

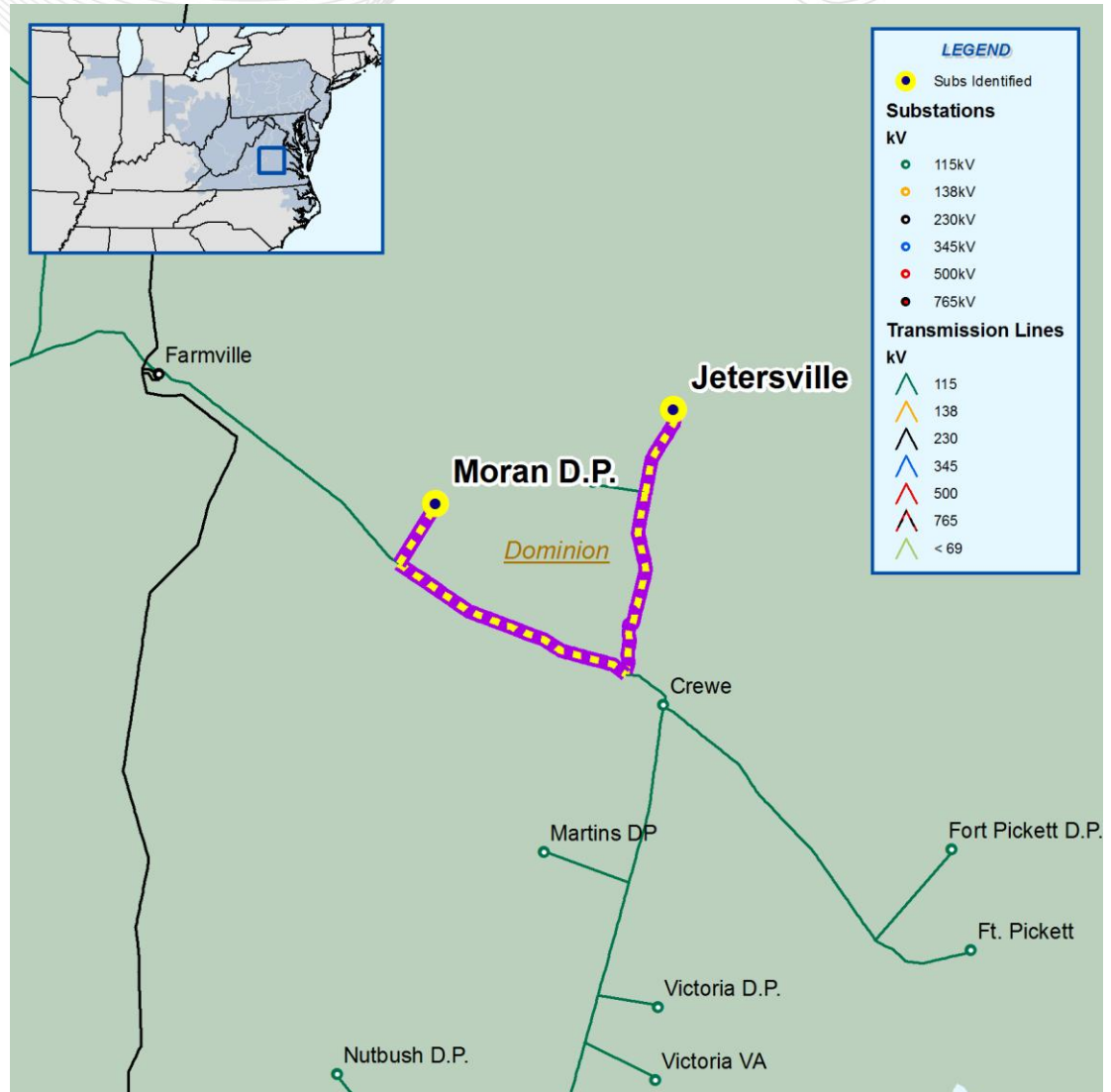
A large, white, lattice-structured transmission tower stands prominently against a clear, bright blue sky. Several high-voltage power lines are visible, extending from the tower towards the top corners of the frame. The tower's structure is a complex network of interconnected beams forming a wide, flat top section.

