

Dominion Transmission Zone M-3 Process

EOL Rebuild 115kV Line #105 – Tarboro to Switch 96T105

Need Number: DOM-2021-0036

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 06/09/2022

Previously Presented:

Need – 06/15/2021

Solution – 12/20/2021

Project Driver:

Equipment Material Condition, Performance, and Risk

Specific Assumption Reference:

See details on Equipment Material Condition, Performance and Risk in Dominion’s Planning Assumptions presented in December 2020.

Problem Statement:

Dominion Energy has identified a need to replace approximately 15.7 miles of 115kV Line #105 (Tarboro to Parmele) which includes the double circuit segment with Line #2177 (Tarboro to Chinquapin) based on the Company’s End of Life criteria.

- Double circuit is on COR-TEN® towers built in 1967. Single circuit is on wood pole structures dating back to 1963. Conductor is 2/0 Copper.
- Industry guidelines indicate equipment life for steel structures is 40-60 years, wood structures is 35-55 years, conductor and connectors are 40-60 years, and porcelain insulators are 50 years.



Dominion Transmission Zone M-3 Process EOL Rebuild 115kV Line #105 – Tarboro to Switch 96T105

Need Number: DOM-2021-0036

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 06/09/2022

Selected Solution:

Rebuild approximately 15.7 miles of Line #105 Tarboro to normally open switch 96T105 with current 115kV standard construction practices. This includes replacing four COR-TEN® double circuit towers and excludes the double circuit tap to Shiloh DP. The new conductor will have a minimum normal summer rating of 393 MVA. Terminal equipment will be upgraded as needed.

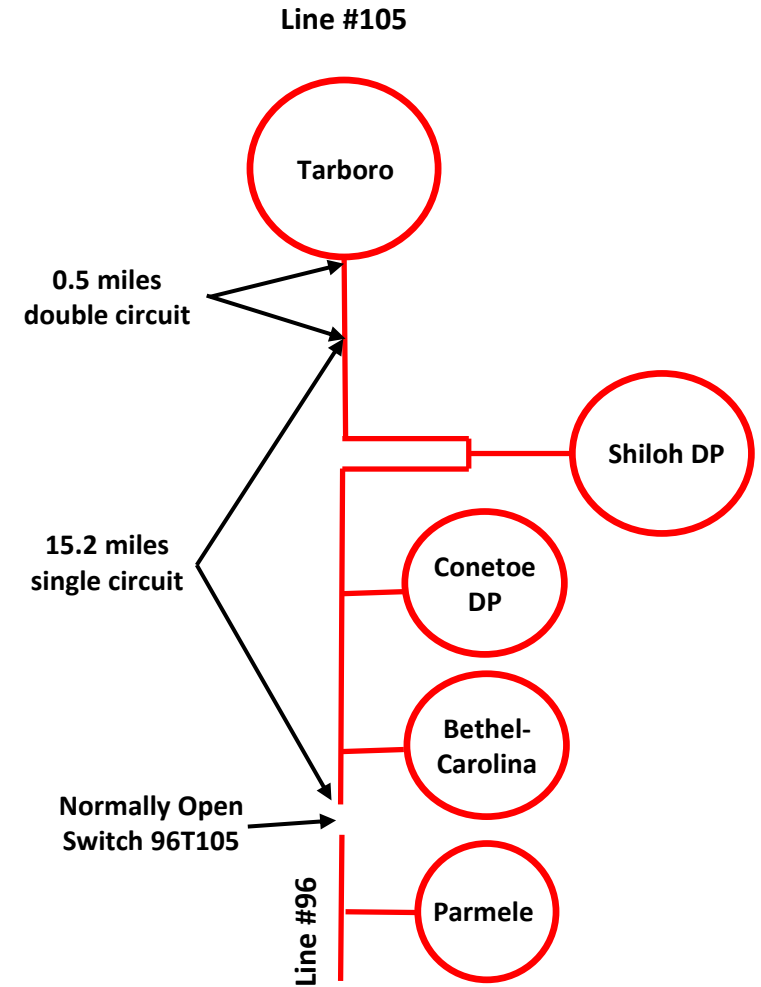
Estimated Cost: \$24.5M

Projected In-Service: 06/30/2024

Supplemental Project ID: s2701

Project Status: Conceptual

Model: 2025 RTEP



Dominion Transmission Zone M-3 Process EOL Rebuild 115kV Line #108 – Boykins to Tunis

Need Number: DOM-2021-0037

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 06/09/2022

Previously Presented:

Need – 06/15/2021

Solution – 12/20/2021

Project Driver:

Equipment Material Condition, Performance, and Risk

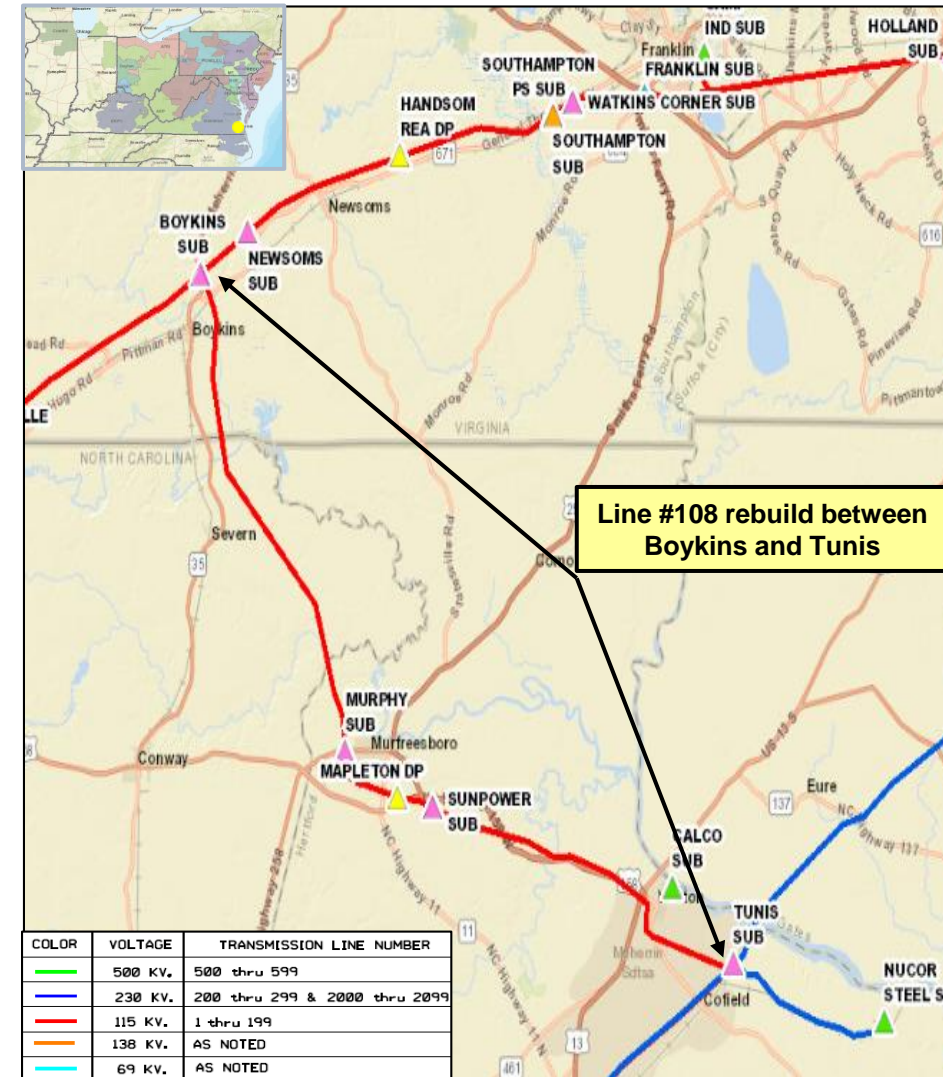
Specific Assumption Reference:

See details on Equipment Material Condition, Performance and Risk in Dominion’s Planning Assumptions presented in December 2020.

Problem Statement:

Dominion Energy has identified a need to replace approximately 26.5 miles of 115kV Line #108 (Boykins to Tunis) based on the Company’s End of Life criteria.

- Line #108 was constructed on wood pole structures in 1967.
- A field-condition assessment indicated damage to several poles from woodpeckers, rotting and cracking.
- Industry guidelines indicate equipment life for wood structures is 35-55 years, conductor and connectors are 40-60 years, and porcelain insulators are 50 years.



Dominion Transmission Zone M-3 Process EOL Rebuild 115kV Line #108 – Boykins to Tunis

Need Number: DOM-2021-0037

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 06/09/2022

Selected Solution:

Rebuild the entire Line #108 from Boykins to Tunis, approximately 26.5 miles, using current 115kV standard construction practices. The new conductor will have a minimum normal summer rating of 393 MVA. Terminal equipment will be upgraded as needed.

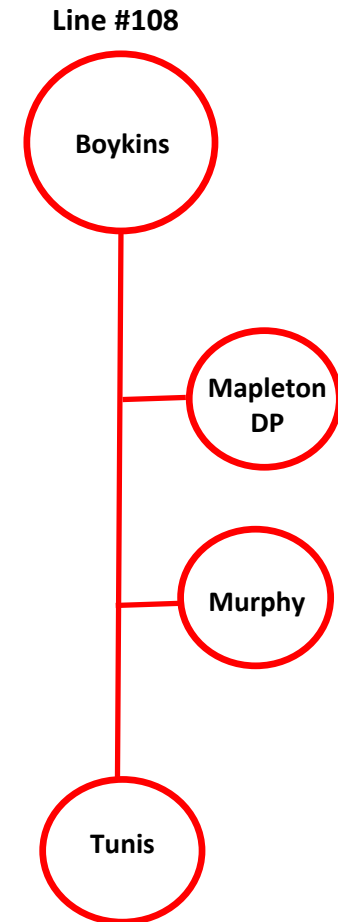
Estimated Cost: \$46.0M

Projected In-Service: 12/31/2024

Supplemental Project ID: s2702

Project Status: Conceptual

Model: 2025 RTEP



Dominion Transmission Zone M-3 Process Replace Clifton Forge TX#2 - DEV

Need Number: DOM-2021-0044

Process Stage:
Submission of Supplemental Project for Inclusion in the Local Plan – 06/09/2022

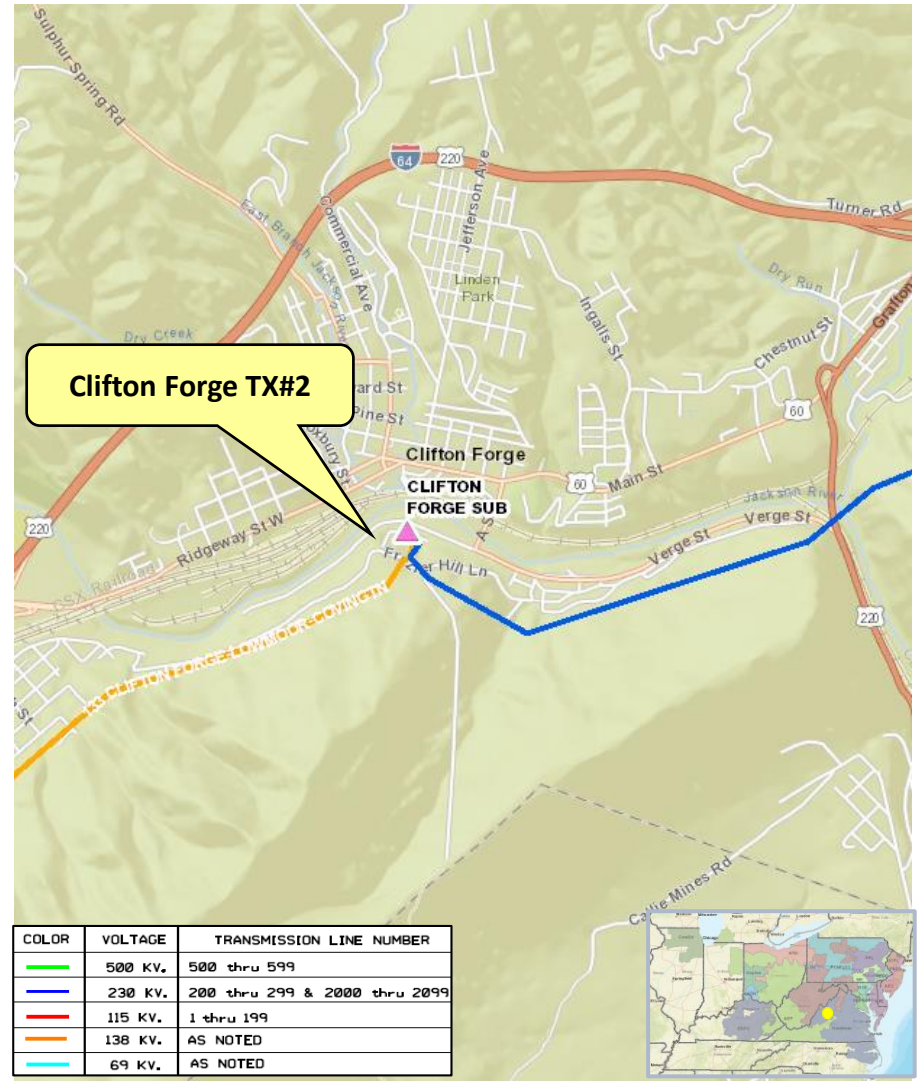
Previously Presented:
Need – 08/31/2021
Solution – 10/05/2021

Project Driver:
Equipment Material Condition, Performance, and Risk

Specific Assumption Reference:
See details on Equipment Material Condition, Performance and Risk in Dominion’s Planning Assumptions presented in December 2020.

Problem Statement:
Clifton Forge TX#2 is a 250 MVA, 230/138/13.2 kV three-phase auto transformer bank that was manufactured in 1996. This transformer bank has been identified for replacement based on the results of Dominion’s transformer health assessment (THA) process. Detailed drivers include:

- Age (approaching 30 years old).
- Reduced BIL ratings (2 levels below standard).
- Degraded porcelain type bushings.
- Oil DGA shows elevated levels of CO and CO2 indicating potential degradation of dielectric paper insulation.
- Mechanical design issue was observed with conservator tank mounting (tank began to collapse and start pulling away from the tank anchor points).
- THA score less than 80.



Dominion Transmission Zone M-3 Process

Replace Clifton Forge TX#2 - DEV

Need Number: DOM-2021-0044

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 06/09/2022

Selected Solution:

Replace Clifton Forge TX#2 with a new three-phase, 230/138/13.2 kV, 250 MVA unit. Include other ancillary equipment (arresters, switches, relays, etc.) as needed.

