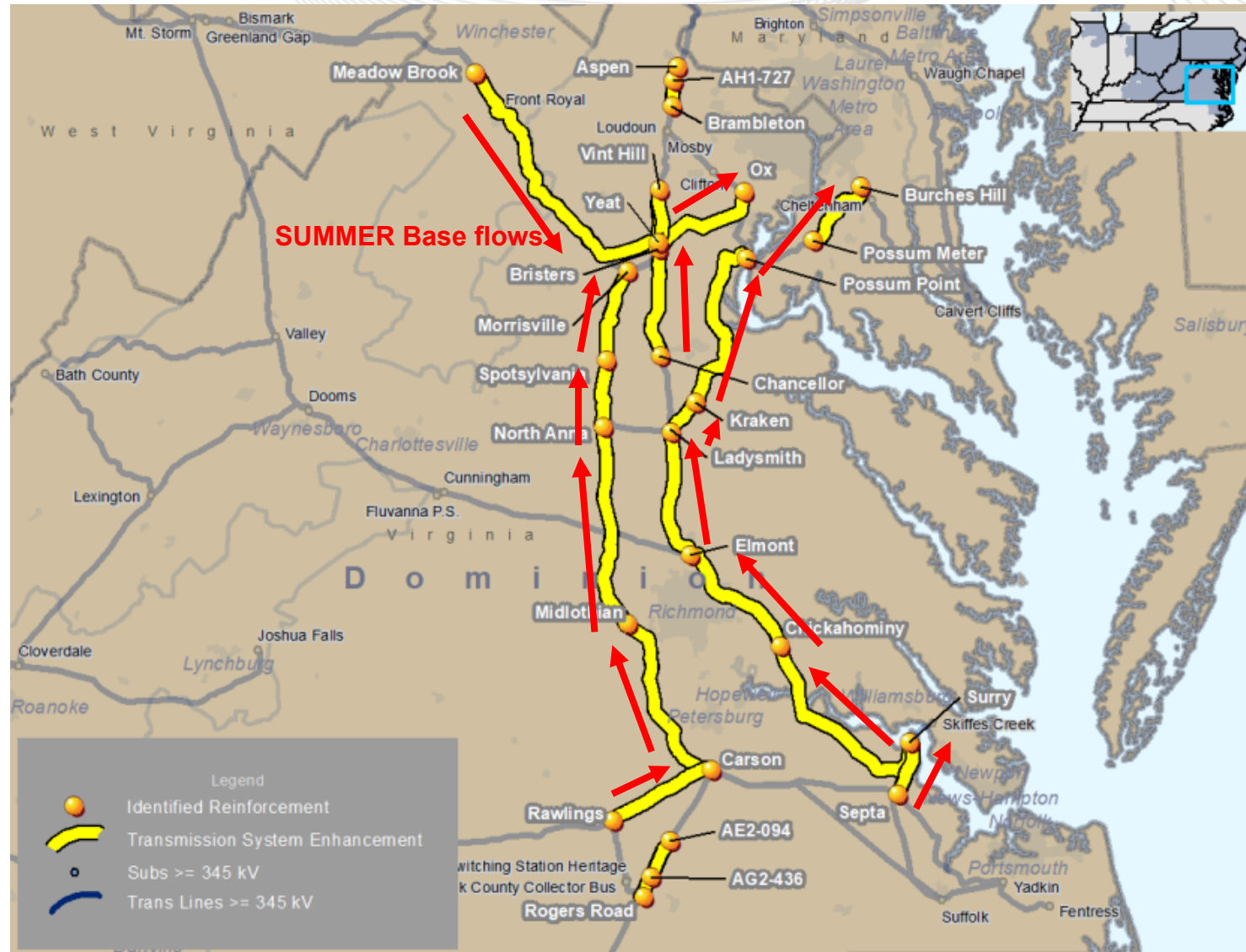


Southern Cluster

- The Dominion area is experiencing multiple 500kV violations along its primary South - North corridor in 2032.
 - Violations are predominantly being driven by:
 - Additional generation added in the south that is flowing to the load centers in northern VA (NOVA).
 - Increases in load with a heavier concentration in the NOVA area.
 - Further increase in PJM load overall – currently, an increase in data center load external to Dominion (PPL zone).
 - These needs require long-lead, backbone enhancements requiring more than 5 years to develop.

- The 2032 case is showing the need to reinforce the southern 500 kV transmission backbone.
 - This 500 kV corridor includes multiple South - North 500kV elements.
 - The southern transmission backbone will support the transfer of resource capacity from the southern edge of the PJM system into the Northern VA and help balance flows between West - East and South - North.
- 230 kV transmission lines: Chesterfield – Basin & Chesterfield – Hopewell will be addressed as part of the 2030 set of violations.



All proposals submitted to address Dominion 2032 regional flows recommend 765 kV, 500kV or HVDC developments:

All proposals offer additional south to north paths to transfer power from planned generation in the south to load centers in the north.

- 4 Dominion proposals recommend a +/- 525 kV HVDC link variants from Heritage to Mosby.
- Multiple proposals offer 765 kV developments with one or more lines heading to the Morrisville area.
- A couple of proposals focus on 500 kV developments with some additional 230kV reinforcements in the northern Virginia area.