Transmission Expansion Advisory Committee Sub-Regional RTEP Projects

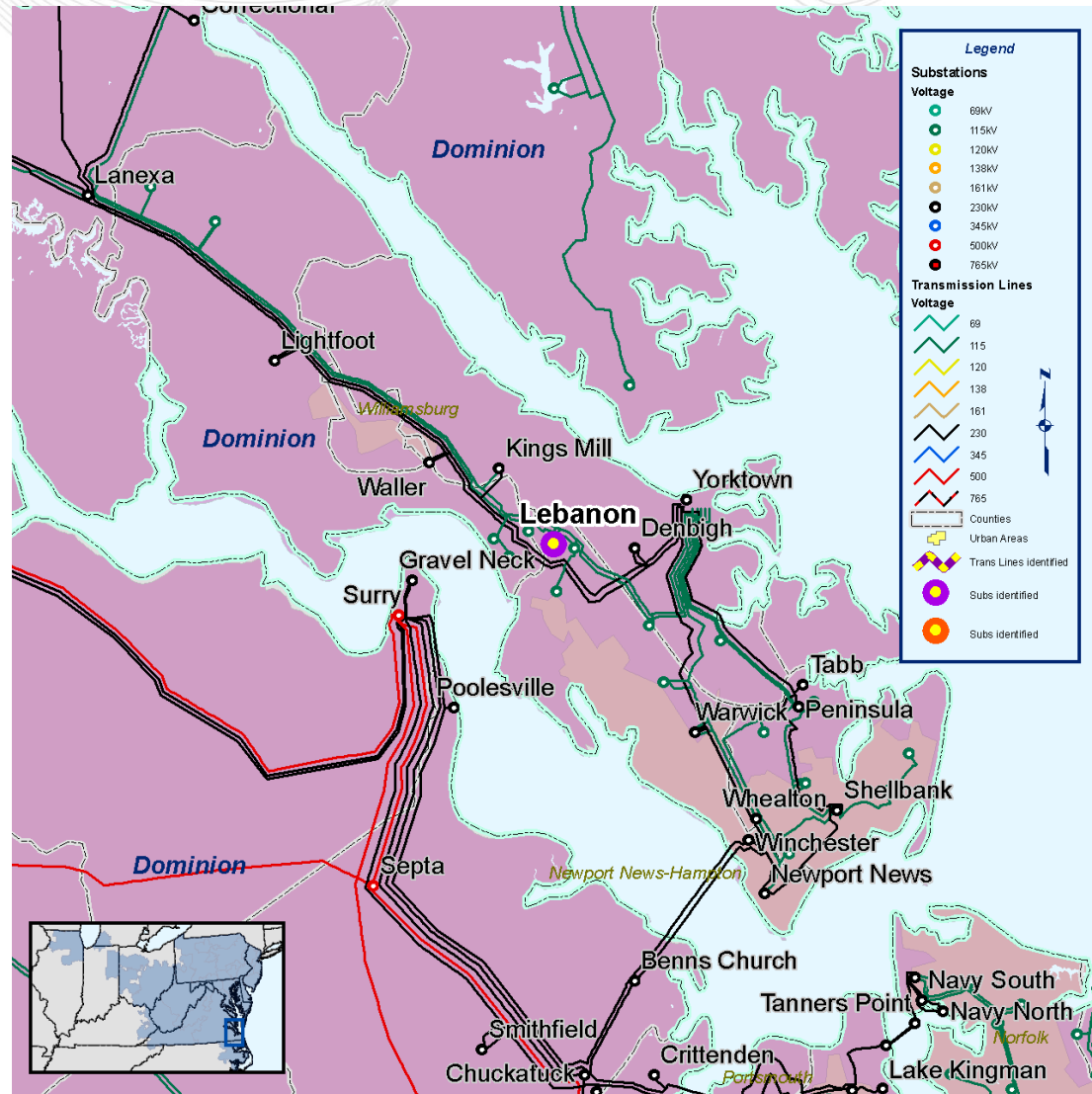
October 20, 2009

Baseline Reliability Update

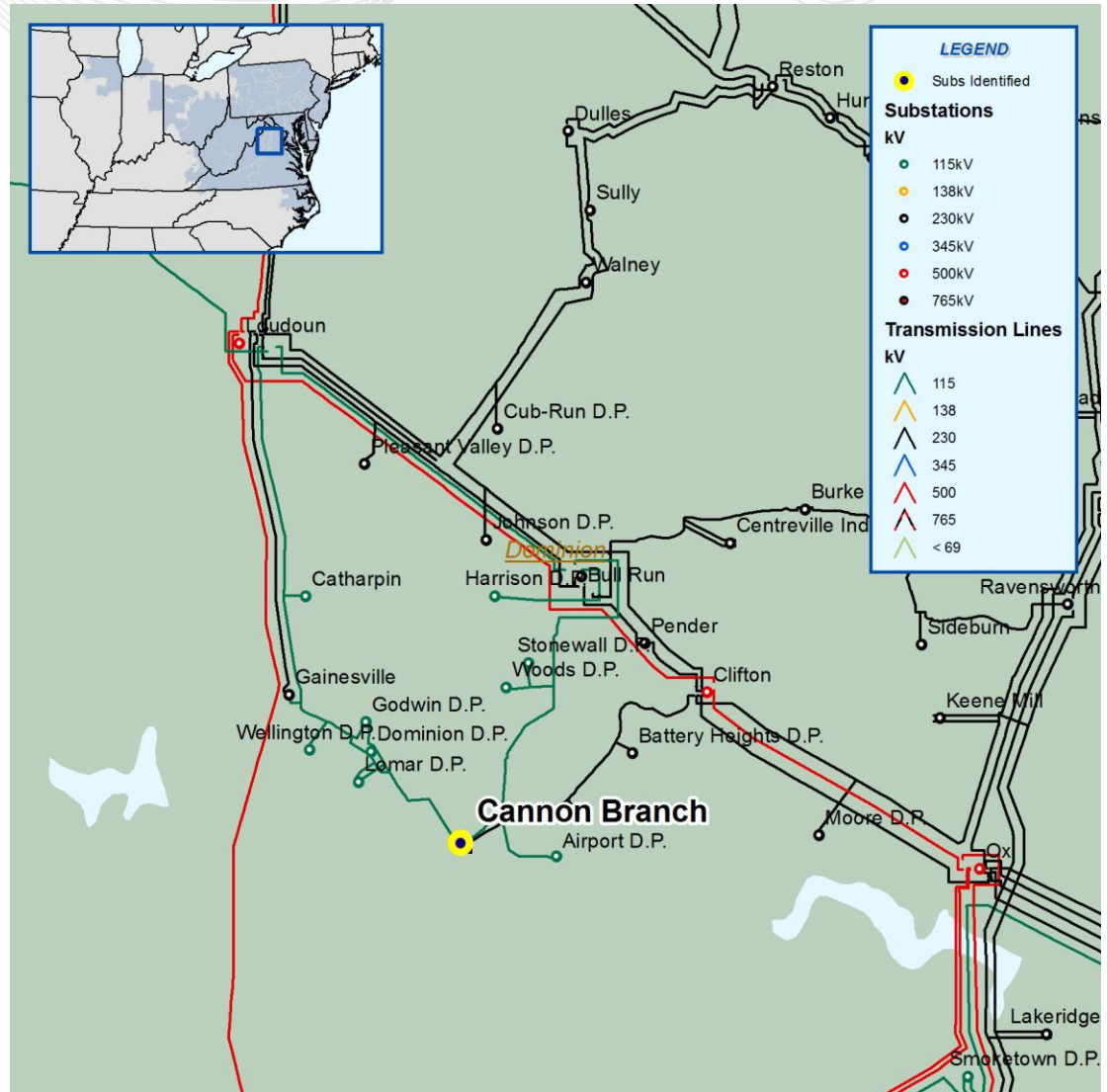
- Baseline Project b0330
- Jetersville – Moran 115 kV overloads for the outage of Gen 1 at Jetersville 115 kV
- Proposed solution: Install breaker at Crewe 115 kV and shift load from line 158 to line 98
- Estimated cost: \$0.5 M
- Expected IS date: June 2011
- Project cancelled due to other projects in the area



- Loss of the Yorktown to Lanexa 115 kV line results in low voltage at Grafton and Lebanon
- Solution: Install 29.7 MVAR capacitor at Lebanon (b0778)
- Previous IS date: 5/1/2012
- New IS date: 5/1/2018
- Lower load forecast
- Estimated Cost: \$0.5 M