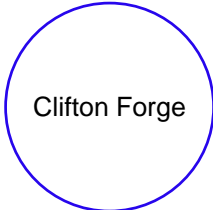
Estimated Cost: \$3.0 M

Projected In-Service: 05/31/2023

Supplemental Project ID: s2703

Project Status: Engineering

Model: 2026 RTEP



Dominion Transmission Zone M-3 Process

Sockman 115kV Delivery - DEV

Need Number: DOM-2021-0057

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 06/09/2022

Previously Presented:

Need – 08/13/2021

Solution – 10/14/2021

Project Driver:

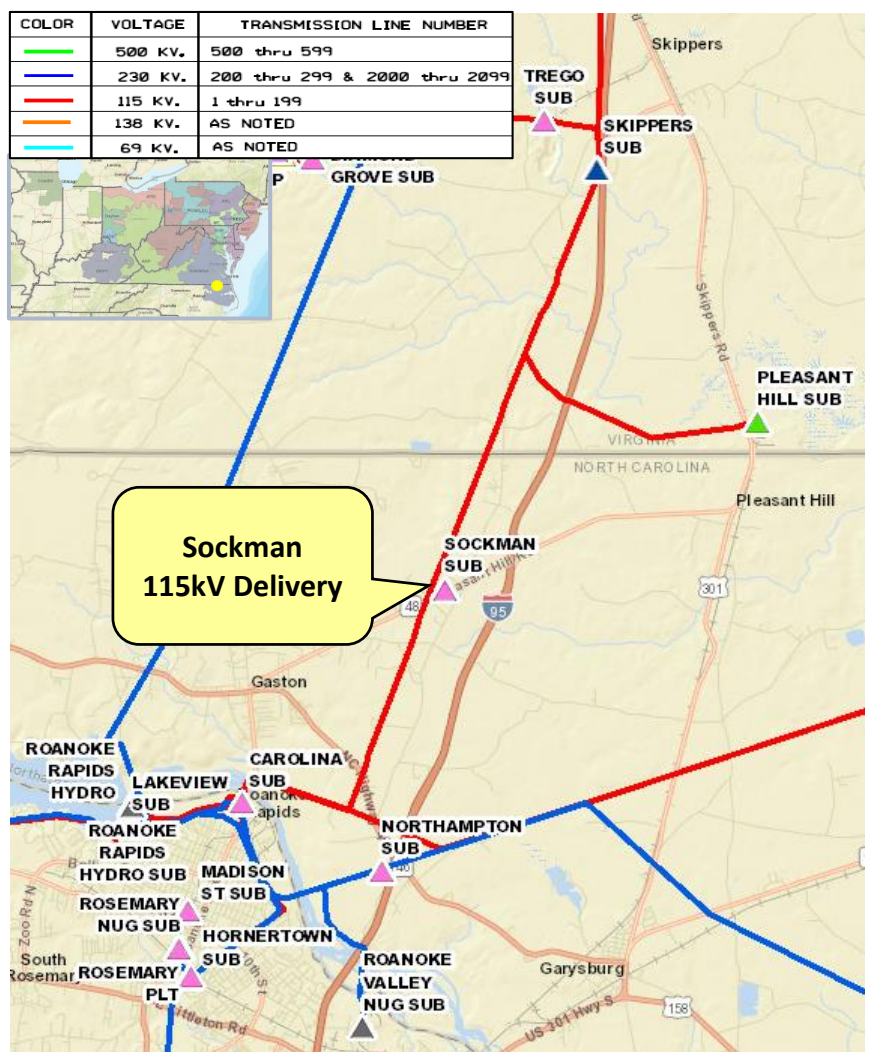
Customer Service

Specific Assumption Reference:

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 DP Request for a new 115kV substation (Sockman) to install 115/34.5 kV Transformer and connect 20 MW of Distributed Generation (DG) to Line #130 near structure 154 in Northampton County. The DG cannot be accommodated on existing distribution circuit. This request is for a State Queue Project NC16089. Requested in-service date is 03/31/2022.



Dominion Transmission Zone M-3 Process

Sockman 115kV Delivery - DEV

Need Number: DOM-2021-0057

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 06/09/2022

Selected Solution:

Tap Line #130 (Skippers - Carolina) near structure 154 and install three (3) line switches and other associated transmission equipment to connect to the proposed new substation. The new section of line will have a minimum rating of 261 MVA. The developer will bear the full cost of the project.

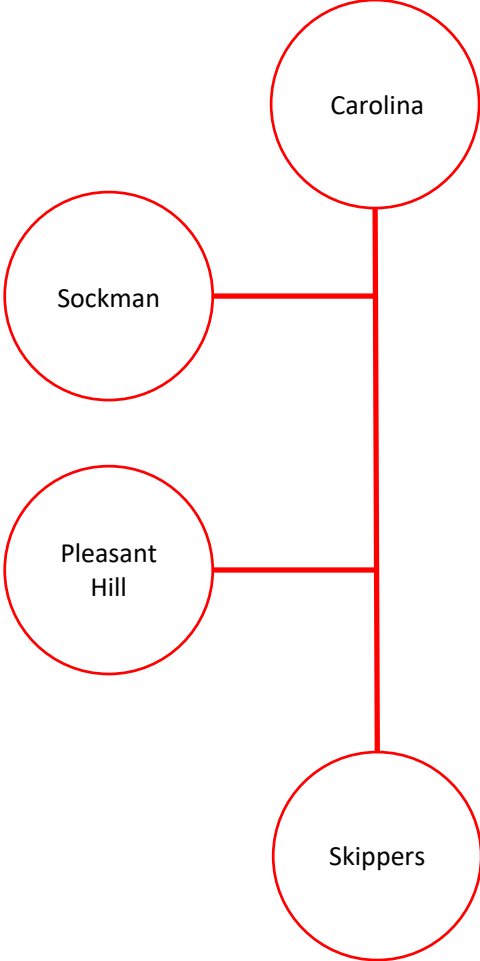
Estimated Project Cost: \$3.6 M

Projected In-service Date: 10/28/2022

Supplemental Project ID: s2704

Project Status: Engineering

Model: 2026 RTEP



Dominion Transmission Zone M-3 Process Line #29 and Line #252 EOL Rebuild

Need Number: DOM-2021-0058

Process Stage:
Submission of Supplemental Project for Inclusion in the Local Plan – 06/09/2022

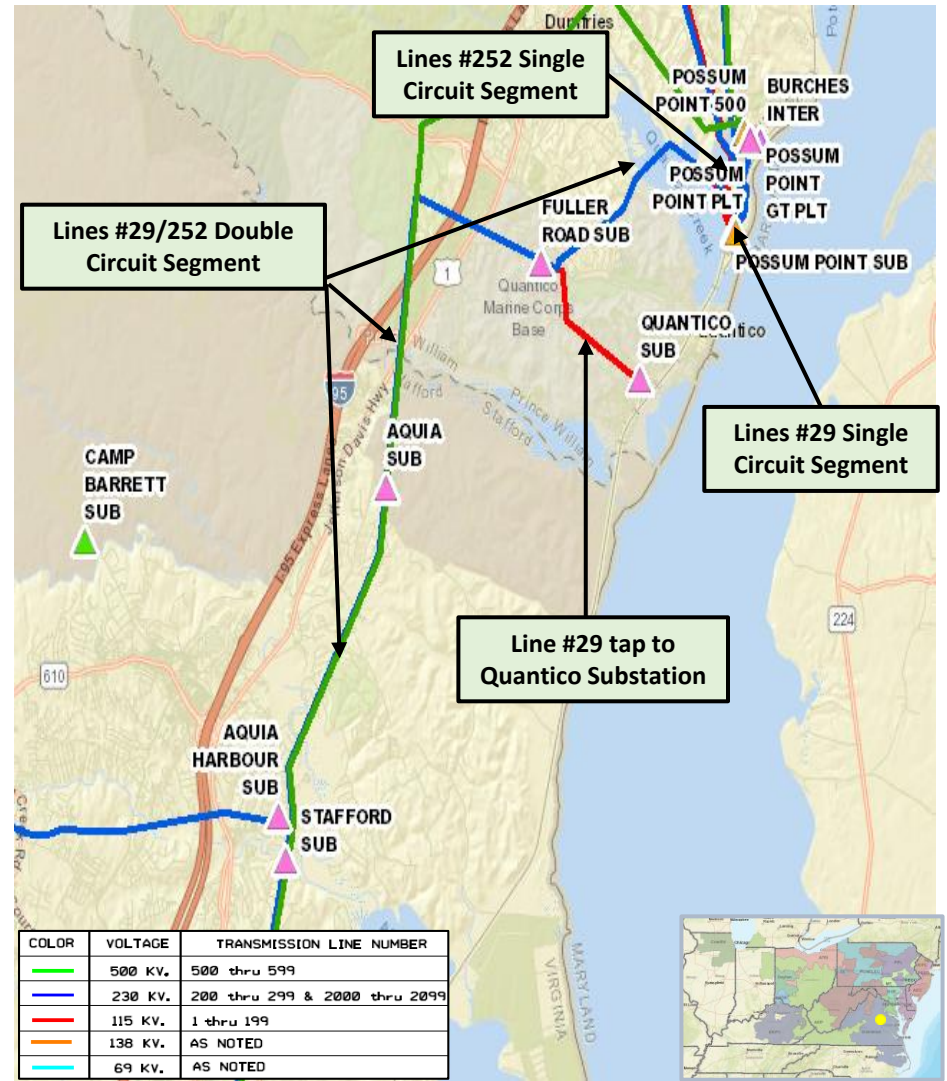
Previously Presented:
Need – 08/31/2021
Solution – 10/05/2021

Project Driver:
Equipment Material Condition, Performance, and Risk

Specific Assumption Reference:
See details on Equipment Material Condition, Performance and Risk in Dominion’s Planning Assumptions presented in December 2020.

Problem Statement:
Dominion Energy has identified the need to rebuild approximately 12.0 miles of 115kV Line #29 and 230kV Line #252 between Aquia Harbour Switching Station to Possum Point and the approximately 1.7 miles of 115kv tap line to Quantico Substation based on the Company’s End of Life Criteria.

- Lines #29 and #252 were mostly constructed on double circuit CORTEN steel structures in 1978. The 115 kV tap line to Quantico Substation was constructed on wood structures in 1978.
- A recent field inspection indicated continued degradation of structures where steel members are delaminating and cracking, and wood structures are showing woodpecker damages.
- Industry guidelines indicate equipment life for wood structures is 35-55 years, conductor and connectors are 40-60 years, and porcelain insulators are 50 years. A 50-year cycle for CORTEN steel structures is often cited.
- Line #29 is the only feed to the customers at Quantico Substation.



Dominion Transmission Zone M-3 Process Line #29 and Line #252 EOL Rebuild

Need Number: DOM-2021-0058

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 06/09/2022

Selected Solution:

- Using current 230kV standards and a minimum summer emergency rating of 1047 MVA, wreck and rebuild approximately 12 miles of double circuit Lines #252 and #29 from Aquia Harbour Switching Station to Possum Point.
- At Possum Point, upgrade the wave trap on Line #252 to 3000A.
- At Aquia Substation, upgrade the Line #252 switches and leads to 3000A.
- At Aquia Harbour Switching Station, upgrade the Line #252 wave trap and a circuit breaker switch to 3000A.

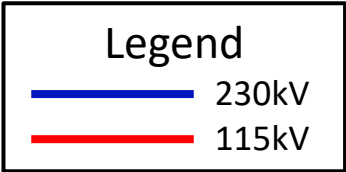
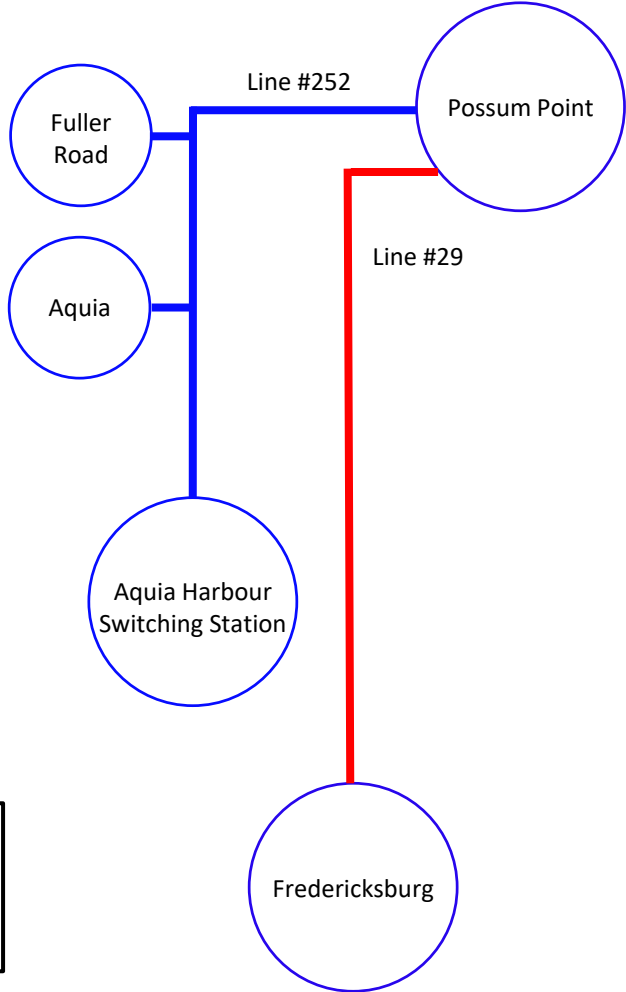
Estimated Cost: \$38.0M

Projected In-Service: 06/01/2026

Supplemental Project ID: s2705

Project Status: Engineering

Model: 2026 RTEP



Dominion Transmission Zone M-3 Process

Replace Altavista TX#4 - DEV

Need Number: DOM-2021-0059

Process Stage:
Submission of Supplemental Project for Inclusion in the Local Plan – 06/09/2022

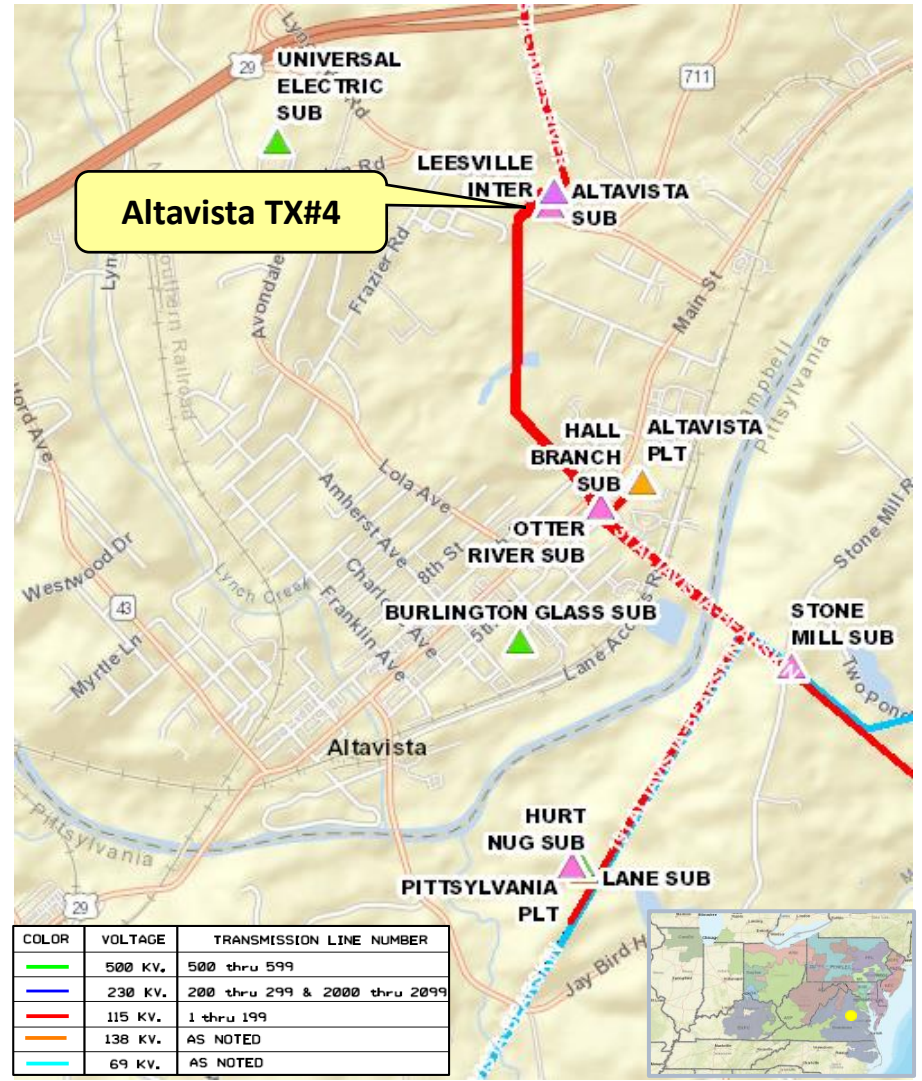
Previously Presented:
Need – 10/14/2021
Solution – 11/18/2021

Project Driver:
Equipment Material Condition, Performance, and Risk

Specific Assumption Reference:
See details on Equipment Material Condition, Performance and Risk in Dominion’s Planning Assumptions presented in December 2020.

Problem Statement:
Altavista TX#4 is a 112 MVA, 138/115/13.2 kV transformer bank that was manufactured in 1986. This transformer bank has been identified for replacement based on the results of Dominion’s transformer health assessment (THA) process. Detailed drivers include:

- Age (>30 years old).
- Reduced BIL ratings (2 levels below standard).
- Tertiary winding design not meeting current MVA requirement for loading.
- Degraded porcelain type bushings.
- Oil DGA indicates high CO and CO2 levels; potential break down of dielectric paper insulation on main current carrying conductors inside the transformer.
- Transformer paint is not in good shape.
- THA score less than 80.