Dominion Regional Cluster Proposals – 2032			
Proposing Entity	Proposal ID	High Level Description	Total Cost (\$ M)
Dominion	2025-W1-275 (1A - HVDC)	• New HVDC Transmission Link from Heritage to Mosby (~185 miles), new 500kV line Elmont-Kraken, various 500kV rebuilds, new 765/500kV switching station & various substation equipment upgrades.	\$4819.51
Dominion	2025-W1-326 (1B - HVDC)	• New HVDC Transmission Link from Heritage to Mosby (~185 miles), new 500kV line Chickahominy-Kraken, new 500kV line Skiffes Creek-Chickahominy, various 500kV rebuilds, new 765/500kV switching station & various substation equipment upgrades.	\$5009.03
Dominion	2025-W1-547 (1C - HVDC)	• New HVDC Transmission Link from Heritage to Mosby (~185 miles), new 500kV line Vontay-Kraken, various 500kV rebuilds, new 765/500kV switching station & various substation equipment upgrades.	\$4904.5
Dominion	2025-W1-352 (1D - HVDC)	• New HVDC Transmission Link from Heritage to Mosby (~185 miles), new 500kV line North Anna-Vontay, various 500kV rebuilds, new 765/500kV switching station & various substation equipment upgrades.	\$5013.97
Dominion	2025-W1-705 (2A – 765kV)	• New 765kV line from Heritage to Yeat (~152 miles), new 500kV line Chickahominy-Kraken, new 500kV line Skiffes Creek-Chickahominy, various 500kV rebuilds, new 765/500kV switching station & various substation equipment upgrades.	\$2864.73
Dominion	2025-W1-848 (2B – 765kV)	• New 765kV line from Heritage to Yeat (~152 miles), new 500kV line Vontay-Kraken, various 500kV rebuilds, new 765/500kV switching station & various substation equipment upgrades.	\$2969.05
Dominion	2025-W1-352 (2C – 765kV)	• New 765kV line from Heritage to Yeat (~152 miles), various 500kV rebuilds & various substation equipment upgrades.	\$2273.85
Dominion	2025-W1-616 (3A – 616)	• New 500kV line from Heritage-Morrisville, new 500kV line Finneywood-Cunningham, new 500kV line Morrisville-Cunningham, various 500kV rebuilds, new 765/500kV switching station & various substation equipment upgrades.	\$2349.26
Transource	2025-W1-331 (2-765kV)	• Construct Bagpipe 765kV, Vontay 765kV, Durandal 765/500kV, Starfruit 765/230kV, Lodi 765/500kV, and Kaladin 500/230kV substations. Construct Bagpipe-Vontay, Joshua Falls-Durandal 765kV, Durandal-Starfruit 765kV, Starfruit-Lodi 765kV, Lodi-Cunningham 500kV, Lodi-Kaladin 500kV, Kaladin-North Anna 500kV, and Kaladin-Morrisville 500kV lines.	\$2895.32
Transource	2025-W1-781 (1-765kV)	• Construct Durandal 765/500kV, Starfruit 765/230kV, Lodi 765/500kV & Kaladin 500/230kV substations. Construct Joshua Falls-Durandal 765kV, Durandal-Starfruit 765kV, Starfruit-Lodi 765kV, Lodi-Cunningham 500kV, Lodi-Kaladin 500kV, Kaladin-North Anna 500kV, and Kaladin-Morrisville 500kV lines.	\$1986.45
TRAIL	2025-W1-938 (765kV)	• New Lea Anna 765 kV, Ladysmith 765 kV, Rogers Rd 765 kV, Centerville Rd 765 kV, Perkins Rd 765 kV, Creekward 500 kV Switchyards, substation expansions at the following locations: Bristers 500 kV, Morrisville 500 kV, Rogers Rd 500 kV, Carson 500 kV, new substations at the following locations: Bristers 765/500 kV, Morrisville 765/500 kV, Lea Anna 765/500 kV, Ladysmith 765/500 kV, Rogers Rd 765/500 kV, Perkins Rd 765/500 kV, new transmission lines: Lea Anna - Ladysmith 765 kV, Ladysmith - Bristers 765 kV, Lea Anna - Morrisville 765 kV, Centerville Rd - Rogers Rd 765 kV, Rogers Rd - Perkins Rd 765 kV, Perkins Rd - Lea Anna 765 kV, Carson - Creekward 500 kV Line & relay setting revisions at Ladysmith	\$3426.93
LS Power	2025-W1-260 (500kV)	• New 765/500kV Middle Fork, 500kV South Fork and 500kV Turkey Creek Substations, Substation expansions at the following locations: Warrenton, Wheeler, Brickyard, Vint Hill, Cunningham, Morrisville, Rawlings, Carson Expansion, new 500kV lines: Front Royal - Vint Hill, Cunningham - Middle Fork #1 & #2, Middle Fork - Morrisville #1 & 2 and Rawlings - South Fork.	\$2207.36

- All HVDC proposals have similar configuration and cost.
- All 765 kV solutions follow similar routes (reinforcing South - North) corridor and will require heavy greenfield development.
- 500 kV option(s) considered in view of offered capacity vs ROW greenfield impact introduced by 765kV developments.
- Narrow down and consequently shortlist a front runner HVDC option and HVAC option for final evaluation/selection (shortlist).

