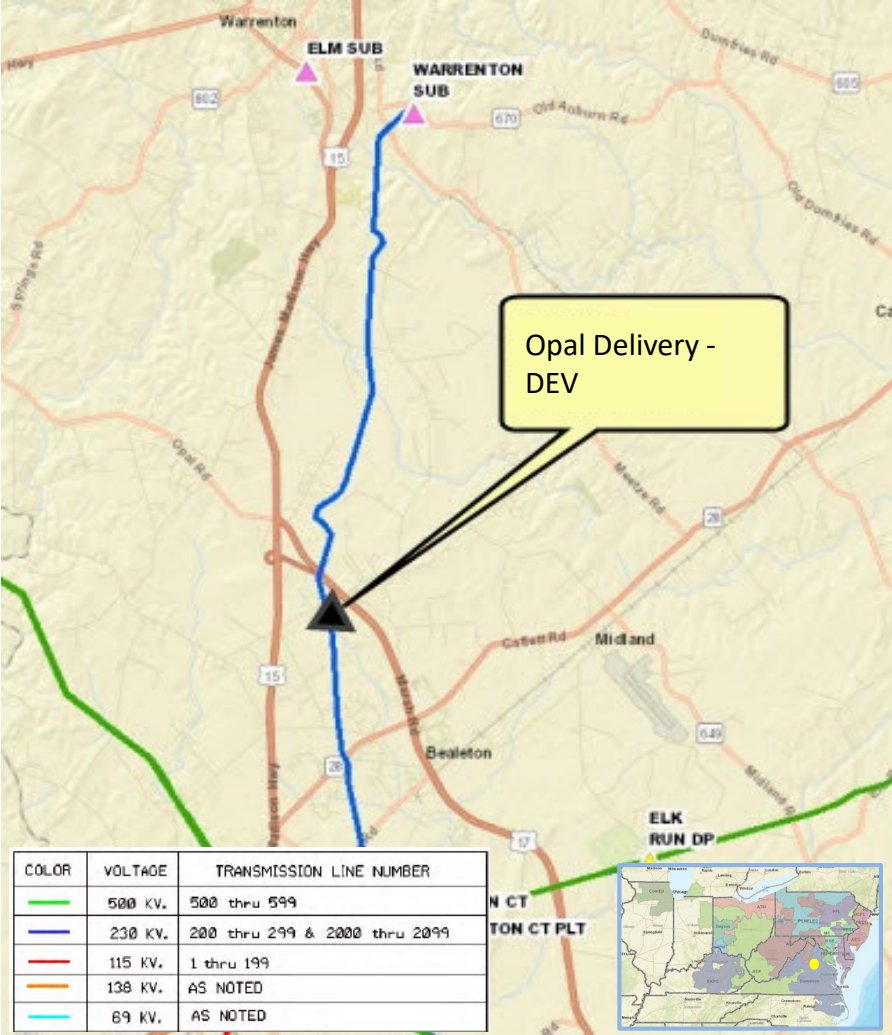
Problem Statement:

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



Dominion Transmission Zone M-3 Process Opal 230 kV Delivery

Need Number: DOM-2018-0004

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 7/25/2019

Selected Solution:

Interconnect the new substation with a single tee-tap arrangement on Line No.2155 (Remington CT-Warrenton).

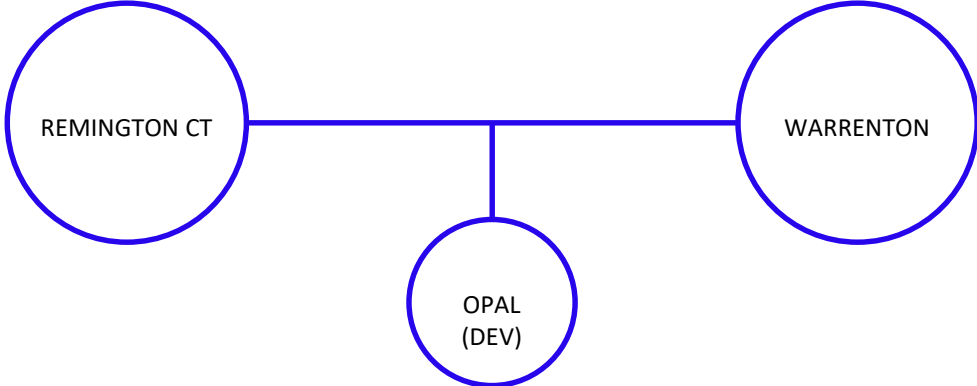
Estimated Cost: \$0.75 M

Projected In-Service: 7/15/2021

Supplemental Project ID: s1832

Project Status: Engineering

Model: 2023 RTEP



Dominion Transmission Zone M-3 Process Add 2nd TX – Cannon Branch 230 kV Delivery - DEV

Need Number: DOM-2018-0005

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 7/25/2019

Previously Presented:

Need – 9/13/2018

Solution – 11/8/2018

Project Driver:

Customer Service

Specific Assumption Reference:

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

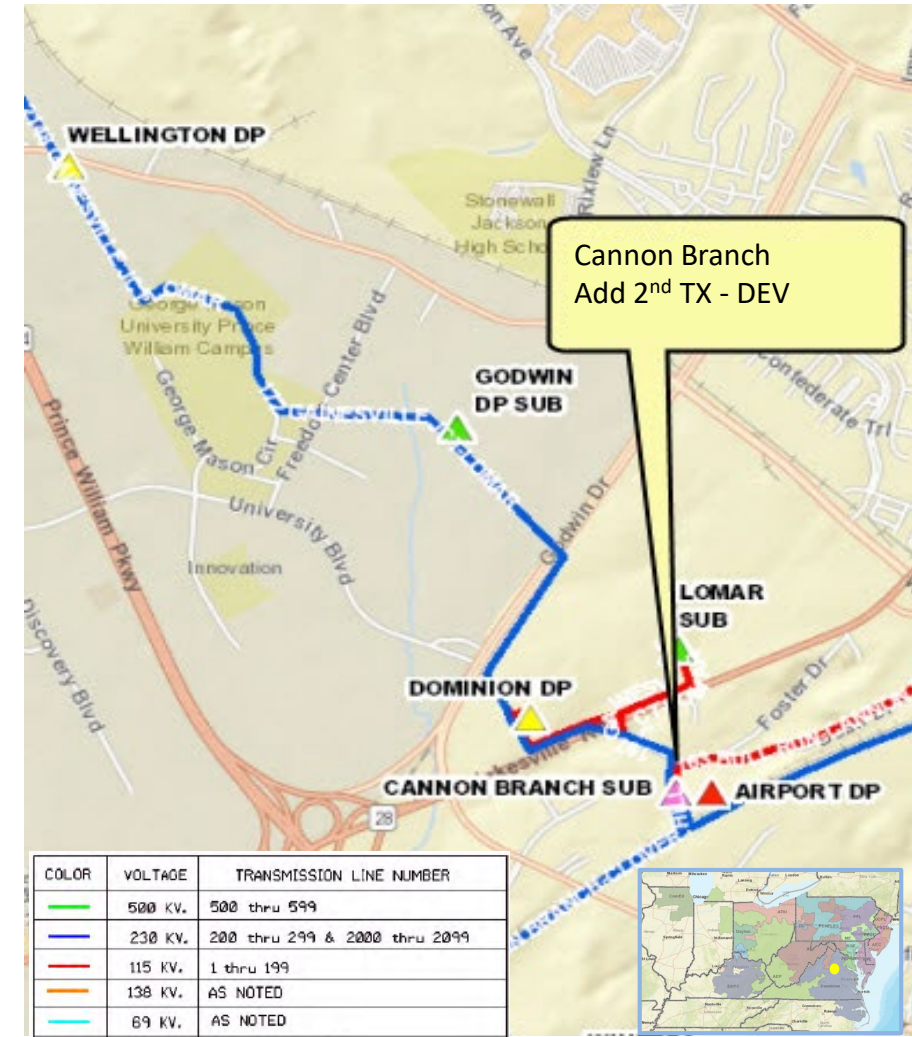
Problem Statement:

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



Dominion Transmission Zone M-3 Process Add 2nd TX – Cannon Branch 230 kV Delivery - DEV

Need Number: DOM-2018-0005

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan –
7/25/2019

Selected Solution:

Install 1200 Amp, 40 kAIC circuit switcher and associated equipment (bus, switches, relaying, etc.) to feed the new transformer from existing 230 kV bus No.1 at Cannon Branch.

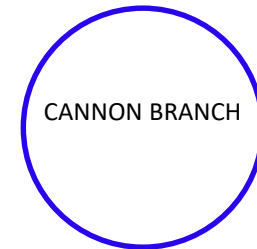
Estimated Cost: \$0.75 M

Projected In-Service: 11/15/2019

Supplemental Project ID: s1833

Project Status: Construction

Model: 2023 RTEP



Dominion Transmission Zone M-3 Process Gant 230 kV Delivery - NOVEC

Need Number: DOM-2018-0006

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 7/25/2019

Previously Presented:

Need – 9/13/2018

Solution – 12/13/2018

Project Driver:

Customer Service

Specific Assumption Reference:

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

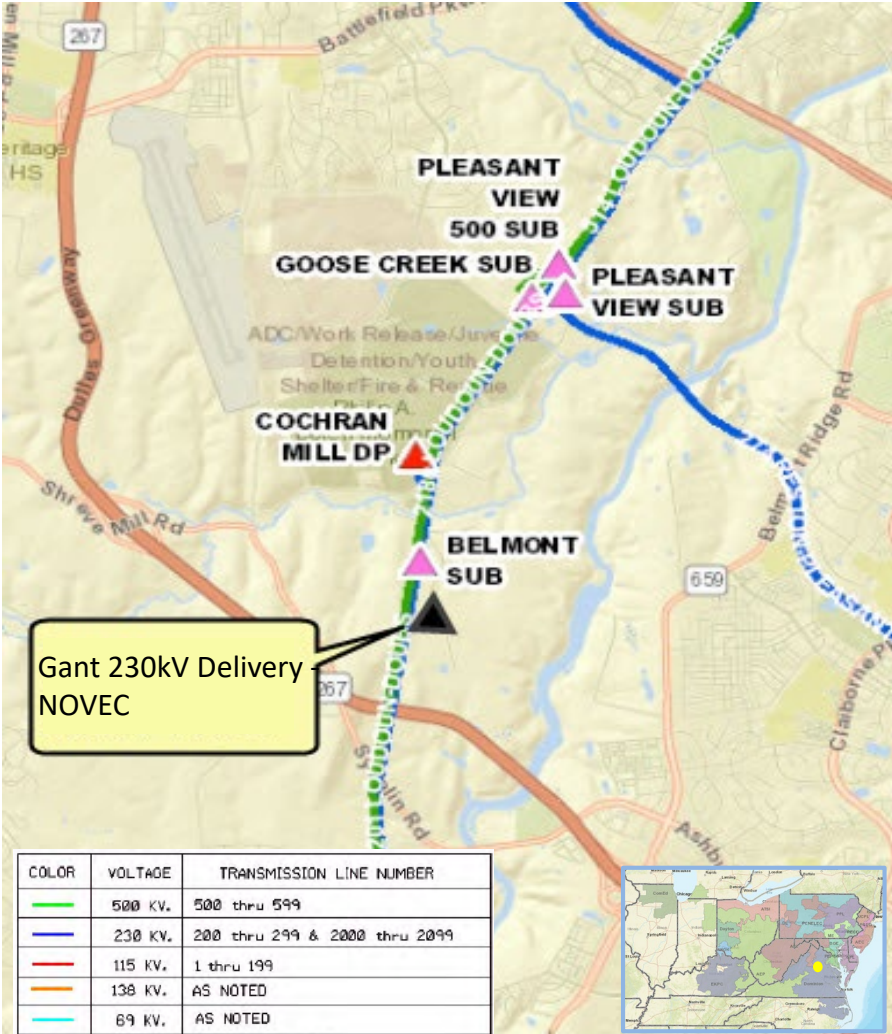
Problem Statement:

NOVEC has submitted a DP Request for a new substation (Gant) to accommodate a new datacenter campus in Loudoun County with a total load in excess of 100 MW. Requested in-service date is 11/01/2019.

Projected 2023 Load

Summer: 112.0 MW

Winter: 120.0 MW



Dominion Transmission Zone M-3 Process Gant 230 kV Delivery - NOVEC

Need Number: DOM-2018-0006

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 7/25/2019

Selected Solution:

Interconnect the new DP substation by cutting and extending Line No.206 (Brambleton-Belmont) to new Stonewater Switching Station. Terminate both ends into a four-breaker ring arrangement to create a Brambleton-Stonewater line and a Stonewater-Belmont line. Provide two 230 kV feeds from the ring bus at Stonewater to Gant DP.

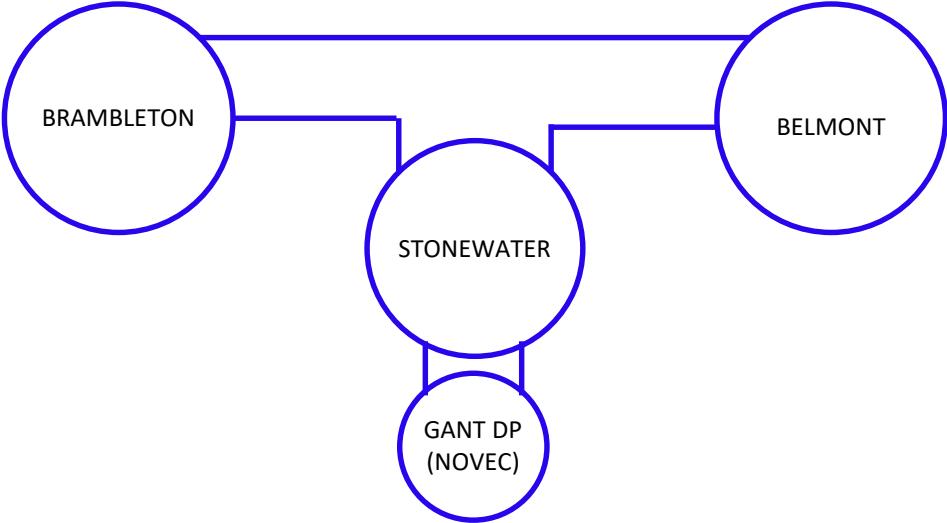
Estimated Cost: \$9.0 M

Projected In-Service: 11/1/2019

Supplemental Project ID: s1834

Project Status: Construction

Model: 2023 RTEP



Dominion Transmission Zone M-3 Process Innovation 230 kV Delivery - NOVEC

Need Number: DOM-2018-0007

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 7/25/2019

Previously Presented:

Need – 9/13/2018

Solution – 12/13/2018

Project Driver:

Customer Service

Specific Assumption Reference:

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

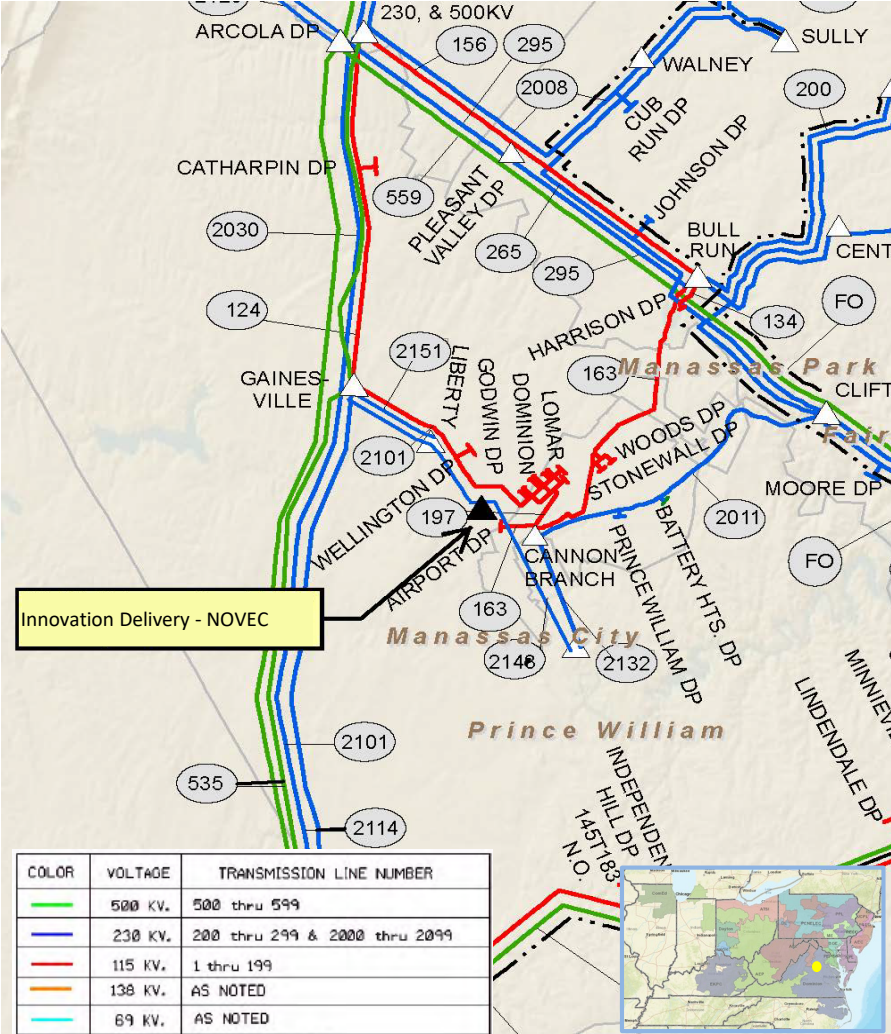
Problem Statement:

NOVEC has submitted a DP Request for a new substation (Innovation) to accommodate a new datacenter campus in Prince William County with a total load in excess of 100 MW. Requested in-service date is 08/15/2019.

Projected 2023 Load

Summer: 98.6 MW

Winter: 111.4 MW



Dominion Transmission Zone M-3 Process Innovation 230 kV Delivery - NOVEC

Need Number: DOM-2018-0007

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 7/25/2019

Selected Solution:

Interconnect the new DP substation by cutting and extending Line No.2148 (Cloverhill-Liberty) to new Pioneer Switching Station. Terminate both ends into a six-breaker ring arrangement (four breakers installed initially, two future) to create Line No.2148 (Cloverhill-Pioneer) and Line No.2187 (Pioneer-Liberty). Provide two 230 kV feeds from the ring bus at Pioneer to Innovation DP.

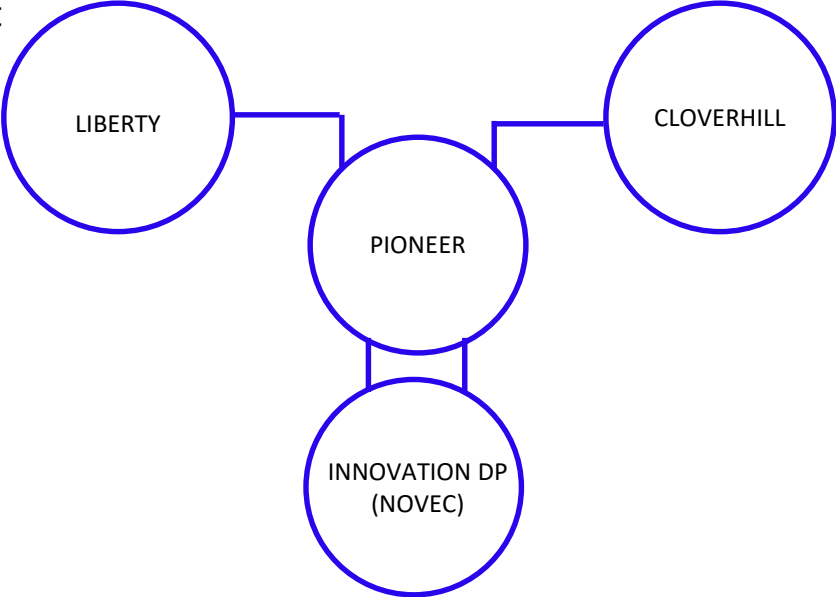
Estimated Cost: \$9.7 M

Projected In-Service: 8/15/2019

Supplemental Project ID: s1835

Project Status: Construction

Model: 2023 RTEP



Dominion Transmission Zone M-3 Process Cumulus 230 kV Delivery - DEV

Need Number: DOM-2018-0008

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 7/25/2019

Previously Presented:

Need – 9/13/2018

Solution – 11/8/2018

Project Driver:

Customer Service

Specific Assumption Reference:

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

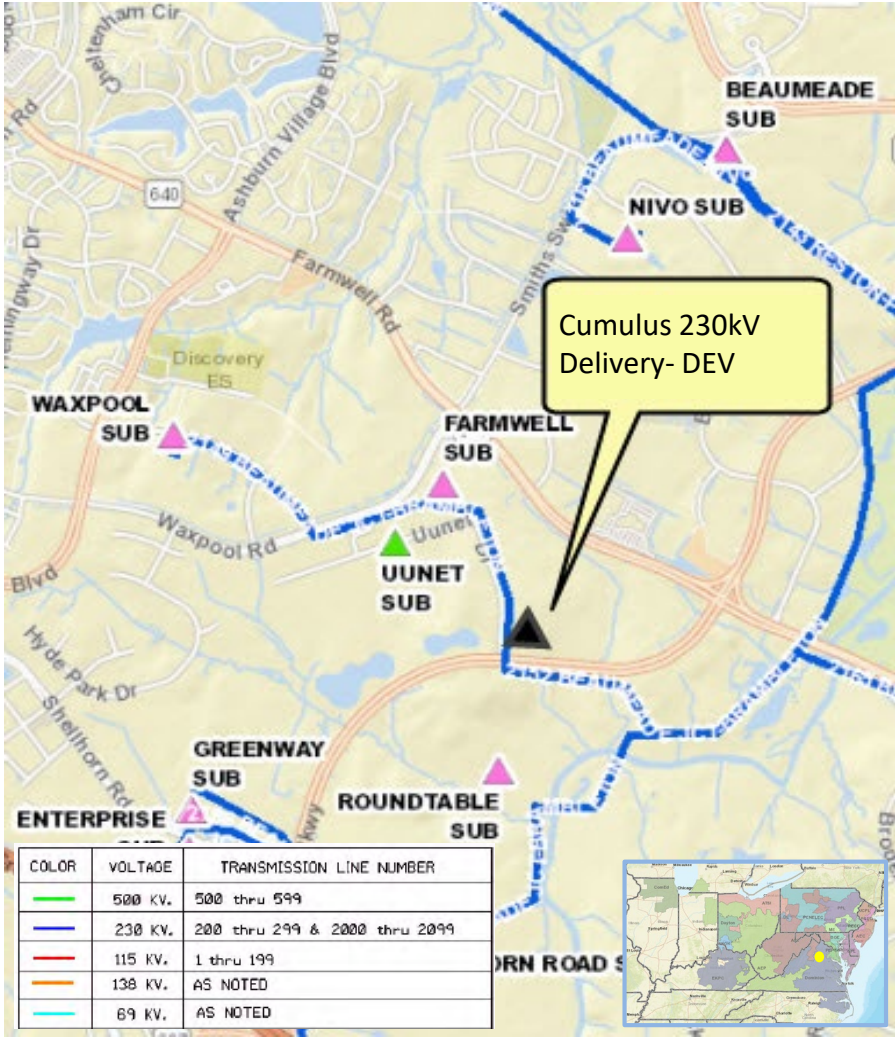
Problem Statement:

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



Dominion Transmission Zone M-3 Process Cumulus 230 kV Delivery - DEV

Need Number: DOM-2018-0008

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 7/25/2019

Selected 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.