Dominion Transmission Zone M-3 Process

Replace Altavista TX#4 - DEV

Need Number: DOM-2021-0059

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 06/09/2022

Selected Solution:

Replace Altavista TX#4 with a new three-phase, 138/115/13.2 kV, 112 MVA unit. Include other ancillary equipment (arresters, switches, relays, etc.) as needed.

Estimated Cost: \$3.8 M

Projected In-Service: 03/17/2022

Supplemental Project ID: s2706

Project Status: Complete

Model: 2026 RTEP



Dominion Transmission Zone M-3 Process

Retire Roanoke Valley NUG Sub

Need Number: DOM-2021-0060

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 06/09/2022

Previously Presented:

Need – 08/31/2021

Solution – 10/05/2021

Project Driver:

- 1) Equipment Material Condition, Performance, and Risk
- 2) Customer Service

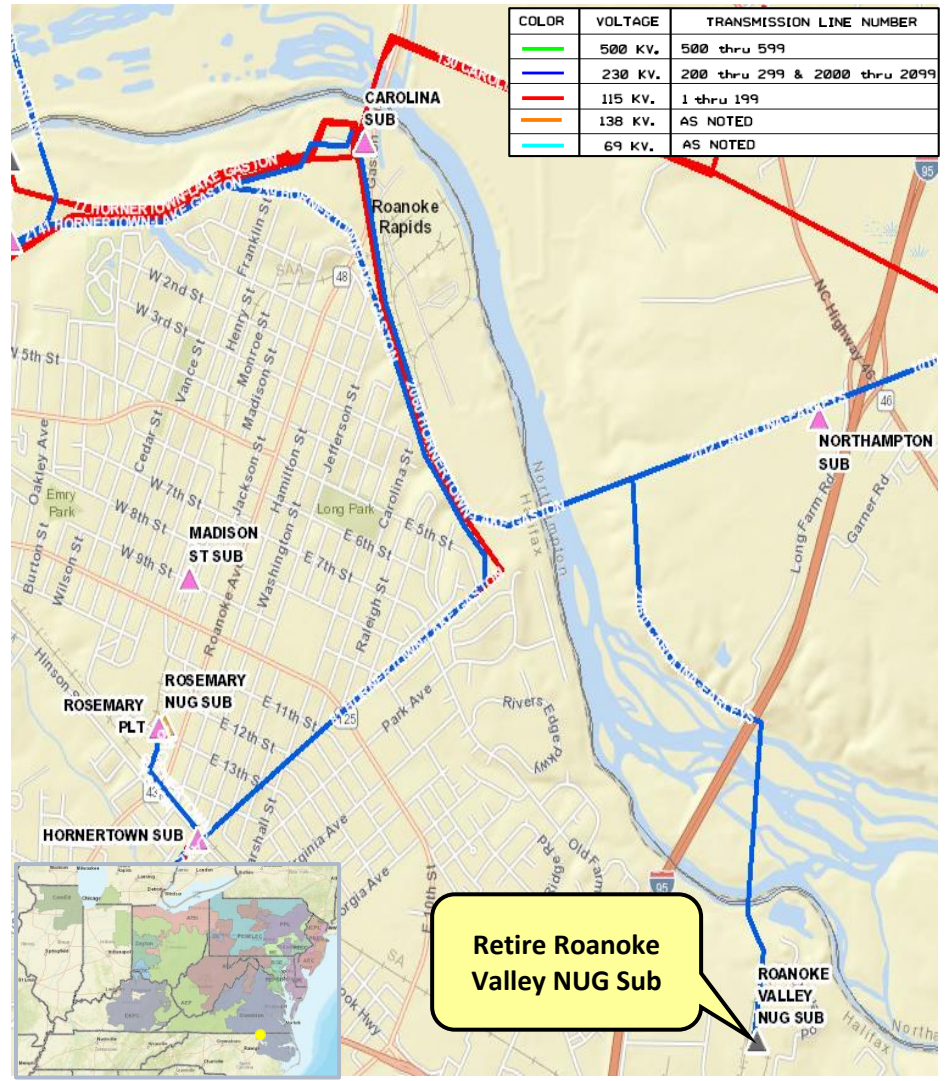
Specific Assumption Reference:

See details on Equipment Material Condition, Performance and Risk in Dominion’s Planning Assumptions presented in December 2020.

Problem Statement:

Dominion Energy has identified a need to retire Roanoke Valley NUG 230kV Sub and to remove a portion of the double circuit Lines #2012 and #2060.

- No load at Roanoke Valley NUG 230kV Sub post retirement of the generator. The assets are no longer required, need continuous maintenance and pose risk to reliability.
- DE Distribution has a customer locating on the property



Dominion Transmission Zone M-3 Process Retire Roanoke Valley NUG Sub

Need Number: DOM-2021-0060

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 06/09/2022

Selected Solution:

Retire Roanoke Valley NUG (RVN) Sub and remove the four (4) structures between RVN Sub and structure 2012/1D,2060/27. Connect Line #2012 with Line #2060 at the junction point (structure 2012/13A,2060/13A) creating Line #2012 from Earleys to Carolina. The remaining portion of double circuit Line #2012/2060 will be kept as idle line.

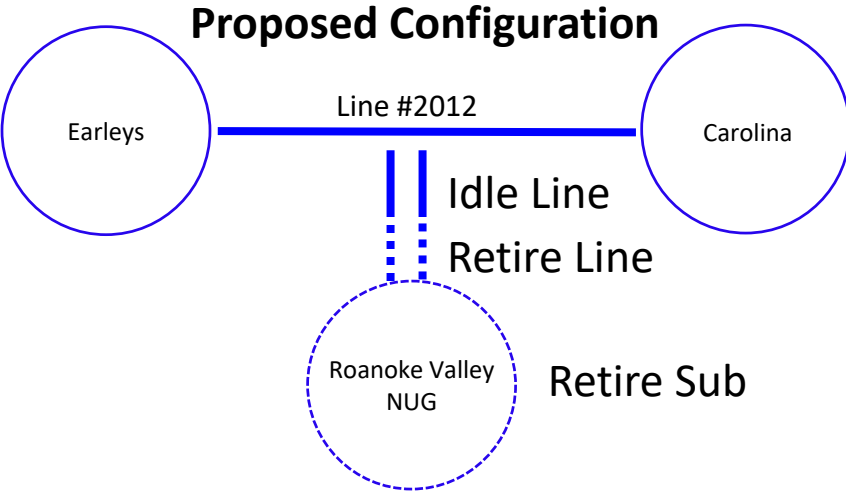
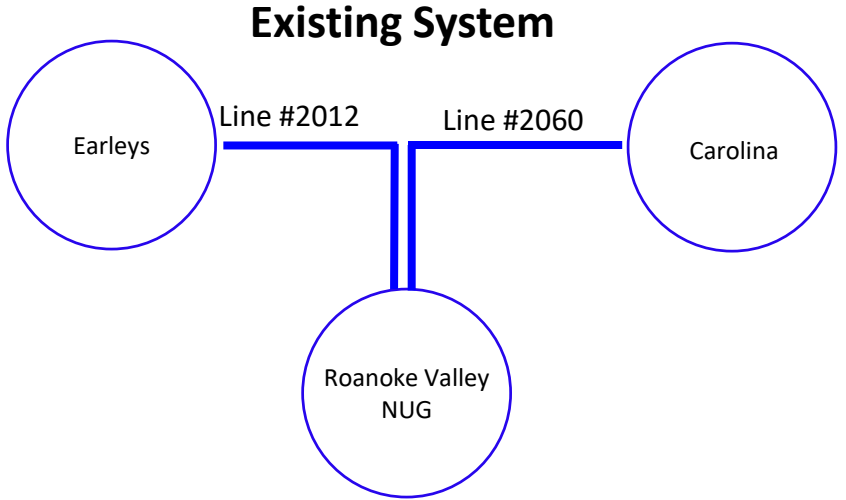
Estimated Cost: \$1.2M

Projected In-Service: 03/31/2022

Supplemental Project ID: s2707

Project Status: Complete

Model: 2025 RTEP



Dominion Transmission Zone M-3 Process Judes Ferry 230kV Delivery

Need Number: N/A (PJM Supplemental # s0131)

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 9/9/2022

Previously Presented:

Need – 06/05/2008

Cancellation – 02/08/2022

Project Driver:

Customer Service

Specific Assumption Reference:

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

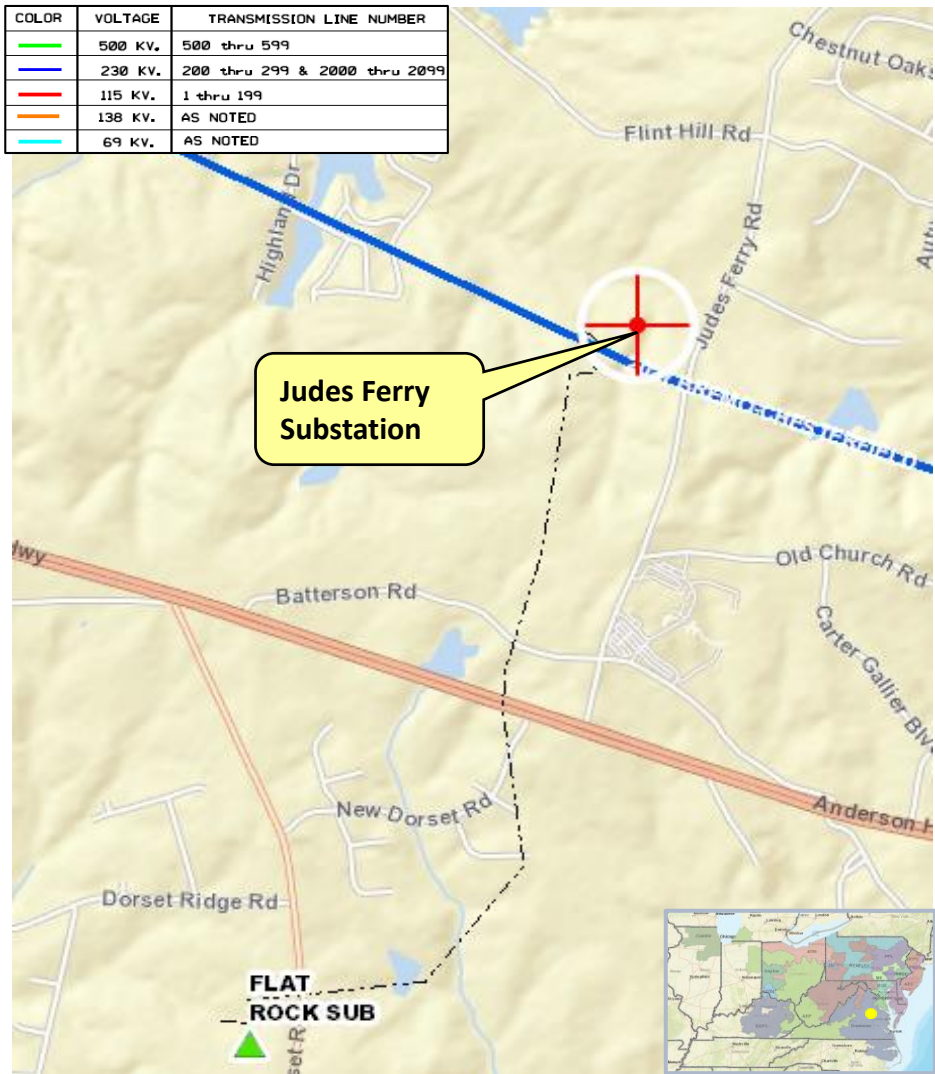
Problem Statement:

DEV Distribution no longer has the need to construct a new substation (Judes Ferry SUB) which would have been located on 230kV line #2027 adjacent to Judes Ferry road in Powhatan County. This is due to load not growing in the area as anticipated.

Projected 2023 Load was:

Summer: 77.0 MW

Winter: 77.0 MW



Dominion Transmission Zone M-3 Process

St. Johns 115kV Delivery – Add 2nd TX - DEV

Need Number: DOM-2018-0023 (PJM Supplemental # s1843)

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 9/9/2022

Previously Presented:

Need – 12/13/2018

Solution – 02/07/2019

Cancellation – 04/12/2022

Project Driver:

Customer Service

Specific Assumption Reference:

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

Problem Statement:

DEV Distribution no longer has the need to install a second distribution transformer at Greenwich substation in Virginia Beach due to load not growing in the area as anticipated. The requested in-service date was 10/15/2019. The original need slide was presented on 12/13/2018, and the solution slide on 2/7/2019.

Projected 2023 Load was:

Summer: 77.0 MW

Winter: 77.0 MW



Dominion Transmission Zone M-3 Process St. Johns 115kV Delivery – Add 2nd TX - DEV

Need Number: DOM-2020-0020 (PJM Supplemental # s2333)

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 9/9/2022

Previously Presented:

Need – 06/16/2020

Solution – 07/16/2020

Cancellation – 02/17/2022

Project Driver:

Customer Service

Specific Assumption Reference:

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

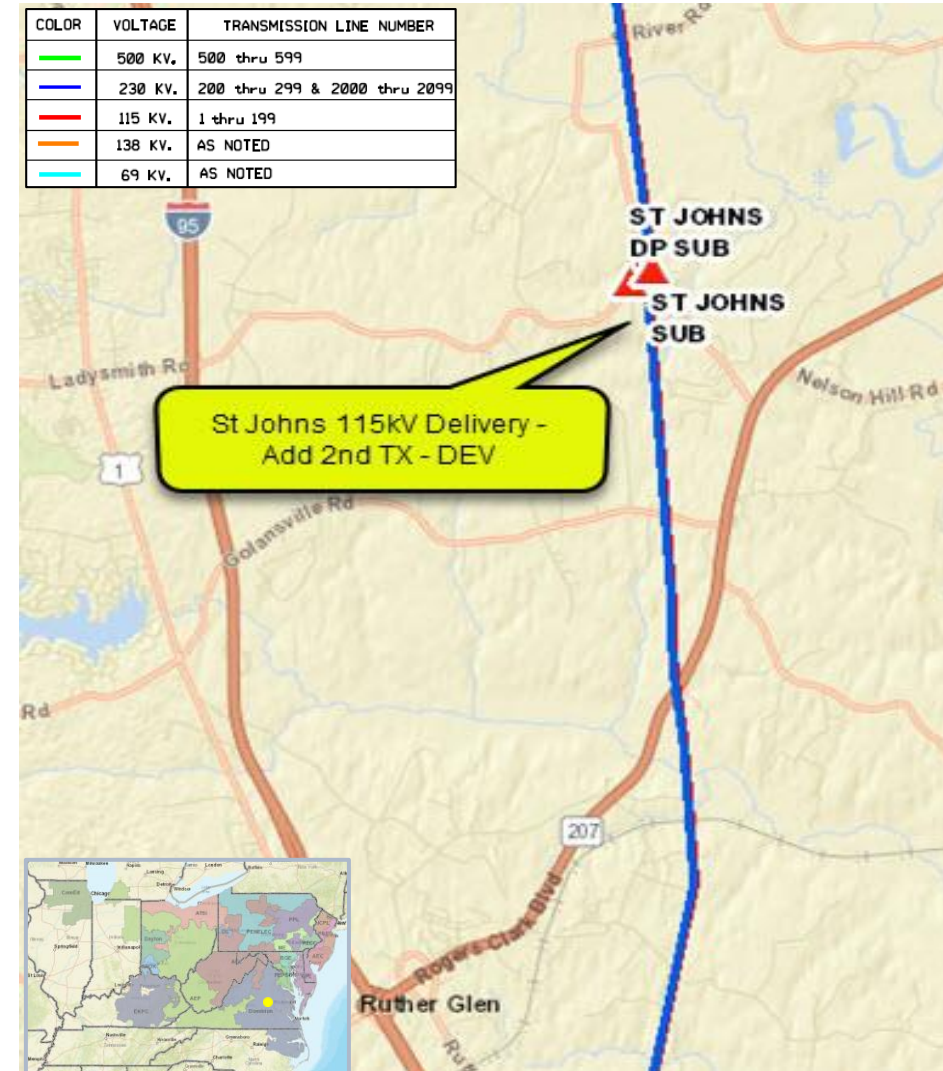
Problem Statement:

DEV Distribution has cancelled its DP Request to add a 2nd distribution transformer at St. Johns Substation in Caroline County.