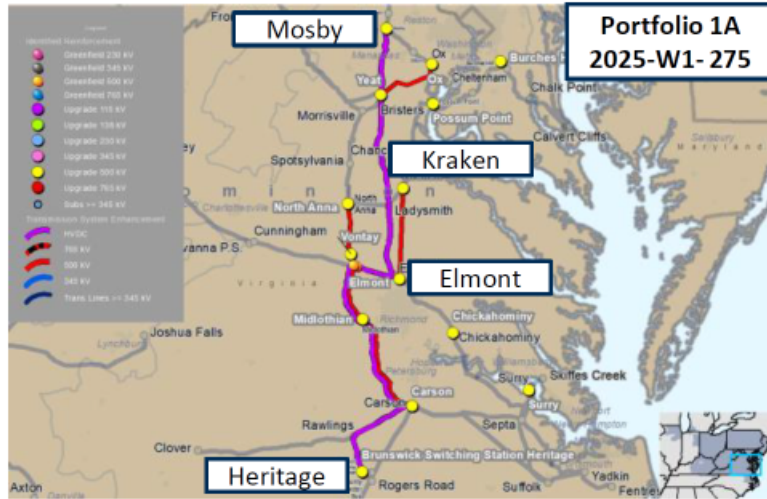
Portfolio/ Combination #	Entity	2032 Base Performance	2032 S4 + PPL Load	Cost \$	Notes
275 (1A-HVDC)	Dominion	0 - 500kV violations > 100% 2 - 500 kV loadings > 90%	0 - 500kV violations > 100% 3 - 500 kV loading > 90%	\$4,820	
326 (1B-HVDC)	Dominion	0 - 500kV violations > 100% 0 - 500 kV loading > 90%	N/A	\$5,009	
547 (1C-HVDC)	Dominion	0 - 500kV violations > 100% 1 - 500 kV loading > 90%	N/A	\$4,905	
352 (1D-HVDC)	Dominion	0 - 500kV violations > 100% 2 - 500 kV loadings > 90%	N/A	\$5,014	
705 (2A-765kV)	Dominion	0 - 500kV violations > 100% 2 - 500 kV loadings > 90%	1 - 500kV violation > 100% 2 - 500 kV loading > 90%	\$2,865	
848 (2B-765kV)	Dominion	0 - 500kV violations > 100% 2 - 500 kV loadings > 90%	0 - 500kV violations > 100% 2 - 500 kV loading > 90%	\$2,969	
474 (2C-765kV)	Dominion	1 - 500kV violation > 100% 1 - 500 kV loading > 90%	N/A	\$2,274	
616 (3-500kV)	Dominion	0 - 500kV violations > 100% 1 - 500 kV loading > 90%	0 - 500kV violations > 100% 3 - 500 kV loading > 90%	\$2,349	
260	LS Power	6 - 500kV violations > 100% 2 - 500 kV loadings > 90%	N/A	\$2,207	
331 (2-765kV)	Transource	0 - 500kV violations > 100% 2 - 500 kV loadings > 90%	3 - 500kV violation > 100% 2 - 500 kV loading > 90%	\$2,895	500kV LN #574 Elmont - Ladysmith currently being reconductored to 4330 MVA (b3020). Loaded to ~97% under single contingency in 2032 Base. Overloaded in S4+PPL Load scenario: ~102%.
781 (1-765kV)	Transource	6 - 500kV violations > 100% 4 - 500 kV loadings > 90%	N/A	\$1,986	
938	Trail	7 - 500kV violations > 100%	N/A	\$3,427	

Note: Unique monitored EHV lines in Dominion only

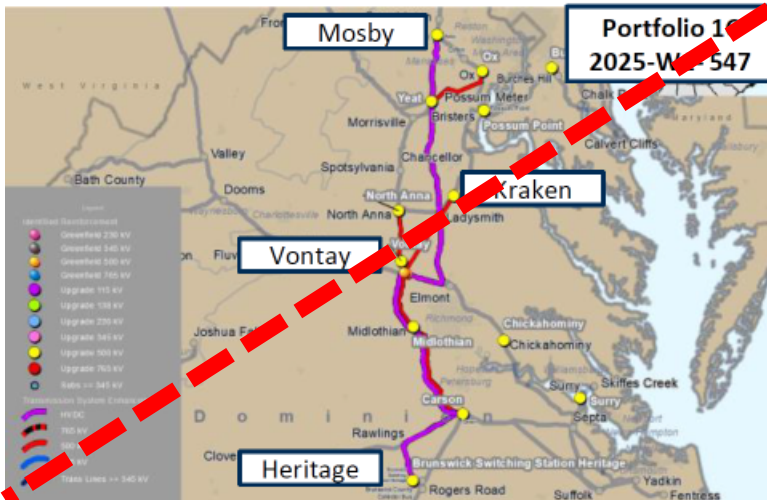
2025W1 Dominion Area (Preliminary Regional Short-List)