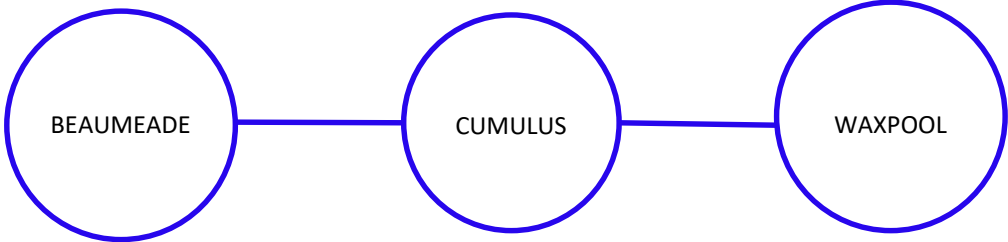
Estimated Cost: \$8.0 M

Projected In-Service: 10/15/2019

Supplemental Project ID: s1836

Project Status: Construction

Model: 2023 RTEP



Dominion Transmission Zone M-3 Process

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

Need Number: DOM-2018-0009

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 7/25/2019

Previously Presented:

Need – 9/13/2018

Solution – 11/8/2018

Project Driver:

Customer Service

Specific Assumption Reference:

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

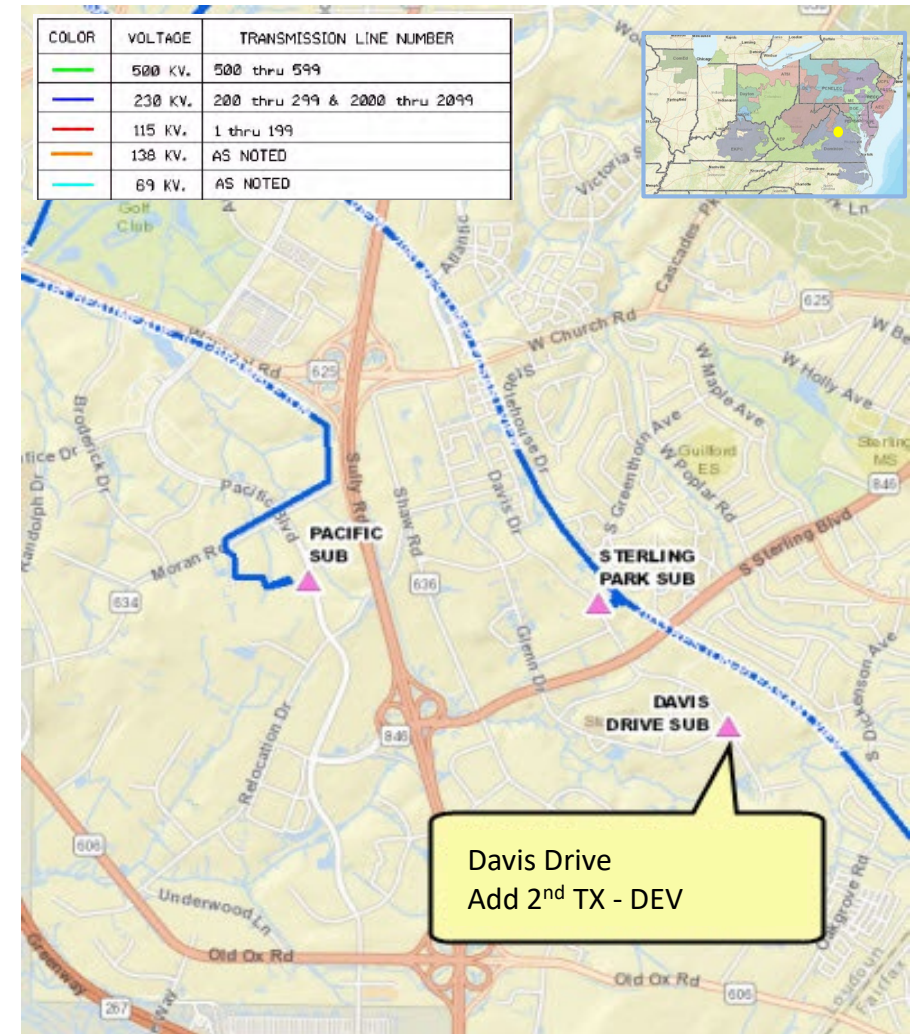
Problem Statement:

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



Dominion Transmission Zone M-3 Process Add 2nd TX – Davis Drive 230 kV Delivery - DEV

Need Number: DOM-2018-0009

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan –
7/25/2019

Selected 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, 40 kAIC circuit switcher.

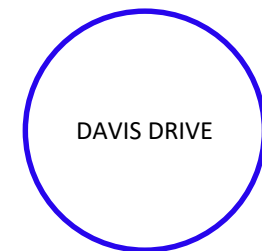
Estimated Cost: \$2.0 M

Projected In-Service: 11/15/2019

Supplemental Project ID: s1837

Project Status: Construction

Model: 2023 RTEP



Dominion Transmission Zone M-3 Process Add 2nd TX – Shellhorn 230 kV Delivery - DEV

Need Number: DOM-2018-0010

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 7/25/2019

Previously Presented:

Need – 9/13/2018

Solution – 11/8/2018

Project Driver:

Customer Service

Specific Assumption Reference:

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

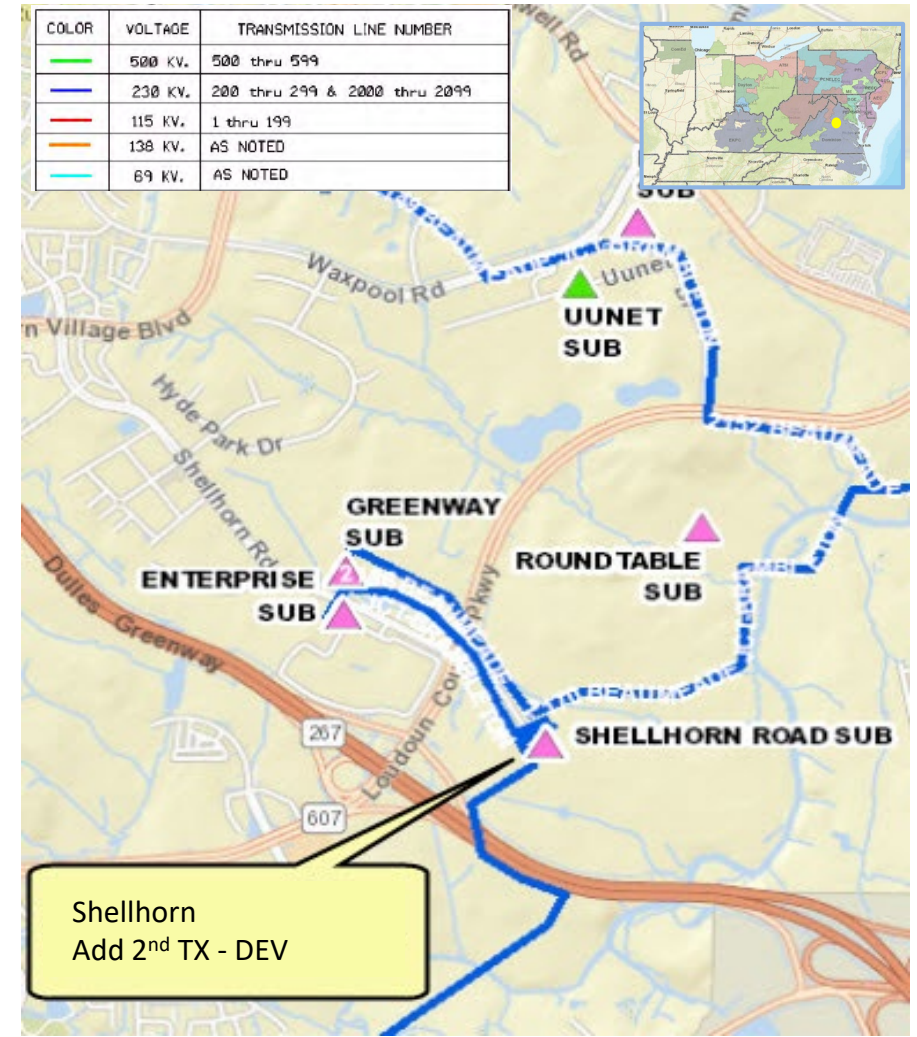
Problem Statement:

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



Dominion Transmission Zone M-3 Process Add 2nd TX – Shellhorn 230 kV Delivery - DEV

Need Number: DOM-2018-0010

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan –
7/25/2019

Selected Solution:

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

Estimated Cost: \$0.25 M

Projected In-Service: 3/31/2020

Supplemental Project ID: s1845

Project Status: Engineering

Model: 2023 RTEP



Dominion Transmission Zone M-3 Process Add 3rd Transformer at Midlothian

Need Number: DOM-2018-0015

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 7/25/2019

Previously Presented:

Need – 9/13/2018

Solution – 11/8/2018

Project Driver:

Customer Service

Specific Assumption Reference:

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

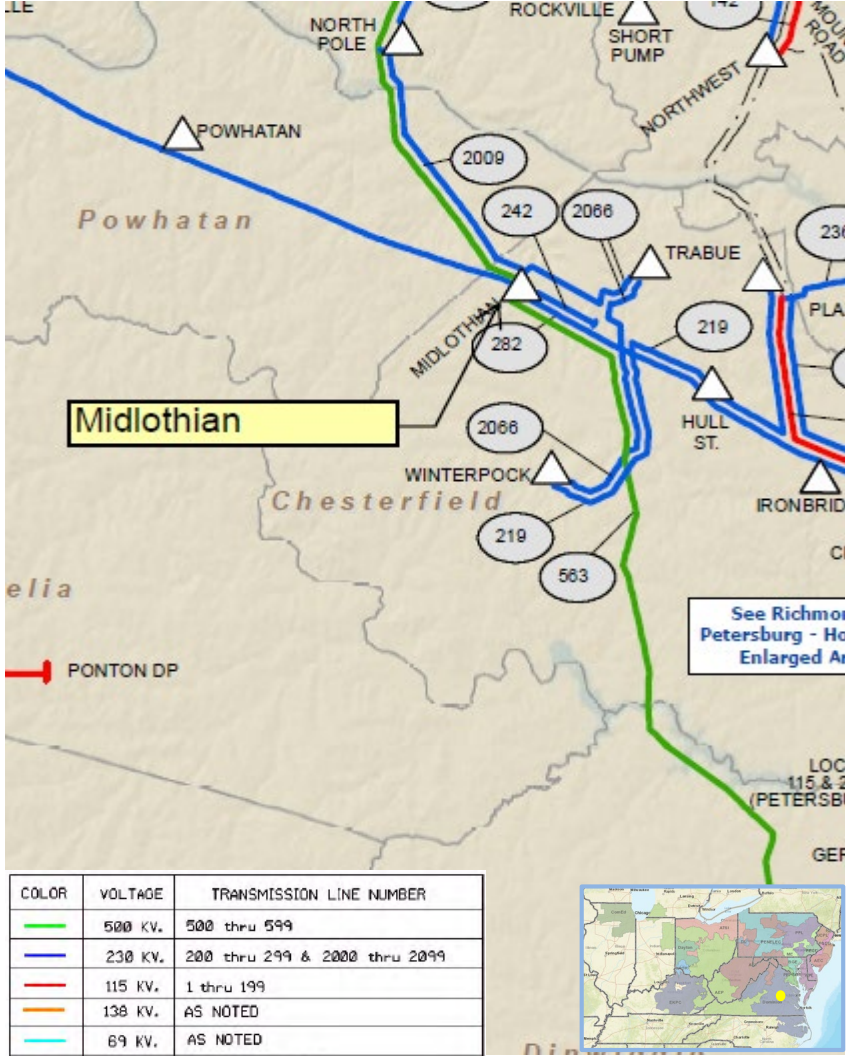
Problem Statement:

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



Dominion Transmission Zone M-3 Process Add 3rd Transformer at Midlothian

Need Number: DOM-2018-0015

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan –
7/25/2019

Selected Solution:

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

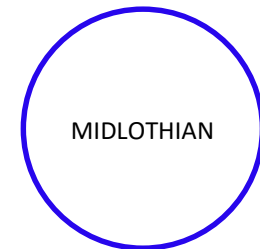
Estimated Cost: \$0.6 M

Projected In-Service: 11/15/2019

Supplemental Project ID: s1839

Project Status: Engineering

Model: 2023 RTEP



Dominion Transmission Zone M-3 Process Distribution Transformer Replacement at Remington

Need Number: DOM-2018-0016

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 7/25/2019

Previously Presented:

Need – 11/29/2018

Solution – 1/17/2019

Project Driver:

Customer Service

Specific Assumption Reference:

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

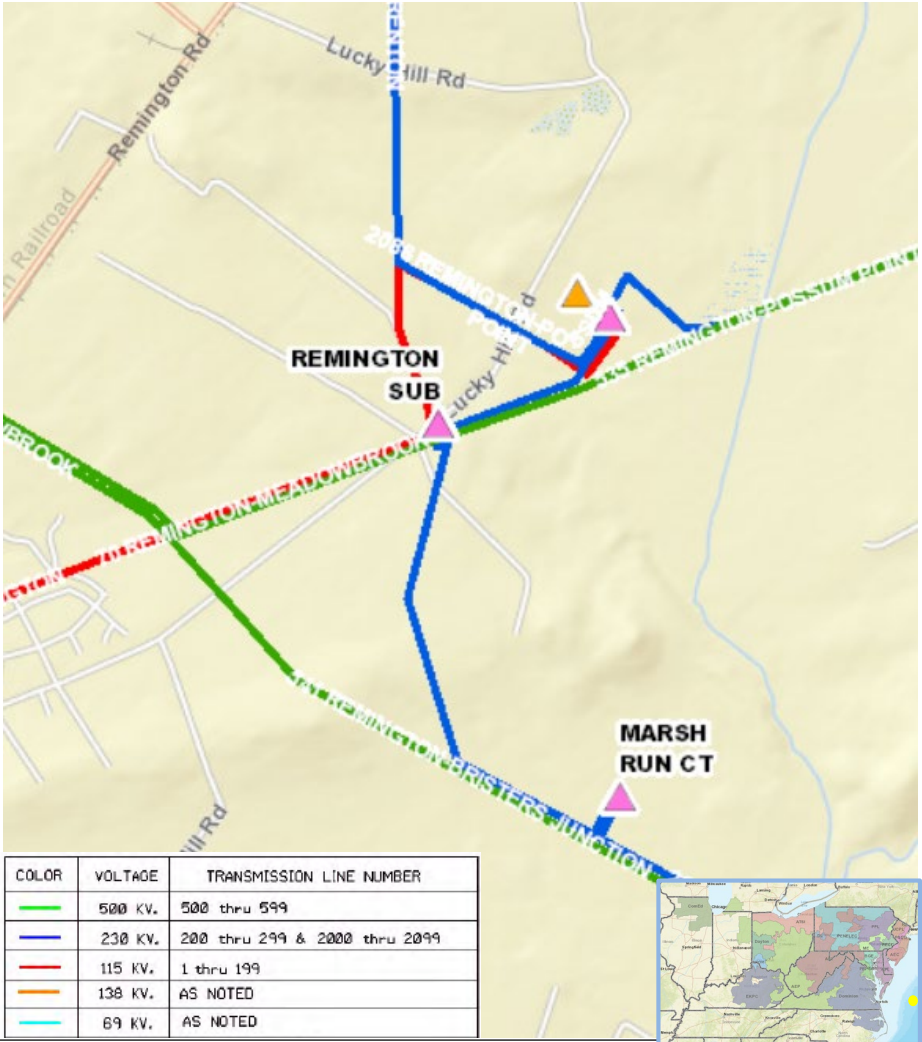
Problem Statement:

DEV Distribution has submitted a DP Request to replace their existing transmission to distribution transformer at Remington Substation in Fauquier County with a higher capacity bank to meet customer load. Requested in-service date is 11/15/2019.

Projected 2023 load

Summer: 60 MW

Winter: 78 MW



Dominion Transmission Zone M-3 Process Distribution Transformer Replacement at Remington

Need Number: DOM-2018-0016

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan –
7/25/2019

Selected Solution:

Relocate existing circuit switcher, install a MOAB switch and related conductors to connect DEV Distribution's uprated transmission to distribution transformer at Remington Substation.

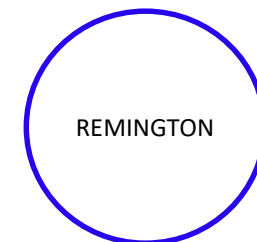
Estimated Cost: \$0.1 M

Projected In-Service: 11/15/2019

Supplemental Project ID: s1840

Project Status: Construction

Model: 2023 RTEP



Dominion Transmission Zone M-3 Process Lucky Hill 230kV - DEV

Need Number: DOM-2018-0018

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 7/25/2019

Previously Presented:

Need – 10/10/2018

Solution – 1/10/2019

Project Driver:

Customer Service

Specific Assumption Reference:

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

Problem Statement:

DEV Distribution has submitted a request for a new substation (Lucky Hill) to accommodate a new datacenter campus in Fauquier County with a total load in excess of 100 MW. Requested in-service date is July 15, 2021.

Projected 2023 load

Summer: 100 MW

Winter: 100 MW



Dominion Transmission Zone M-3 Process
Lucky Hill 230kV - DEV

Need Number: DOM-2018-0018

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 7/25/2019

Selected Solution:

Interconnect the new DP substation by cutting and extending Line #2199 (Remington-Gordonsville) to new Lucky Hill Substation. Terminate both ends into a four-breaker ring arrangement to create new 230kV Gordonsville-Lucky Hill and Lucky Hill-Remington lines.

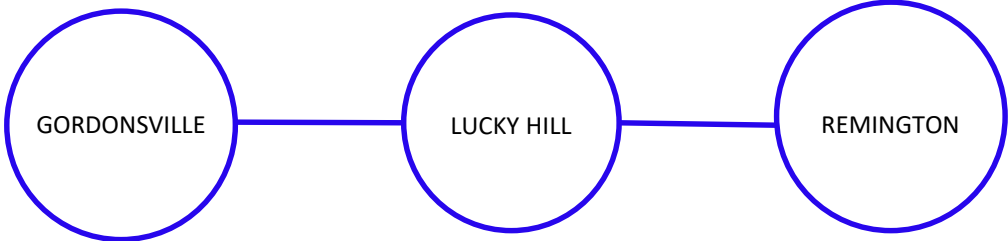
Estimated Cost: \$7.5 M

Projected In-Service: 7/15/2021

Supplemental Project ID: s1841

Project Status: Conceptual

Model: 2023 RTEP



Dominion Transmission Zone M-3 Process Sandlot 230 kV Delivery - DEV

Need Number: DOM-2018-0019

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 7/25/2019

Previously Presented:

Need – 10/11/2018

Solution – 12/13/2018

Project Driver:

Customer Service

Specific Assumption Reference:

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

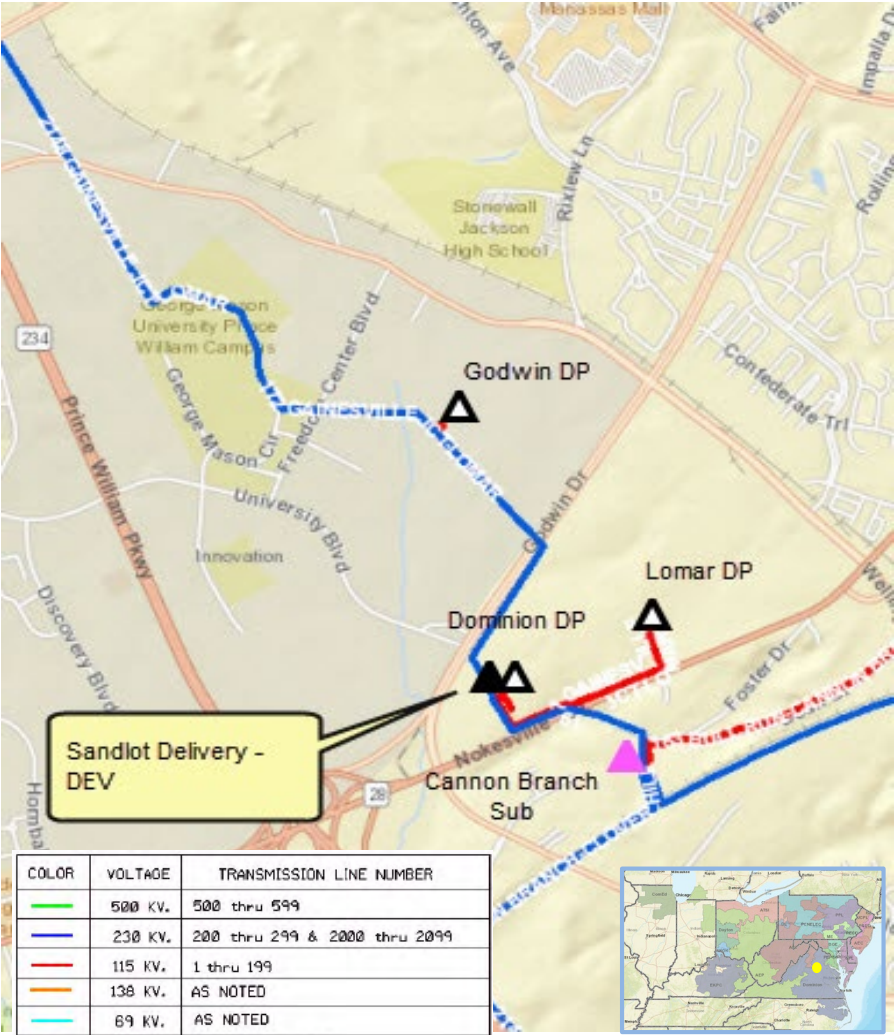
Problem Statement:

DEV Distribution has submitted a DP Request for a new substation (Sandlot) to accommodate the expansion of a manufacturing plant in the City of Manassas with a total load in excess of 100 MW. Requested in-service date is 10/15/2019.

Projected 2023 Load

Summer: 41.9 MW

Winter: 41.9 MW



Dominion Transmission Zone M-3 Process Sandlot 230 kV Delivery - DEV

Need Number: DOM-2018-0019

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 7/25/2019

Selected Solution:

Interconnect the new substation by cutting and extending Line #2148 (Cloverhill-Liberty) to a backbone in the new station. Terminate both ends into a four-breaker ring to create a Cloverhill-Sandlot line and a Sandlot-Liberty line.

The existing manufacturing load of approx. 60 MW will be moved to the Sandlot 230kV Delivery when its 115kV source is converted to 230kV (projected to be needed within the next 3-5 years to accommodate continued growth in the area). The total manufacturing load (existing + expansion) is projected to exceed 100 MW by 2023.

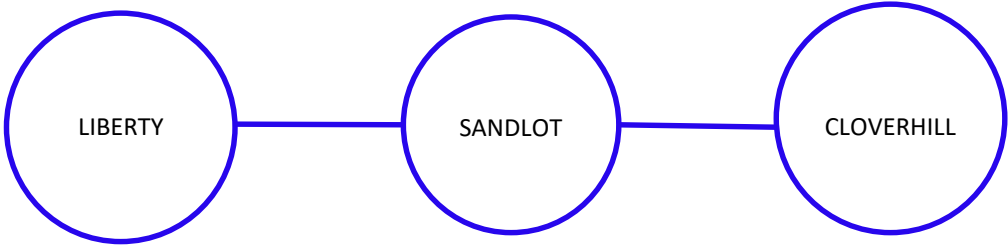
Estimated Cost: \$5.5 M

Projected In-Service: 10/15/2019

Supplemental Project ID: s1842

Project Status: Construction

Model: 2023 RTEP



Dominion Transmission Zone M-3 Process Greenwich 230kV - DEV

Need Number: DOM-2018-0023

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 7/25/2019

Previously Presented:

Need – 12/13/2018

Solution – 2/7/2019

Project Driver:

Customer Service

Specific Assumption Reference:

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

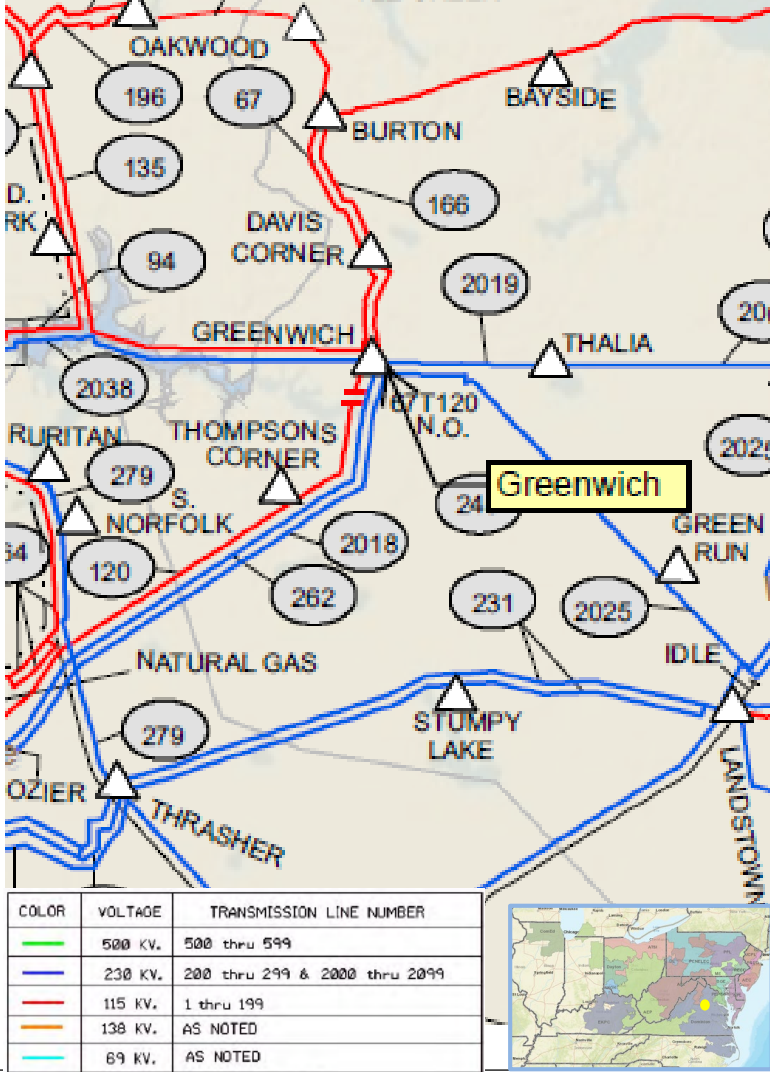
Problem Statement:

DEV Distribution has identified the need to install a second distribution transformer at Greenwich substation. The station load growth has caused a transformer contingency to exceed the capacity of field switching plus a mobile transformer. Requested in-service date is 10/15/2019.