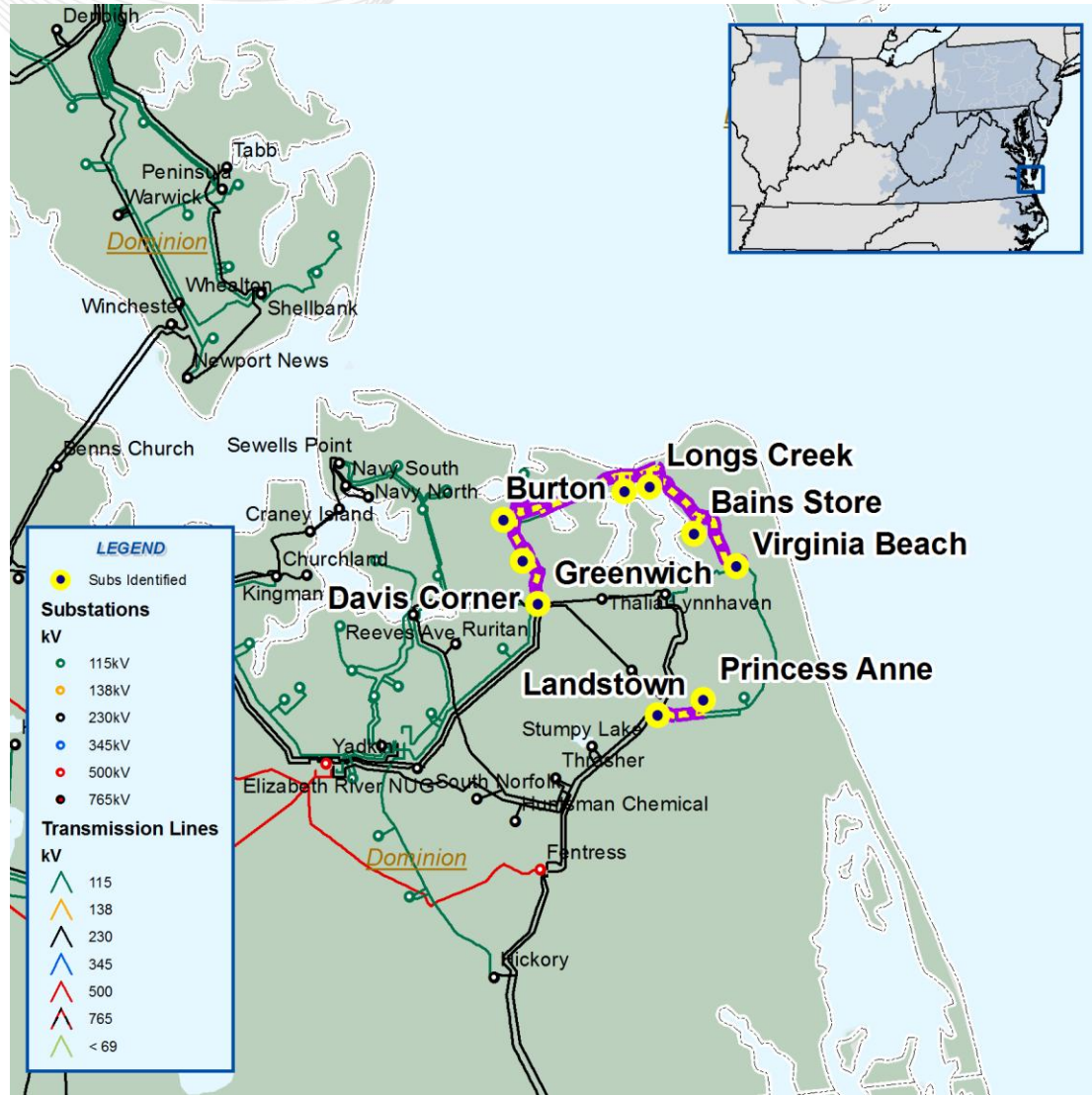


- The Cannon Branch 230-115 kV transformer overloads for the loss of source to the Gainesville to Lomar 115 kV line
- Solution: Replace Cannon Branch 230-115 kV with larger transformer (b1087)
- Estimated cost: \$4.0 M
- IS date: 6/1/2014