Dominion – HVDC

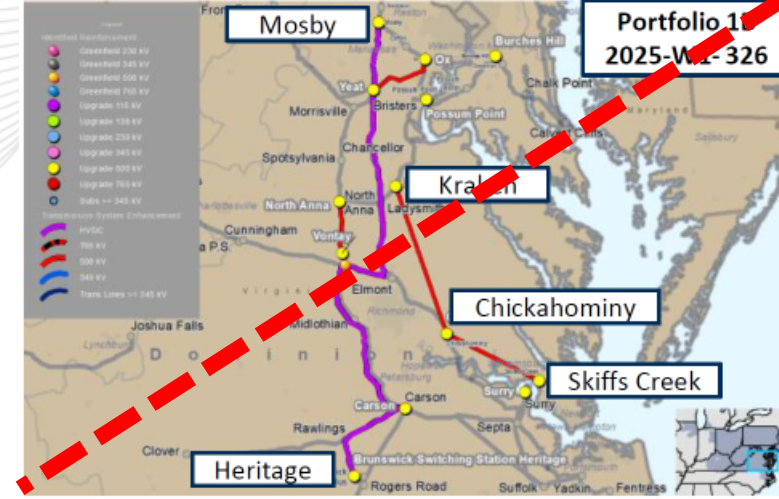
Portfolio 1A -- 2025-W1-275
\$4819.51 M



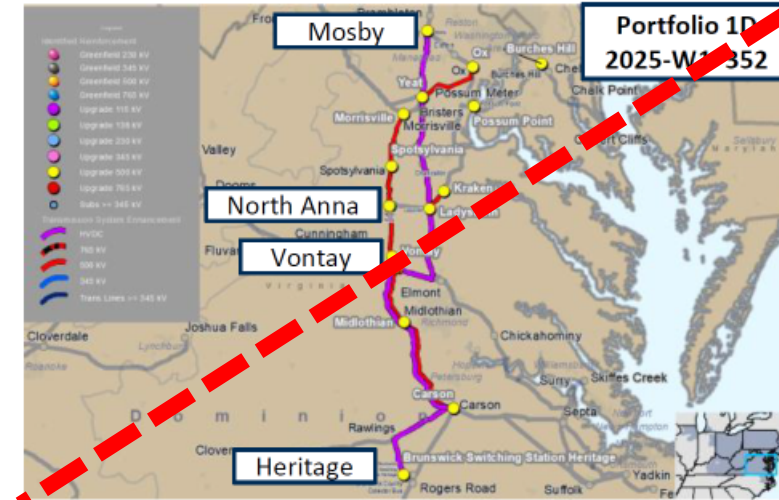
Portfolio 1C -- 2025-W1-547
\$4904.50 M



Portfolio 1B -- 2025-W1-547
\$5009.03 M



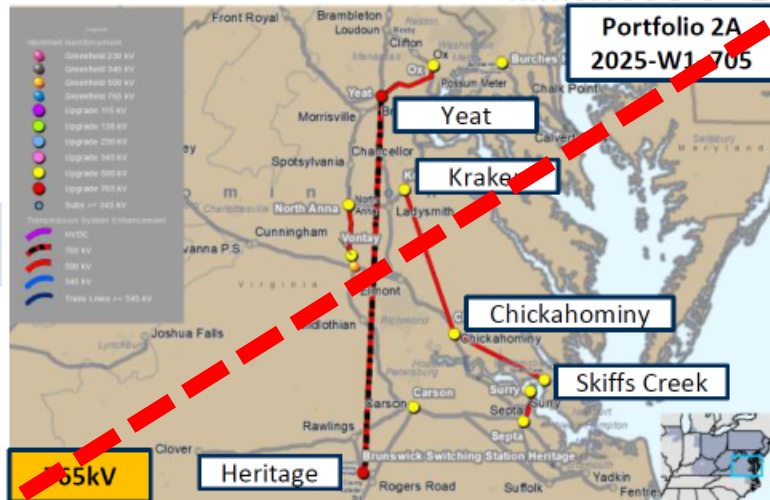
Portfolio 1D -- 2025-W1-352
\$5013.97 M



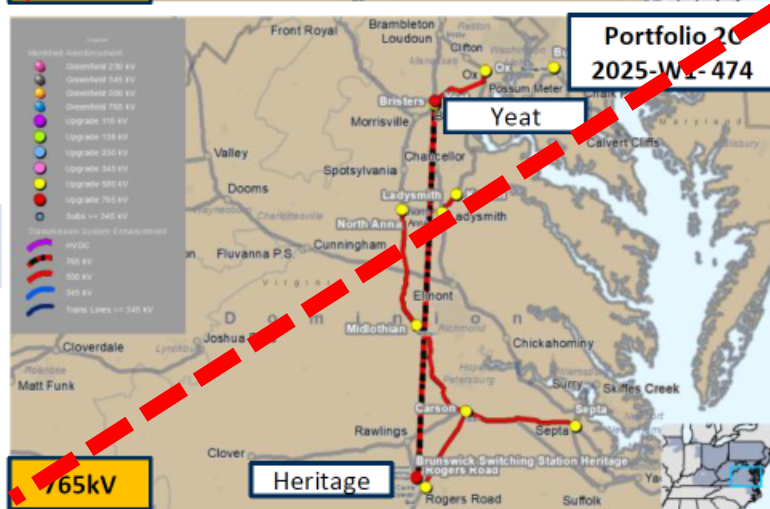
2025W1 Dominion Area (Preliminary Regional Short-List)