Projected 2023 Load

Summer: 77 MVA

Winter: 77 MVA



Dominion Transmission Zone M-3 Process Greenwich 230kV - DEV

Need Number: DOM-2018-0023

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan –
7/25/2019

Selected Solution:

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

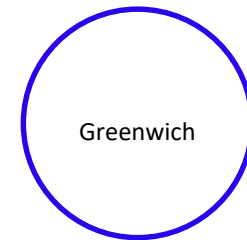
Estimated Cost: \$1.4 M

Projected In-Service: 10/15/2019

Supplemental Project ID: s1843

Project Status: Engineering

Model: 2023 RTEP



Dominion Transmission Zone M-3 Process Copeland DP 115kV - ODEC

Need Number: DOM-2019-0001

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 7/25/2019

Previously Presented:

Need – 1/17/2019

Solution – 2/20/2019

Project Driver:

Customer Service

Specific Assumption Reference:

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

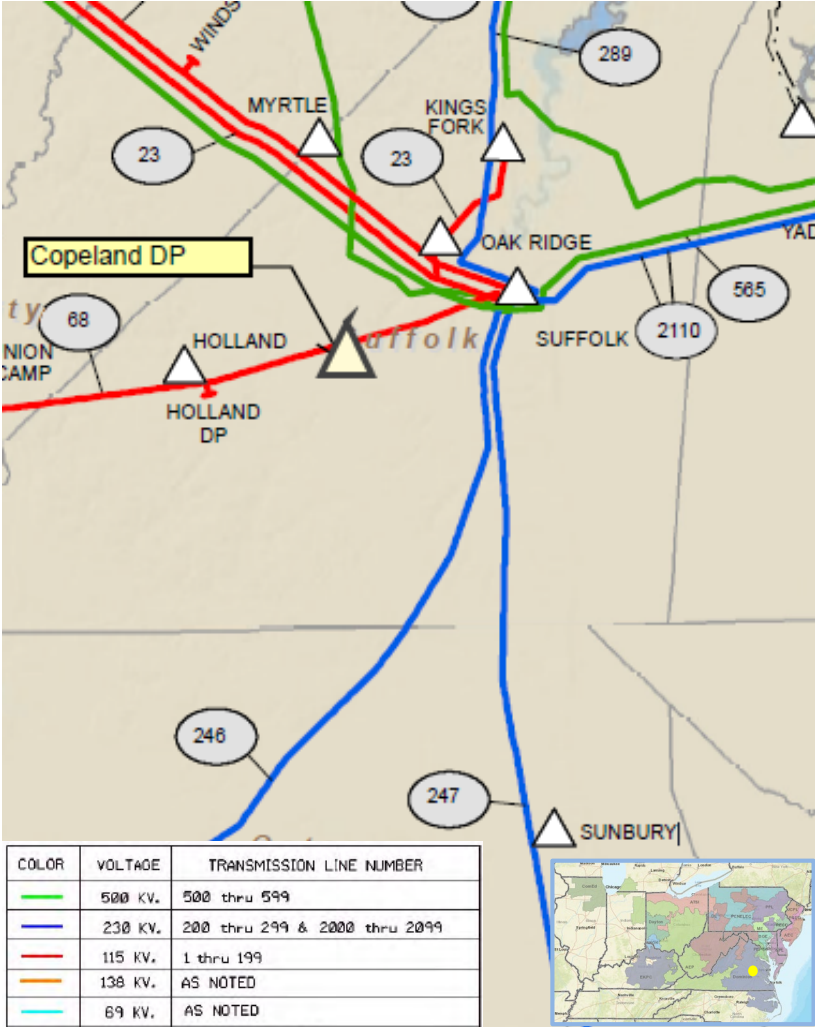
Problem Statement:

ODEC has submitted a request on behalf of Community EC (COMM) for a new Delivery Point (Copeland) at Suffolk, VA, to support future load growth in the area. The customer requests service by May 1, 2019.

Projected 2023 Load

Summer: 8.0 MW

Winter: 12.0 MW



Dominion Transmission Zone M-3 Process Copeland DP 115kV - ODEC

Need Number: DOM-2019-0001

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 7/25/2019

Selected Solution:

Cut into line #68 and install 3 line switches and other associated transmission equipment to connect to COMM’s new DP station Copeland.

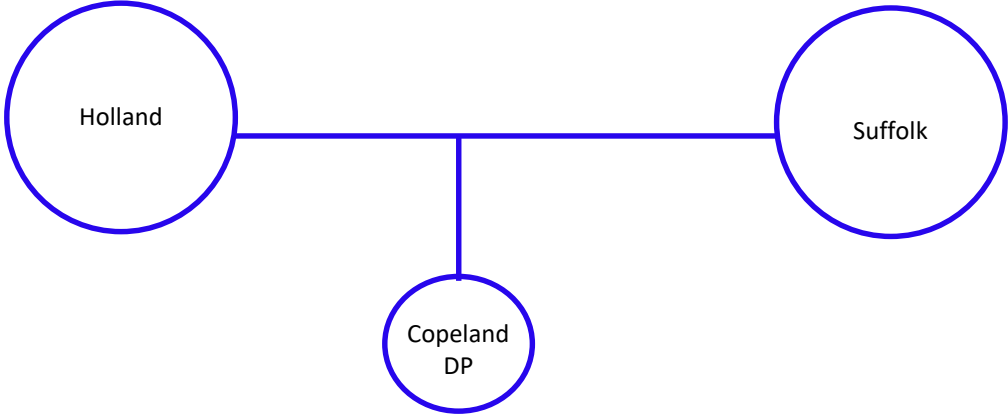
Estimated Cost: \$1 M

Projected In-Service: 5/1/2019

Supplemental Project ID: s1844

Project Status: Complete

Model: 2023 RTEP



Dominion Transmission Zone M-3 Process

Add 5TH TX – Beaumeade 230 kV Delivery - DEV

Need Number: DOM-2018-0012

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 8/21/2019

Previously Presented:

Need – 9/13/2018

Solution – 11/8/2018 & 8/8/2019

Project Driver:

Customer Service

Specific Assumption Reference:

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

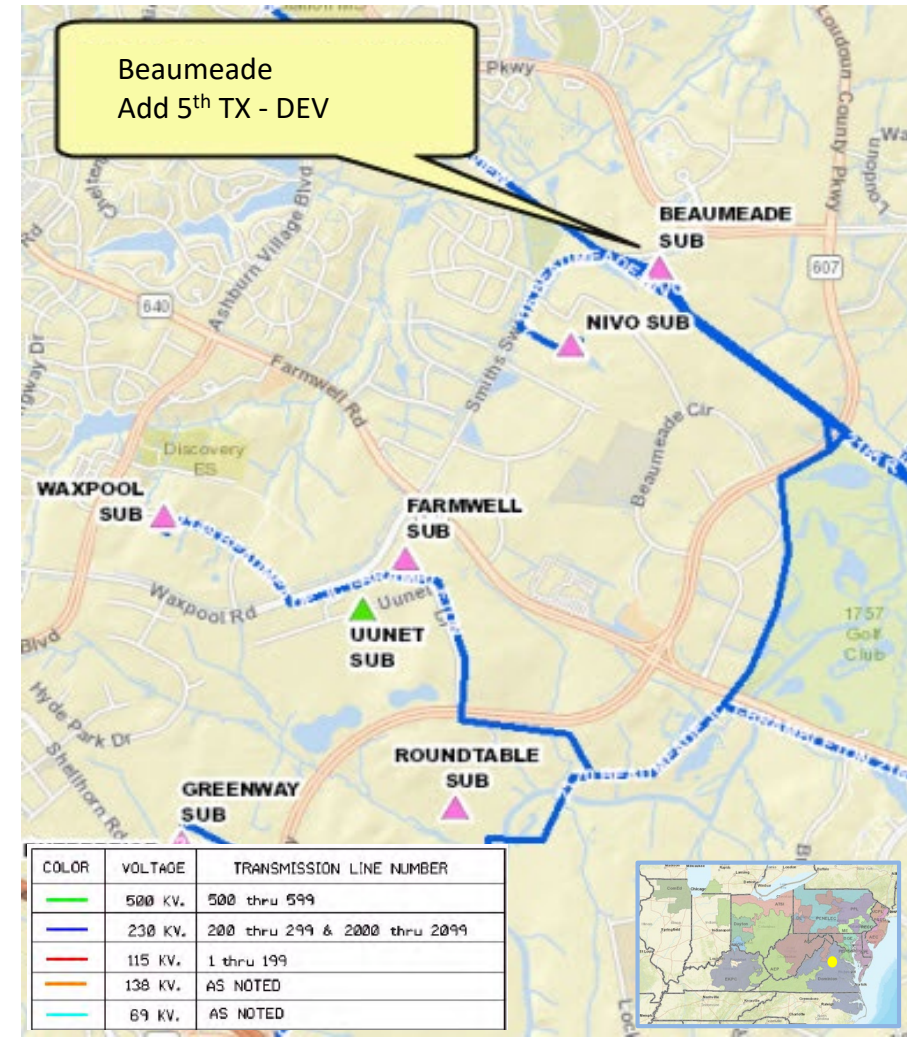
Problem Statement:

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



Dominion Transmission Zone M-3 Process Add 5TH TX – Beaumeade 230 kV Delivery - DEV

Need Number: DOM-2018-0012

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan –
8/21/2019

Selected Solution:

Install 1200 Amp, 50 kAIC circuit switcher and associated equipment (bus, switches, relaying, etc.) to feed the new transformer from existing 230 kV bus No.5 at Beaumeade.

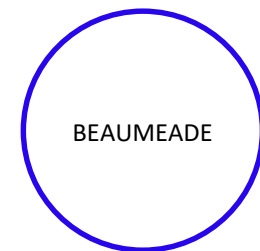
Estimated Cost: \$0.75 M

Projected In-Service: 3/31/2020

Supplemental Project ID: s1838.1

Project Status: Conceptual

Model: 2023 RTEP



Dominion Transmission Zone: Supplemental Do No Harm (DNH) Analysis

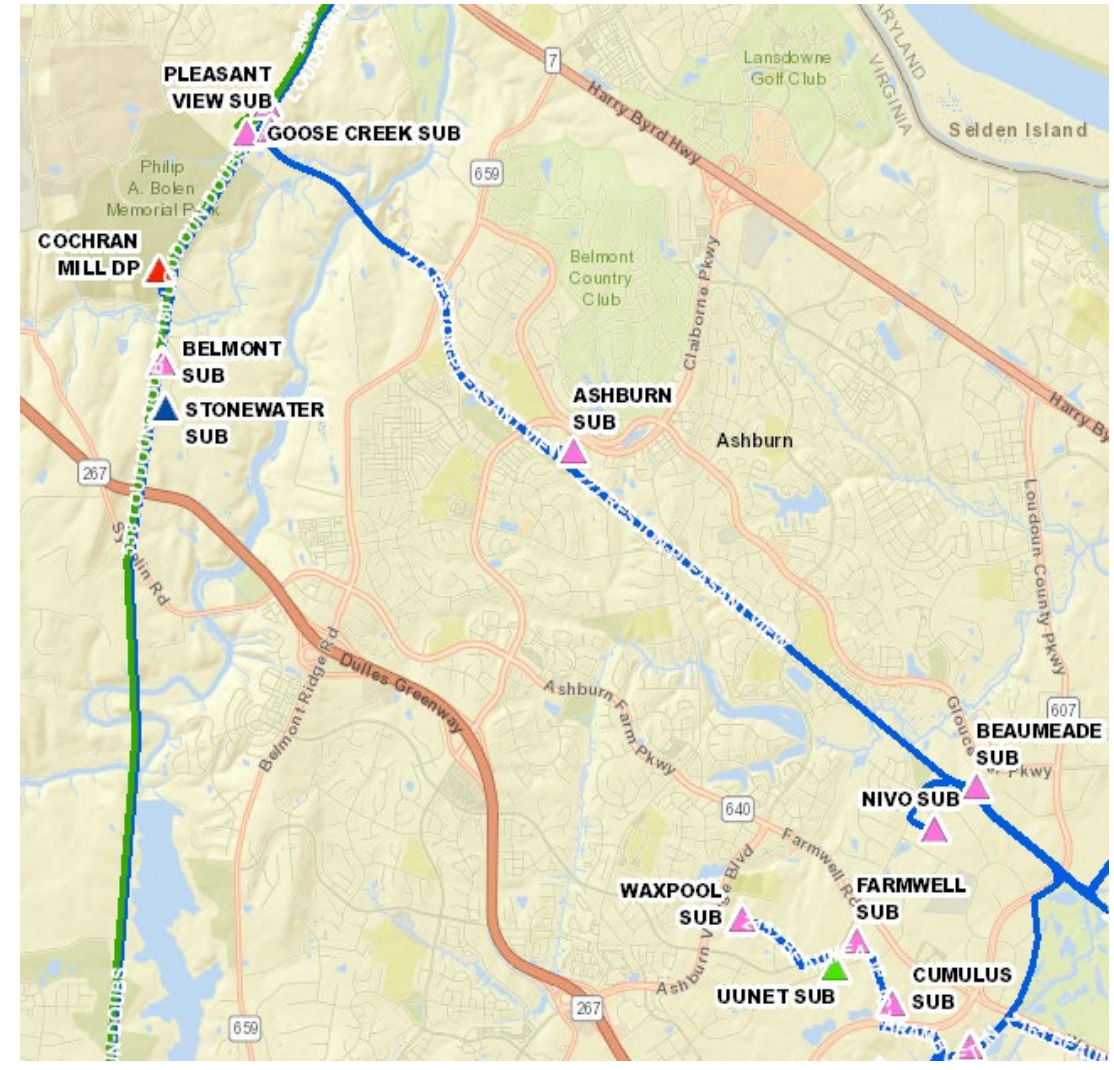
Need Number: DOM-2018-0012

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 8/21/2019

Project Driver: Customer Service (Do No Harm Analysis)

Problem Statement:

PJM has identified a generator deliverability violation with an overload of 100.18% on the Cochran Mill – Ashburn 230 kV line segment for the loss of Line 274. This overload is caused by the previously submitted Supplemental Projects in Dominion Zone and is being assigned to DOM-2018-0012.



Dominion Transmission Zone: Supplemental Do No Harm (DNH) Analysis

Need Number: DOM-2018-0012

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 8/21/2019

Selected Solution :

Re-conductor Belmont – Cochran Mill 230kV, Cochran Mill – Ashburn 230kV and Ashburn – Beaumeade 230kV line segments using a higher capacity conductor as well as upgrade the terminal equipment to achieve a rating of 1572 MVA.

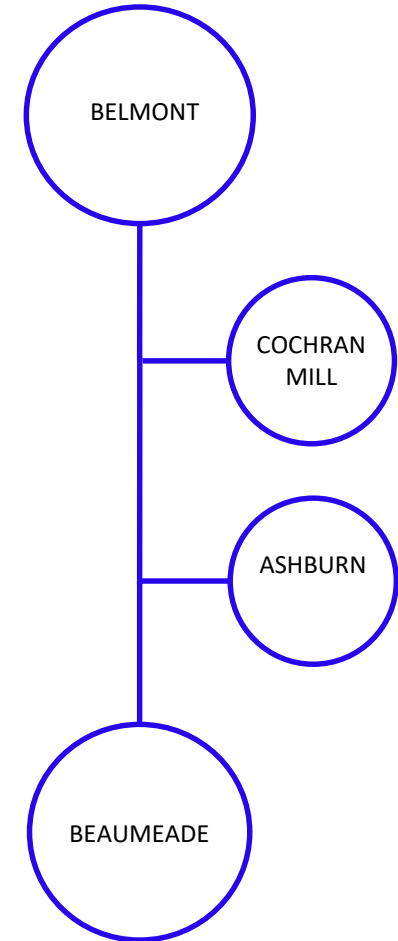
Estimated cost: \$ 15.0 M

Projected In-service Date: 06/01/2023

Supplemental Project ID: s1838.2

Project Status: Conceptual

Model: 2023 RTEP



Dominion Transmission Zone M-3 Process Summit 230kV Delivery - ODEC

Need Number: DOM-2018-0002

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 10/08/2019

Previously Presented:

Need – 9/13/2018

Solution – 10/11/2018

Project Driver:

Customer Service

Specific Assumption Reference:

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

Problem Statement:

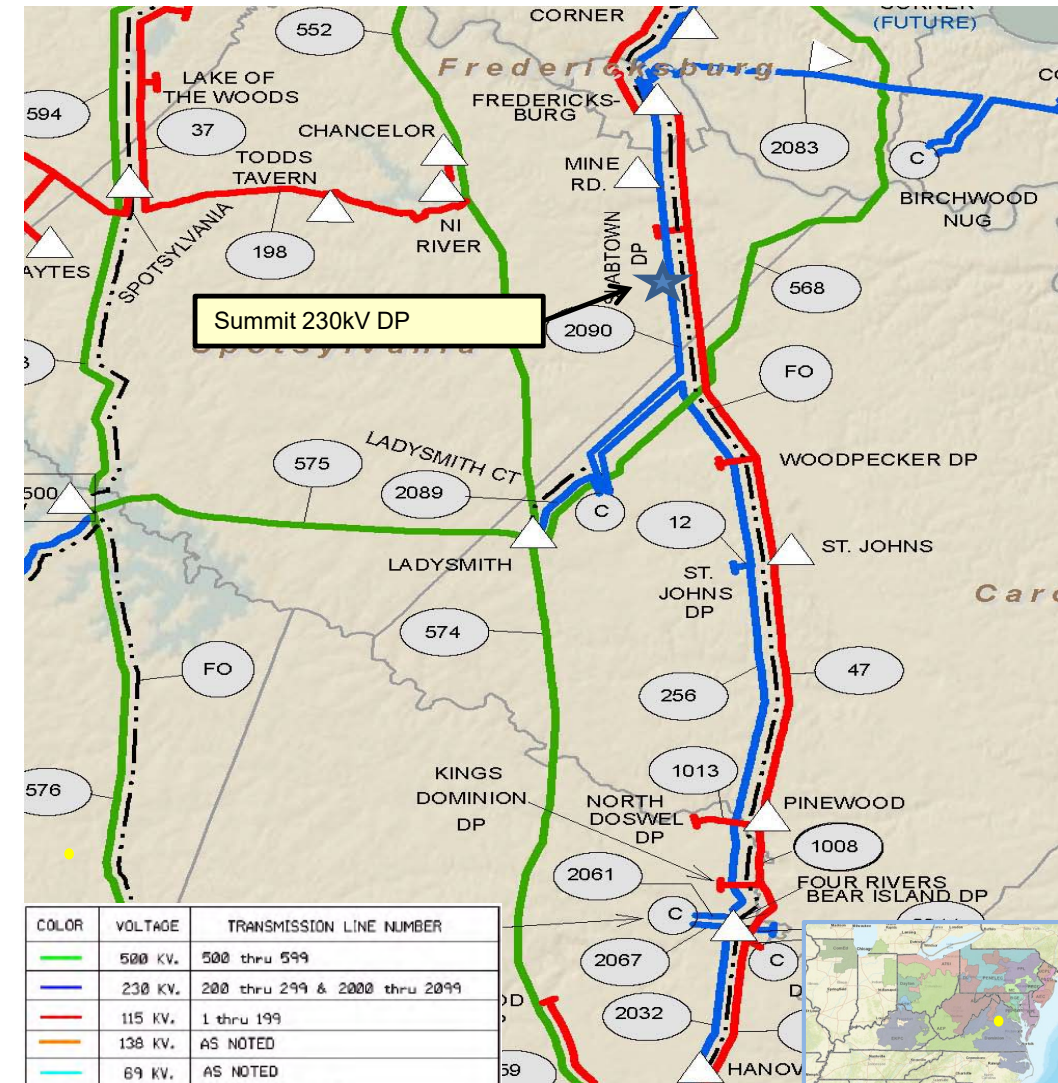
ODEC has submitted a delivery point request south of Fredericksburg to serve projected residential, commercial and industrial loads. Customer requests service by 8/1/2019.

Projected 2023 load

Summer: 35 MW

Winter: 41 MW

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



Dominion Transmission Zone M-3 Process Summit 230kV Delivery - ODEC

Need Number: DOM-2018-0002

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 10/08/2019

Selected Solution:

Install necessary 230kV facilities including three 230kV switches on Line #2090 and associated metering to connect the proposed new Summit Delivery Point.