Projected 2025 Load was:

Summer: 6.8 MW

Winter: 11.9 MW



Dominion Transmission Zone M-3 Process Customer Load request

Need Number: DOM-2021-0056

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 9/9/2022

Previously Presented:

Need – 07/13/2021

Cancellation – 02/08/2022

Project Driver:

Customer Service

Specific Assumption Reference:

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

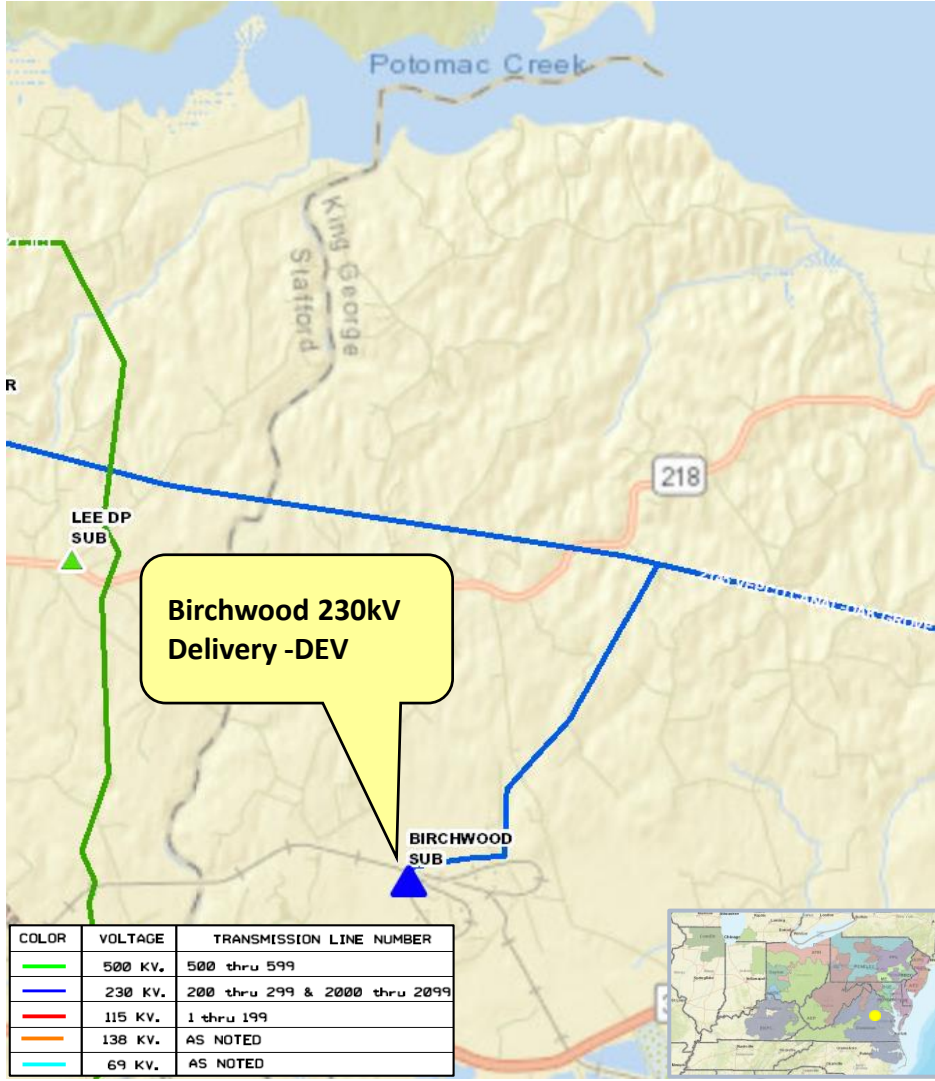
Problem Statement:

DEV Distribution has cancelled a DP Request to install a distribution transformer at Birchwood Substation due to lack of the expected load growth (32 MVA block load addition) in the area. The requested in-service date was 11/30/2022. The original need slide was presented on 07/13/2021.

Projected 2026 Load was:

Summer: 32.0 MW

Winter: 32.0 MW



Dominion Transmission Zone M-3 Process Youngs Branch 230kV Delivery - DEV

Need Number: DOM-2021-0001

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 9/9/2022

Previously Presented:

Need – 01/06/2021

Solution – 07/13/2021

Project Driver:

Customer Service

Specific Assumption Reference:

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

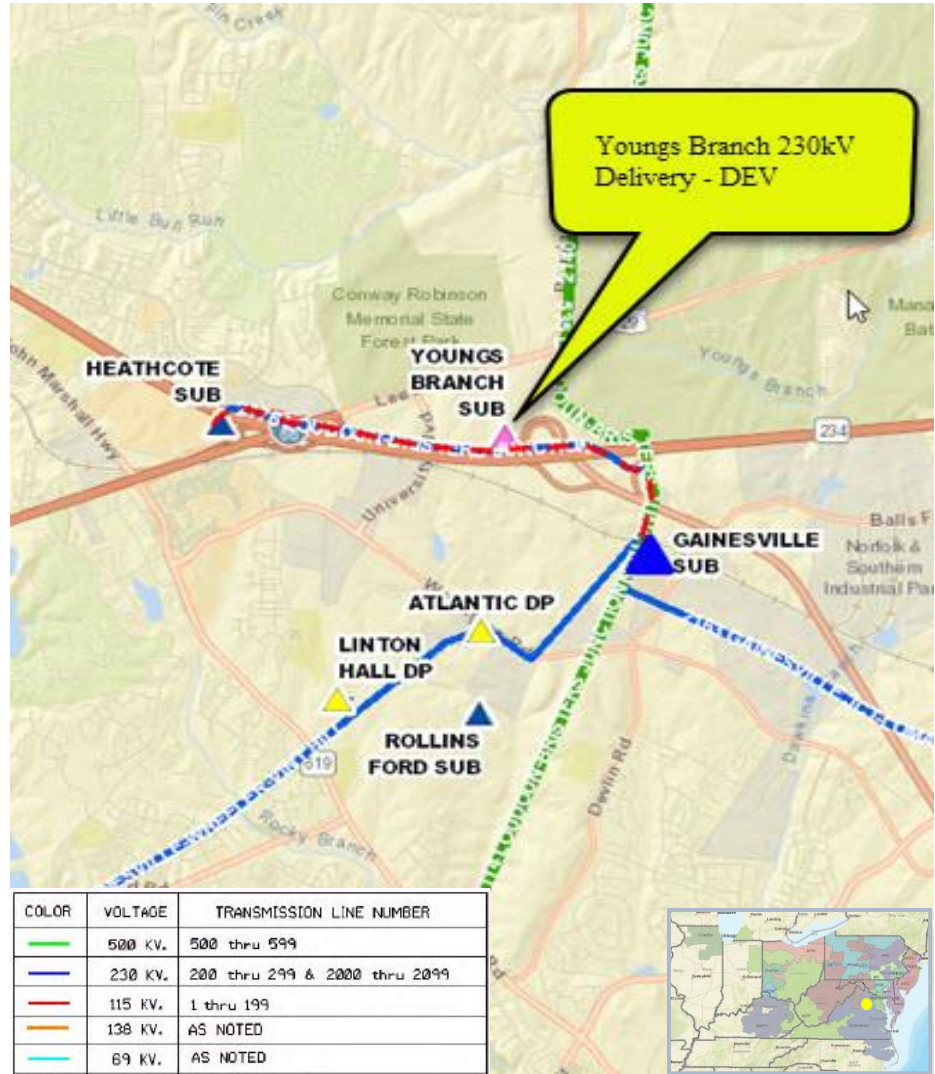
Problem Statement:

DEV Distribution has submitted a DP Request for a new substation (Youngs Branch) to accommodate a new datacenter campus in Prince William County with a total load in excess of 100MW. Requested in-service date is 10/30/2022.

Projected 2026 Load

Summer: 163.1 MW

Winter: 143.3 MW



Dominion Transmission Zone M-3 Process Youngs Branch 230kV Delivery - DEV

Need Number: DOM-2021-0001

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 9/9/2022

Selected Solution:

Interconnect the new substation by cutting and extending Line #2140 (Heathcote - Loudoun) to the proposed Youngs Branch Substation. Terminate both ends into a four-breaker ring arrangement to create a Heathcote – Youngs Branch line and a Loudoun – Youngs Branch line.

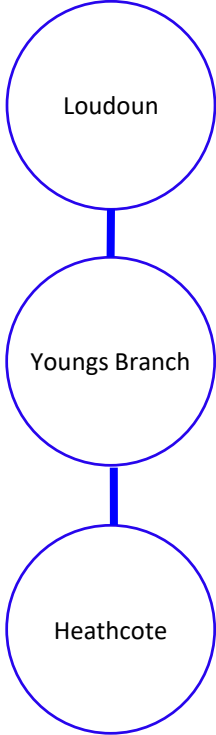
Estimated Cost: \$10.0M

Projected In-Service: 10/30/2022

Supplemental Project ID: s2739

Project Status: Engineering

Model: 2025 RTEP



Dominion Transmission Zone M-3 Process Takeoff 230kV Delivery- Add Two TX's - DEV

Need Number: DOM-2021-0003

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 9/9/2022

Previously Presented:

Need – 04/06/2021

Solution – 05/11/2021

Project Driver:

Customer Service

Specific Assumption Reference:

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

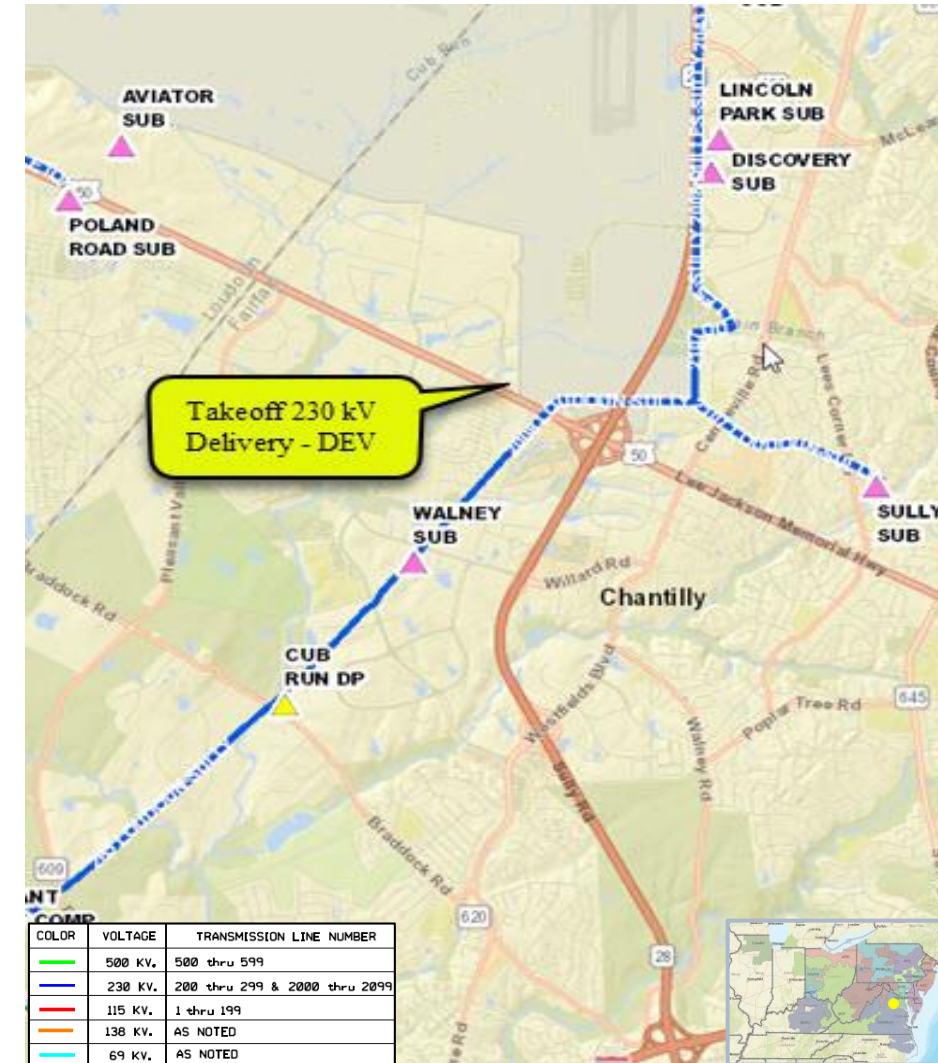
Problem Statement:

DEV Distribution has submitted a DP Request to add transformers at Takeoff Substation to support a new datacenter campus in Fairfax County with a total load in excess of 100 MW. The new station will also support existing load in the immediate area. Requested in-service date is 06/15/2024.

Projected 2026 Load

Summer: 143.2 MW

Winter: 132.5 MW



Dominion Transmission Zone M-3 Process Takeoff 230kV Delivery- Add Two TX's - DEV

Need Number: DOM-2021-0003

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 9/9/2022

Selected Solution:

Install a 2x1200 Amp, 63 kAIC circuit switcher and associated equipment (bus, switches, relaying, etc.) to feed the new transformers at Takeoff.

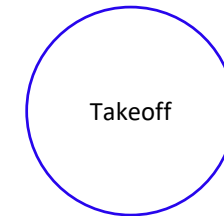
Estimated Cost: \$1.0M

Projected In-Service: 06/15/2024

Supplemental Project ID: s2740

Project Status: Engineering

Model: 2025 RTEP



Dominion Transmission Zone M-3 Process BECO - Add 5th TX - DEV

Need Number: DOM-2021-0028

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 9/9/2022

Previously Presented:

Need – 05/11/2021

Solution – 06/08/2021

Project Driver:

Customer Service

Specific Assumption Reference:

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

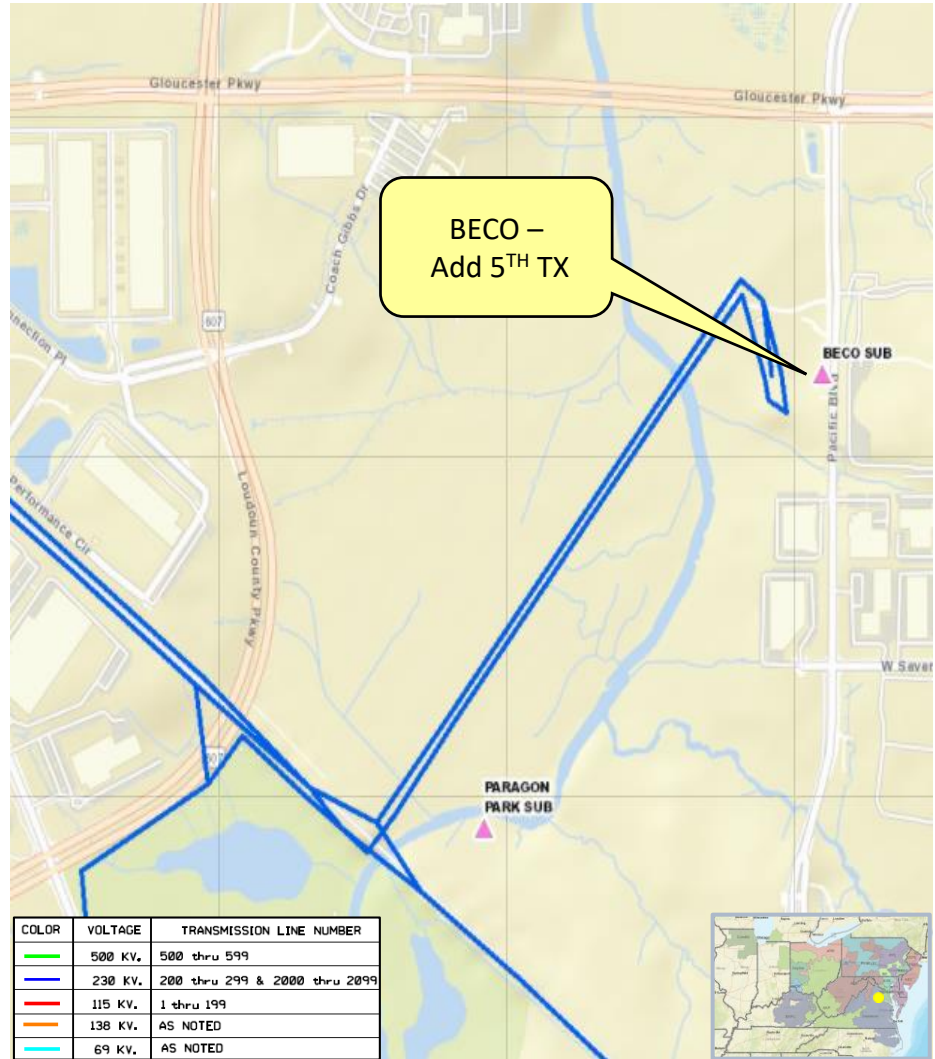
Problem Statement:

DEV Distribution has submitted a DP Request to add the 5th distribution transformer at BECO Substation in Loudoun County. The new transformer is being driven by continued load growth in the area. Requested in-service date is 06/01/2022.