Dominion HVAC Solutions – 765kV & 500kV

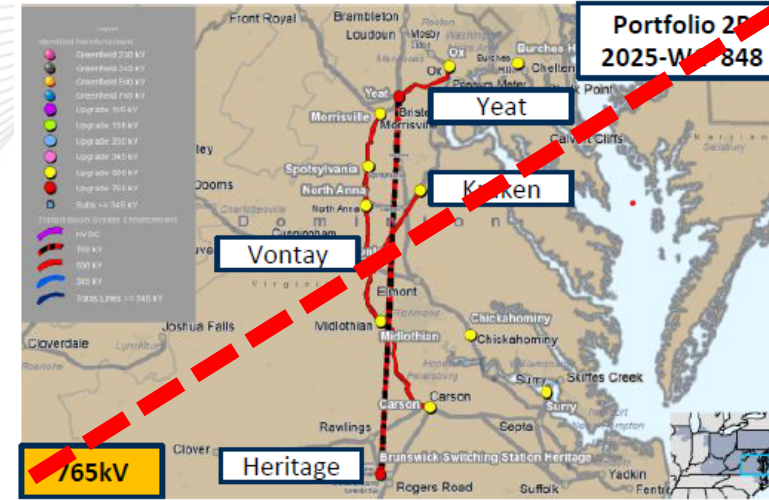
Portfolio 2A -- 2025-W1-705
\$2864.73 M