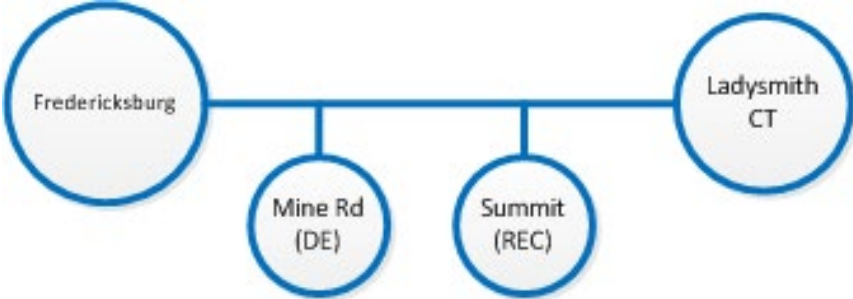
Estimated Cost: \$1.4 M

In-Service: 6/26/2019

Supplemental Project ID: s1751

Project Status: Complete

Model: 2023 RTEP



Dominion Transmission Zone M-3 Process Nimbus 230 kV Delivery - DEV

Need Number: DOM-2018-0011

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 12/17/2019

Previously Presented:

Need – 9/13/2018

Solution – 05/16/2019

Project Driver:

Customer Service

Specific Assumption Reference:

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

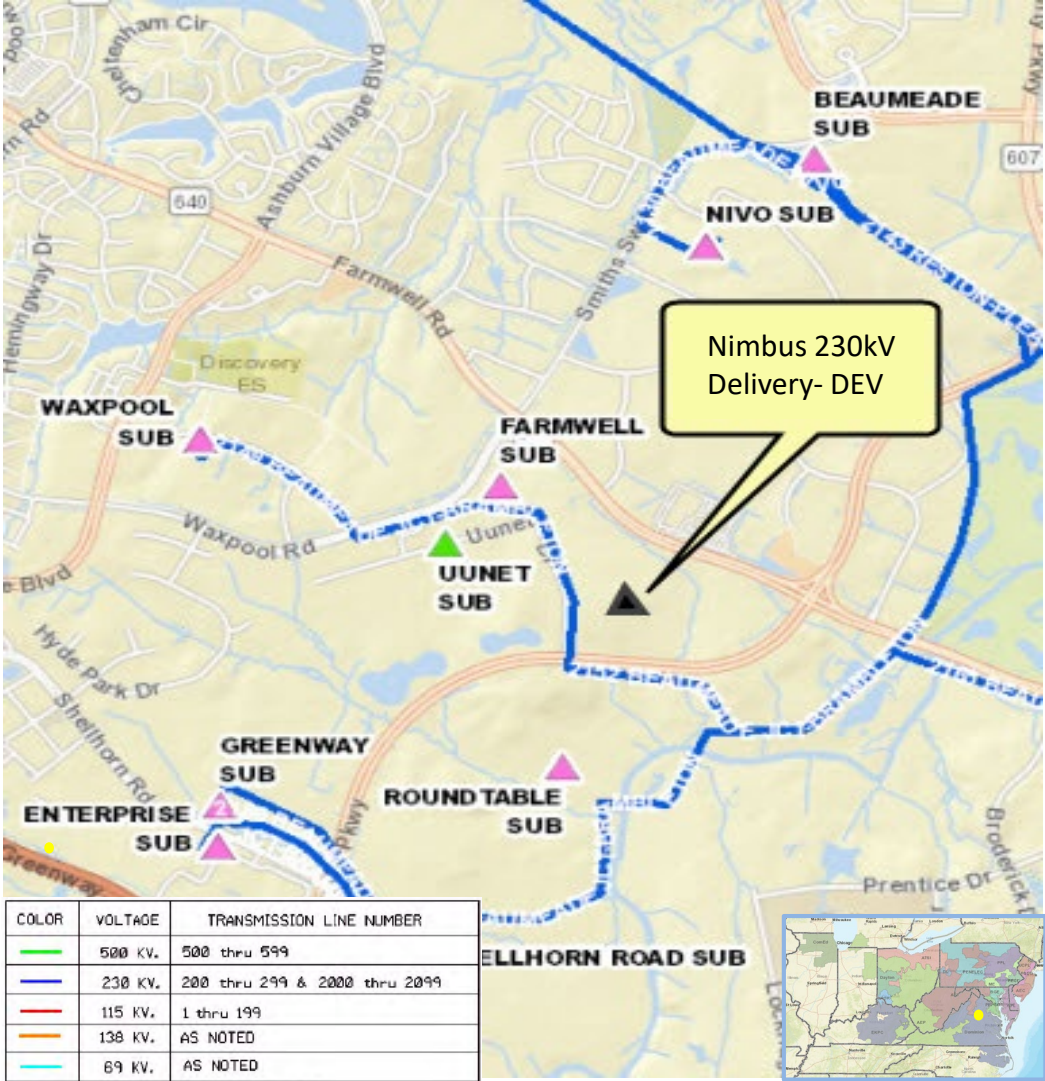
Problem Statement:

DEV Distribution has submitted a DP Request for a new substation (Nimbus) to accommodate a new datacenter campus in Loudoun County with a total load in excess of 100 MW. Requested in-service date is 11/15/2022.

Projected 2023 load

Summer: 60 MW

Winter: 80 MW



Dominion Transmission Zone M-3 Process Nimbus 230 kV Delivery - DEV

Need Number: DOM-2018-0011

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 12/17/2019

Selected Solution:

Interconnect the new substation by cutting and extending Line #2152 (Buttermilk-Beaumeade) to the proposed Nimbus Substation. Terminate both ends into a four-breaker ring arrangement to create a Buttermilk-Nimbus line and a Nimbus-Beaumeade line.

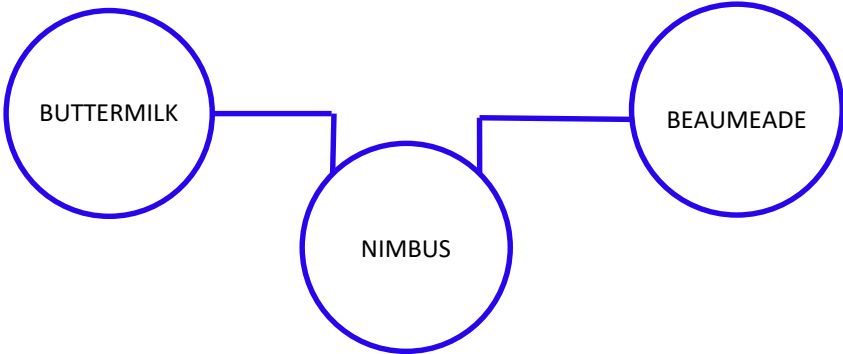
Estimated Cost: \$20.0 M

Projected In-Service: 11/15/2022

Supplemental Project ID: s2100

Project Status: Conceptual

Model: 2023 RTEP



Superseded – refer to slide 80

Need Number: DOM-2018-0013

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 12/17/2019

Previously Presented:

Need – 9/13/2018

Solution – 05/16/2019

Project Driver:

Customer Service

Specific Assumption Reference:

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

Problem Statement:

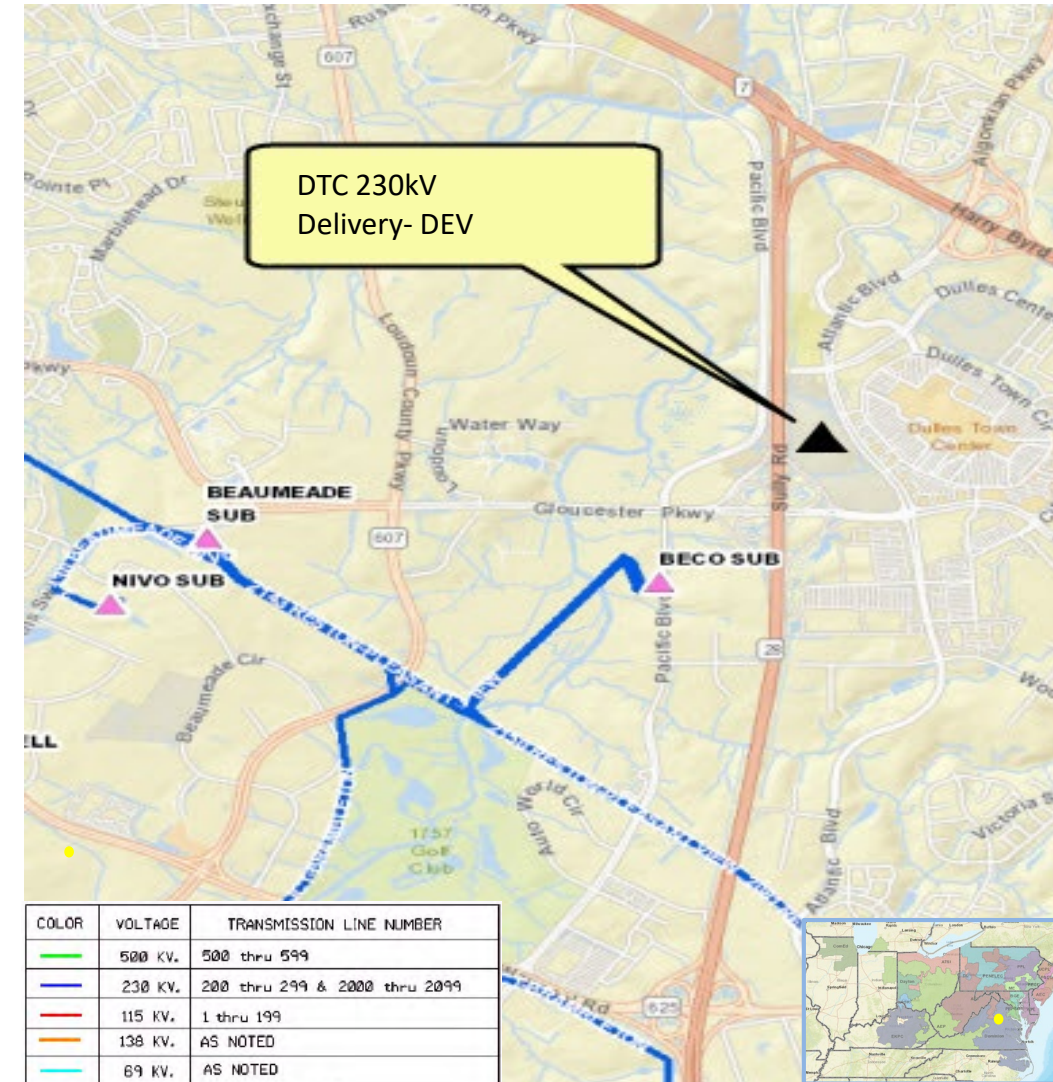
DEV Distribution has submitted a DP Request for a new substation (DTC) to accommodate a new datacenter campus in Loudoun County with a total load in excess of 100 MW. The new substation will be configured to accommodate five 84 MVA transformers with two transformers installed initially. Requested in-service date is 11/15/2021.

Projected 2023 load

Summer: 75.7 MW

Winter: 57.5 MW

Dominion Transmission Zone M-3 Process DTC 230 kV Delivery - DEV



Superseded – refer to slide 81

Need Number: DOM-2018-0013

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 12/17/2019

Selected Solution:

Interconnect the new substation by cutting and extending Line #2143 (Beaumeade-BECO) approximately 1.5 miles to the proposed DTC Substation. Terminate both ends into a six-breaker ring bus arrangement with four breakers installed to create a Beaumeade-DTC line and a BECO-DTC line. Install two 230kV circuit switchers and any necessary high side switches and bus work for the new transformers.

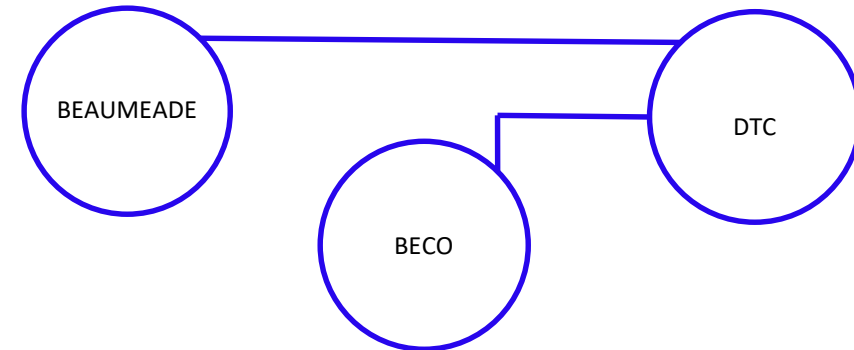
Estimated Cost: \$25.0 M

Projected In-Service: 11/15/2021

Supplemental Project ID: s2101

Project Status: Conceptual

Model: 2023 RTEP



Dominion Transmission Zone M-3 Process Genito 230kV Delivery - DEV

Need Number: DOM-2018-0020

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 12/17/2019

Previously Presented:

Need – 12/13/2018

Solution – 04/11/2019

Project Driver:

Customer Service

Specific Assumption Reference:

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

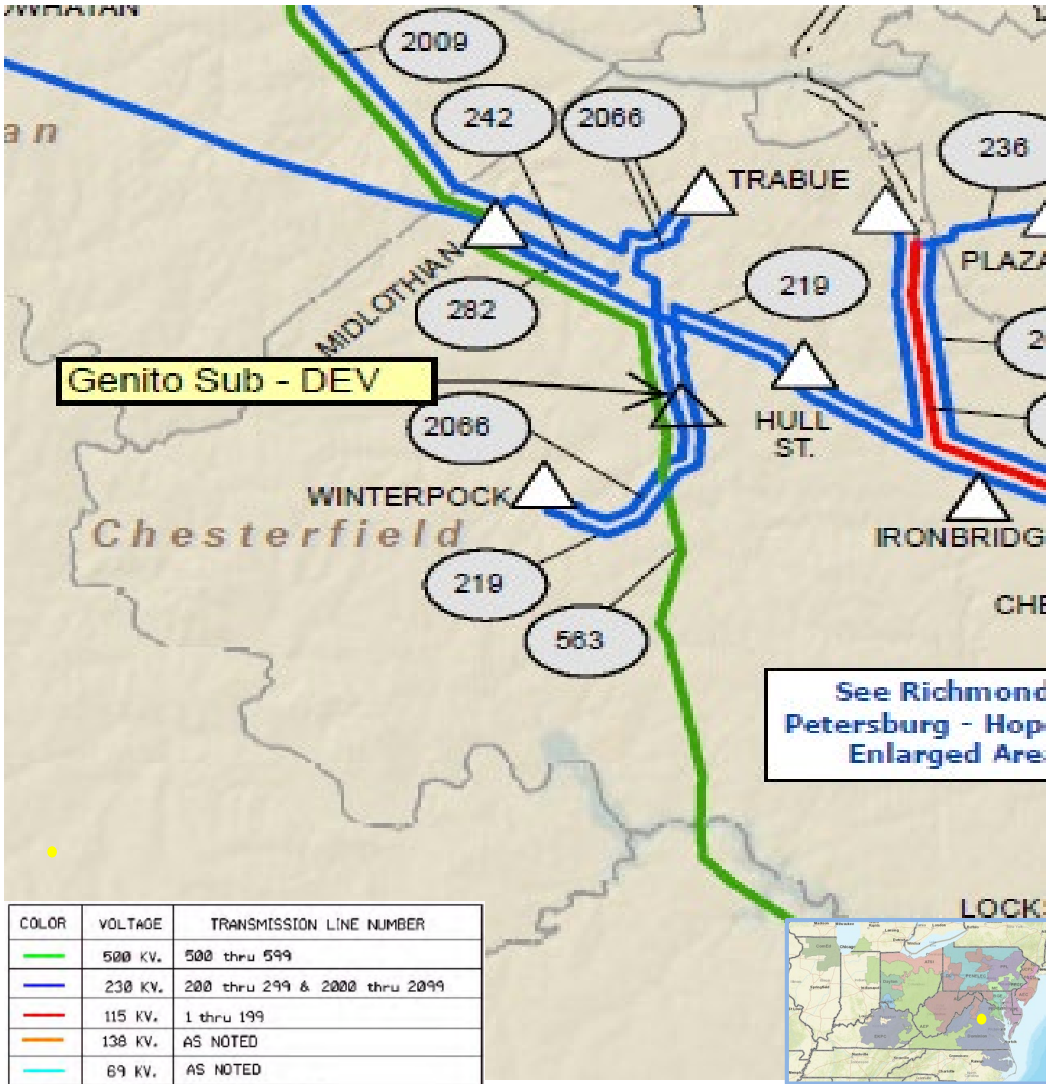
Problem Statement:

DEV Distribution has submitted a DP Request for a new substation (Genito). DEV has received load requests in Chesterfield County with a total load of 36MVA. One development request is in the area of Genito Place, west of Hwy 288 and north of Genito Road, another request is also in the close proximity. All existing substations are remote from the new developments and do not have adequate capacity. Requested in-service date is 05/15/2020.

Projected 2023 load

Summer: 58.3 MW

Winter: 45.6 MW



Dominion Transmission Zone M-3 Process Genito 230kV Delivery - DEV

Need Number: DOM-2018-0020

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 12/17/2019

Selected Solution:

Cut into line #2066 and install three line switches. Install a 230kV circuit switcher on the high side of the new transformer. Perform any necessary associated transmission level work to support this new substation.

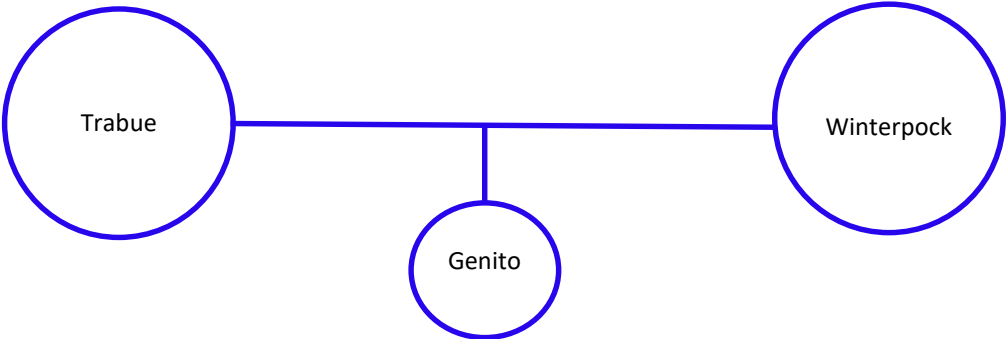
Estimated Cost: \$2.5 M

Projected In-Service: 05/15/2020

Supplemental Project ID: s2102

Project Status: Conceptual

Model: 2023 RTEP



Dominion Transmission Zone M-3 Process

Add 4th TX - BECO 230 kV Delivery - DEV

Need Number: DOM-2018-0022

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 12/17/2019

Previously Presented:

Need – 12/13/2018

Solution – 03/07/2019

Project Driver:

Customer Service

Specific Assumption Reference:

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

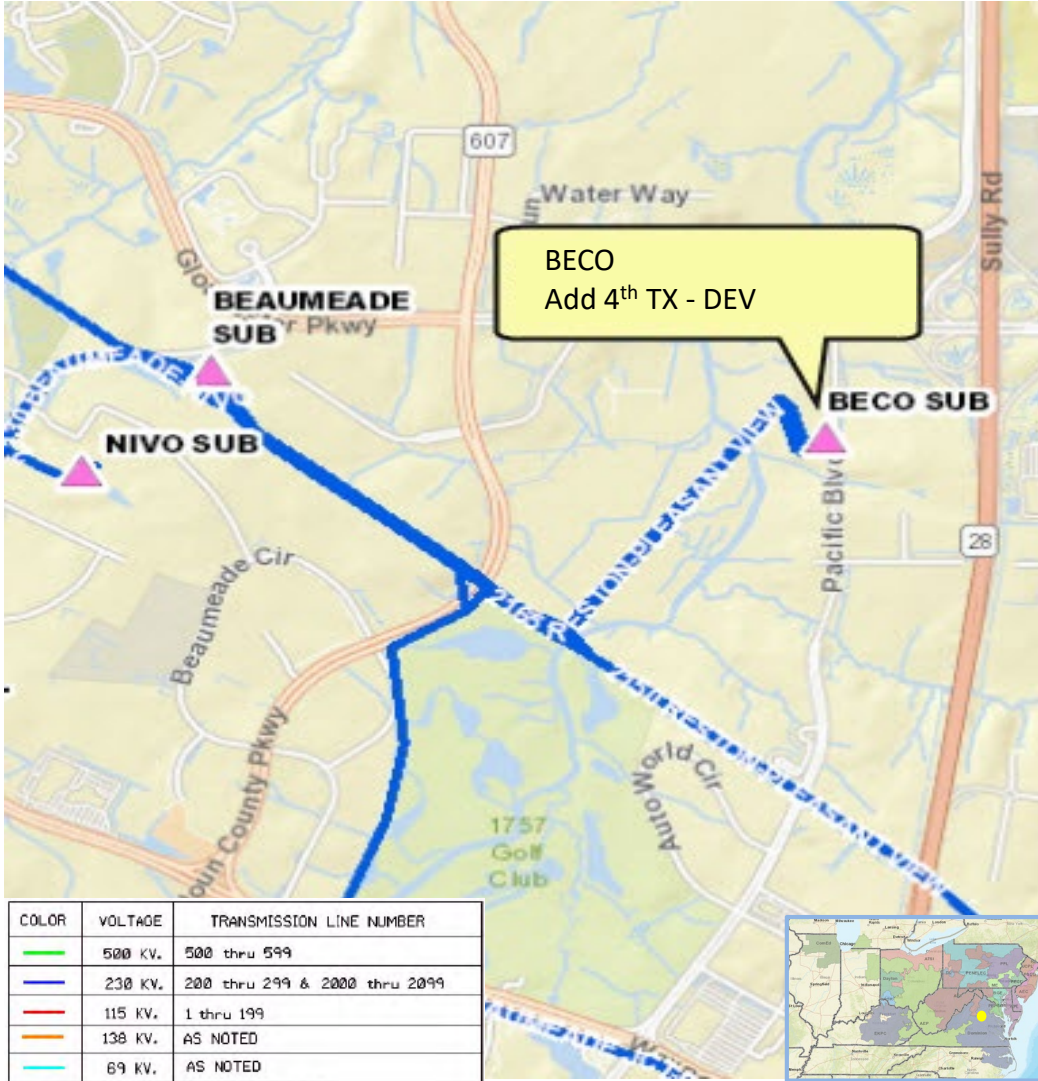
Problem Statement:

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.

Projected 2023 load

Summer: 259.0 MW

Winter: 217.9 MW



Dominion Transmission Zone M-3 Process
Add 4th TX - BECO 230 kV Delivery - DEV

Need Number: DOM-2018-0022

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 12/17/2019

Selected Solution:

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

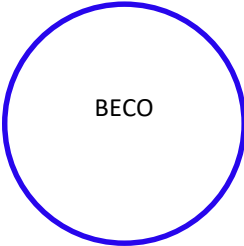
Estimated Cost: \$0.75 M

Projected In-Service: 05/16/2020

Supplemental Project ID: s2103

Project Status: Engineering

Model: 2023 RTEP



Dominion Transmission Zone M-3 Process Buttermilk 230kV Delivery - DEV

Need Number: DOM-2018-0024

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 12/17/2019

Previously Presented:

Need – 01/10/2019

Solution – 03/07/2019

Project Driver:

Customer Service

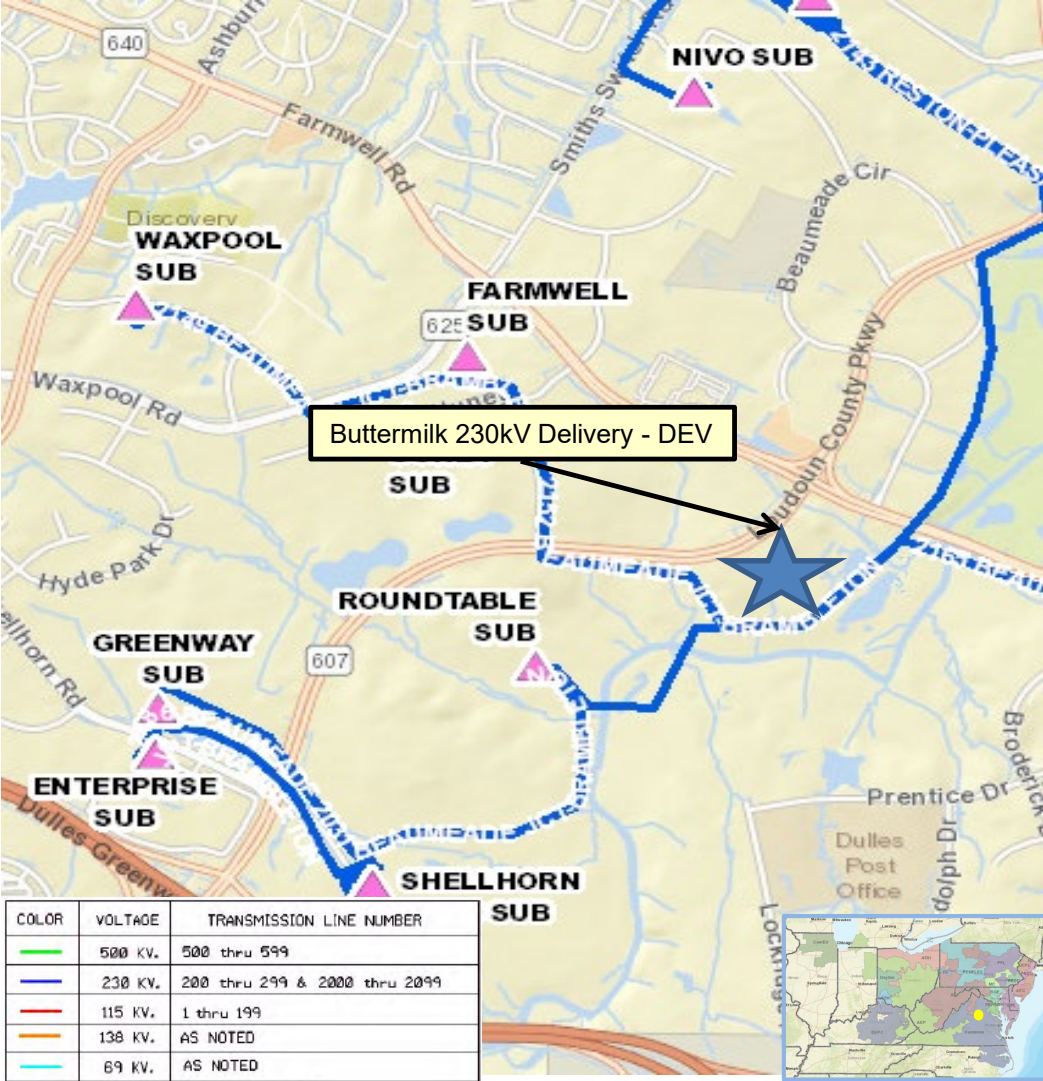
Specific Assumption Reference:

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

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.