Projected 2026 Load

Summer: 250.0 MW

Winter: 240.0 MW



Dominion Transmission Zone M-3 Process

BECO - Add 5th TX - DEV

Need Number: DOM-2021-0028

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 9/9/2022

Selected Solution:

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

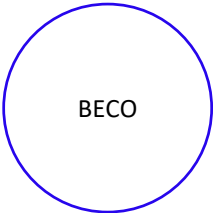
Estimated Cost: \$0.5M

Projected In-Service: 06/01/2022

Supplemental Project ID: s2741

Project Status: Engineering

Model: 2025 RTEP



Dominion Transmission Zone M-3 Process

Davis Drive - Add 3rd and 4th TX - DEV

Need Number: DOM-2021-0032

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 9/9/2022

Previously Presented:

Need – 04/06/2021

Solution – 05/11/2021

Project Driver:

Customer Service

Specific Assumption Reference:

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

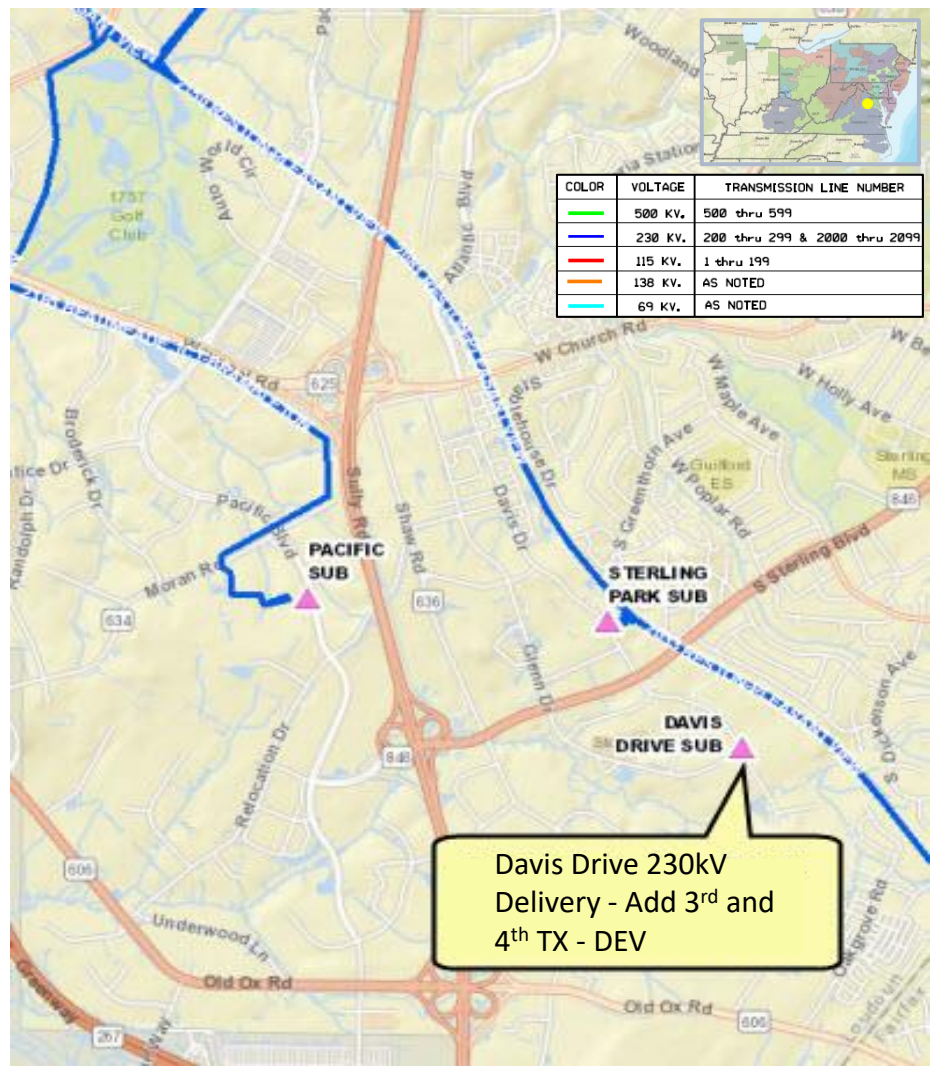
Problem Statement:

DEV Distribution has submitted a DP Request to add the 3rd and 4th distribution transformer at Davis Drive Substation in Loudoun County. The new transformer is being driven by continued load growth in the area. Requested in-service date is 10/01/2022.

Projected 2026 Load

Summer: 224.0 MW

Winter: 222.0 MW



Davis Drive 230KV
Delivery - Add 3rd and
4th TX - DEV

Dominion Transmission Zone M-3 Process

Davis Drive - Add 3rd and 4th TX - DEV

Need Number: DOM-2021-0032

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 9/9/2022

Selected Solution:

Install a 2x1200 Amp, 50 kAIC circuit switcher and associated equipment (bus, switches, relaying, etc.) to feed the new transformers at Davis Drive.

Estimated Cost: \$1.0M

Projected In-Service: 10/01/2022

Supplemental Project ID: s2742.1

Project Status: Engineering

Model: 2025 RTEP



Dominion Transmission Zone M-3 Process Do No Harm (DNH) Analysis

Need Number: DOM-2021-0032-DNH

Process Stage:
Submission of Supplemental Project for Inclusion in the Local Plan – 9/9/2022

Presentation Date:
DNH – 08/31/2021

Supplemental Project Driver:

Do No Harm Analysis

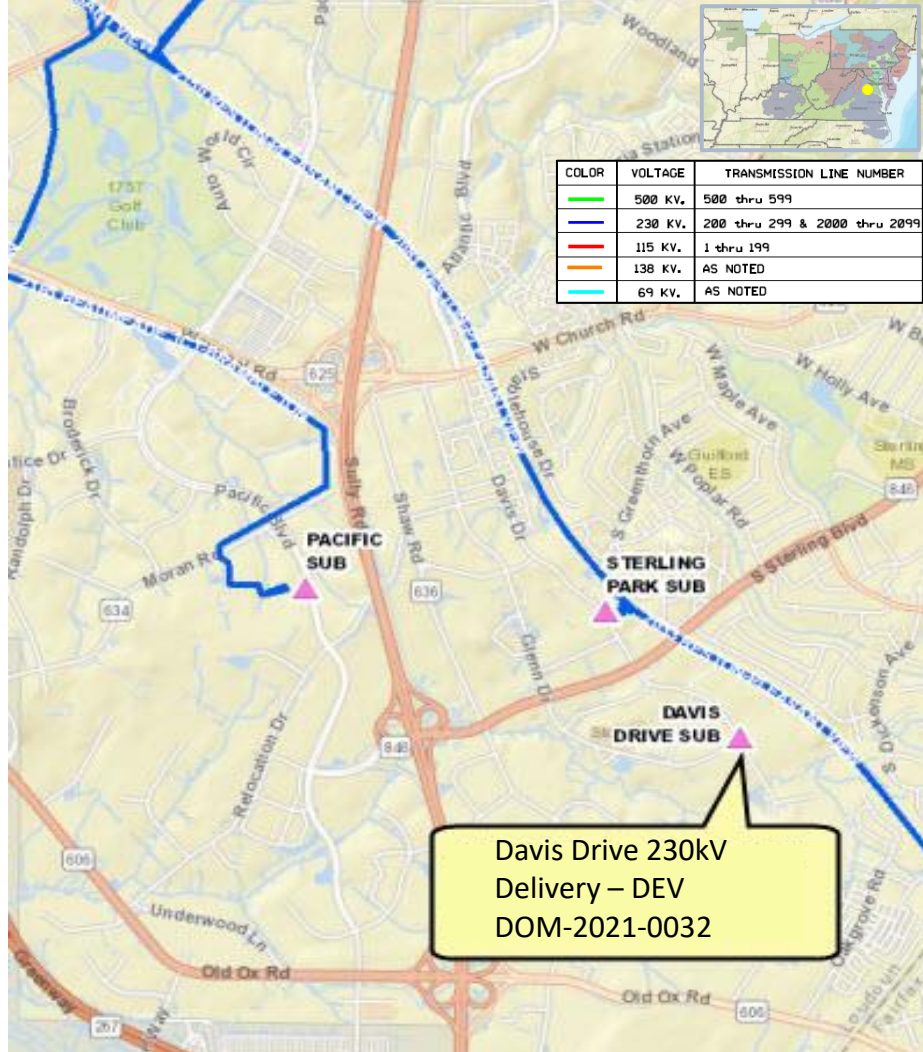
Specific Assumption Reference:

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

Problem Statement:

PJM has identified a 300MW N-1-1 Load Drop violation for the loss of Line #2081 (Paragon Park to Sterling Park) and Line #2033 (Davis Drive to Reston) during the 2021 Do-No-Harm analysis.

The violation was caused by Supplemental Project DOM-2021-0032 in the Dominion Zone.



Dominion Transmission Zone M-3 Process Do No Harm (DNH) Analysis

Need Number: DOM-2021-0032-DNH

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 9/9/2022

Selected Solution:

Cut and Loop Line 2079 (Sterling Park - Dranesville) into Davis Drive substation and install two GIS 230kV breakers.

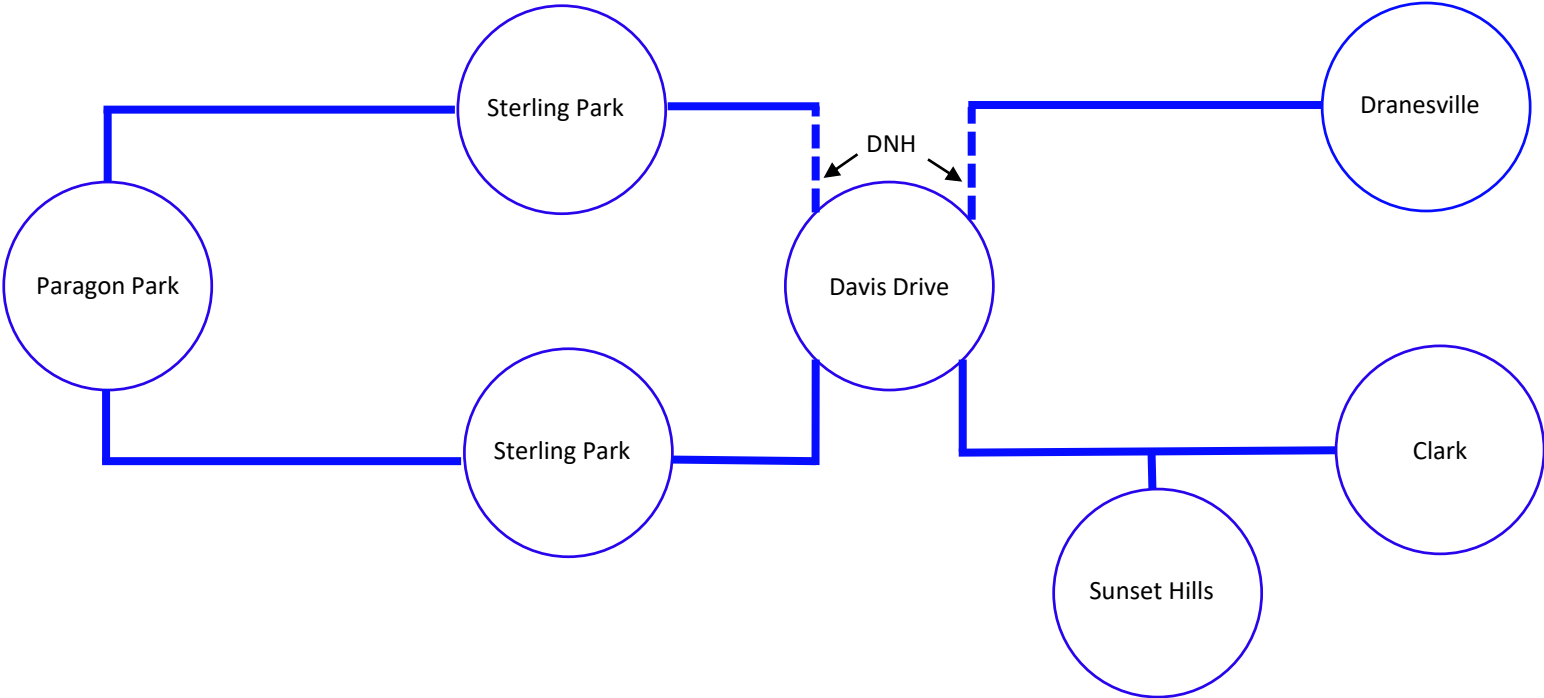
Estimated Cost: \$15.0M
Transmission Line: \$5M
Substation: \$10M

Projected In-Service: 06/15/2026

Supplemental Project ID: s2742.2

Project Status: Engineering

Model: 2025 RTEP



Dominion Transmission Zone M-3 Process

115 kV Partial Line #10 – EOL Rebuild

Need Number: DOM-2021-0050

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 9/9/2022

Previously Presented:

Need – 06/15/2021

Solution – 05/16/2022

Project Driver:

Equipment Material Condition, Performance, and Risk

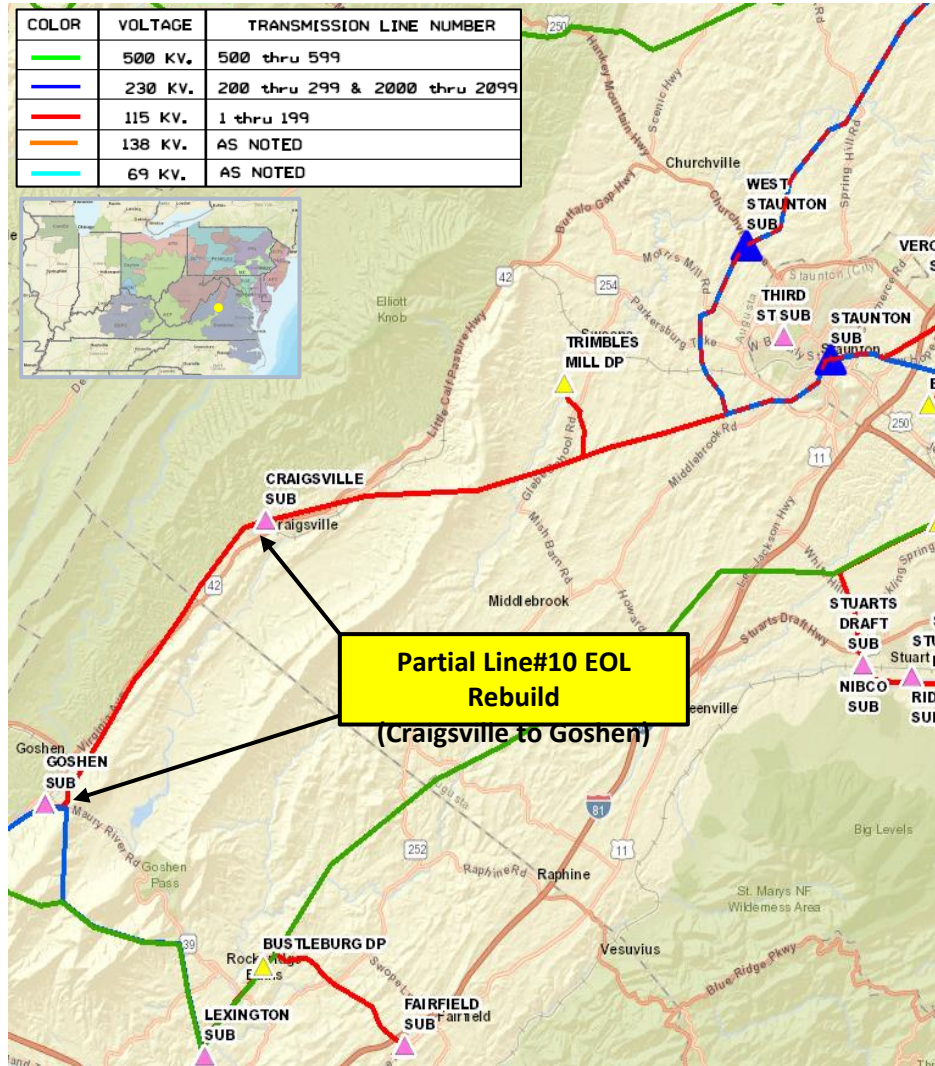
Specific Assumption Reference:

See details on Equipment Material Condition, Performance and Risk in Dominion’s Planning Assumptions presented in December 2020.