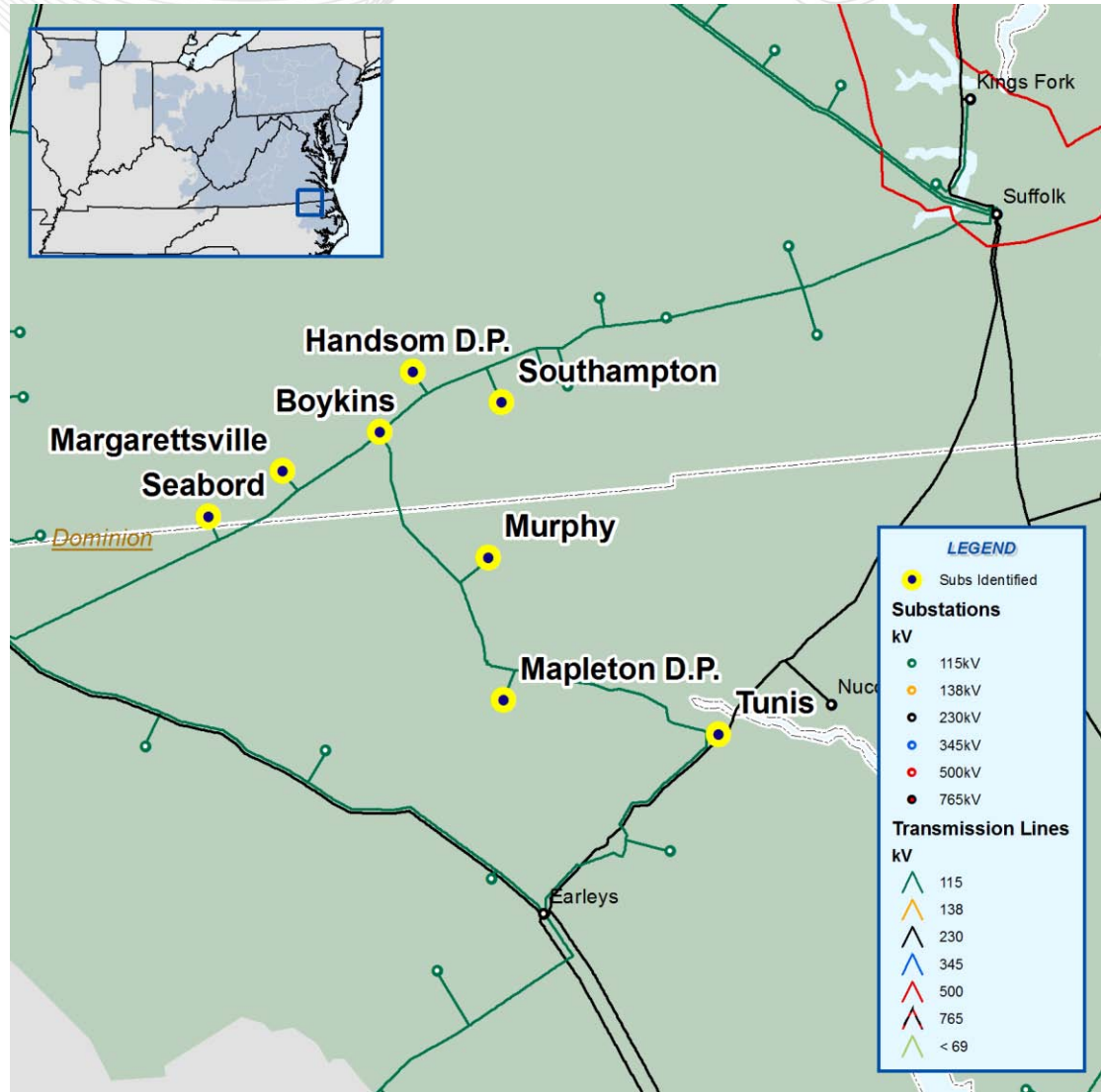


- The following lines have been overloaded for N-1-1 thermal analysis
 - Bayside – Burton 115 kV
 - Bayside – Long Creek 115 kV
 - Burton – Davis 115 kV
 - Davis – Greenwich 115 kV
 - Landstown – Princess Anne 115 kV
 - Bains Store – Long Creek 115 kV
 - Bains Store – VA Beach 115 kV
- For the loss of the contingency combination seen below:
 - Lynnhaven – VA Beach 230 kV + VA Beach 230/115 kV XFMRs 1 and 2
 - Landstown – Princess Anne 115kV + Princess Anne – London 115kV + London – Pendleton 115 kV
- Proposed Solution:

Rebuild the existing 115 kV corridor between Landstown – VA Beach sub for a double ckt (230 kV and 115 kV) Move some load to 230 kV line(b1071)
- Estimated Project Cost: \$25 M
- Required IS Date: 6/1/2012



- The following busses have been overloaded for N-1-1 Voltage Low Magnitude analysis
 - Handsom 115 kV
 - S Hampt 115 kV
 - Boykins 115 kV
 - Mapletn 115 kV
 - Margtstv 115 kV
 - Murphys 115 kV
 - Seabord 115 kV
 - Tunis 115 kV
- For the loss of the contingency combination seen below:
 - Suffolk 230/115 kV XFMR #1
 - Suffolk 230/115 kV XFMR #2
- Proposed Solution:
 - Add a third 230/115 kV XFMR at Suffolk substaion (b1058)
- Estimated Project Cost: \$6 M
- Required IS Date: 6/1/2014