Projected 2023 load
 Summer: 162.7 MW
 Winter: 162.7 MW



Dominion Transmission Zone M-3 Process Buttermilk 230kV Delivery - DEV

Need Number: DOM-2018-0024

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 12/17/2019

Selected 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.

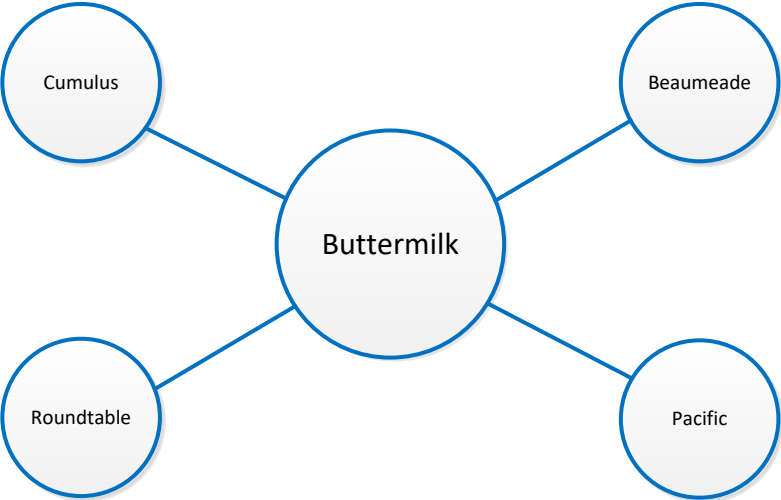
Estimated Cost: \$11.0 M

Projected In-Service: 12/30/2020

Supplemental Project ID: s2104

Project Status: Conceptual

Model: 2023 RTEP



Dominion Transmission Zone M-3 Process Add 3rd TX – Winterpock 230kV Delivery - DEV

Need Number: DOM-2019-0002

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 12/17/2019

Previously Presented:

Need – 02/07/2019

Solution – 04/11/2019

Project Driver:

Customer Service

Specific Assumption Reference:

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

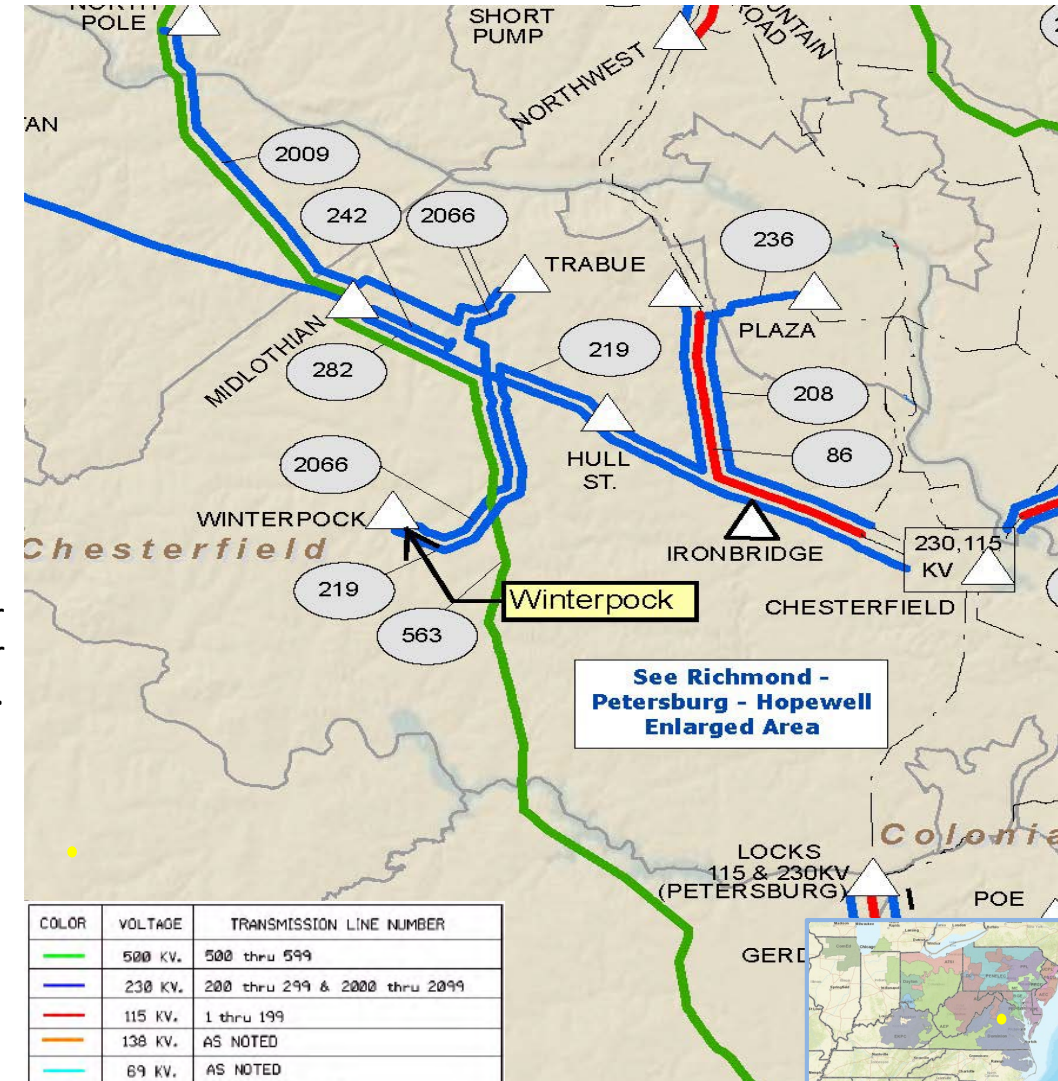
Problem Statement:

DEV Distribution has submitted a DP request to add a 3rd distribution transformer at Winterpock Substation. The station load growth has caused a transformer contingency to exceed the capacity of field switching plus a mobile transformer. Requested in-service date is 09/15/2020.

Projected 2023 load

Summer: 139.0 MW

Winter: 199.0 MW



Dominion Transmission Zone M-3 Process Add 3rd TX – Winterpock 230kV Delivery - DEV

Need Number: DOM-2019-0002

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan –
12/17/2019

Selected Solution:

A 4-breaker ring is required based on Dominion’s Facility Interconnection Requirements for load higher than 100MW. Install a 230kV 4-breaker ring, a circuit switcher on the high side of the transformer and perform any other necessary transmission work.

Estimated Cost: \$8.5 M

Projected In-Service: 09/15/2020

Supplemental Project ID: s2105

Project Status: Conceptual

Model: 2023 RTEP



Dominion Transmission Zone M-3 Process Add 2nd TX – Rockville 230kV Delivery - DEV

Need Number: DOM-2019-0003

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 12/17/2019

Previously Presented:

Need – 02/07/2019

Solution – 04/11/2019

Project Driver:

Customer Service

Specific Assumption Reference:

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

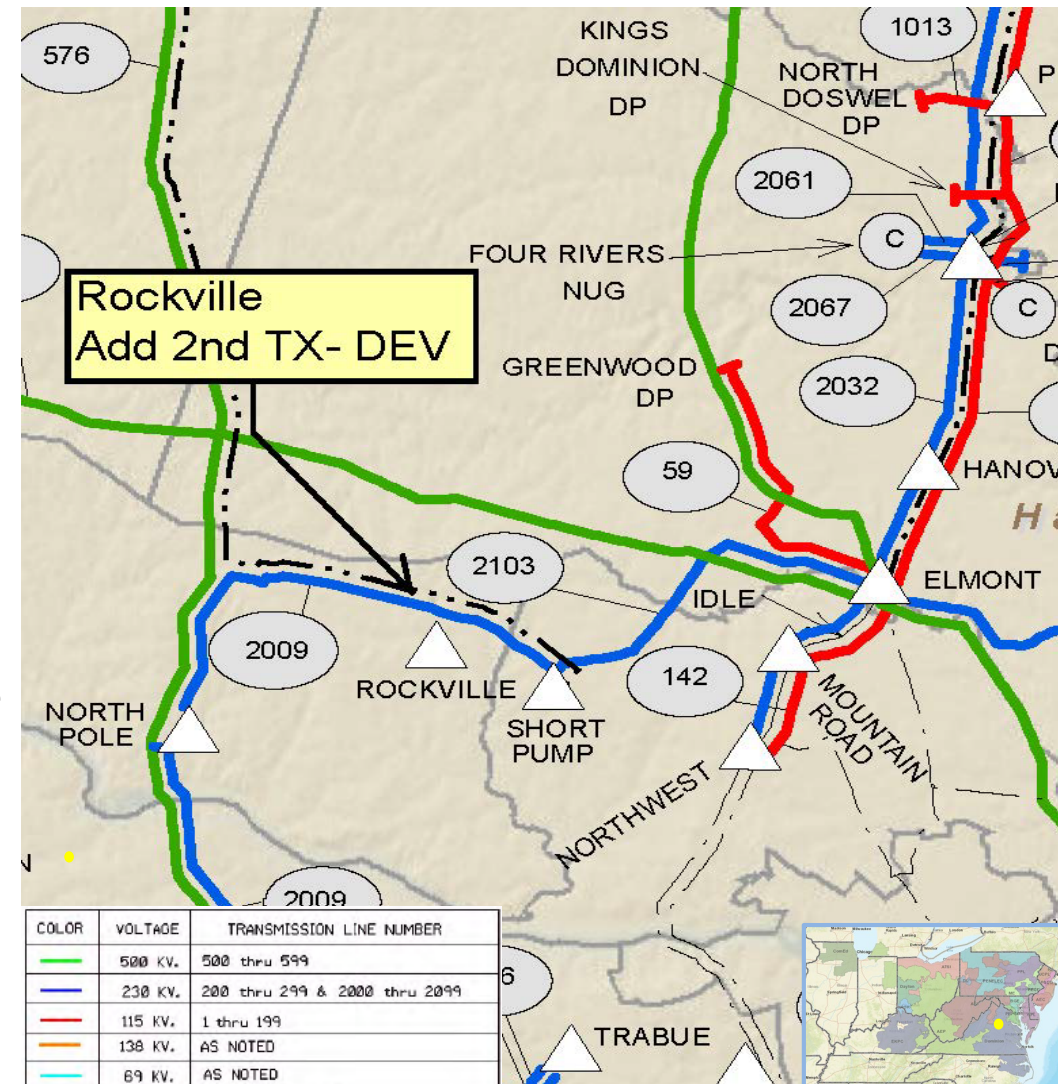
Problem Statement:

DEV Distribution has submitted a DP request to add a second distribution transformer at Rockville Substation in Goochland County. This transformer will support residential and commercial load growth in the area. Requested in-service date is 06/15/2020.

Projected 2023 load

Summer: 53.0 MW

Winter: 51.4 MW



Dominion Transmission Zone M-3 Process Add 2nd TX – Rockville 230kV Delivery - DEV

Need Number: DOM-2019-0003

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan –
12/17/2019

Selected Solution:

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

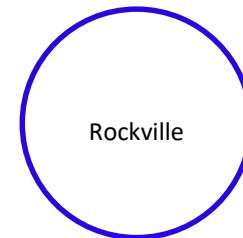
Estimated Cost: \$0.75 M

Projected In-Service: 06/15/2020

Supplemental Project ID: s2106

Project Status: Conceptual

Model: 2023 RTEP



Dominion Transmission Zone M-3 Process Add 2nd TX - Cumulus 230 kV Delivery - DEV

Need Number: DOM-2019-0004

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 12/17/2019

Previously Presented:

Need – 02/07/2019

Solution – 05/16/2019

Project Driver:

Customer Service

Specific Assumption Reference:

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

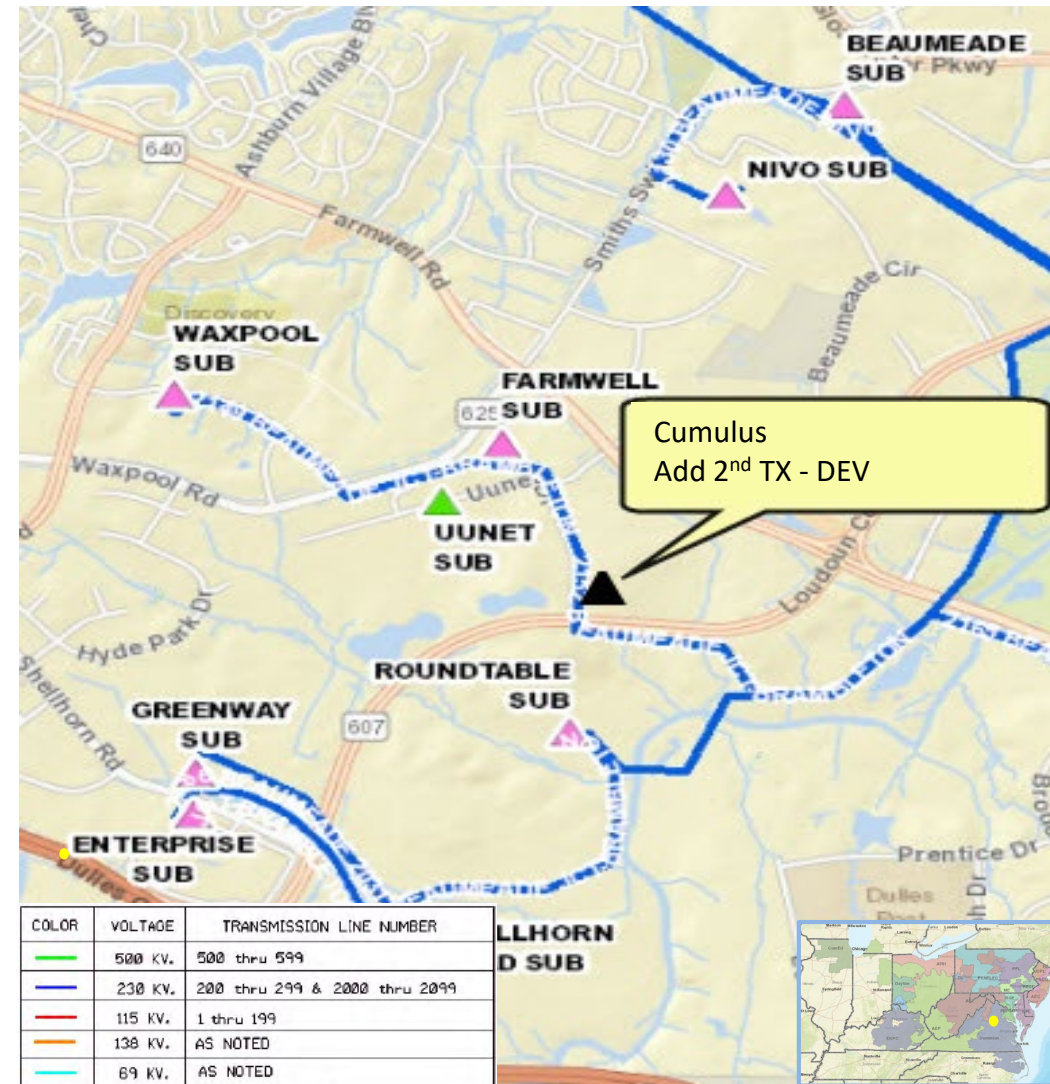
Problem Statement:

DEV Distribution has submitted a DP Request to add a 2nd, 84 MVA distribution transformer at Cumulus Substation in Loudoun County. The new transformer is being driven by projections that load on the initial Cumulus transformer will exceed mobile transformer capability in 2020. Requested in-service date is 10/15/2020.

Projected 2023 load

Summer: 127.9 MW

Winter: 108.3 MW



Dominion Transmission Zone M-3 Process Add 2nd TX - Cumulus 230 kV Delivery - DEV

Need Number: DOM-2019-0004

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan –
12/17/2019

Selected Solution:

Install 1200 Amp, 50kAIC circuit switcher and associated equipment (bus, switches, relaying, etc.) to feed the new transformer at Cumulus.

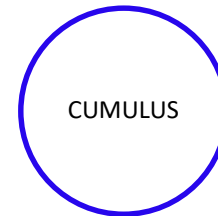
Estimated Cost: \$0.25 M

Projected In-Service: 10/15/2020

Supplemental Project ID: s2107

Project Status: Engineering

Model: 2023 RTEP



Dominion Transmission Zone M-3 Process Lockridge 230kV Delivery - DEV

Need Number: DOM-2019-0005 (Update)

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 12/17/2019

Previously Presented:

Need – 02/07/2019

Solution – 08/08/2019 , 10/6/2020

Project Driver:

Customer Service

Specific Assumption Reference:

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

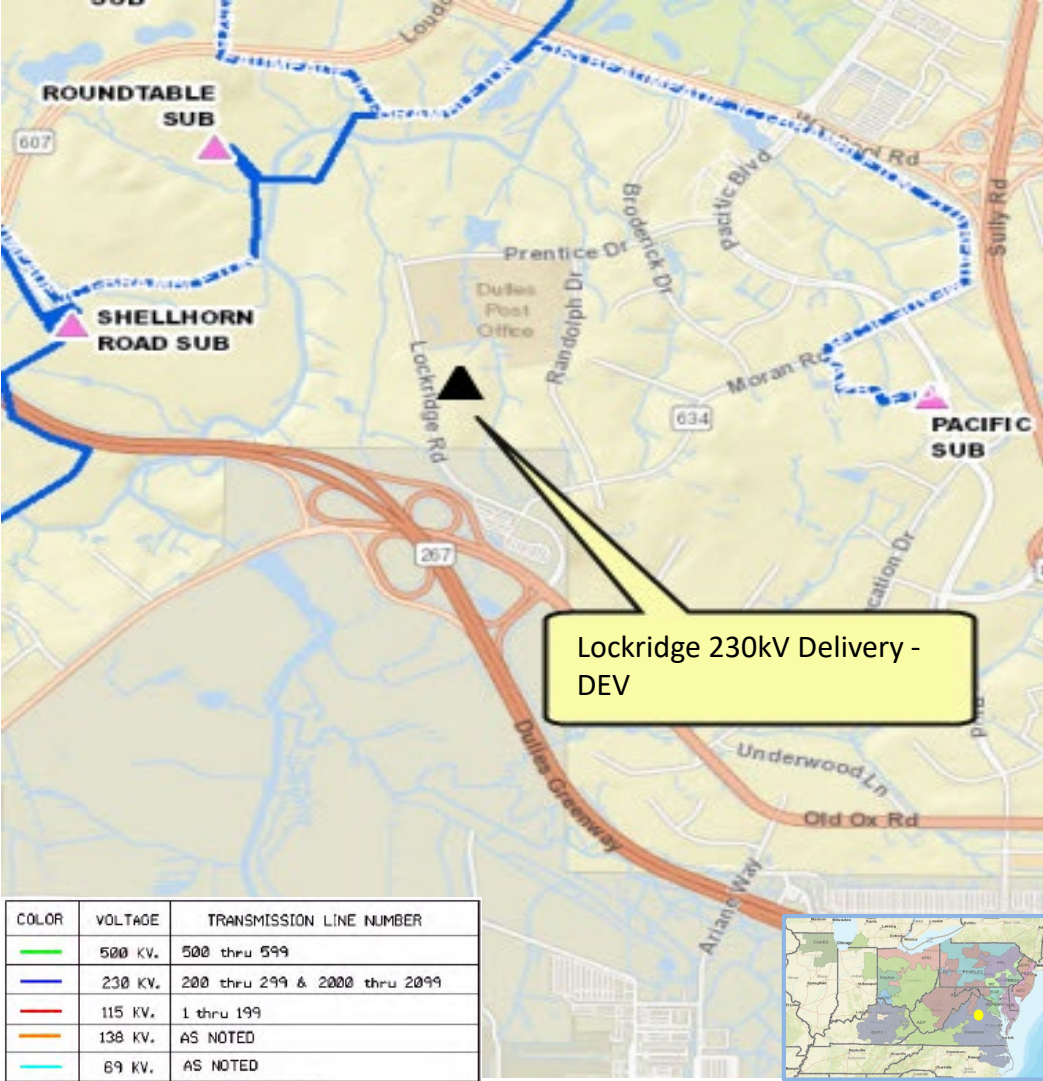
Problem Statement:

DEV Distribution has submitted a DP Request for a new substation (Lockridge) 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 7/31/2022. Date changed from 09/30/2021 as previously presented.

Projected 2023 load

Summer: 139.0 MW

Winter: 156.0 MW



Dominion Transmission Zone M-3 Process Lockridge 230kV Delivery - DEV

Need Number: DOM-2019-0005 (Update)

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 12/17/2019

Selected Solution:

~~Cut an existing 230kV line between Roundtable and Buttermilk substations. Construct a 1.8 mile 230kV loop to Lockridge substation.~~

Cut an existing 230kV line between Shellhorn and Roundtable substations. Construct a 1.0 mile 230kV loop to Lockridge substation.

At Lockridge, install four 230kV breakers (station arranged as six breaker ring) to terminate the two lines. Install two 230kV circuit switchers and any necessary high side switches and bus work for two initial transformers (five ultimate). **No changes to the scope at Lockridge substation**

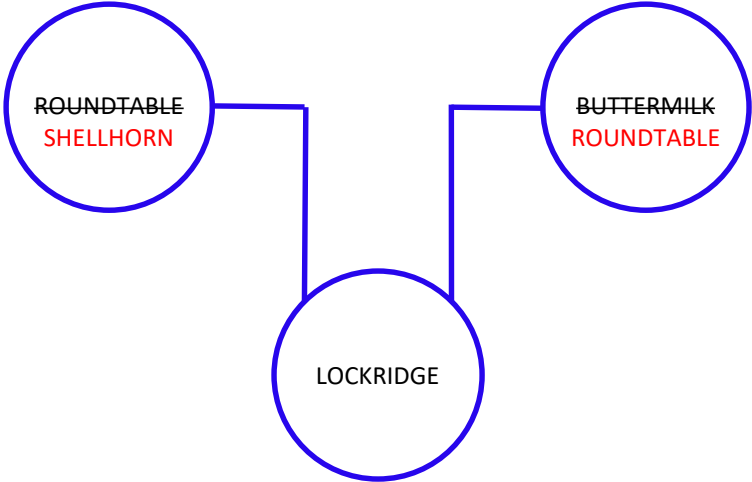
Estimated Cost: ~~\$35.0 M~~ **\$14.5 M**

Projected In-Service: 07/31/2022

Supplemental Project ID: s2108

Project Status: Engineering

Model: ~~2023~~ **2025** RTEP



Dominion Transmission Zone M-3 Process Add 3RD TX - Pacific 230 kV Delivery - DEV

Need Number: DOM-2019-0006

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 12/17/2019

Previously Presented:

Need – 02/07/2019

Solution – 05/16/2019

Project Driver:

Customer Service

Specific Assumption Reference:

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

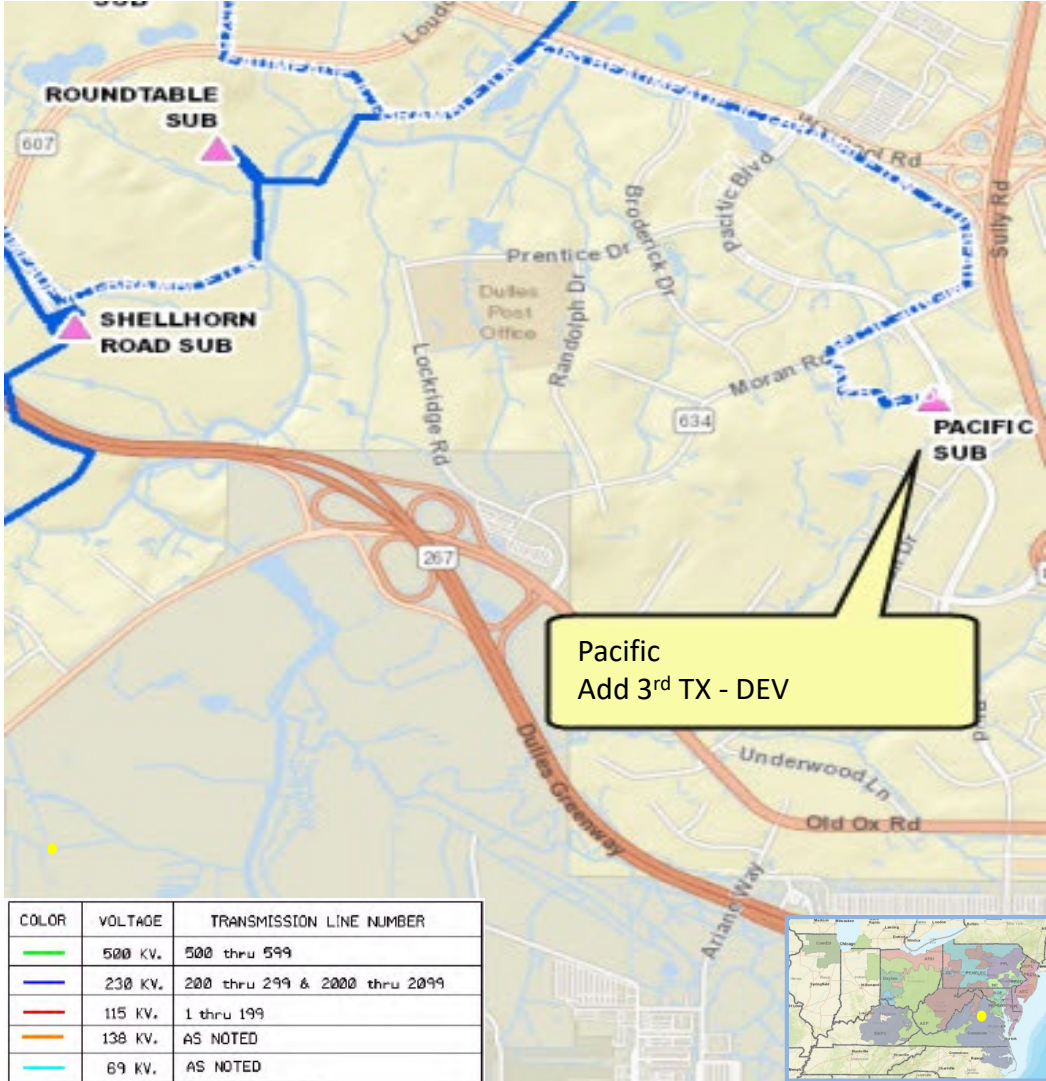
Problem Statement:

DEV Distribution has submitted a DP Request to add a 3rd, 84 MVA distribution transformer at Pacific 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 04/01/2020.

