

Dominion Supplemental Projects

Transmission Expansion Advisory
Committee
June 05, 2025

Needs

Stakeholders must submit any comments within 10 days of this meeting in order to provide time necessary to consider these comments prior to the next phase of the M-3 process

Dominion Transmission Zone: Supplemental Operational Flexibility and Efficiency

Need Number: DOM-2025-0028

Process Stage: TEAC Meeting 06/05/2025

Project Driver: Operational Flexibility and Efficiency

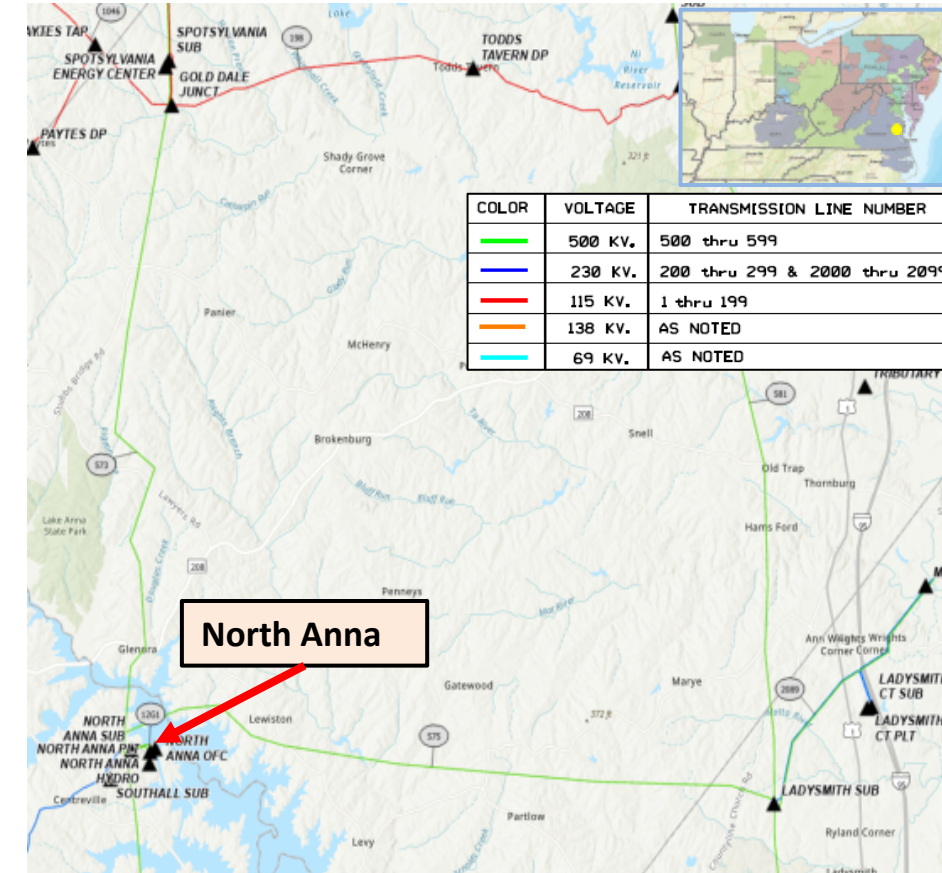
Specific Assumption References:

See details on Operational Flexibility and Efficiency in Dominion's Planning Assumptions presented in December 2024.

Problem Statement:

Due to the nature of North Anna's configuration and the amount of transfers seen through the North Anna switchyard, the units often are either at their limits of absorbing or injecting reactive power and hence reaching their voltage limits. When operating the units at their maximum reactive power, the units are ineffective during emergency or contingency events.

Furthermore, refueling outage of one unit leads to an additional MVar transfer from the remaining online unit which exacerbates the voltage issue. Without additional reactive support, this will continue to push the nuclear units to their limits and constrains the operator's capability in maintaining grid reliability.



Dominion Transmission Zone: Supplemental Equipment Material Condition, Performance and Risk