Problem Statement:

Dominion Energy has identified a need to replace approx. 11 miles of 115kV Line#10 from Craigsville to Goshen based on the Company’s End of Life criteria.

- The segment of Line#10 from Craigsville to Goshen was constructed in 1925 consisting of Blaw Knox towers, ACSR conductor and 3/8” static wire.
- Blaw Knox towers are known for ground line corrosion and potential U-Bolt connection issues.
- Field inspection indicates a number of structures have damage.
- Industry guidelines indicate equipment life for steel structures 40-60 years, wood structures is 35-55 years, conductor and connectors are 40-60 years, and porcelain insulators are 50 years.



Dominion Transmission Zone M-3 Process

115 kV Partial Line #10 – EOL Rebuild

Need Number: DOM-2021-0050

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 9/9/2022

Selected Solution:

Approximately 11 miles (from Craigsville to Goshen) consisting of Blaw Knox towers will be replaced with appropriate structures. New conductor with a minimum normal summer rating of 393 MVA will be used. Terminal equipment will be upgraded as needed.

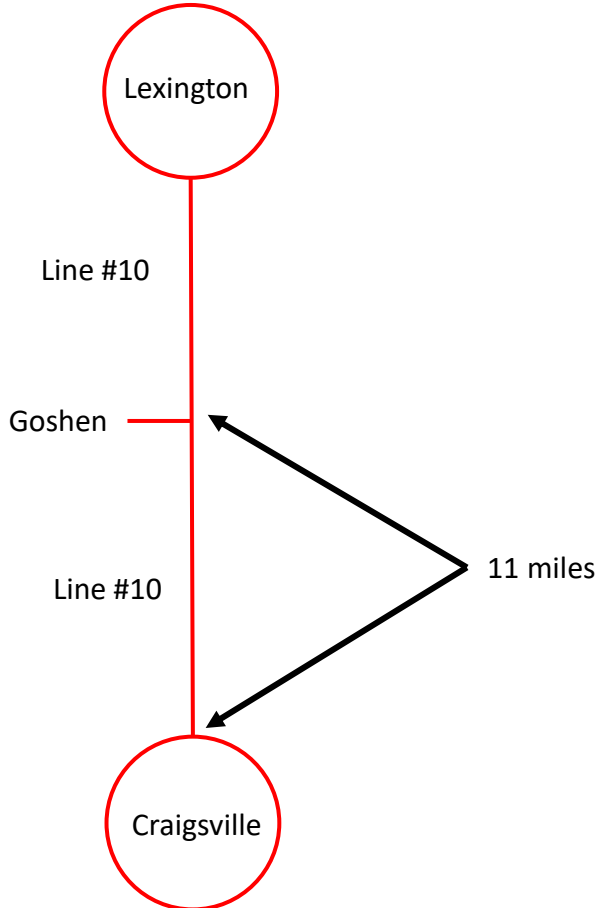
Estimated Cost: \$29.6M

Projected In-Service: 12/31/2024

Supplemental Project ID: s2730

Project Status: Conceptual

Model: 2025 RTEP



Dominion Transmission Zone M-3 Process Shellhorn - Add 4th TX - DEV

Need Number: DOM-2021-0053

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 9/9/2022

Previously Presented:

Need – 07/13/2021

Solution – 08/10/2021

Project Driver:

Customer Service

Specific Assumption Reference:

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

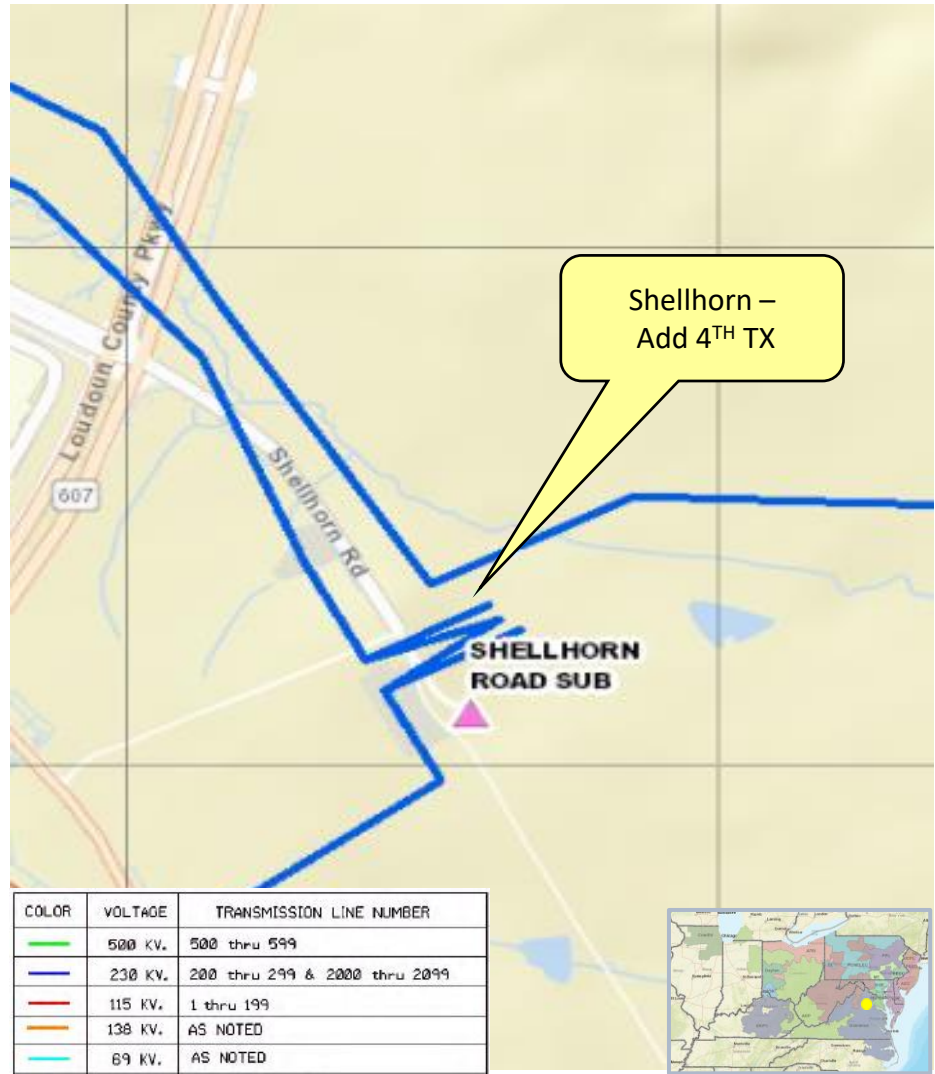
Problem Statement:

DEV Distribution has submitted a DP Request to add the 4th distribution transformer at Shellhorn Substation in Loudoun County. The new transformer is being driven by continued load growth in the area. Requested in-service date is 12/15/2022.

Projected 2026 Load

Summer: 243.0 MW

Winter: 243.0 MW



Dominion Transmission Zone M-3 Process

Shellhorn - Add 4th TX - DEV

Need Number: DOM-2021-0053

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 9/9/2022

Selected Solution:

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

Estimated Cost: \$0.5M

Projected In-Service: 12/15/2022

Supplemental Project ID: s2743

Project Status: Engineering

Model: 2025 RTEP



Dominion Transmission Zone M-3 Process

Possum Point - Replace 500kV Breakers, Disconnects and Update Protection

Need Number: DOM-2022-0004

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 9/9/2022

Previously Presented:

Need – 02/08/2022

Solution – 03/08/2022

Project Driver:

Equipment Material Condition, Performance, and Risk

Specific Assumption Reference:

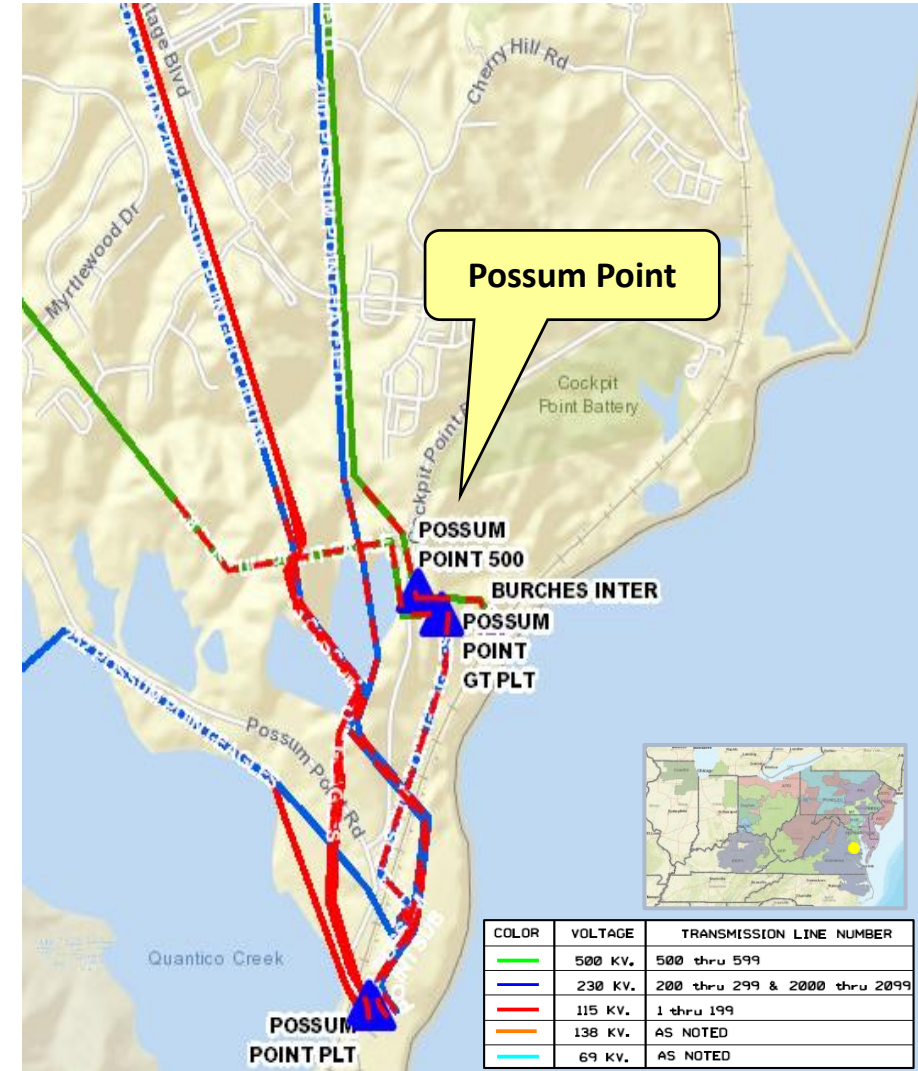
See details on Equipment Material Condition, Performance and Risk in Dominion’s Planning Assumptions presented in December 2020.

Problem Statement:

Dominion Energy has identified a need to replace four 500kV live tank breakers (561T571, 568T571, H1T568 & H1T560) and eight disconnect switches (56075, 56078, H178, H175, 56875, 56878, 57178 & 57175) at Possum Point Substation. These breakers and switches were manufactured in 1992 and are at end of life. The legacy live tank breakers have a history of component failures including external free standing CTs, external resistors and grading capacitors. No internal breaker condition monitoring is available with these type of breakers.

Other Possum Point station deficiencies include:

- Bus #1 relay protection has electromechanical relays that are no longer being supported.
- Arresters are the latest standard for 500kV terminations in the station and have not been installed on Line #560.
- The 500kV breaker panels do not have the latest standard requirements.



Dominion Transmission Zone M-3 Process

Possum Point - Replace 500kV Breakers, Disconnects and Update Protection

Need Number: DOM-2022-0004

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 9/9/2022

Selected Solution:

Replace the following substation equipment at Possum Point:

- Four 500kV breakers (560T571, 568T571, H1T568 & H1T560) with 5000A, 50kA breakers and breaker failure protection
- Eight 500kV breaker disconnect switches (56075, 56078, H178, H175, 56875, 56878, 57178 & 57175) with 5000A switches and associated leads
- Bus #1 differential protection from electromechanical to digital relays

Install 3 – 500kV line arresters on Line #560 station terminations.

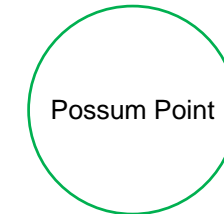
Estimated Cost: \$6.8 M

Projected In-Service: 11/17/2023

Supplemental Project ID: s2731

Project Status: Engineering

Model: 2025 RTEP



Dominion Transmission Zone M-3 Process Ox - Replace 500kV Breaker

Need Number: DOM-2022-0005

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 9/9/2022

Previously Presented:

Need – 02/08/2022

Solution – 03/08/2022

Project Driver:

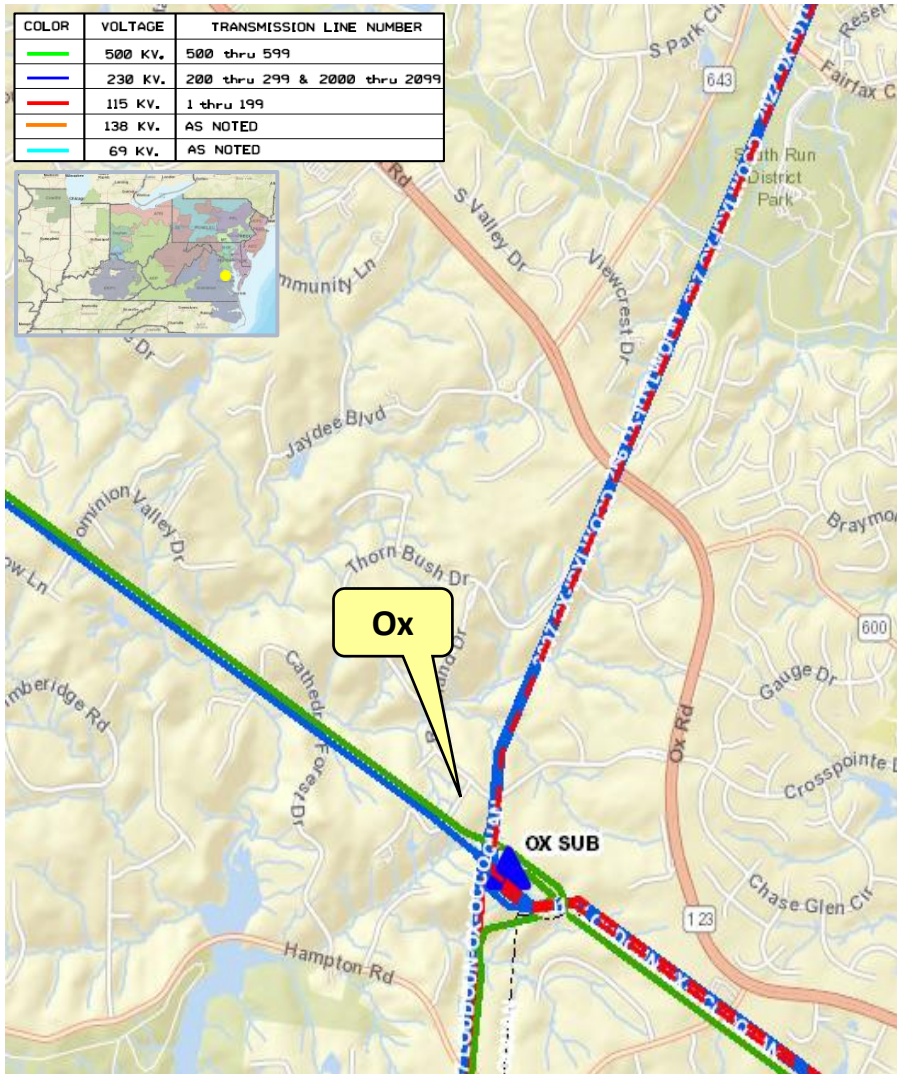
Equipment Material Condition, Performance, and Risk

Specific Assumption Reference:

See details on Equipment Material Condition, Performance and Risk in Dominion’s Planning Assumptions presented in December 2020.