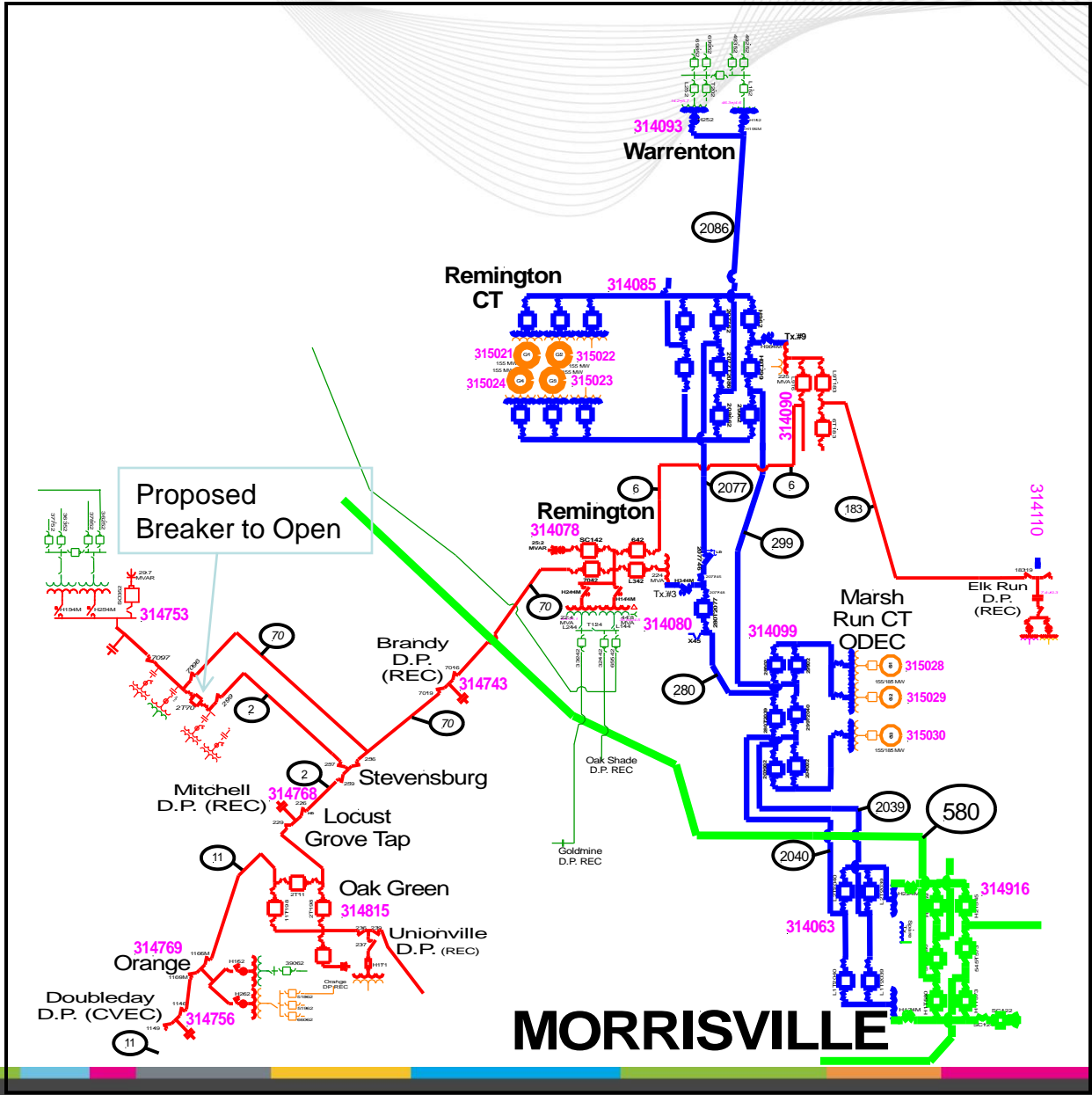




Remington Area Summer 2010/2011 Operating Condition and Interim Operating Procedure

- An outage of Tower Line #2039 & #2040 (Morrisville – Marsh Run) results in the following thermal overload conditions in Summer 2010 & 2011 based on latest PJM retooled case
 - Generation on at Marsh Run and Remington Ct
 - Remington CT 230-115 kV Transformer above thermal STE
 - Line #6 (Remington – Remington CT) above thermal STE
 - Line #70 (Culpeper – Remington) above thermal STE
 - Line #2 (Culpeper – Oak Green) above thermal STE

- NO Generation on at Marsh Run and Remington CT
 - Line #11 (Gordonsville – Oak Green) above thermal STE