Need Number: DOM-2025-0026

Process Stage: Need Meeting 06/05/2025

Project Driver: Equipment Material Condition, Performance Risk

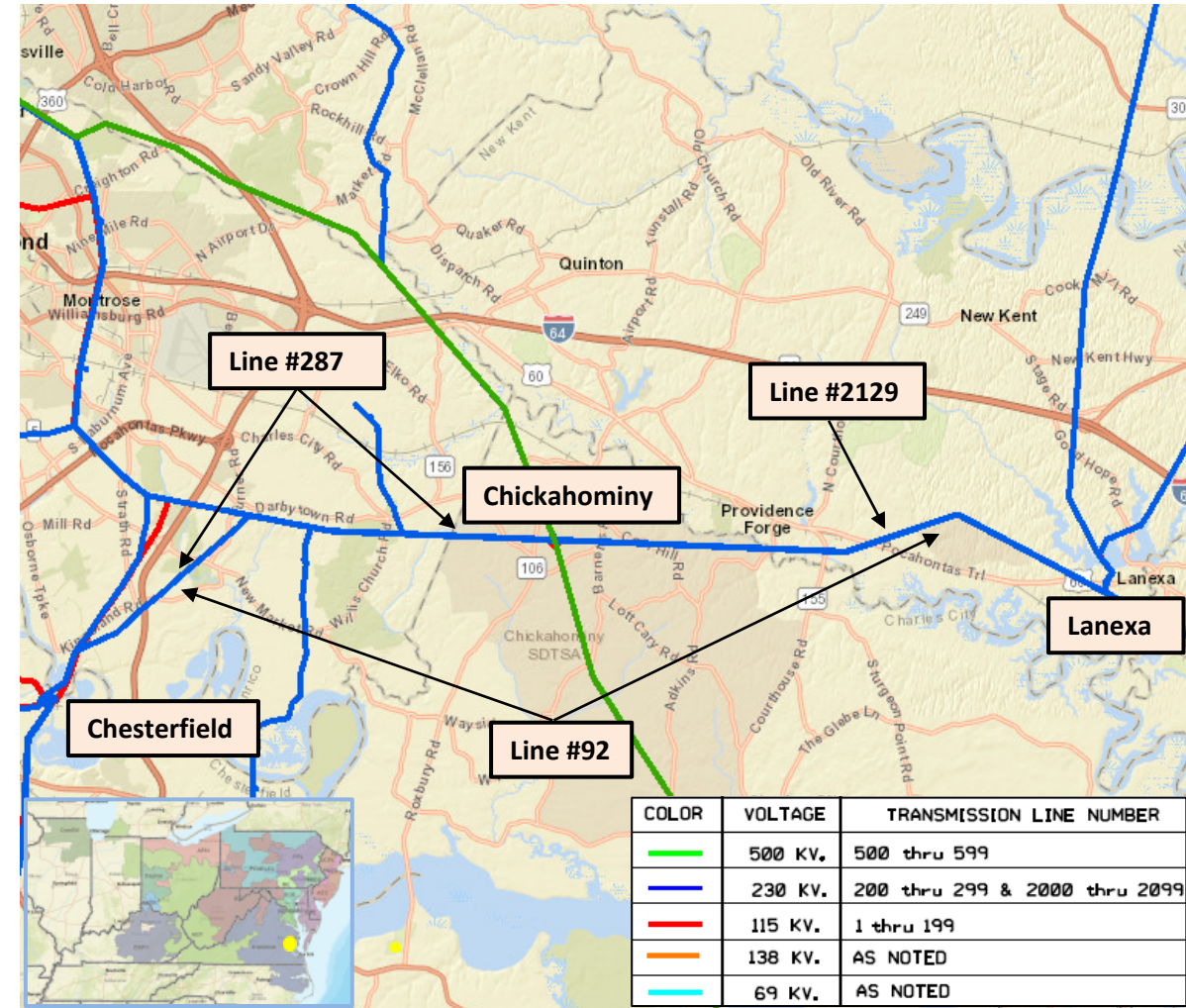
Specific Assumption References:

See details on Equipment Material Condition, Performance and Risk in Dominion's Planning Assumptions presented in December 2024.

Problem Statement:

Dominion Energy has identified a need to replace the lines between its Chesterfield and Lanexa Substations, based on the Company's End of Life criteria. These include 115 kV Line #92 from Chesterfield to Lanexa (30 miles); 230 kV Line #287 from Chesterfield to Chickahominy (14.6 miles); and Line #2129 from Chickahominy to Lanexa (14.2 miles).

- Lines #92 and #287 lines were constructed on double circuit, 3-pole wood H-frame structures in 1952 and 1966, respectively. Both lines have ACSR conductor and 3/8" steel static.
- 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.
- Removal of line pair #92 and #287 and of line pair #92 and #2129 causes a Generator Deliverability violation on line #539 (Ladysmith to Possum Point) and the loss of generation at Providence Forge Substation. Line #92 has direct connected loads at the 115kV tap at Turner substation and at the Providence Forge substation. Additionally, lines #92 and #287 provide outlets for the generation at Chesterfield.