Problem Statement:

Dominion Energy has identified a need to replace a live tank breaker 561T571 at Ox Substation. This breaker was built in 1998 and is at end of life. The legacy live tank breakers have a history of component failures including external free standing CTs, external resistors and grading capacitors. No internal breaker condition monitoring is available with these type of breakers.



Dominion Transmission Zone M-3 Process

Ox - Replace 500kV Breaker

Need Number: DOM-2022-0005

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 9/9/2022

Selected Solution:

Replace 500kV breaker 561T571 with a 5000A, 50kA breaker at Ox substation.

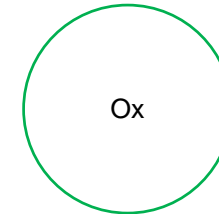
Estimated Cost: \$1.4 M

Projected In-Service: 11/01/2022

Supplemental Project ID: s2732

Project Status: Engineering

Model: 2025 RTEP



Dominion Transmission Zone M-3 Process Elmont - Replace 500kV Breaker and Disconnects

Need Number: DOM-2022-0006

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 9/9/2022

Previously Presented:

Need – 02/08/2022

Solution – 03/08/2022

Project Driver:

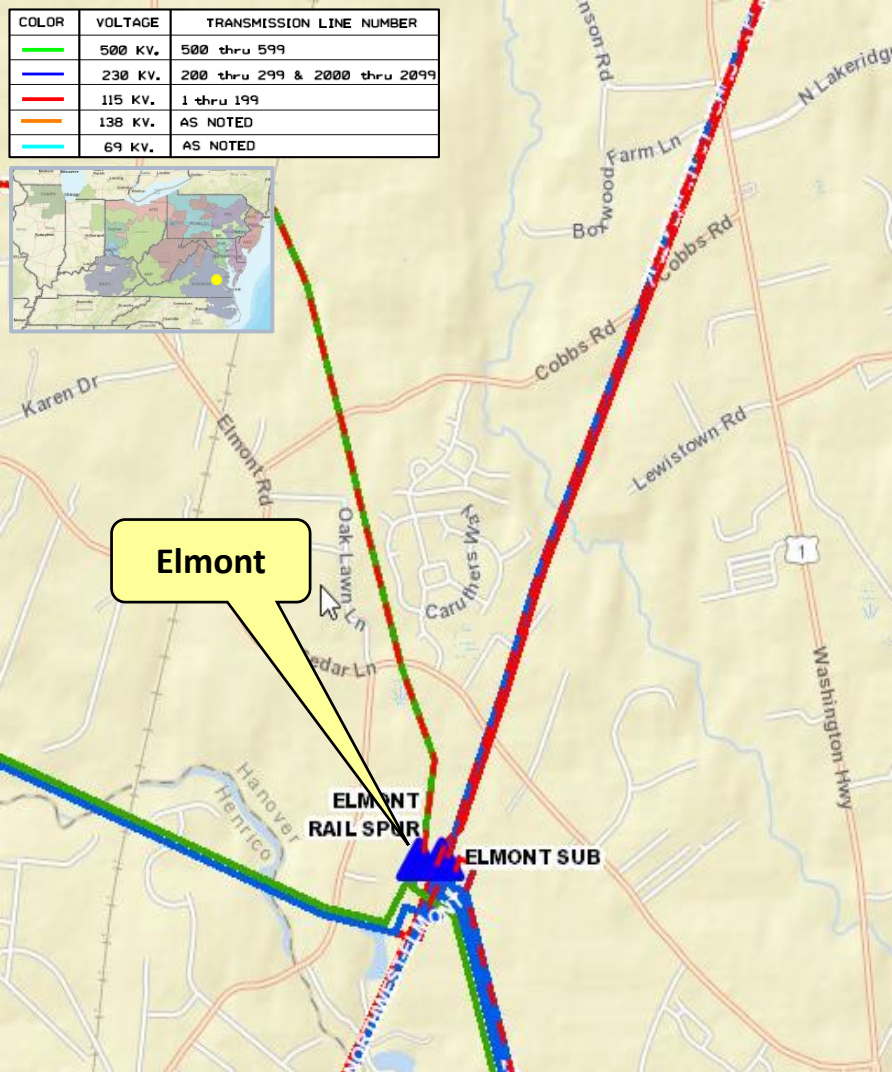
Equipment Material Condition, Performance, and Risk

Specific Assumption Reference:

See details on Equipment Material Condition, Performance and Risk in Dominion’s Planning Assumptions presented in December 2020.

Problem Statement:

Dominion Energy has identified a need to replace one 500kV live tank breaker (H1T553) and two disconnect switches (H198 & 55397) at Elmont Substation. These breakers and switches were manufactured in 1992 and are at end of life. The legacy live tank breakers have a history of component failures including external free standing CTs, external resistors and grading capacitors. No internal breaker condition monitoring is available with these type of breakers.



Dominion Transmission Zone M-3 Process Elmont - Replace 500kV Breaker and Disconnects

Need Number: DOM-2022-0006

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 9/9/2022

Selected Solution:

Replace the following substation equipment at Elmont:

- Breaker H1T553 with 5000A, 50kA breaker
- Two 500kV breaker disconnect switches (H198 & 55397) with 5000A switches and associated leads.

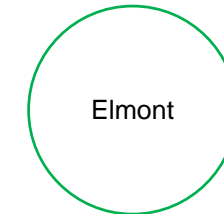
Estimated Cost: \$1.8 M

Projected In-Service: 12/01/2022

Supplemental Project ID: s2733

Project Status: Engineering

Model: 2025 RTEP



Dominion Transmission Zone M-3 Process EPG - Add 2nd and 3rd TXs - DEV

Need Number: DOM-2022-0009

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 9/9/2022

Previously Presented:

Need – 03/08/2022

Solution – 04/12/2022

Project Driver:

Customer Service

Specific Assumption Reference:

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

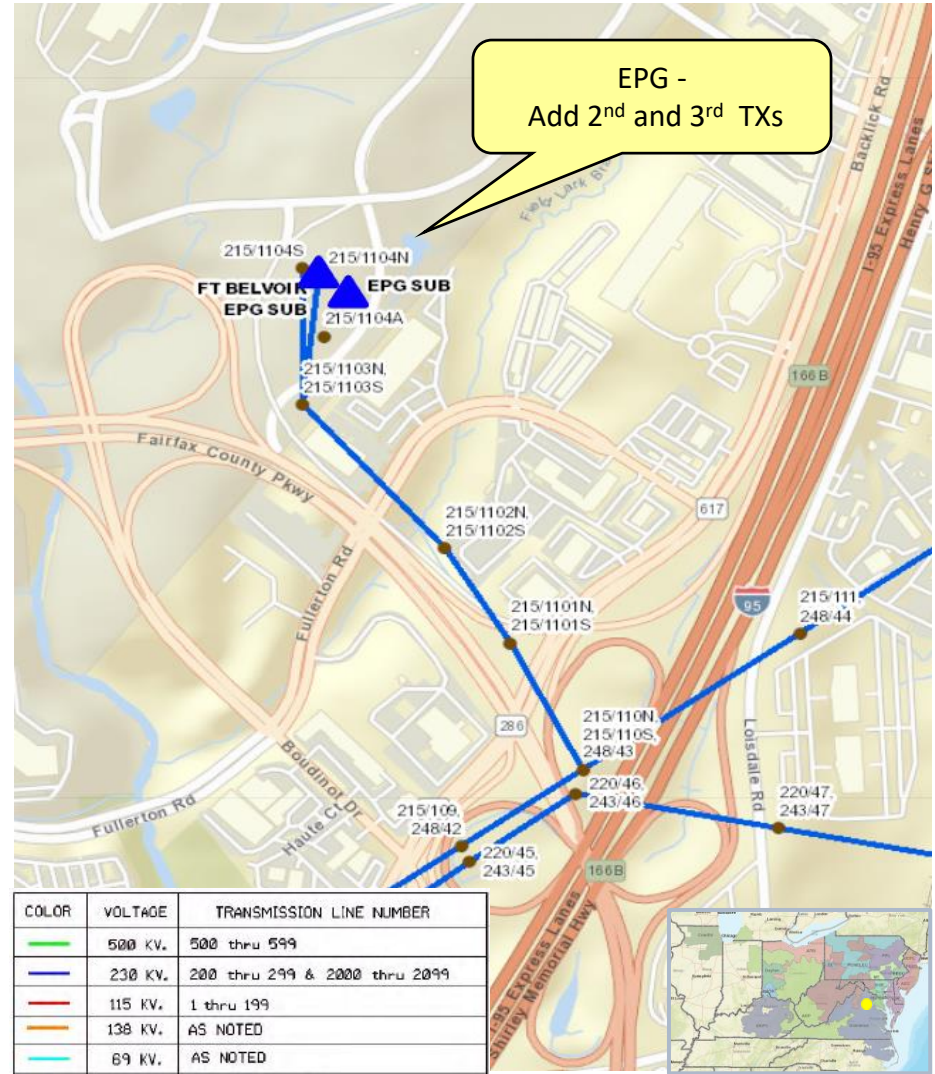
Problem Statement:

DEV Distribution has submitted a DP Request to add the 2nd and 3rd distribution transformers at EPG Substation in Fairfax County. The new transformers are being driven by continued load growth in the area. Requested in-service date is 03/31/2023.

Projected 2026 Load

Summer: 34.0 MW

Winter: 35.6 MW



Dominion Transmission Zone M-3 Process EPG - Add 2nd and 3rd TXs - DEV

Need Number: DOM-2022-0009

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 9/9/2022

Selected Solution:

Install a four-breaker ring bus arrangement to create a Possum Point-EPG line and an EPG-Hayfield line.

Estimated Cost: \$1.5M

Note: Per Dominion’s Facility Interconnection Requirements Document, Section 4.3.1, the Customer will be required to pay excess facilities for all equipment above a T-tap interconnection.

Projected In-Service: 03/31/2023

Supplemental Project ID: s2734

Project Status: Conceptual

Model: 2025 RTEP



Dominion Transmission Zone M-3 Process

Install Circuit Switchers on Northern Neck GSU TX#2 and GSU TX#3

Need Number: DOM-2022-0011

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 9/9/2022

Previously Presented:

Need – 02/17/2022

Solution – 04/19/2022

Project Driver:

Operational Flexibility and Efficiency

Specific Assumption Reference:

See details on Operational Flexibility and Efficiency in Dominion’s Planning Assumptions presented in December 2021.

Problem Statement:

Line #224 (Lanexa-Northern Neck) is being wrecked and rebuilt for approximately 41 miles on baseline upgrade project #b3089 and a 2nd 230kV circuit is being added in the corridor on baseline upgrade project #b3223. To support the load in the area and maintain adequate voltage during the extended construction in the Lanexa-Northern Neck corridor, a mobile statcom was installed at Northern Neck Substation and the adjacent Northern Neck generators have been called into operation. Due to the age of the Northern Neck generator installation, the transmission interconnection does not include appropriate protection on the high-side of the generator step-up transformers, resulting in the loss of the mobile statcom and all generation on multiple occasions. As a result, Dominion Energy has identified the need to install appropriate protection to provide better segmentation on the high-side of the generator step-up transformers.



Dominion Transmission Zone M-3 Process

Install Circuit Switchers on Northern Neck GSU TX#2 and GSU TX#3

Need Number: DOM-2022-0011

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 9/9/2022

Selected Solution:

Install two 230kV, 1200 Amp, 40kA circuit switchers on the high-side of Northern Neck GSU TX#2 and GSU TX#3, including any associated equipment (bus, relaying, etc.) determined necessary by the project team.

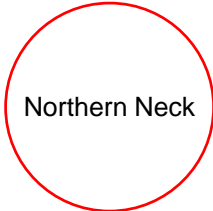
Estimated Cost: \$0.45 M

Projected In-Service: 09/30/2022

Supplemental Project ID: s2735

Project Status: Engineering

Model: 2025 RTEP



Dominion Transmission Zone M-3 Process Pretlow 115kV Delivery – City of Franklin

Need Number: DOM-2022-0012

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 9/9/2022

Previously Presented:

Need – 04/19/2022

Solution – 05/16/2022

Project Driver:

Customer Service

Specific Assumption Reference:

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

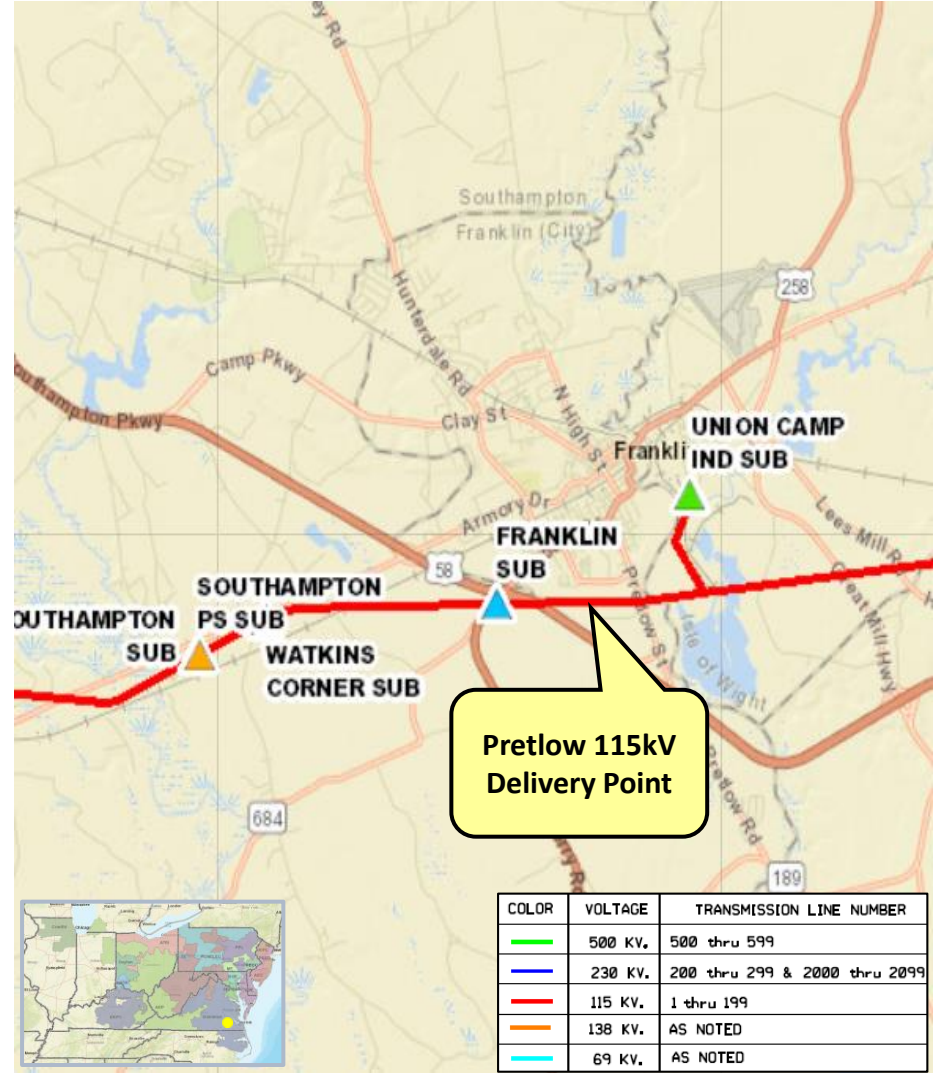
Problem Statement:

The City of Franklin, VA Power & Light has submitted a DP Request for a new 115kV substation (Pretlow DP). The new substation is needed to serve an industrial customer as well as approximately 14 MW transferred from an existing delivery point that is being retired. Requested in-service is June 1, 2024.