 - Line #2 (Culpeper – Oak Green) above thermal STE
 - Voltages in Culpeper - Remington – Warrenton Area
 - range between 83 - 91 % of nominal



MORRISVILLE

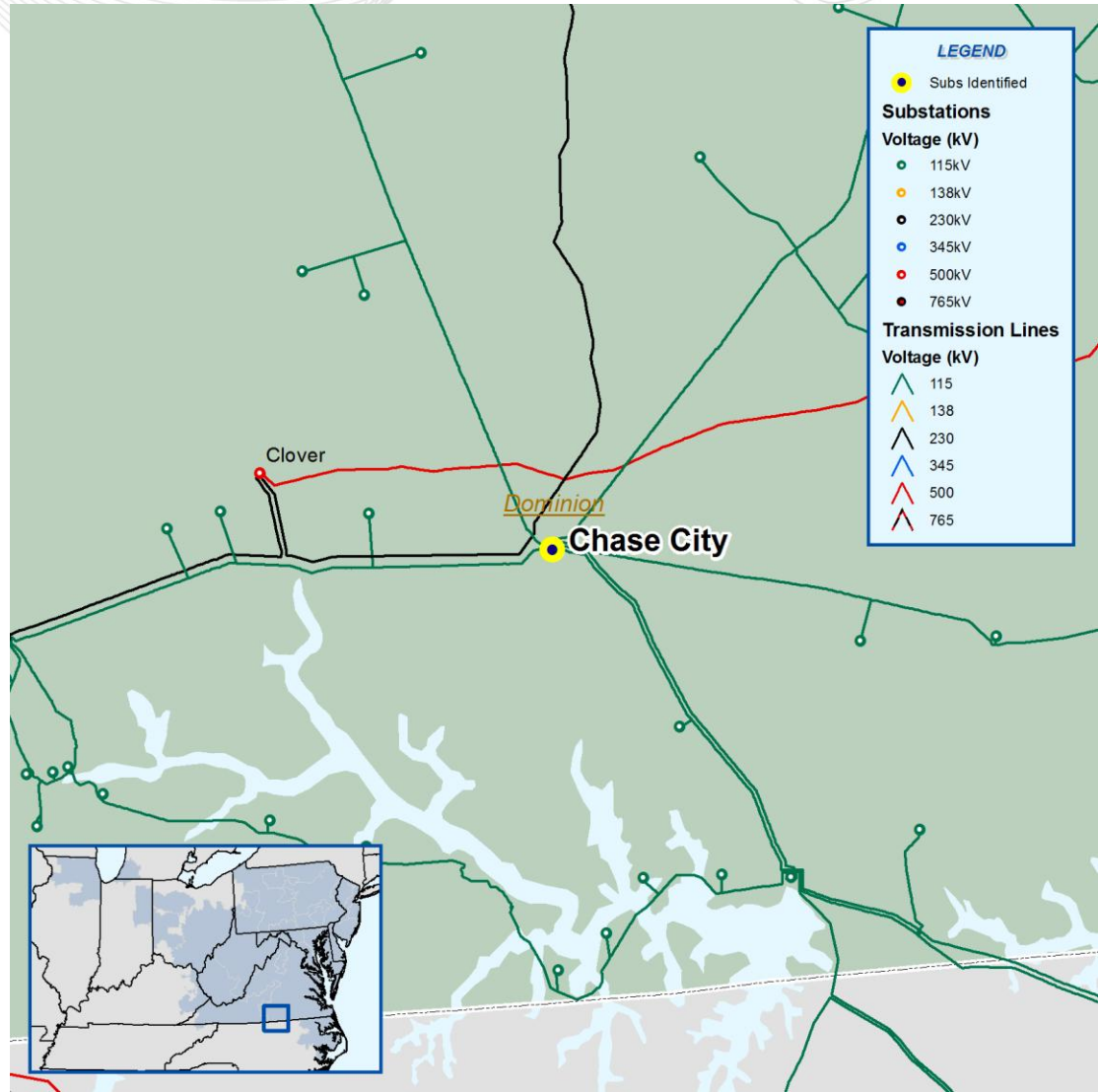
- Proposed Remington CT – Gainesville 230 kV Line will resolve this potential operating condition as well as operating restrictions on Marsh Run and Remington CT units for transmission contingencies, scheduled in service date Summer 2012.
 - SCC Application filed in June 2009
 - PJM Baseline Upgrades
 - b0453.1 - Convert Remington - Sowego 115kV to 230kV
 - b0453.2 - Add Sowego - Gainesville 230kV
 - b0453.3 - Add 230/115kV Auto transformer at Bristers to feed Sowego