Solutions

Stakeholders must submit any comments within 10 days of this meeting in order to provide time necessary to consider these comments prior to the next phase of the M-3 process

Dominion Transmission Zone: Supplemental Customer Load Request

Need Number: DOM-2024-0009

Process Stage: Solutions Meeting 06/05/2025

Previously Presented: Need Meeting 02/06/2024

Project Driver: Customer Service

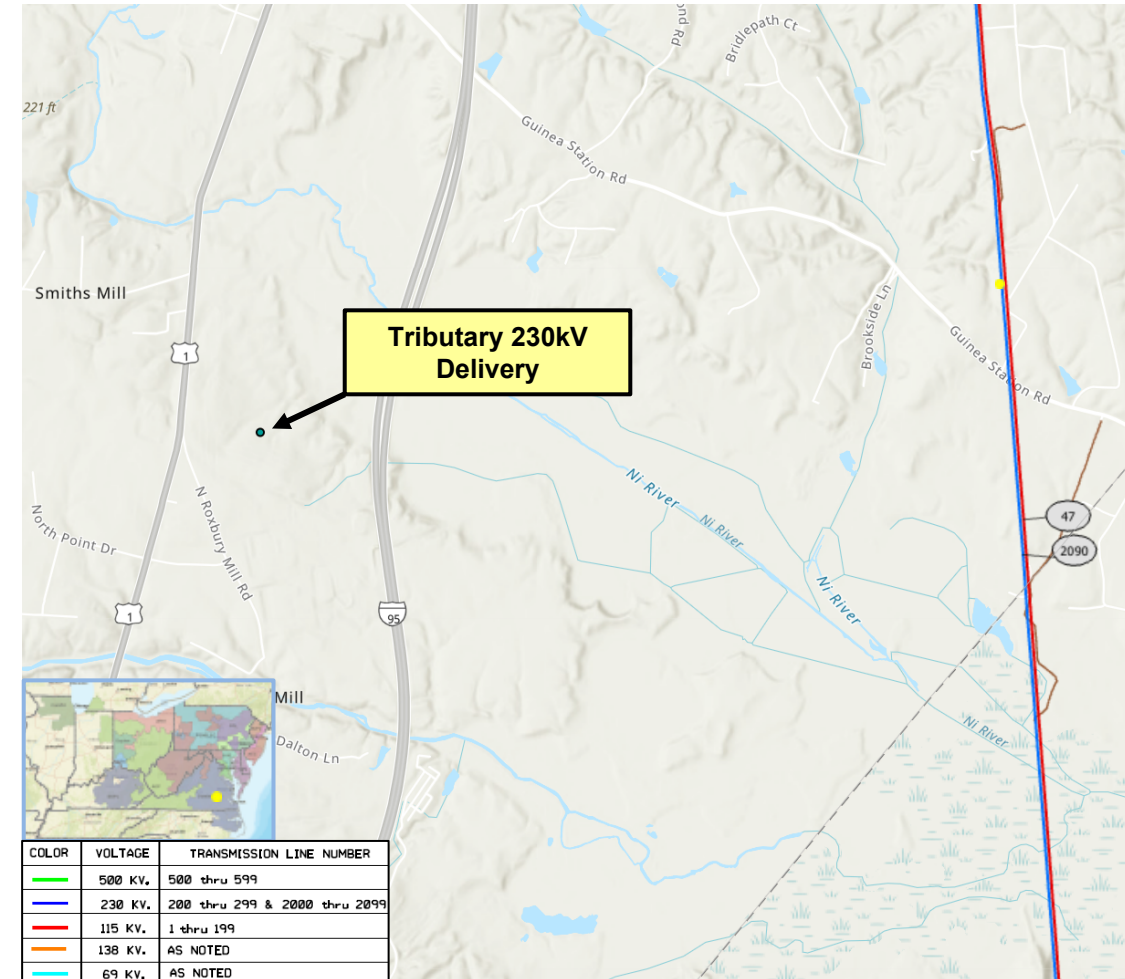
Specific Assumption References:

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

Problem Statement:

ODEC has submitted a DP request for a new 230 kV delivery point (Riverview Tributary) to serve a data center customer in Spotsylvania, VA with a total load in excess of 100 MW. Requested in-service date is ~~05/31/2025~~ 04/01/2027.

Initial In-Service Load	Projected 2028 Load
Summer: 7 MW Winter: 0 MW	Summer: 108 MW Winter: 108 MW



Dominion Transmission Zone: Supplemental Tributary 230kV Delivery - REC

Need Number: DOM-2024-0009

Process Stage: Solutions Meeting 06/05/2025

Proposed Solution:

- Construct Tributary 230 kV switching station with a 4-breaker ring bus configuration.
- Cut Line #2090 (New Post – Ladysmith CT) and extend double-circuit 230kV lines for approx. 2.4 miles to Tributary Switching Station.