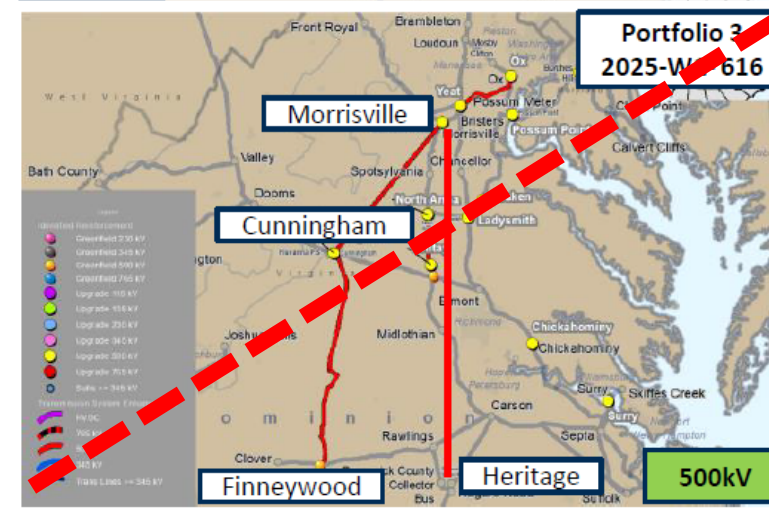
Portfolio 2C -- 2025-W1-474
\$2273.85 M

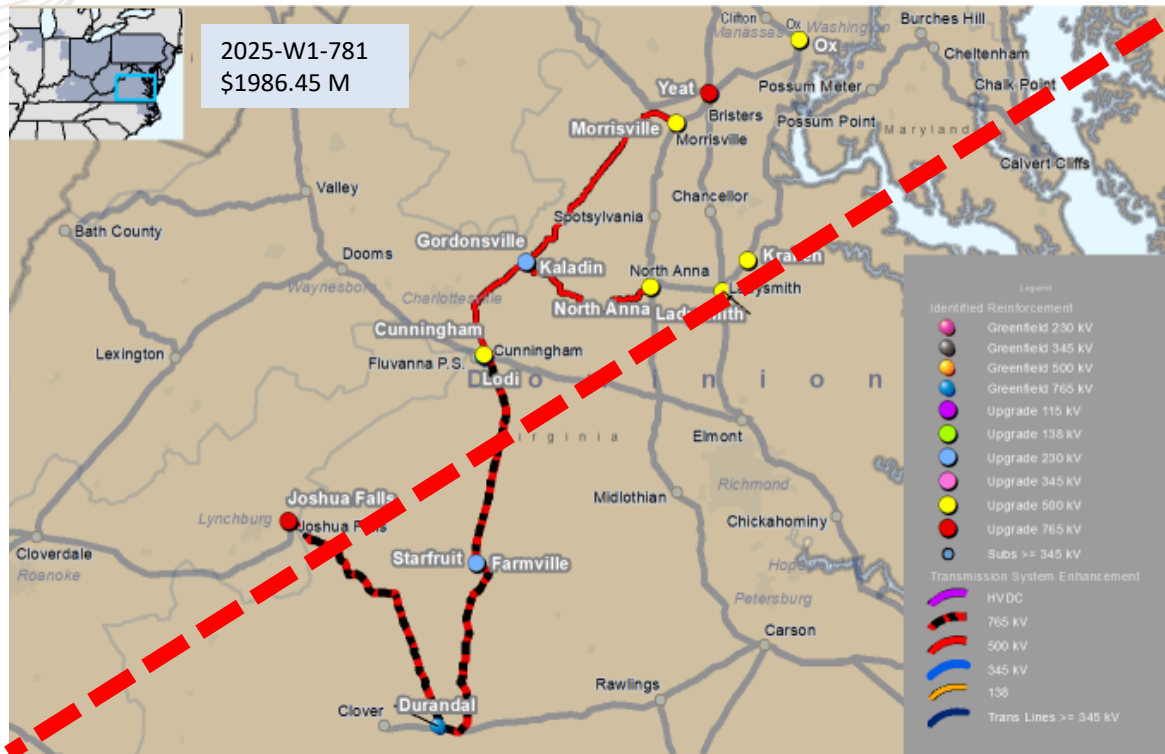
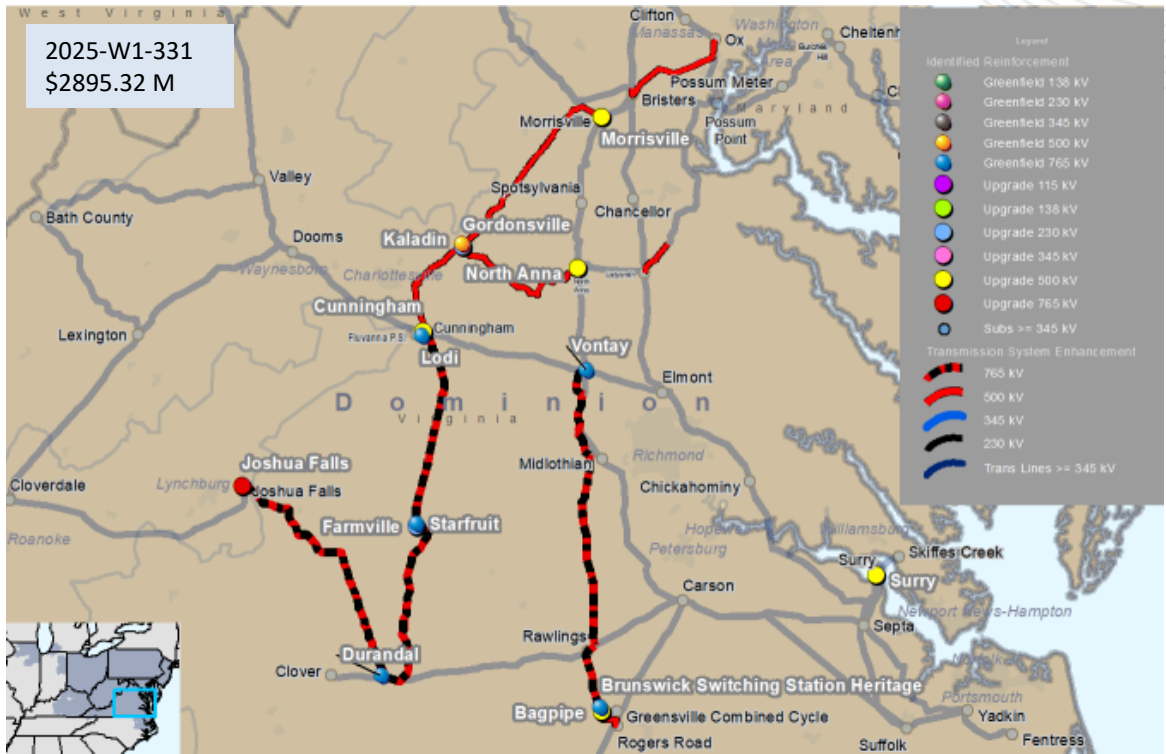