Projected 2023 load

Summer: 191.8 MW

Winter: 187.2 MW



Dominion Transmission Zone M-3 Process
Add 3RD TX - Pacific 230 kV Delivery - DEV

Need Number: DOM-2019-0006

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 12/17/2019

Selected Solution:

Install 1200 Amp, 50kAIC circuit switcher and associated equipment (bus, switches, relaying, etc.) to feed the new transformer at Cumulus.

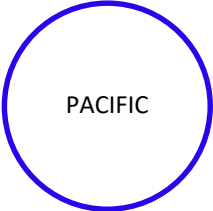
Estimated Cost: \$0.25 M

Projected In-Service: 04/01/2020

Supplemental Project ID: s2109

Project Status: Engineering

Model: 2023 RTEP



Dominion Transmission Zone M-3 Process Perimeter 230 kV Delivery - NOVEC

Need Number: DOM-2019-0007

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 12/17/2019

Previously Presented:

Need – 02/07/2019

Solution – 05/16/2019

Project Driver:

Customer Service

Specific Assumption Reference:

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

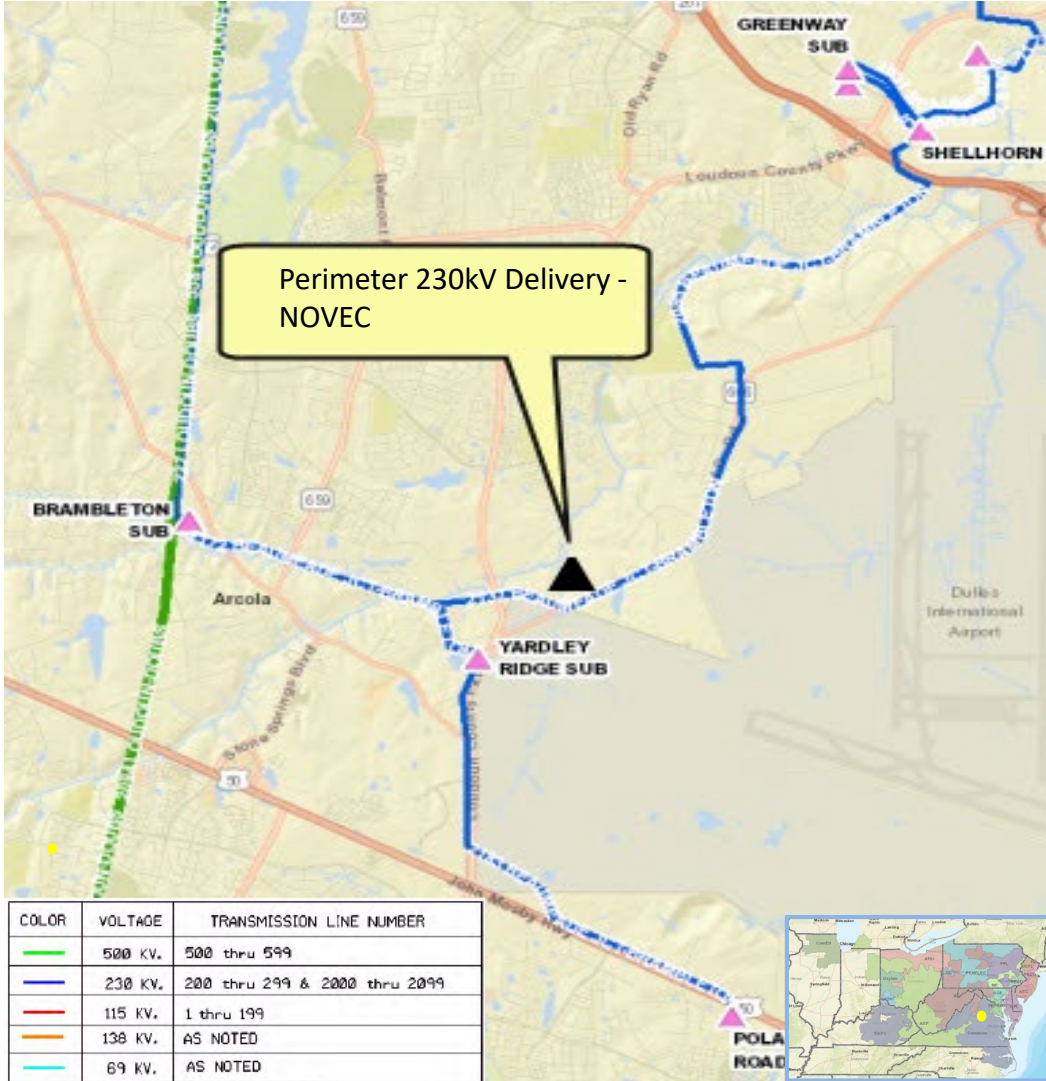
Problem Statement:

NOVEC has submitted a DP Request for a new substation (Perimeter) to support a new datacenter campus in Loudoun County with a total load in excess of 100 MW. Requested in-service date is 12/01/2020.

Projected 2023 load

Summer: 50.0 MW

Winter: 60.0 MW



Dominion Transmission Zone M-3 Process Perimeter 230 kV Delivery - NOVEC

Need Number: DOM-2019-0007

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 12/17/2019

Selected Solution:

Interconnect the new DP substation by cutting and extending Line #2095 (Yardley-Shellhorn) to new Cabin Run Switching Station. Terminate both ends into a four-breaker ring arrangement to create a Yardley-Cabin Run line and a Cabin Run-Shellhorn line. Provide two 230 kV feeds from the ring bus at Cabin Run to Perimeter DP.

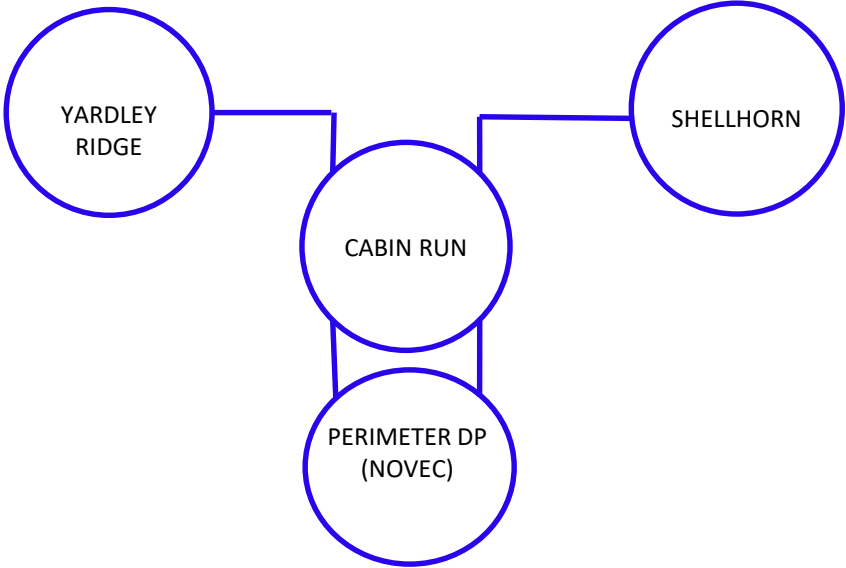
Estimated Cost: \$8.0 M

Projected In-Service: 12/01/2020

Supplemental Project ID: s2110

Project Status: Engineering

Model: 2023 RTEP



Dominion Transmission Zone M-3 Process Global Plaza 230 kV Delivery - DEV

Need Number: DOM-2019-0008

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 12/17/2019

Previously Presented:

Need – 02/07/2019

Solution – 05/16/2019

Project Driver:

Customer Service

Specific Assumption Reference:

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

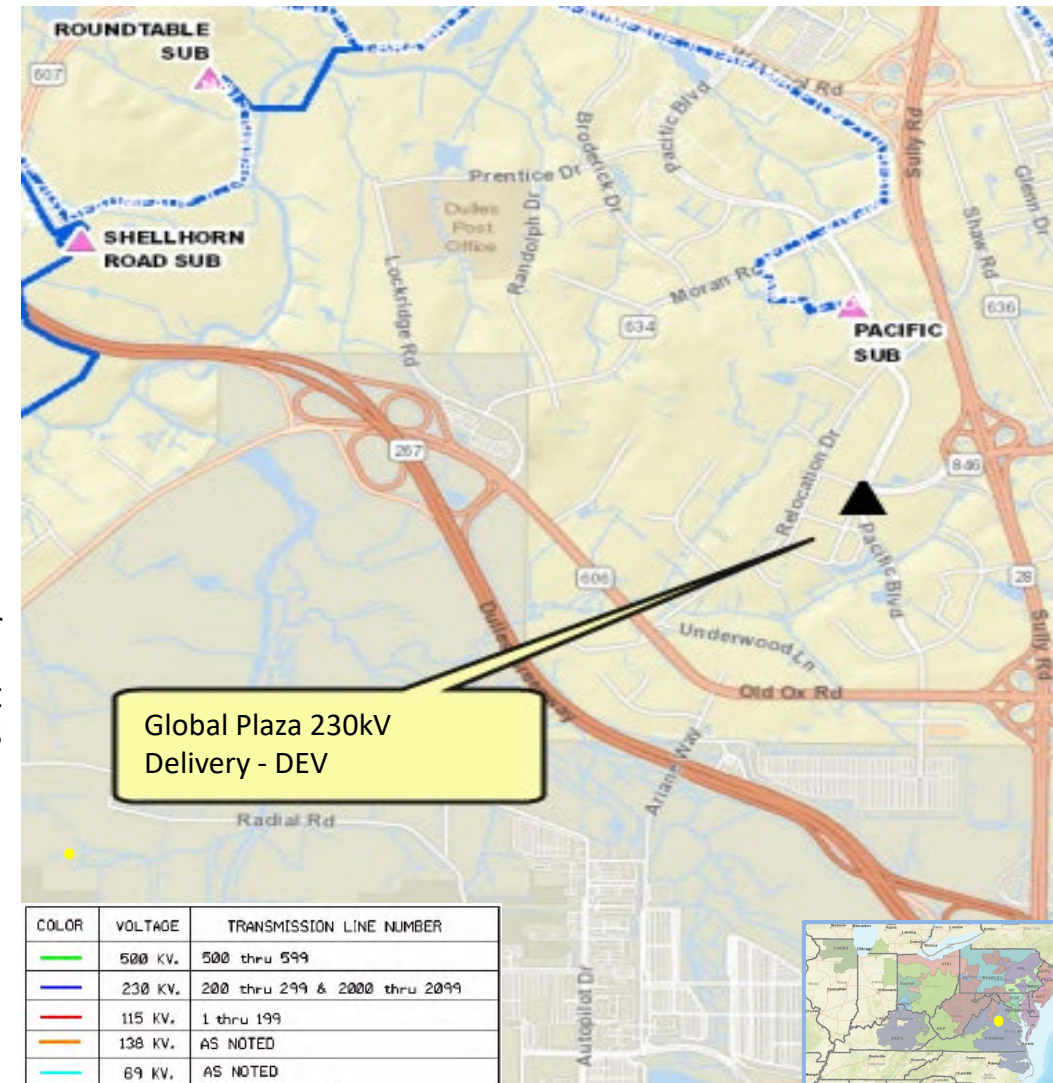
Problem Statement:

DEV Distribution has submitted a DP Request for a new substation (Global Plaza – formerly Relocation Road) 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 12/15/2021 (previously 11/15/2021).

Projected 2023 load

Summer: 122.6 MW

Winter: 98.8 MW



Dominion Transmission Zone M-3 Process Global Plaza 230 kV Delivery - DEV

Need Number: DOM-2019-0008

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 12/17/2019

Selected Solution:

Interconnect the new substation by constructing two 230kV lines approximately 1.0 mile from Pacific Substation to Global Plaza Substation.

At Pacific, install two 230kV breakers (completing the 6-breaker ring) to terminate the two lines.

At Global Plaza, install four 230kV breakers (station arranged as breaker-and-a-half) to terminate the two lines. Install two 230kV circuit switchers and any necessary high side switches and bus work for two initial transformers (five ultimate).

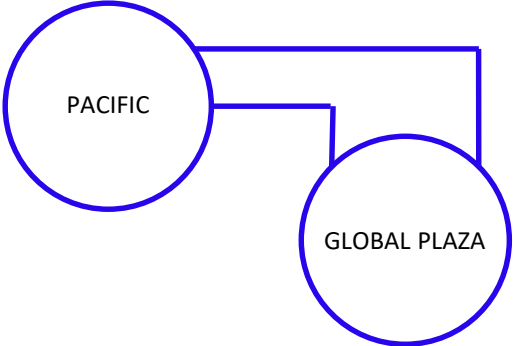
Estimated Cost: \$40.0 M

Projected In-Service: 12/15/2021

Supplemental Project ID: s2111

Project Status: Conceptual

Model: 2023 RTEP



Dominion Transmission Zone M-3 Process Add 2ND TX – Clifton Forge 138 kV Delivery - DEV

Need Number: DOM-2019-0009

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 12/17/2019

Previously Presented:

Need – 02/20/2019

Solution – 03/28/2019

Project Driver:

Customer Service

Specific Assumption Reference:

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

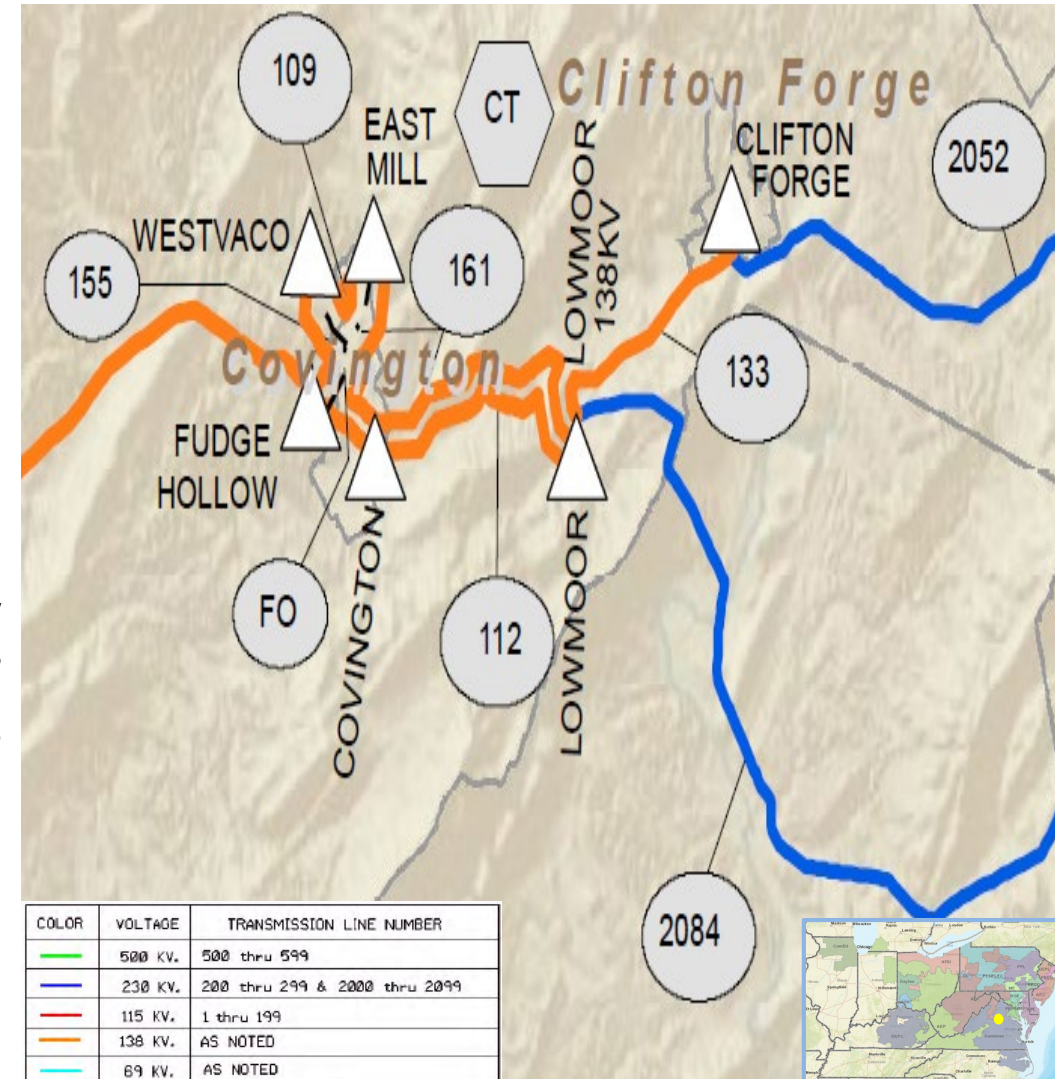
Problem Statement:

DEV Distribution has submitted a DP Request to add a second 138/13.2kV distribution transformer at Clifton Forge Substation in Allegheny county. This transformer will support residential and commercial load growth and act as a spare in the event of failure of an existing bank. Requested in-service date is 06/15/2019.

Projected 2023 load

Summer: 31.5 MW

Winter: 36.5 MW



Dominion Transmission Zone M-3 Process Add 2ND TX – Clifton Forge 138 kV Delivery - DEV

Need Number: DOM-2019-0009

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan –
12/17/2019

Selected Solution:

Install a high side switch, circuit switcher, and related conductors to connect DEV
Distribution's transformer at Clifton Forge.

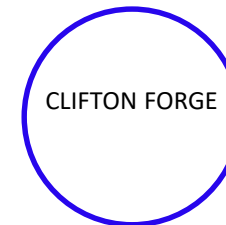
Estimated Cost: \$0.70 M

Projected In-Service: 06/15/2019

Supplemental Project ID: s2112

Project Status: Complete

Model: 2023 RTEP



Dominion Transmission Zone M-3 Process Paragon Park 230 kV Delivery - DEV

Need Number: DOM-2019-0011

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 12/17/2019

Previously Presented:

Need – 03/07/2019

Solution – 05/16/2019

Project Driver:

Customer Service

Specific Assumption Reference:

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

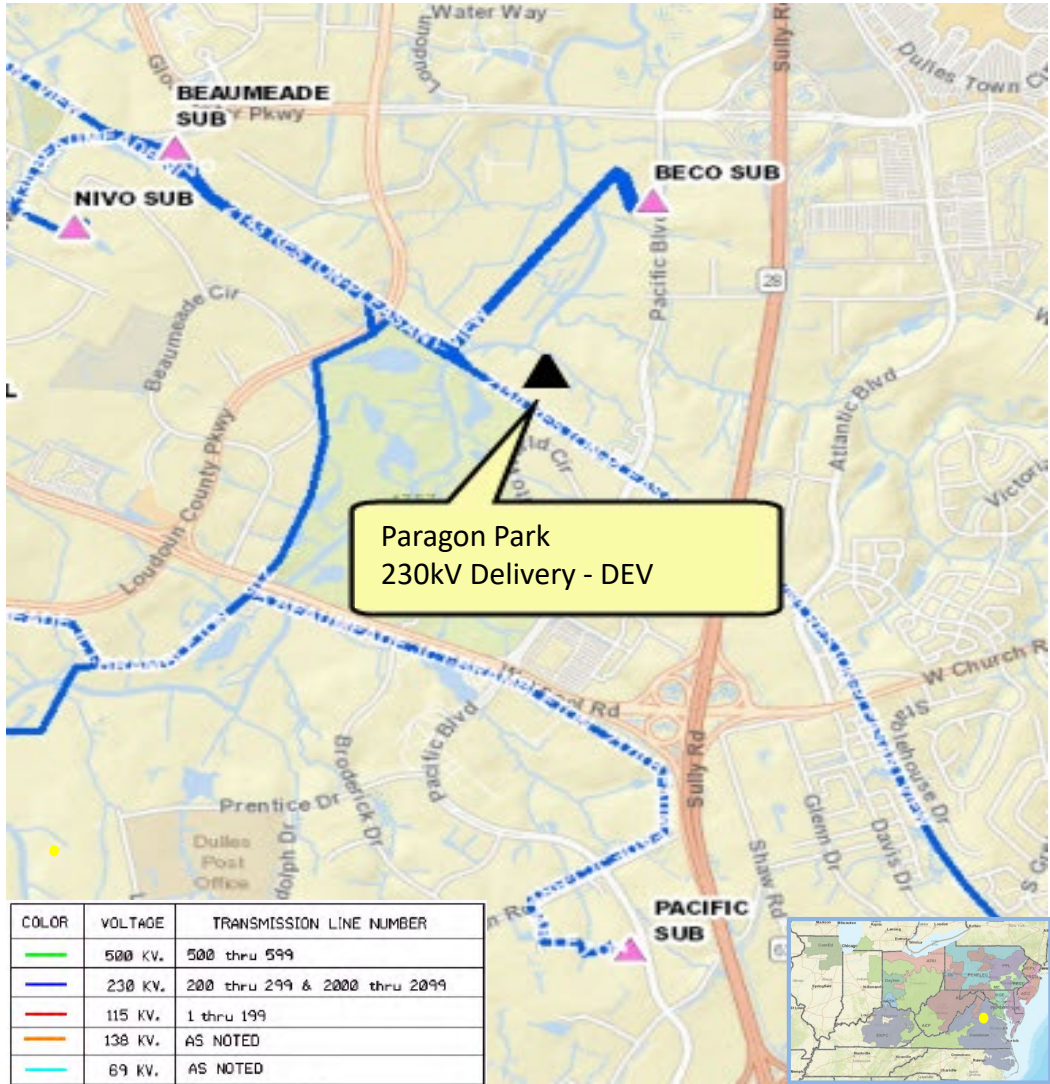
Problem Statement:

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 07/15/2021 (changed from 04/01/2021).

Projected 2023 load

Summer: 128.3 MW

Winter: 131.8 MW



Dominion Transmission Zone M-3 Process Paragon Park 230 kV Delivery - DEV

Need Number: DOM-2019-0011

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 12/17/2019

Selected Solution:

Interconnect Paragon Park Substation by cutting and terminating both Line #2081 (BECO-Sterling Park) and Line #2150 (Beaumeade-Sterling Park) into a six-breaker 230kV ring bus. Install two 230kV circuit switchers and any necessary high side switches and bus work for the new transformers.