Estimated Project Cost: \$32.3M (Total)

Transmission Line: \$20.6M

230kV Substation: \$11.7M

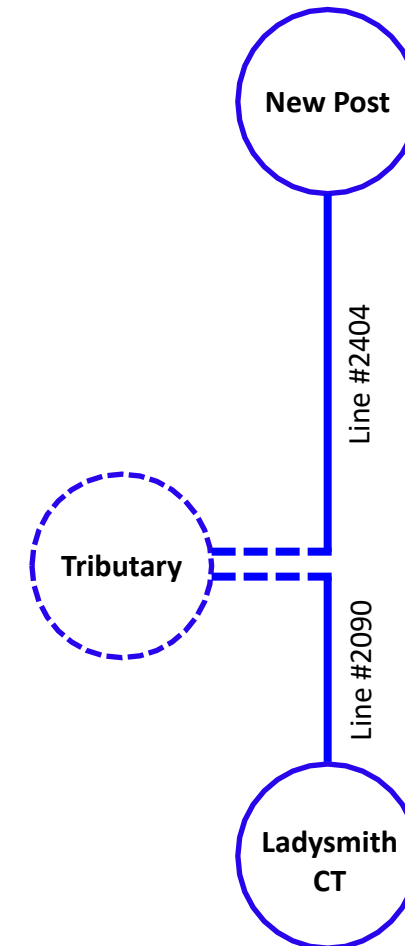
Alternatives Considered:

- No feasible alternatives.
 - Line #2090 is within the closest existing 230 kV transmission corridor to the proposed site.

Projected In-service Date: 04/01/2027

Project Status: Engineering

Model: 2028 RTEP



Dominion Transmission Zone: Supplemental Customer Load Request

Need Number: DOM-2023-0002

Process Stage: Solutions Meeting 06/05/2025

Previously Presented: Need Meeting 02/07/2023

Project Driver: Customer Service

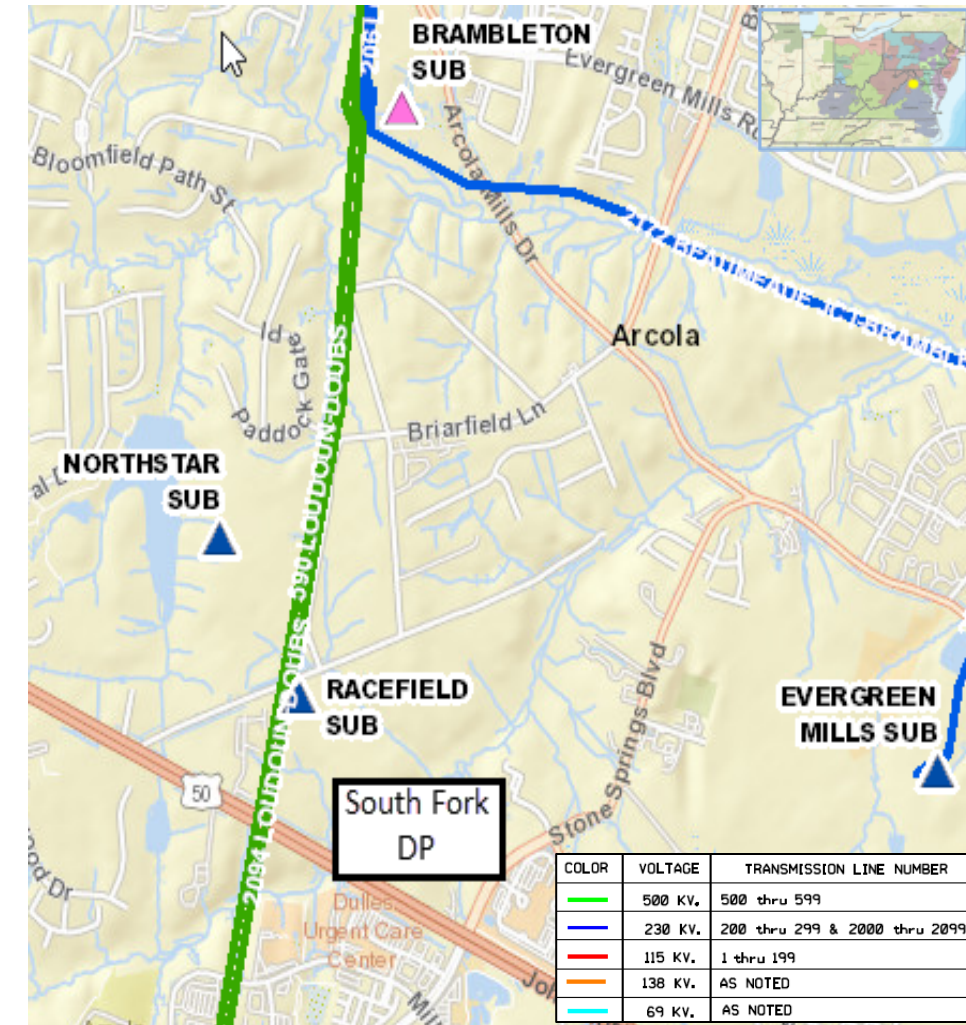
Specific Assumption References:

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

Problem Statement:

NOVEC has submitted a DP Request (South Fork) for a new substation (Reed Farm) in Loudoun County. Requested in-service date is 9/30/2026.

Initial In-Service Load	Projected 2029 Load
Summer: 34.9 MW Winter: 40.5 MW	Summer: 162.0 MW Winter: 124.0 MW



Dominion Transmission Zone: Supplemental South Fork 230kV Delivery - NOVEC

Need Number: DOM-2023-0002

Process Stage: Solutions Meeting 06/05/2025

Proposed Solution:

Interconnect the new substation by cutting and extending Line #2094 (Racefield - Loudoun) approximately 0.2 mile to the proposed Reed Farm Substation. Lines to terminate in a 230kV four-breaker ring arrangement with an ultimate arrangement of a six-breaker ring.

Estimated Project Cost: \$19.0M

Transmission Line: \$7.0M

230kV Substation: \$12.0M

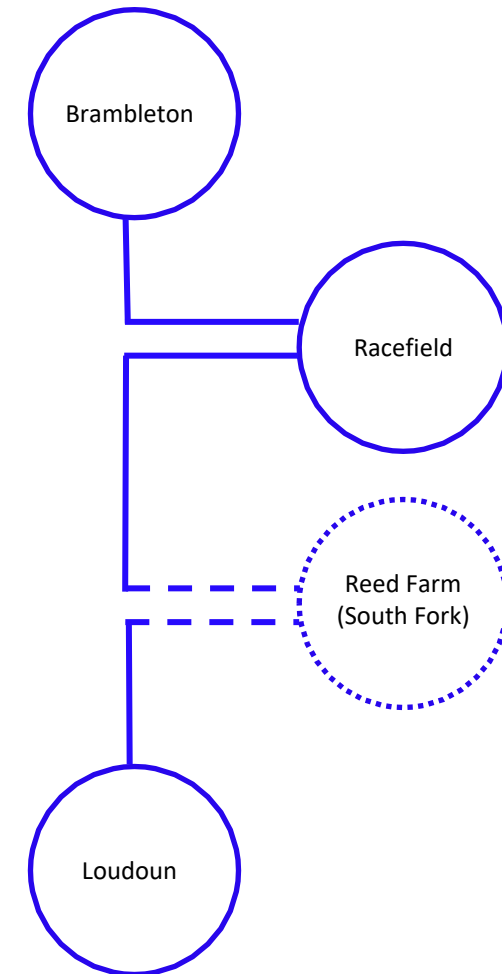
Alternatives Considered:

No feasible alternatives. Line #2094 is the closest source to the proposed site.

Projected In-service Date: 09/30/2026

Project Status: Engineering

Model: 2029 RTEP



Dominion Transmission Zone: Supplemental Operational Flexibility and Efficiency

Need Number: DOM-2024-0051

Process Stage: Solution Meeting 06/05/2025

Previously Presented: Need Meeting 08/06/2024

Project Driver: Operational Flexibility and Efficiency

Specific Assumption References:

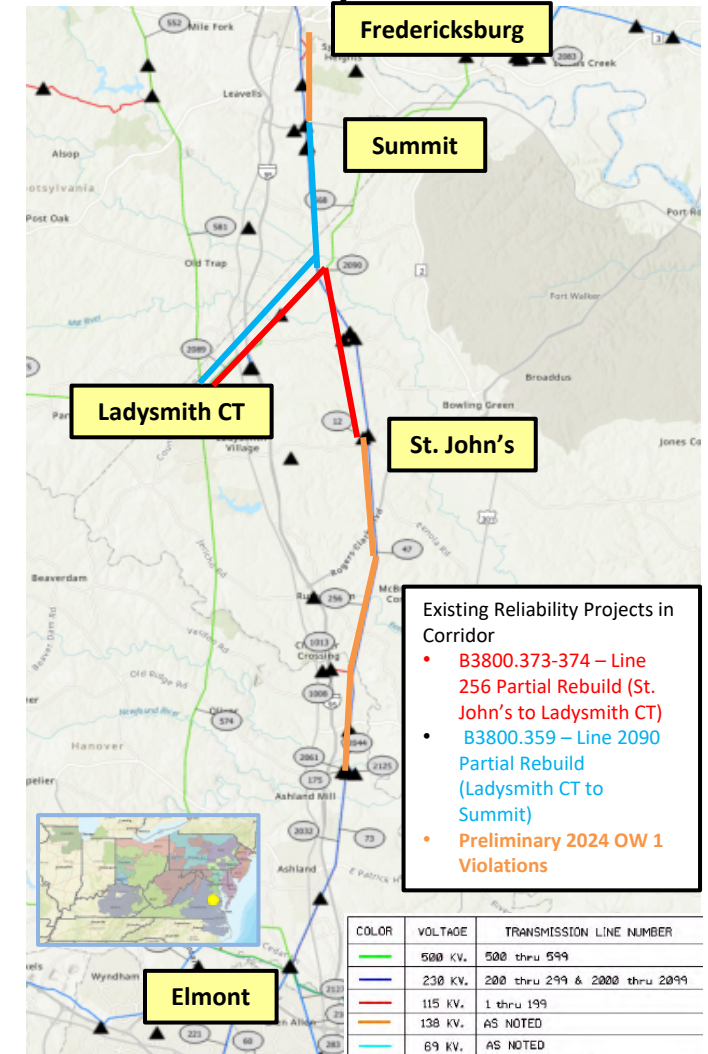
See details on Operational Flexibility and Efficiency in Dominion's Planning Assumptions presented in December 2023.

Problem Statement (page 1 of 2):

The Elmont to Fredericksburg corridor and points north have experienced significant growth, resulting in existing projects to address reliability violations on portions of Lines #256 (Ladysmith CT-Four Rivers) and #2090 (Ladysmith CT-Fredericksburg) as shown on the map. Further, it is anticipated that near-term End-of-Life upgrade projects, coupled with future reliability upgrades will impact most of the remaining corridor.

Additionally, Delivery Point Requests for nine new substations to serve data center load in the Elmont to Fredericksburg corridor have been submitted, as well as ten new substations to serve data center load in the Elmont to Chickahominy corridor. These are in various stages of evaluation/development. Load projections for the DP's currently indicate over 4900 MW of new load by year 2029, growing to over 6,800 MW by year 2032.

There is currently only one 230kV transmission source in the corridor from Elmont to Fredericksburg, along with one 115kV source that was recently rebuilt. Without diverse transmission sources to serve the new substations, it is anticipated that initial facility interconnections with the one 230kV transmission line will have to be reworked as additional transmission lines are required in the corridor to address new reliability violations.