Portfolio 2B -- 2025-W1-848
\$2969.05 M



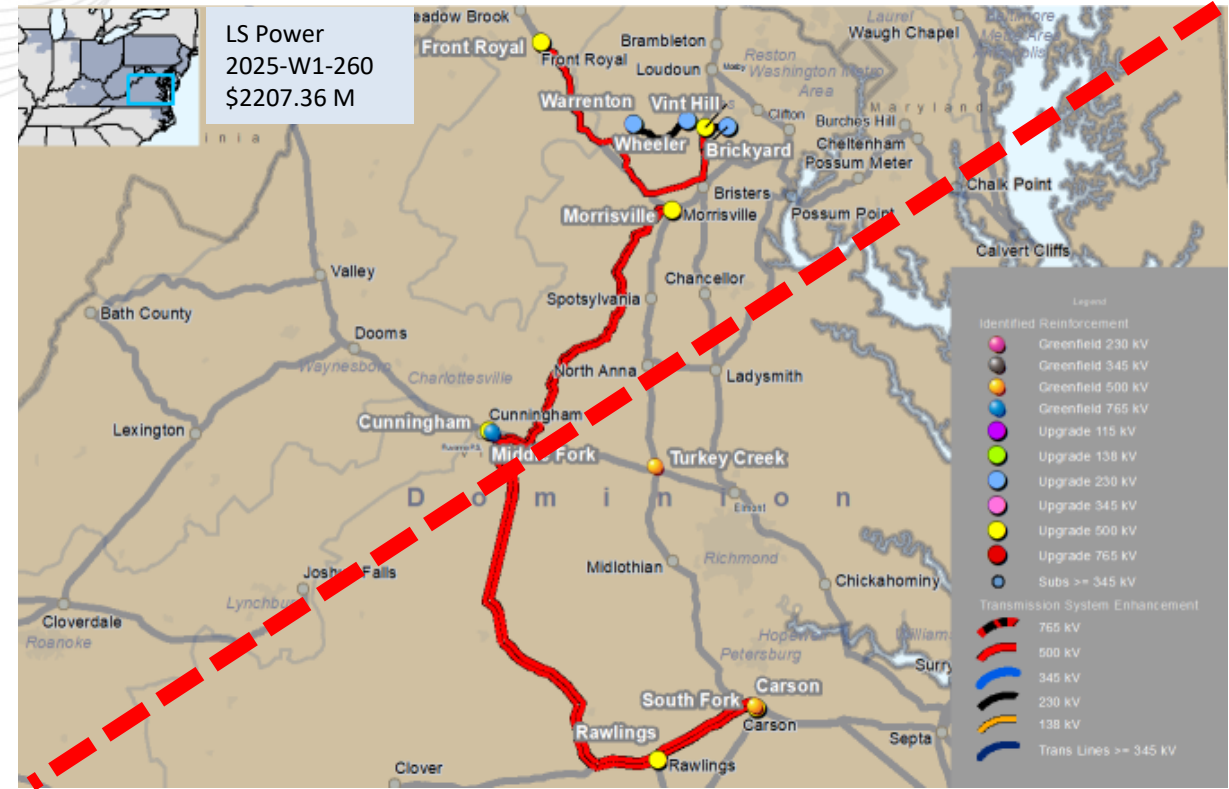
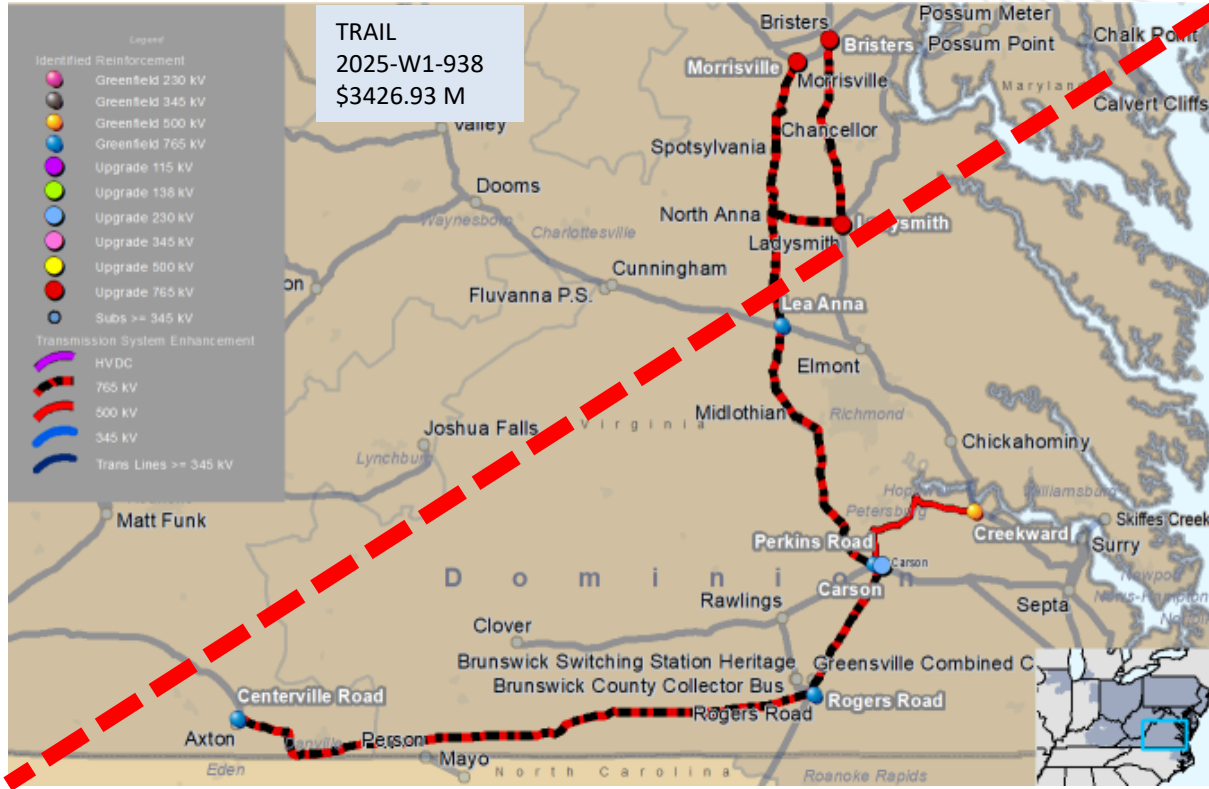
Portfolio 3 -- 2025-W1-616
\$2349.26 M





2025W1 Dominion Area (Preliminary Regional Short-List)