- Proposed Interim Summer 2010 & 2011 Operating Solutions
 - Open Mountain Run Breaker 2T70 during peak loading conditions – **recommended option**
 - Creates a scenario where if both Line #2039 & 2040 are out of service no thermal or voltage conditions will occur. Only for load levels above 17,000 MW or 4 total generation units on in the area.

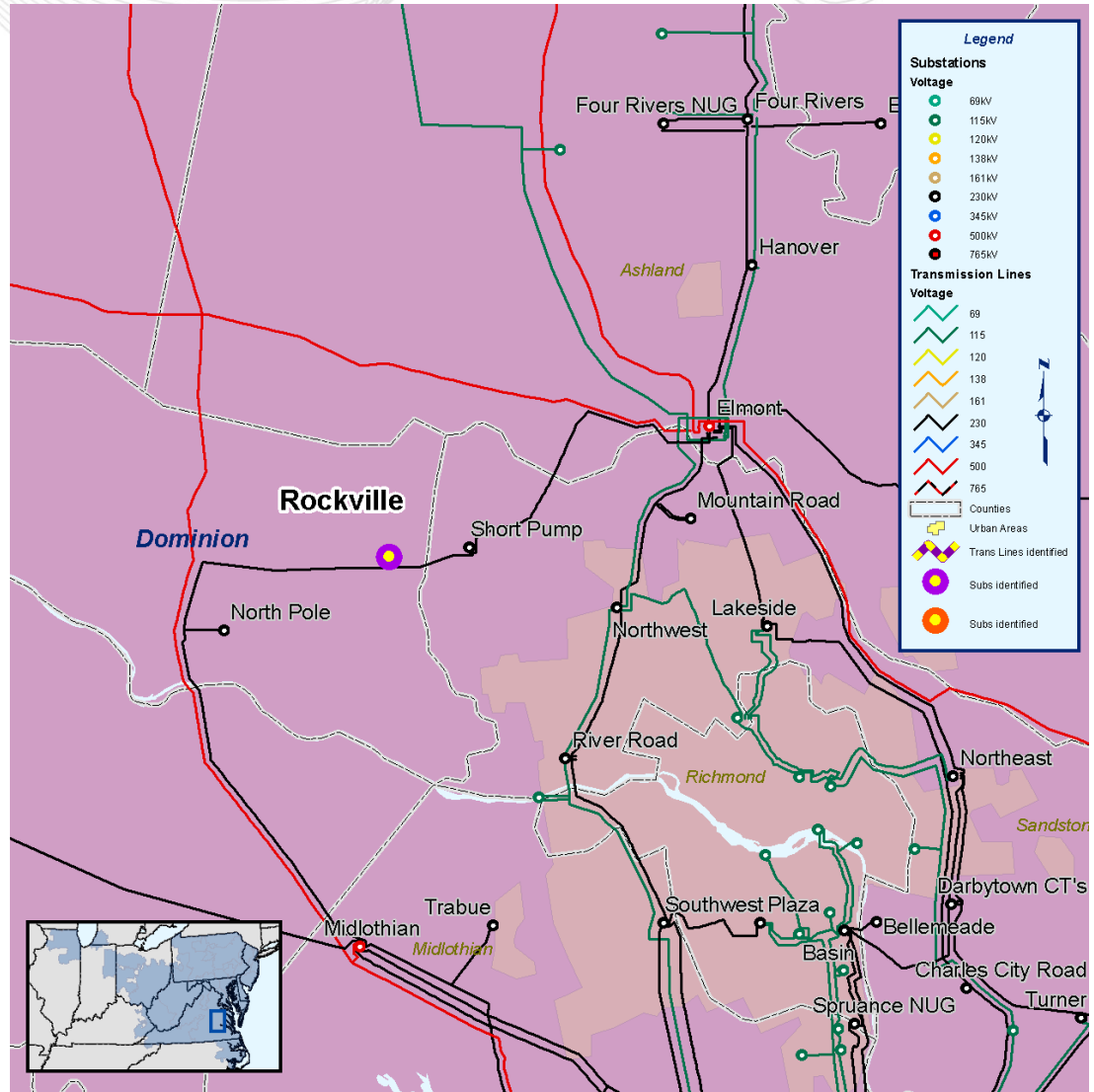
 - Install a SPS Scheme to open Remington Breaker 7042 for certain power flows.
 - Creates a scenario where if both Line #2039 & 2040 are out of service no thermal or voltage conditions will occur. Only for load levels above 17,000 MW or 4 total generation units on in the area.
 - Will take a year to get approved will require opening 2T70 Breaker for Summer 2010