Need Number: DOM-2024-0051

Process Stage: Solution Meeting 06/05/2025

Project Driver: Operational Flexibility and Efficiency

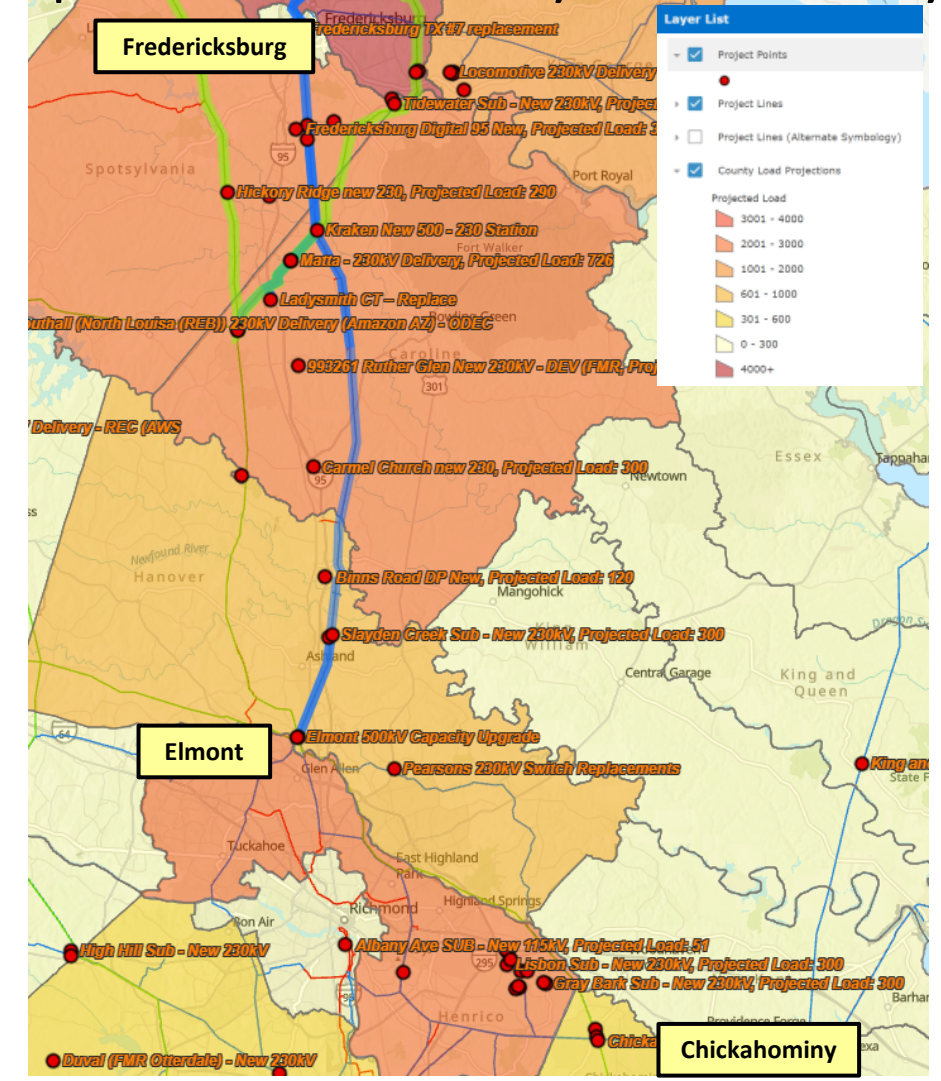
Specific Assumption References:

See details on Operational Flexibility and Efficiency in Dominion's Planning Assumptions presented in December 2023.

Problem Statement (page 2 of 2):

				MW	MW
		Initial Connect Date	Status	2029	2032
99#	Project name				
ELMONT TO FREDERICKSBURG					
993260	Tributary (Fmr - River View & LC Reidhill S	6/1/2025	DP	108	108
993185	New Post Sub	7/1/2025	DP	462	462
993217	Lee's Hill Sub (Hunter Ridge)	10/1/2025	DP	600	800
993272	Slayden Creek Sub	1/1/2026	DP	45	83
993261	Ruther Glen Sub (FMR Ladysmith)	3/2/2026	DP	338	548
993244	Carmel Church Sub	12/31/2026	DP	187	299
993092	Matta (FMR Thornburg Orrock Sub)	3/1/2027	DP	225	462
993273	Falling Creek Sub	1/1/2028	DP	92	210
993374	Babylon Sub	6/1/2028	DP	180	900
ELMONT TO CHICKAHOMINY					
993330	Thicket Sub	10/1/2027	DP	255	300
993329	Gray Bark Sub	7/1/2027	DP	300	300
993328	Saltwood Sub	7/1/2027	DP	300	300
993281	Bunker Sub	11/1/2027	DP	300	300
993390	Stockholm Sub	4/30/2027	DP	240	300
993391	Letterkenny Sub	7/30/2027	DP	240	300
993423	Oslo Sub	10/30/2028	DP	218	300
993424	Lisbon Sub	4/30/2028	DP	224	300
993364	Summerfield Sub	4/1/2028	DP	300	300
993365	Winterfield Sub	7/1/2028	DP	300	300

Dominion Transmission Zone: Supplemental Operational Flexibility and Efficiency



Need Number: DOM-2024-0051

Process Stage: Solution Meeting 06/05/2025

Project Driver: Operational Flexibility and Efficiency

Proposed Solution

1 – Previously presented Do No Harm supplemental project DOM-2023-0016, 0053, 0055, 2024-0012 will wreck and rebuild 230kV line 256/2032 (Kraken-Elmont) with double circuit structures and 115kV line #47 (Fredericksburg-Four Rivers) and line #73 (Four Rivers-Elmont) with double circuit structures.

2 – Install second 230kV conductor on both double circuit structures from Kraken to Elmont. Lines will not terminate at Elmont.

3 – Install 230kV conductor on open arms of existing 230kV Line #2075 from Elmont to Chickahominy

4 – Install 230kV conductor on 500kV Line #557 5/2 structures being rebuilt under 2021 Open Window End of Life project b3692.