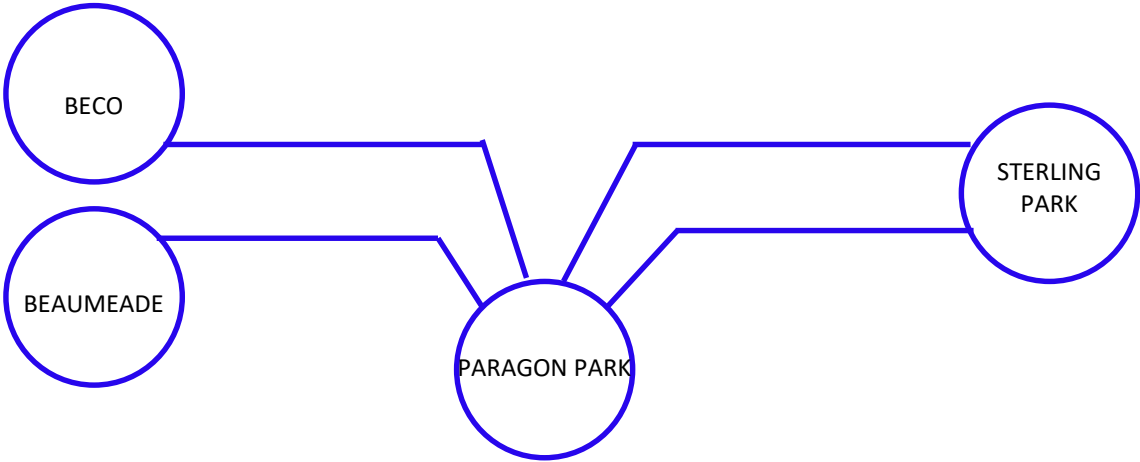
Estimated Cost: \$10.0 M

Projected In-Service: 07/15/2021

Supplemental Project ID: s2113

Project Status: Conceptual

Model: 2023 RTEP



Dominion Transmission Zone M-3 Process Add 3RD TX – Poland Road 230 kV Delivery - DEV

Need Number: DOM-2019-0012

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 12/17/2019

Previously Presented:

Need – 03/07/2019

Solution – 05/16/2019

Project Driver:

Customer Service

Specific Assumption Reference:

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

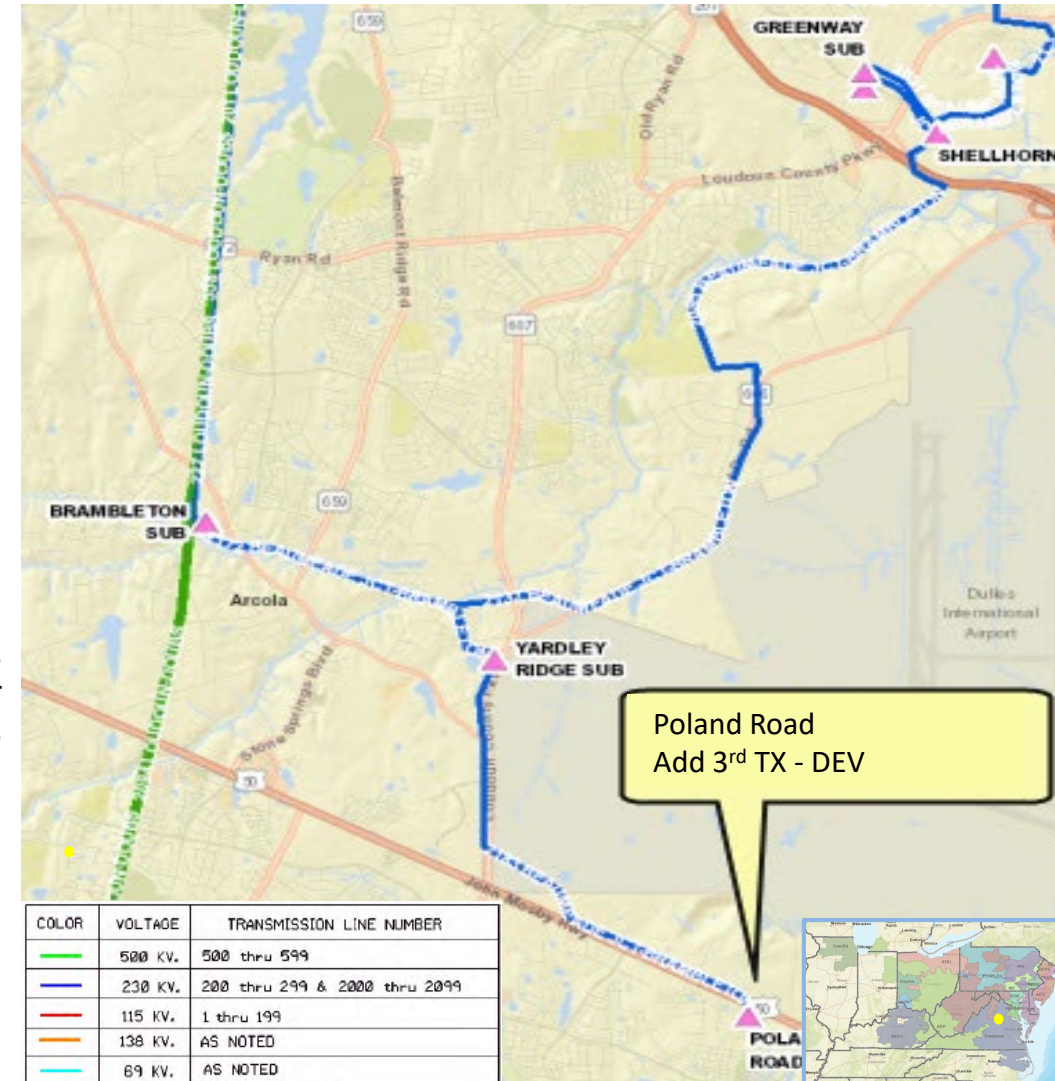
Problem Statement:

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.

Projected 2023 load

Summer: 237.7 MW

Winter: 237.7 MW



Dominion Transmission Zone M-3 Process
Add 3RD TX – Poland Road 230 kV Delivery - DEV

Need Number: DOM-2019-0012

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan –
12/17/2019

Selected Solution:

Install 1200 Amp, 50kAIC circuit switcher and associated equipment (bus, switches, relaying, etc.) to feed the new transformer at Poland Road.

Estimated Cost: \$0.25 M

Projected In-Service: 10/15/2020

Supplemental Project ID: s2114

Project Status: Conceptual

Model: 2023 RTEP



Dominion Transmission Zone M-3 Process Flat Creek 115kV Delivery - DEV

Need Number: DOM-2019-0013

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 12/17/2019

Previously Presented:

Need – 02/20/2019

Solution – 08/27/2019

Project Driver:

Customer Service

Specific Assumption Reference:

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

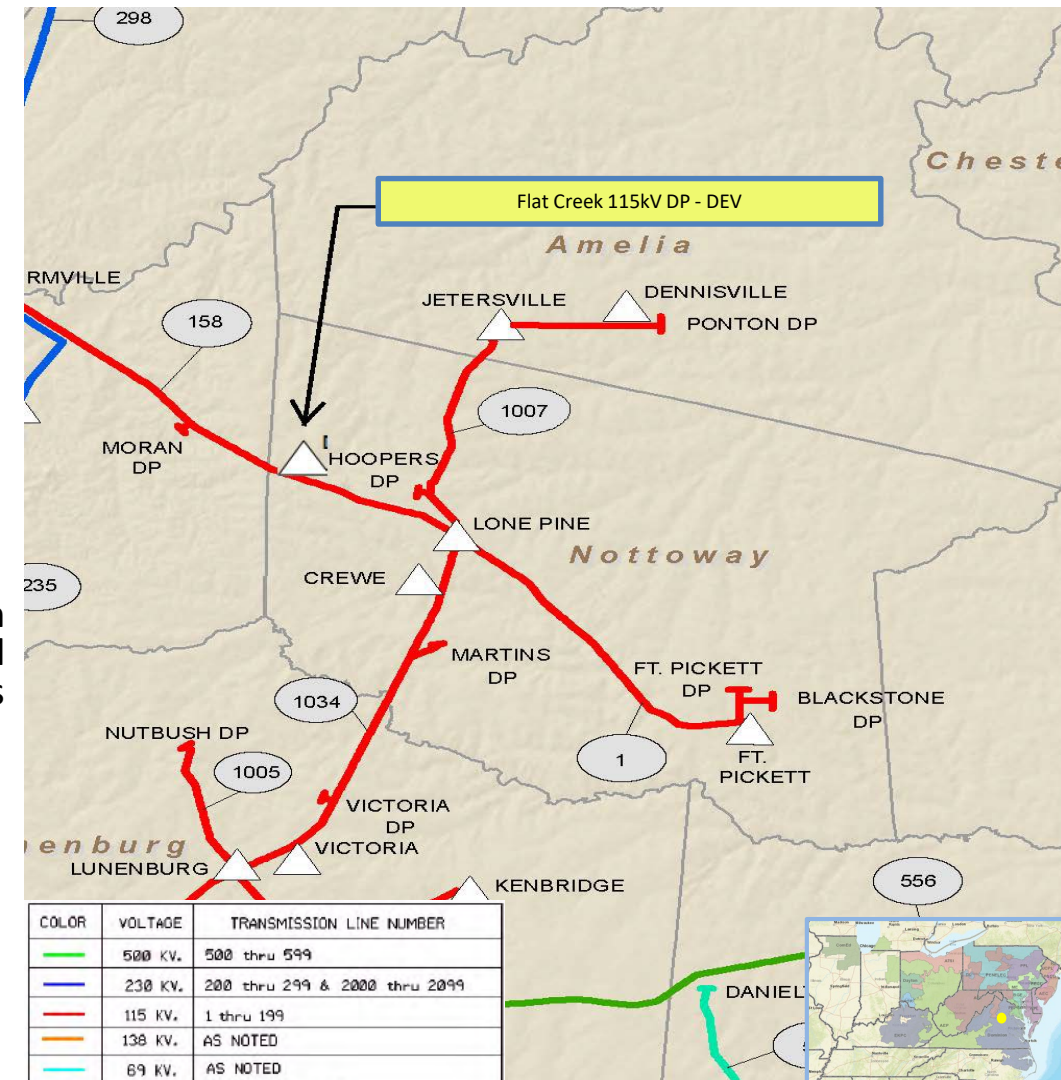
Problem Statement:

DEV Distribution has submitted a DP Request for new Flat Creek Substation (initially presented 02/20/2019 as Burkeville) to support commercial and industrial load growth in Nottoway County. Requested in-service date is 08/16/2021.

Projected 2023 load

Summer: 10.9 MW

Winter: 12.4 MW



Dominion Transmission Zone M-3 Process Flat Creek 115kV Delivery - DEV

Need Number: DOM-2019-0013

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 12/17/2019

Selected Solution:

Cut into line #158 and install three line switches. Install a 115kV circuit switcher on the high side of the new transformer. Perform any necessary associated transmission level work to support this new substation.

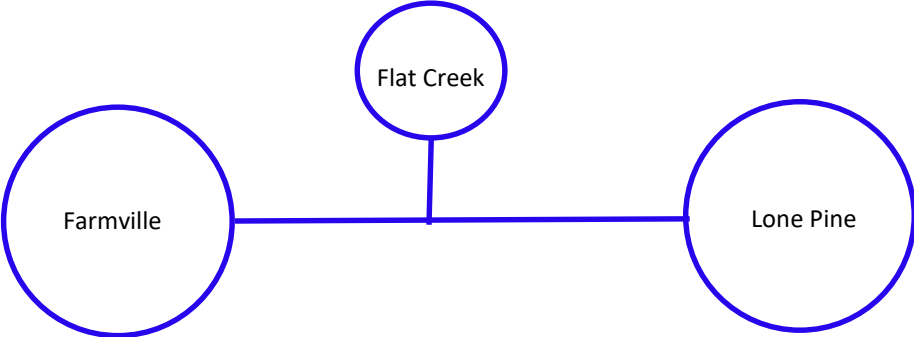
Estimated Cost: \$0.7 M

Projected In-Service: 08/16/2021

Supplemental Project ID: s2115

Project Status: Conceptual

Model: 2023 RTEP



Dominion Transmission Zone M-3 Process Replace Chesterfield 230-115kV TX - DEV

Need Number: DOM-2019-0014

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 12/17/2019

Previously Presented:

Need – 03/07/2019

Solution – 04/11/2019

Project Driver:

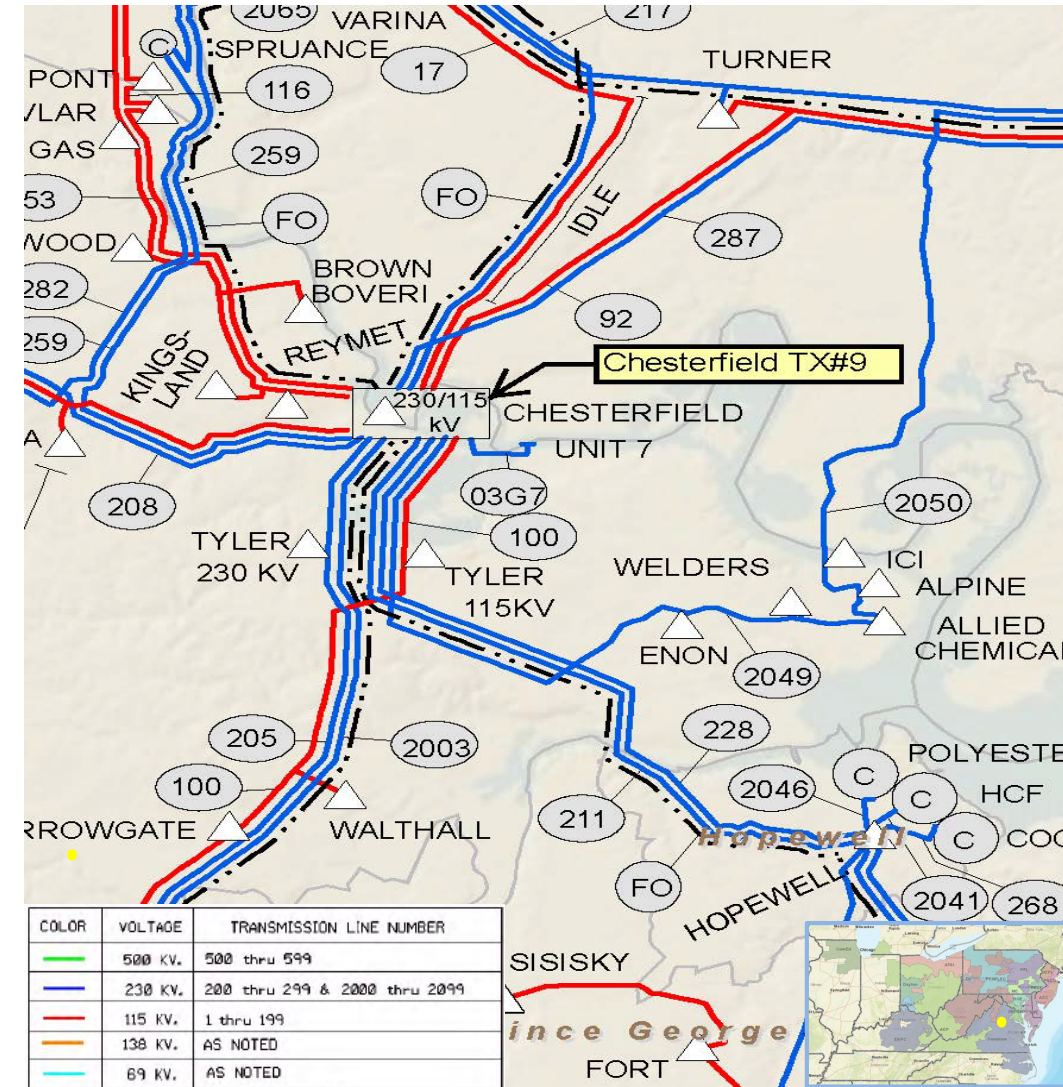
Equipment Condition

Specific Assumption Reference:

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

Problem Statement:

- Chesterfield Tx#9 is a 224MVA 230/115kV transformer originally manufactured 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)
- This vintage transformer is considered highly suspect due to previous transformer failures
- THA score less than 80



Dominion Transmission Zone M-3 Process
Replace Chesterfield 230-115kV TX - DEV

Need Number: DOM-2019-0014

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 12/17/2019

Selected Solution:

Replace the identified 224MVA 230/115kV transformer with a 224MVA 230/115kV transformer. Perform any associated transmission work.

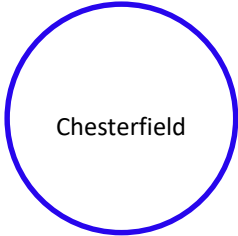
Estimated Cost: \$4.5 M

Projected In-Service: 11/01/2019

Supplemental Project ID: s2116

Project Status: Complete

Model: 2023 RTEP



Dominion Transmission Zone M-3 Process

Replace Peninsula 230-115kV TX and Install Ring Bus - DEV

Need Number: DOM-2019-0016

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 12/17/2019

Previously Presented:

Need – 03/07/2019

Solution – 04/11/2019

Project Driver:

Equipment Condition and Operational Flexibility

Specific Assumption Reference:

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

Problem Statement:

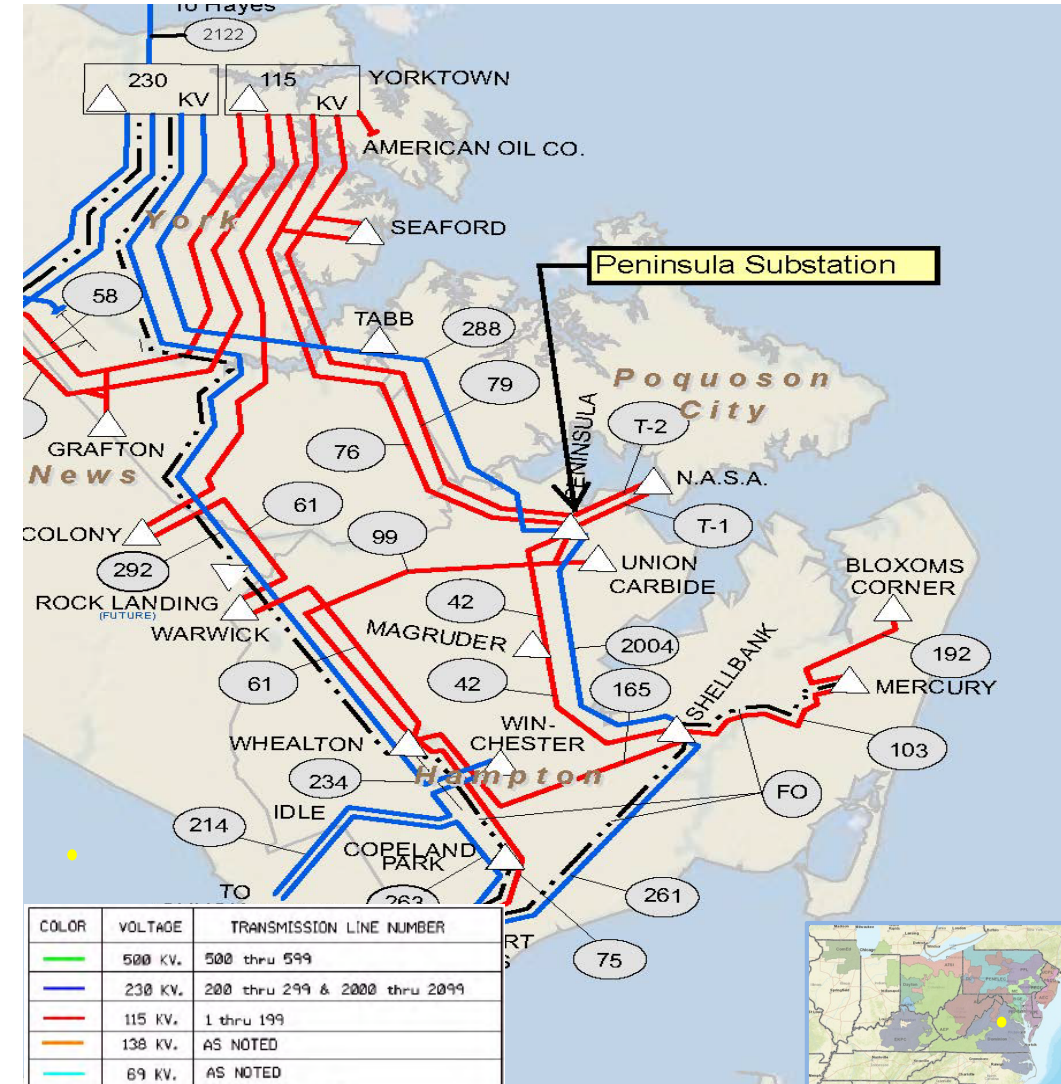
Equipment Condition:

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.



Dominion Transmission Zone M-3 Process Replace Peninsula 230-115kV TX and Install Ring Bus - DEV

Need Number: DOM-2019-0016

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan –
12/17/2019

Selected Solution:

Replace the identified 224MVA 230/115kV transformer with a new 224MVA 230/115kV transformer. Build a 230kV 3-breaker ring bus to connect line #288, line #2044 and the 230/115kV transformer.

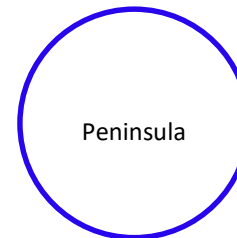
Estimated Cost: \$16.1 M

Projected In-Service: 04/30/2021

Supplemental Project ID: s2117

Project Status: Conceptual

Model: 2023 RTEP



Dominion Transmission Zone M-3 Process

Add 2nd TX – Northampton 230kV Delivery - DEV

Need Number: DOM-2019-0017

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 12/17/2019

Previously Presented:

Need – 04/11/2019

Solution – 05/16/2019

Project Driver:

Customer Service

Specific Assumption Reference:

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

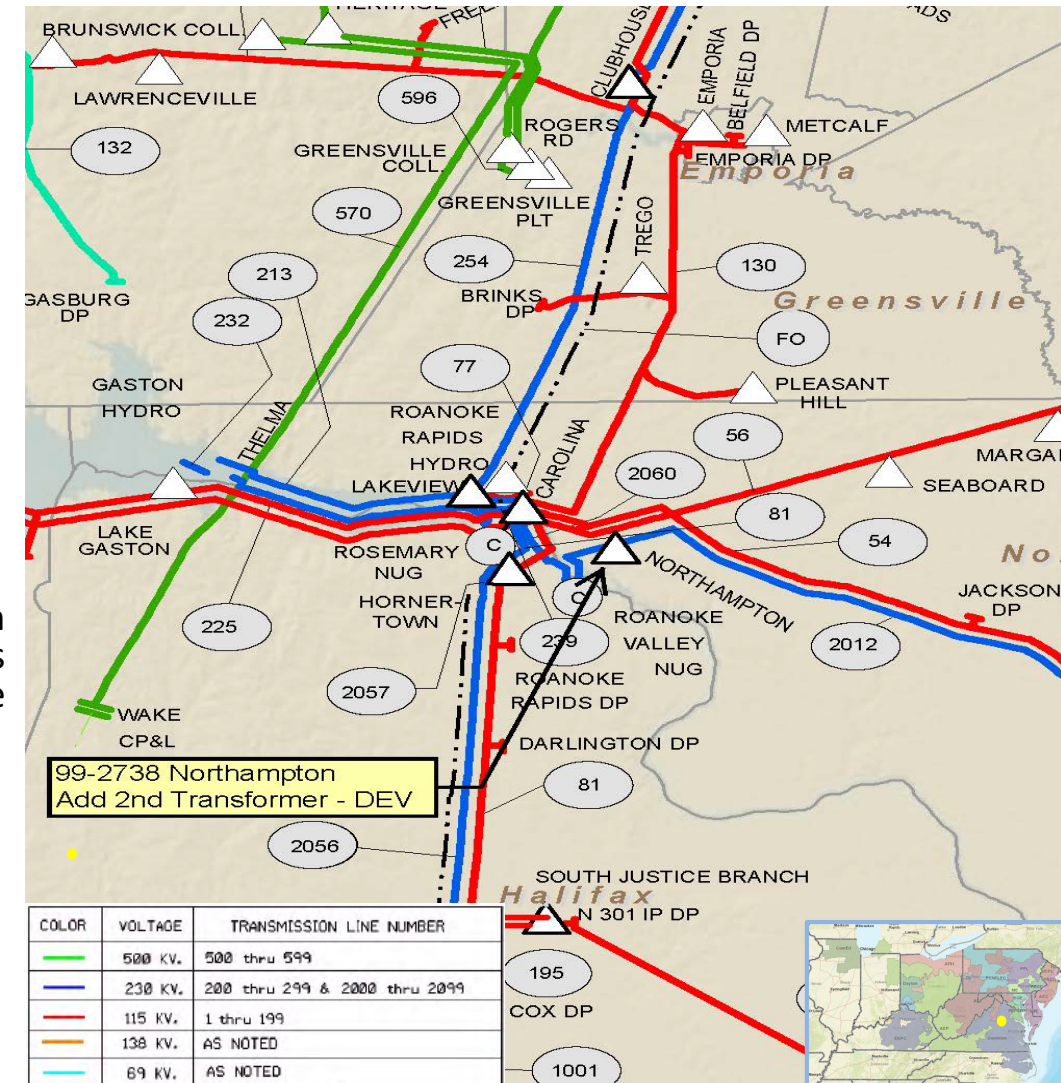
Problem Statement:

DEV Distribution has submitted a DP request to add a second distribution transformer at Northampton Substation in Northampton County, NC. This transformer will support commercial load growth and contingency loading for the loss of the existing transformer. Requested in-service date is 09/01/2020.