Projected 2027 Load

Summer: 27.0 MW

Winter: 27.0 MW



Dominion Transmission Zone M-3 Process Pretlow 115kV Delivery – City of Franklin

Need Number: DOM-2022-0012

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 9/9/2022

Selected Solution:

Build a single circuit 115kV tap line for approximately 200 feet, connecting the City of Franklin P&L’s proposed Pretlow DP to Line #93 (Southampton – Union Camp). Install required switch structures and switches in accordance with Dominion Facilities Interconnection Requirements.

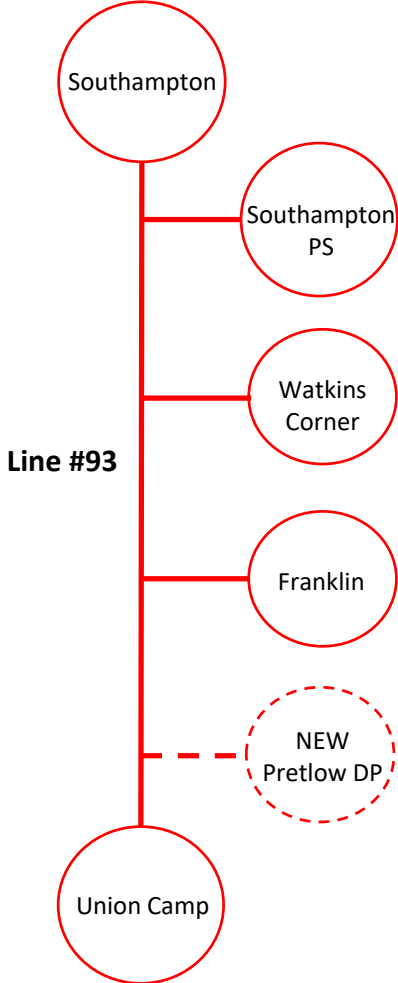
Estimated Cost: \$1.3M

Projected In-Service: 06/01/2024

Supplemental Project ID: s2736

Project Status: Conceptual

Model: 2025 RTEP



Dominion Transmission Zone M-3 Process

La Crosse 115kV Delivery - DEV

Need Number: DOM-2022-0018

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 9/9/2022

Previously Presented:

Need – 04/19/2022

Solution – 05/16/2022

Project Driver:

Customer Service

Specific Assumption Reference:

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

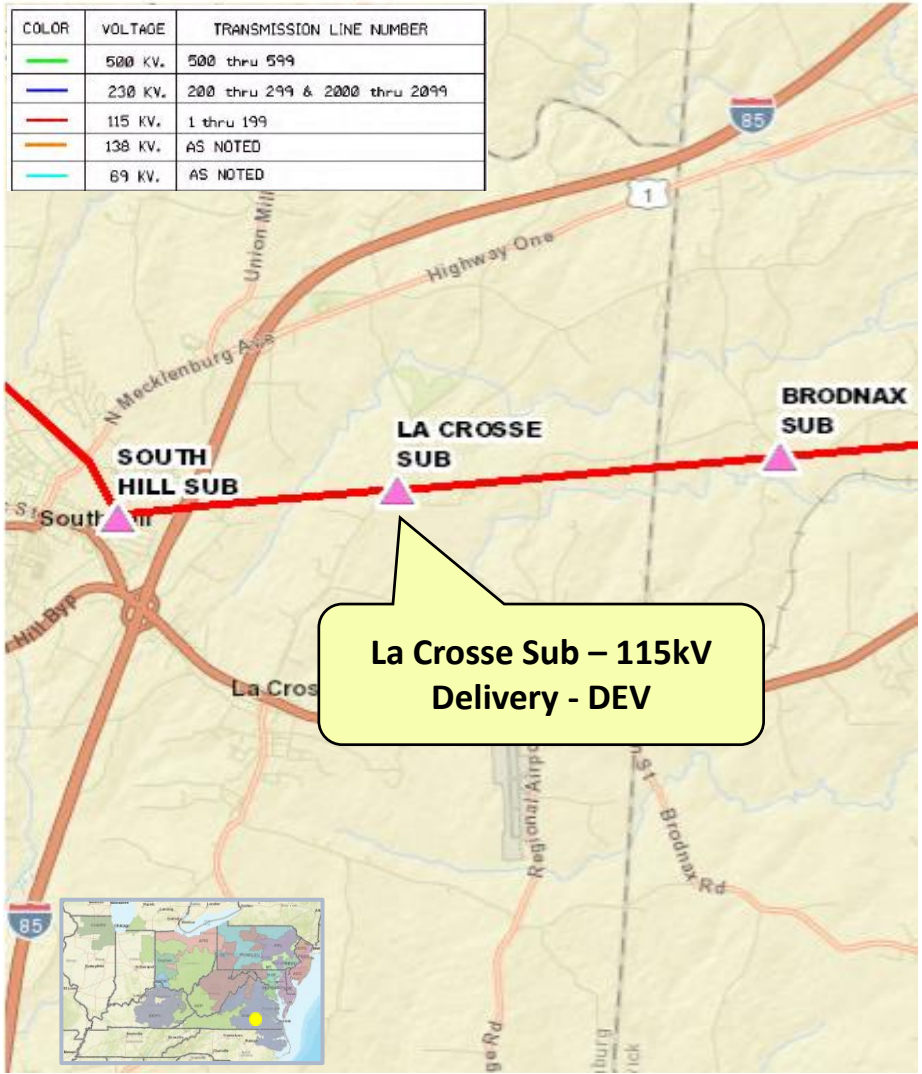
Problem Statement:

DEV has submitted a request for a new delivery point (La Crosse) at La Crosse, VA, to support as a bridging power source for new data center campuses. The total load is 100 MW. The customer requests service by December 1, 2022. The substation will remain as the primary source to the campuses, until 230kV sources in the area are energized. At that time, DEV Distribution Planning will evaluate the status and need for La Crosse Substation. If it is deemed that the station is not needed, customer will be responsible for the “labor cost” for the removal of the station.

Projected 2027 Load

Summer: 100.0 MW

Winter: 100.0 MW



Dominion Transmission Zone M-3 Process La Crosse 115kV Delivery - DEV

Need Number: DOM-2022-0018

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 9/9/2022

Selected Solution:

Interconnect the new substation by cutting and extending Line #40 (Chase City – Broadnax) to the proposed La Crosse 115kV Substation. Add 33 MVAR 115kV cap bank at La Crosse Sub for voltage support. The data center customer will bear the full cost of the project.

Estimated Cost: \$9.0M (Total)

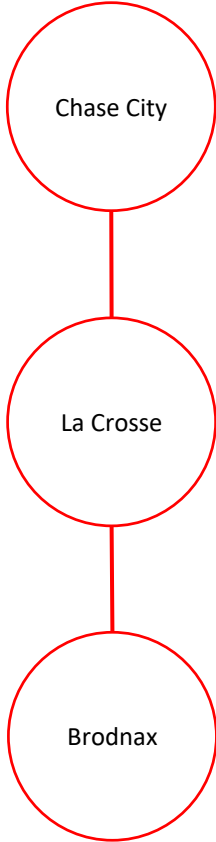
Transmission Line	\$3M
115kV Substation	\$6M

Projected In-Service: 12/01/2022

Supplemental Project ID: s2737

Project Status: Engineering

Model: 2025 RTEP



Dominion Transmission Zone M-3 Process Butler Farm 230kV Delivery - DEV

Need Number: DOM-2022-0026

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 10/10/2022

Previously Presented:

Need – 05/10/2022

Solution – 06/07/2022

Project Driver:

Customer Service

Specific Assumption Reference:

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

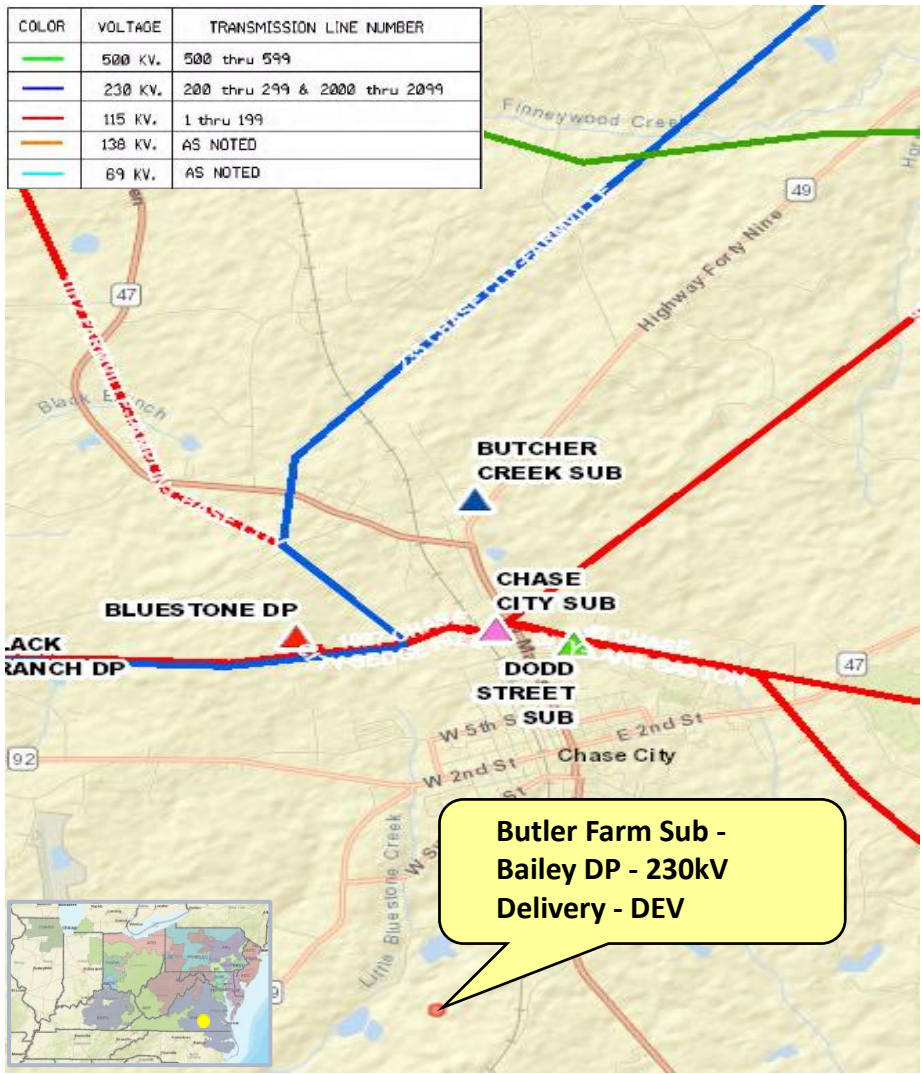
Problem Statement:

DEV Distribution has submitted a delivery point request (Bailey DP) for a new delivery point to serve a data center customer in Chase City, VA. The total load is in excess of 100 MW. The customer requests service by July 1, 2025.

Projected 2027 Load

Summer: 74.8 MW

Winter: 46.8 MW



Dominion Transmission Zone M-3 Process

Butler Farm 230kV Delivery - DEV

Need Number: DOM-2022-0026

Process Stage:

Submission of Supplemental Project for Inclusion in the Local Plan – 10/10/2022

Selected Solution:

- Obtain land and build a new 500/230kV Finneywood switching station at the intersection of Line #556 (Clover-Rawlings) and Line #235 (Cloud – Farmville).
- Cut and terminate Line #556 into Finneywood 500/230kV switching station. Cut and terminate Line #235 into Finneywood 500/230kV switching station. In the new Finneywood switching station, install two 840 MVA 500/230kV transformers, a 230kV breaker and half bus with 12 breakers and a 500kV ring bus with 6 breakers.
- Construct Butler Farm 230kV substation with four 230kV breaker ring bus to terminate two 230kV lines. Construct one new 230kV transmission line for approximately 20 miles from Clover Sub to Butler Farm Substation. Construct one new 230kV transmission line for approximately 10 miles from Finneywood Sub to Butler Farm Substation.
- New right-of-way will be needed for both transmission lines. New conductor to have a minimum summer normal rating of 1573 MVA.

Estimated Cost: \$180.0M (Total)

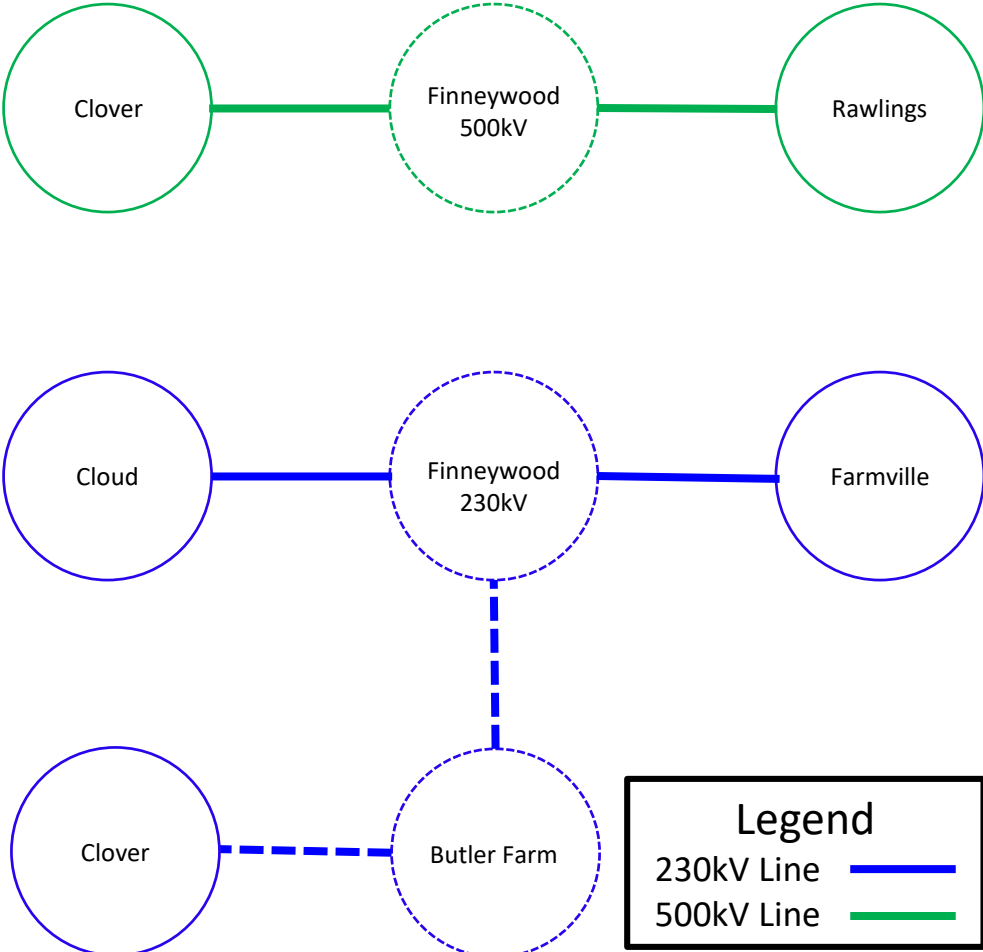
Transmission Line	\$60M
500kV Substation	\$100M
230kV Substation	\$20M

Projected In-Service: 07/01/2025

Supplemental Project ID: s2738

Project Status: Engineering

Model: 2025 RTEP



Revision History

06/09/2022 – V1 – Local Plan posted to pjm.com for s2701-s2707.

09/09/2022 – V2 – Local Plan posted to pjm.com for s2731-s2737, s2739-s2743.

10/10/2022 – V3 – Local Plan posted to pjm.com for s2738.