5 – Final configuration will be two new 230kV circuits from Kraken-Chickahominy

Alternatives Considered: None, in existing ROW

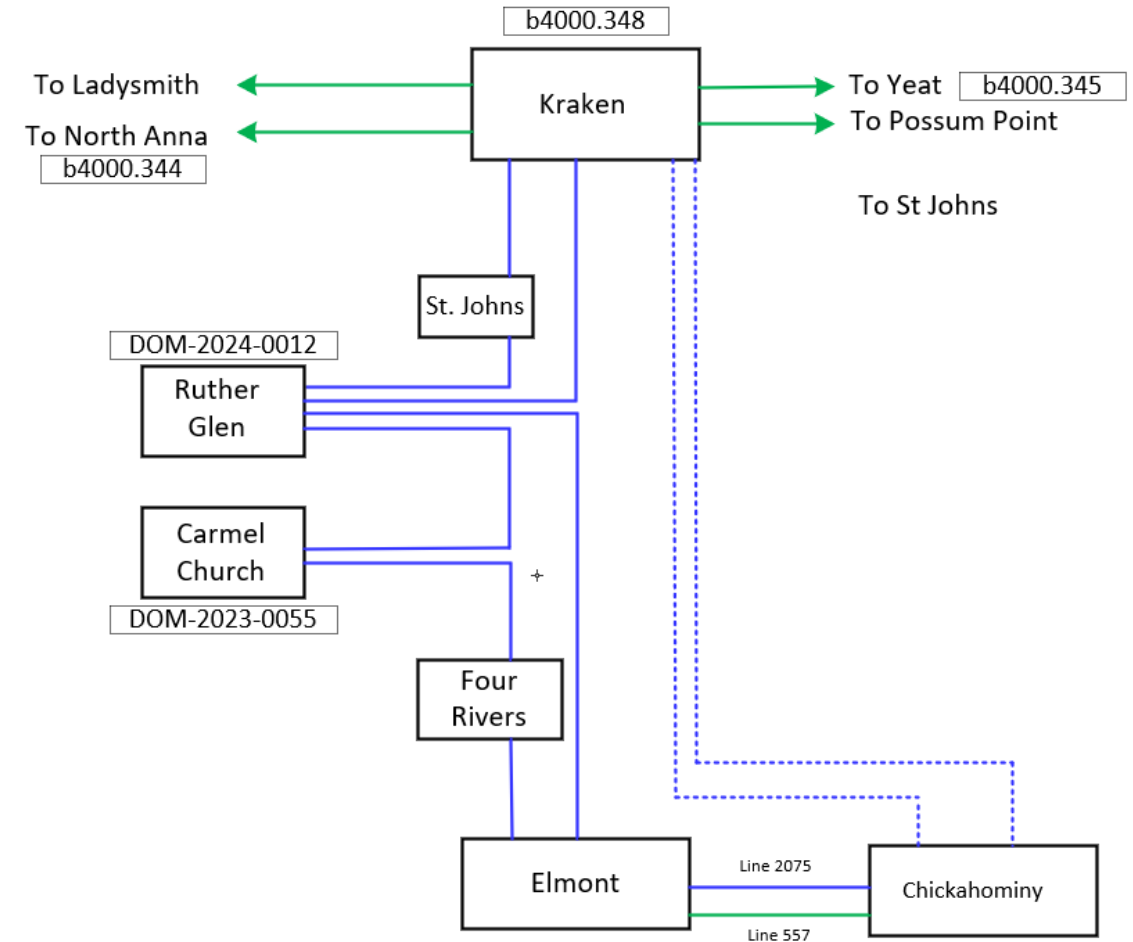
Estimated Cost: \$108M

Projected In-Service Date: 12/31/2030

Project Status: Conceptual

Model: 2029 RTEP

Dominion Transmission Zone: Supplemental Operational Flexibility and Efficiency



Appendix

High level M-3 Meeting Schedule

Assumptions

Activity	Timing
Posting of TO Assumptions Meeting information	20 days before Assumptions Meeting
Stakeholder comments	10 days after Assumptions Meeting

Needs

Activity	Timing
TOs and Stakeholders Post Needs Meeting slides	10 days before Needs Meeting
Stakeholder comments	10 days after Needs Meeting

Solutions

Activity	Timing
TOs and Stakeholders Post Solutions Meeting slides	10 days before Solutions Meeting
Stakeholder comments	10 days after Solutions Meeting

Submission of Supplemental Projects & Local Plan

Activity	Timing
Do No Harm (DNH) analysis for selected solution	Prior to posting selected solution
Post selected solution(s)	Following completion of DNH analysis
Stakeholder comments	10 days prior to Local Plan Submission for integration into RTEP
Local Plan submitted to PJM for integration into RTEP	Following review and consideration of comments received after posting of selected solutions

Revision History

05/23/2025 – V1 – Original version posted to pjm.com