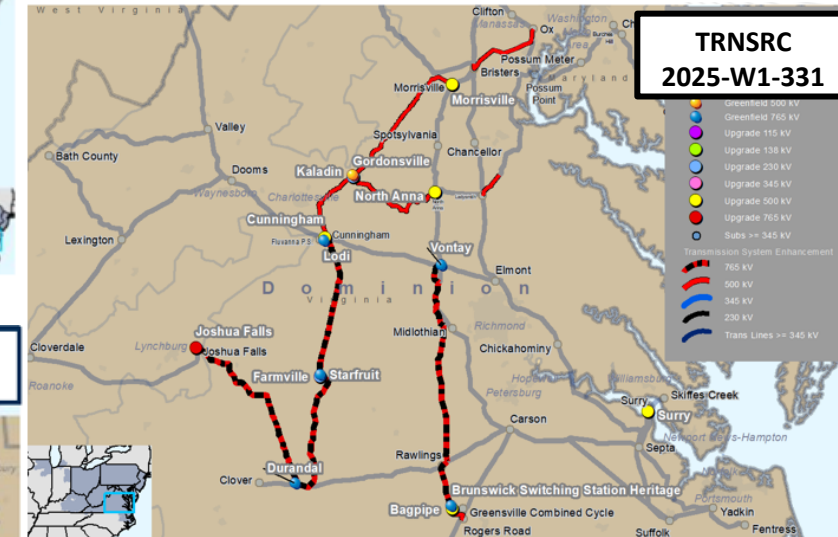
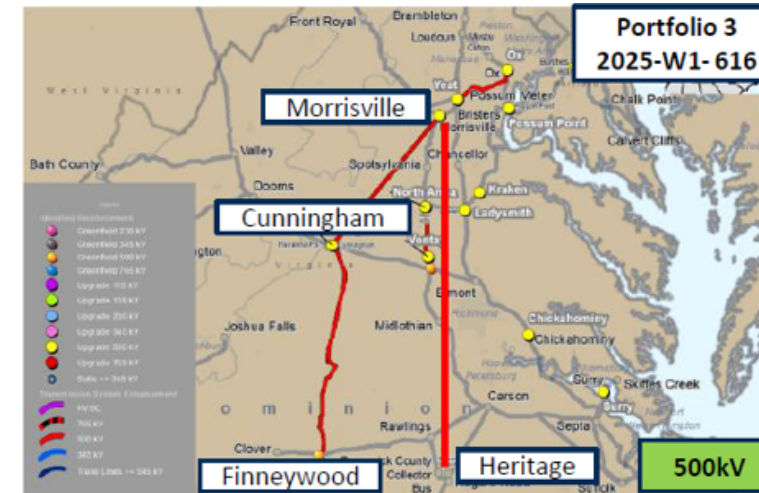
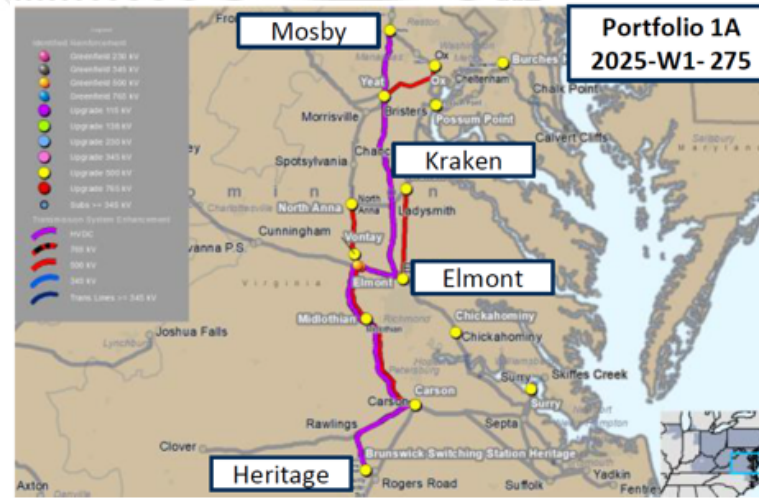
TRAIL & LS Power



- All shortlisted proposals offer additional backbone paths from southern Dominion “towards” the Morrisville 500 kV Station
 - Direct path to connect generation in the south to the load center in the north
- While all preliminary short-listed proposals meet the posted need (at varying degrees), some offer more complete and even additional benefits / robustness merits such as;
 - Direct injection of power closer to the data center alley area in Northern Virginia
 - More operational flexibility between north and south transfers
 - Minimizing short circuit issues that are already present in Dominion
 - Higher transfer capability from south to north

Focusing on Short-listed proposals offering “similar” Transfer-Capability merits

- Proposal 275 provides for a +/- 525 kV HVDC link from Heritage in the south to a termination point further north of Morrisville at Mosby.
 - A new 500kV line from Elmont to Kraken is also part of the proposal.
- Proposal 331 provides for another 765kV source from AEP (Joshua Falls) to a station called Durandal in Dominion before heading north towards Cunningham and stepping down to a 500kV line as it heads towards Morrisville.
 - An additional 765kV line development is also part of the proposal starting around Heritage and terminating at Vontay.
 - A couple of additional Dominion upgrades added to the scope.
- Proposal 616 offers 2 new 500kV line reinforcements with additional 500kV upgrades.
 - Finneywood – Cunningham – Morrisville
 - Heritage – Morrisville



- Sink Definition

Sub System	Sink A
DOM1 (NOVA area)	100%

- Source Definition
(West/South)

Source 1	Source 2
50%/50%	0%/100%