Projected 2023 load

Summer: 27.1 MW

Winter: 27.3 MW



Dominion Transmission Zone M-3 Process Add 2nd TX – Northampton 230kV Delivery - DEV

Need Number: DOM-2019-0017

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan –
12/17/2019

Selected Solution:

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

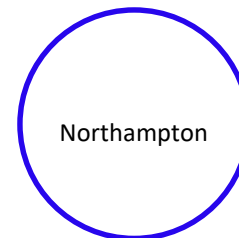
Estimated Cost: \$0.50 M

Projected In-Service: 09/01/2020

Supplemental Project ID: s2118

Project Status: Conceptual

Model: 2023 RTEP



Dominion Transmission Zone M-3 Process

Add Circuit Switcher – Virginia Beach 115kV Delivery - DEV

Need Number: DOM-2019-0018

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 12/17/2019

Previously Presented:

Need – 03/28/2019

Solution – 04/23/2019

Project Driver:

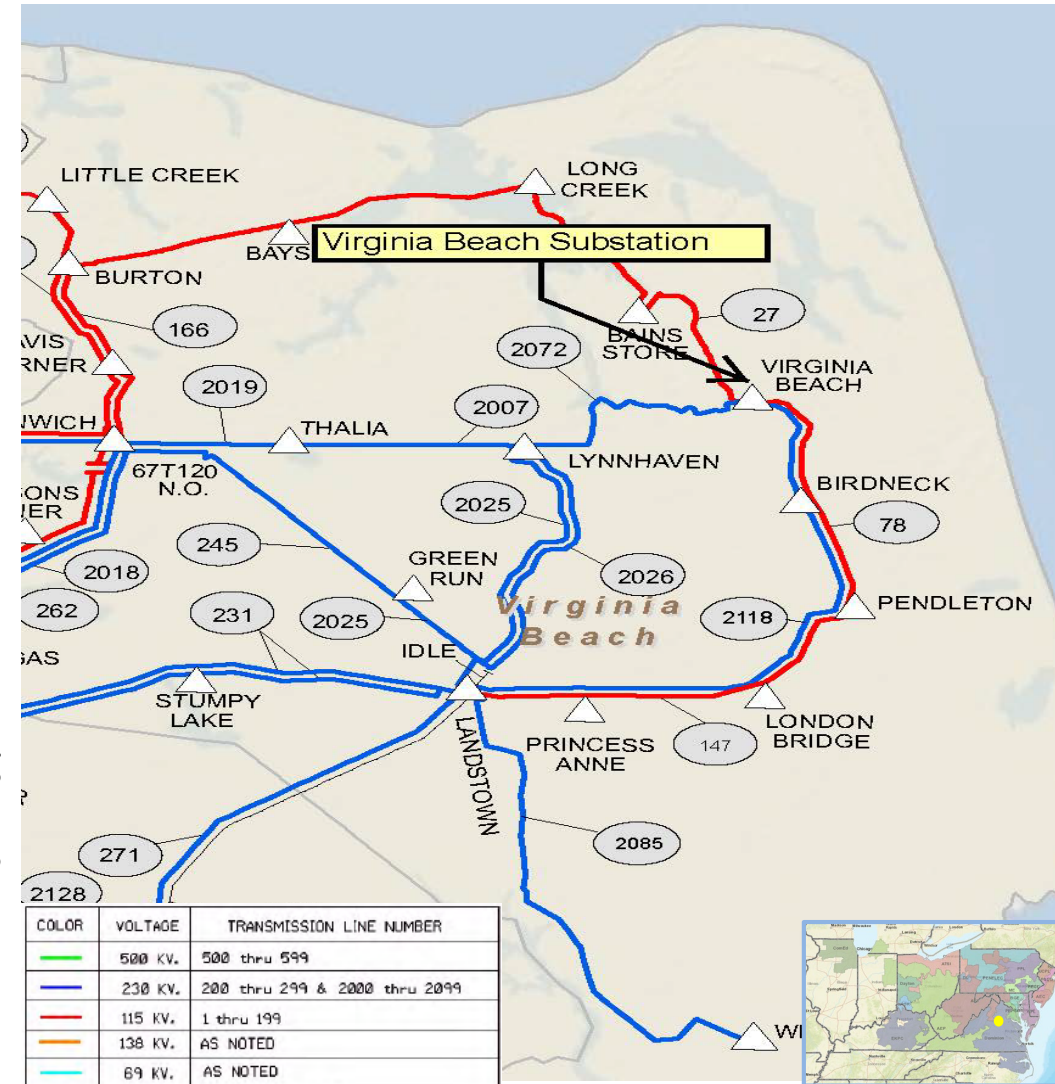
Customer Service

Specific Assumption Reference:

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

Problem Statement:

DEV Distribution has identified the need to replace an existing 115/34.5kV distribution transformer at Virginia Beach substation. Currently there is no high side fault interrupting device for this transformer. Requested in-service date is 05/15/2020.



Dominion Transmission Zone M-3 Process Add Circuit Switcher – Virginia Beach 115kV Delivery - DEV

Need Number: DOM-2019-0018

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan –
12/17/2019

Selected Solution:

Install a 115kV circuit switcher, high side switch and perform necessary transmission work for the transformer.

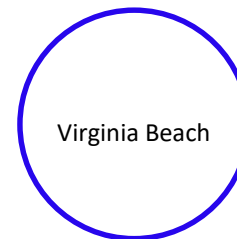
Estimated Cost: \$0.40 M

Projected In-Service: 05/15/2020

Supplemental Project ID: s2119

Project Status: Engineering

Model: 2023 RTEP



Dominion Transmission Zone M-3 Process Add 2nd TX – Chickahominy 230kV Delivery - DEV

Need Number: DOM-2019-0019

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan – 12/17/2019

Previously Presented:

Need – 04/11/2019

Solution – 06/13/2019

Project Driver:

Customer Service

Specific Assumption Reference:

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

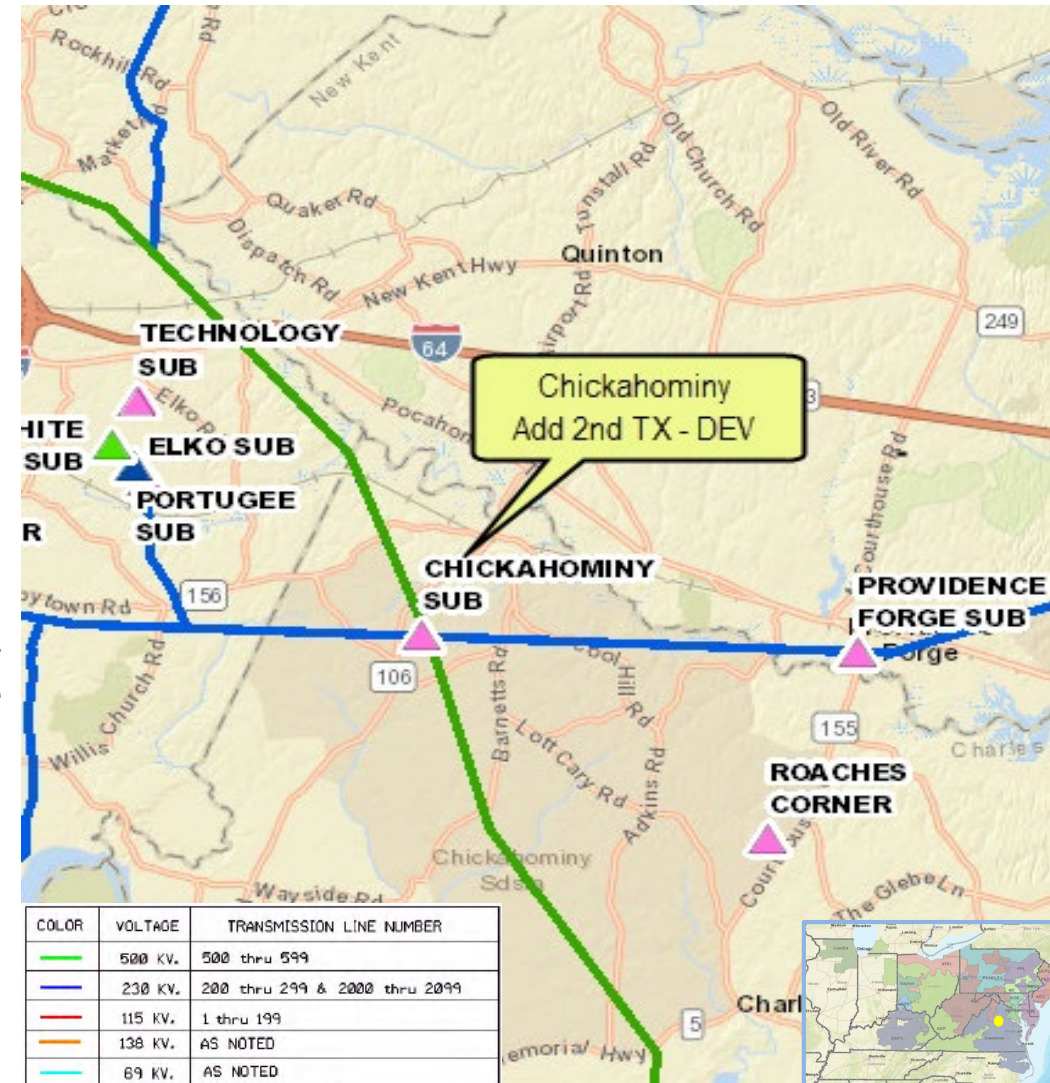
Problem Statement:

DEV Distribution has submitted a DP Request to add a 56 MVA distribution transformer at Chickahominy Substation in Charles City County. The new transformer is being requested for contingency support of Providence Forge substation. Requested in-service date is 5/31/2021.

Projected 2023 load

Summer: 20.3 MW

Winter: 28.5 MW



Dominion Transmission Zone M-3 Process Add 2nd TX – Chickahominy 230kV Delivery - DEV

Need Number: DOM-2019-0019

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan –
12/17/2019

Selected Solution:

Install 3000 Amp, 50kAIC circuit breaker and associated equipment (bus, switches, relaying, etc.) to feed the new transformer at Chickahominy.

Estimated Cost: \$0.75 M

Projected In-Service: 05/31/2021

Supplemental Project ID: s2120

Project Status: Conceptual

Model: 2023 RTEP



Dominion Transmission Zone: Supplemental Customer Load Request

Need Number: DOM-2018-0001

Process Stage: Solution - Revision

Previously Presented:

Need Meeting – 9/13/2018; Solution Meeting – 10/11/2018; Local Plan – s1750; Solution Meeting – 12/12/2019

Project Driver: Customer Service

Specific Assumption References:

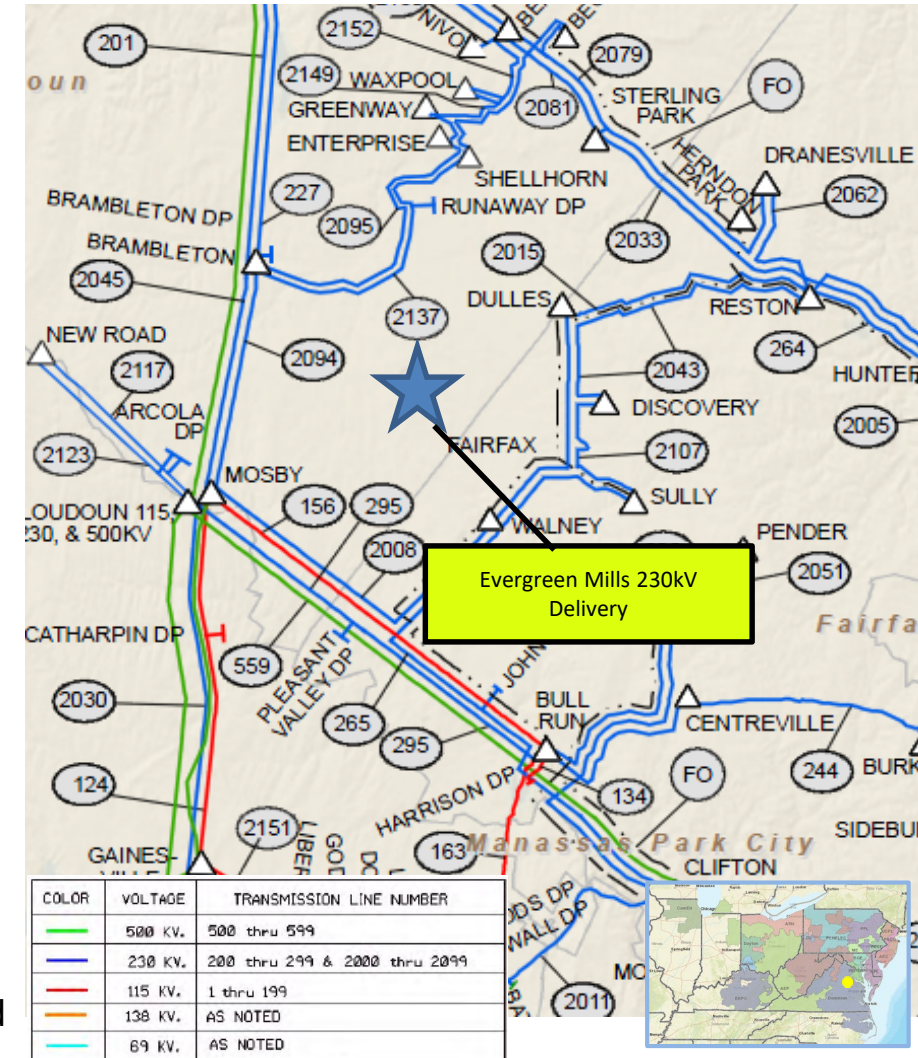
Customer load request will be evaluated per Dominion’s Facility Interconnection Requirements Document and Dominion’s Transmission Planning Criteria.

Problem Statement:

DEV Distribution has submitted a request to serve a new datacenter campus in Loudoun County with total load in excess of 100MW by 2025. Requested in-service date is 5/1/2021.

Initial In-Service Load	Projected 2024 Load
Summer: 5 MW	Summer: 80.0 MW

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



Dominion Transmission Zone: Supplemental Evergreen Mills 230kV Delivery - DEV

Need Number: DOM-2018-0001

Process Stage: Solution - Revision

Proposed Solution:

With the total projected load exceeding 100 MW, two transmission sources will be required to comply with the Company’s Facility Interconnection Requirements and avoid a violation of mandatory NERC reliability criteria. Cut and extend Line #2172 (Brambleton-Yardley Ridge) into and out of new Evergreen Mills Switching Station which will be constructed with four (4) 230 kV breakers in a ring bus arrangement.

The customer has requested two (2) additional 230kV breakers to be installed for additional redundancy and will be responsible for excess facilities charges. Estimated excess facilities charge for two breakers is \$1.8M.

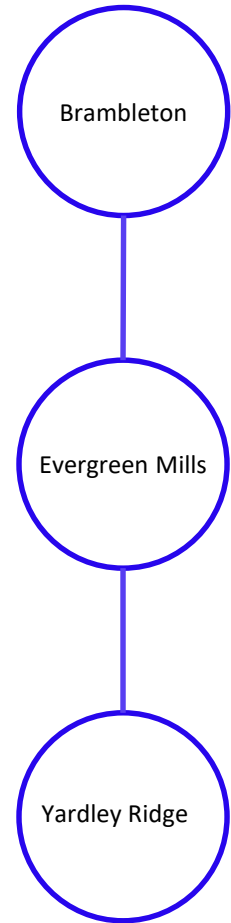
The previously presented solution was modified due to decreased Customer load projections.

Estimated Project Cost: \$21.2 M

Supplemental Project ID: s1750

Project Status: Conceptual

Model: 2023 RTEP



Dominion Transmission Zone M-3 Process

DTC 230 kV Delivery - DEV

Need Number: DOM-2018-0013

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 12/13/2019

Previously Presented:

Need – 9/13/2018

Solution – 05/16/2019; **10/05/2021**

Project Driver:

Customer Service

Specific Assumption Reference:

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

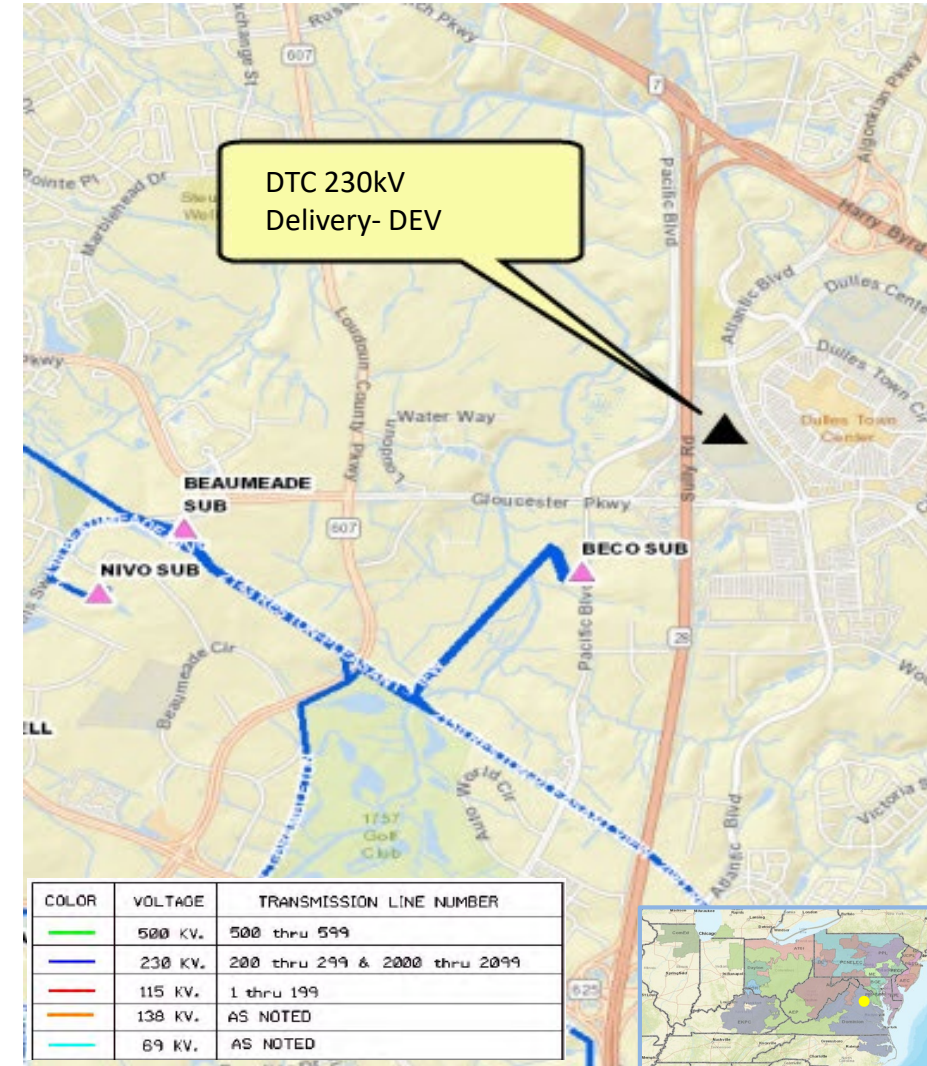
Problem Statement:

DEV Distribution has submitted a DP Request for a new substation (DTC) to accommodate a new datacenter campus in Loudoun County with a total load in excess of 100 MW. The new substation will be configured to accommodate five 84 MVA transformers with two transformers installed initially. Requested in-service date is ~~11/15/2021~~. **06/30/2024**. **In-service date changed due to permitting, routing, and land acquisition delays.**

Projected ~~2023~~ **2027** load

Summer: ~~75.7~~ **287.0** MW

Winter: ~~57.5~~ **282.0** MW



Dominion Transmission Zone M-3 Process

DTC 230 kV Delivery - DEV

Need Number: DOM-2018-0013

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 12/13/2019

Selected Solution:

Interconnect the new substation by cutting and extending Line #2143 (Beaumeade-BECO) approximately 1.5 miles to the proposed DTC Substation. Terminate both ends into a six-breaker ring bus arrangement with four breakers installed to create a Beaumeade-DTC line and a BECO-DTC line. Install two 230kV circuit switchers and any necessary high side switches and bus work for the new transformers.

Estimated Cost: ~~\$25.0~~ 41.0 M (Total)

DTC Substation - \$10.0M

Line Extension - \$15.0 M

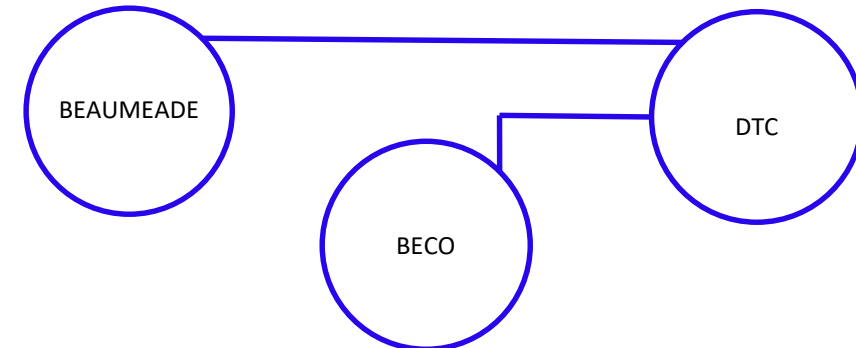
DTC Land Purchase - \$16.0M (Land cost was not included as part of previous estimate)

Projected In-Service: ~~11/15/2021~~ 06/30/2024

Supplemental Project ID: s2101

Project Status: ~~Conceptual~~ Engineering

Model: ~~2023~~ 2025 RTEP



Revision History

07/25/2019 – V1 – Local Plan posted to pjm.com for s1750, s1832-s1837, s1839-s1845.

08/21/2019 – V2 – Local Plan posted to pjm.com for s1838.

10/08/2019 – V3 – Local Plan posted to pjm.com for s1751.

12/17/2019 – V4 – Updated DOM-2018-0001 problem statement and solution (slides 2-3, 78-79).

Updated DOM-2018-0018 projected ISD from 9/15/2020 to 7/15/2021 (slides 22-23).

Updated DOM-2018-0012 solution to include reconductor of Belmont – Cochran Mill 230kV section (slide 33). Local Plan posted to pjm.com for s2100-s2120.

04/28/2020 – V5 – Updated DOM-2019-0013 projected ISD from 9/15/2020 to 8/16/2021 (slides 66-67).

03/29/2021 – V6 – Updated DOM-2019-0005 project solution and cost (slides 52-53).

06/09/2022 – V7 – Updated DOM-2018-0013 problem statement and solution (slides 38-39, 80-81).

09/08/2022 – V8 – Updated DOM-2018-0013 problem statement and solution (slides 80-81).