Supplemental Projects

- Chase City 115 kV bus overloads due to area network upgrades
- Solution: Reconductor Chase City 115 kV bus and add a new tie breaker
- Cost Estimate: \$2.4 M
- Expected IS date: June 2010
- *Note: after discussion at the October 20, 2009 Southern SRRTEP meeting, this supplemental project has been changed to a baseline project and will be presented as such at the 10/22/2009 TEAC meeting



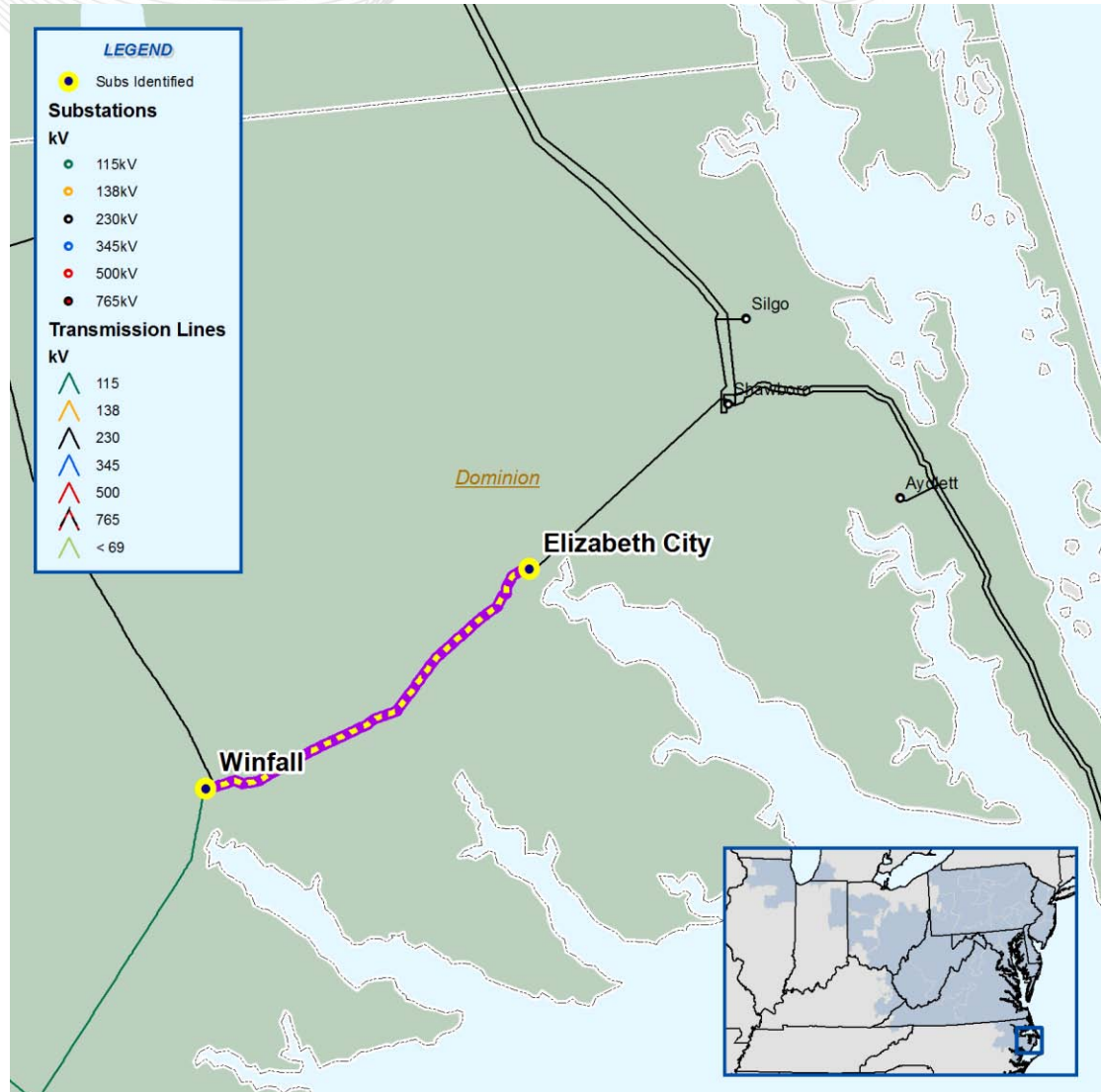
- Project s0138: Install a new distribution substation at Rockville which is located on line #2009
- Old IS date: 5/1/2010
- New Expected IS date: 5/1/2011



- Add 2nd Tyler 230-34.5kV delivery point on the Chesterfield to Poe 230 kV line
- Expected IS date: 5/1/2011

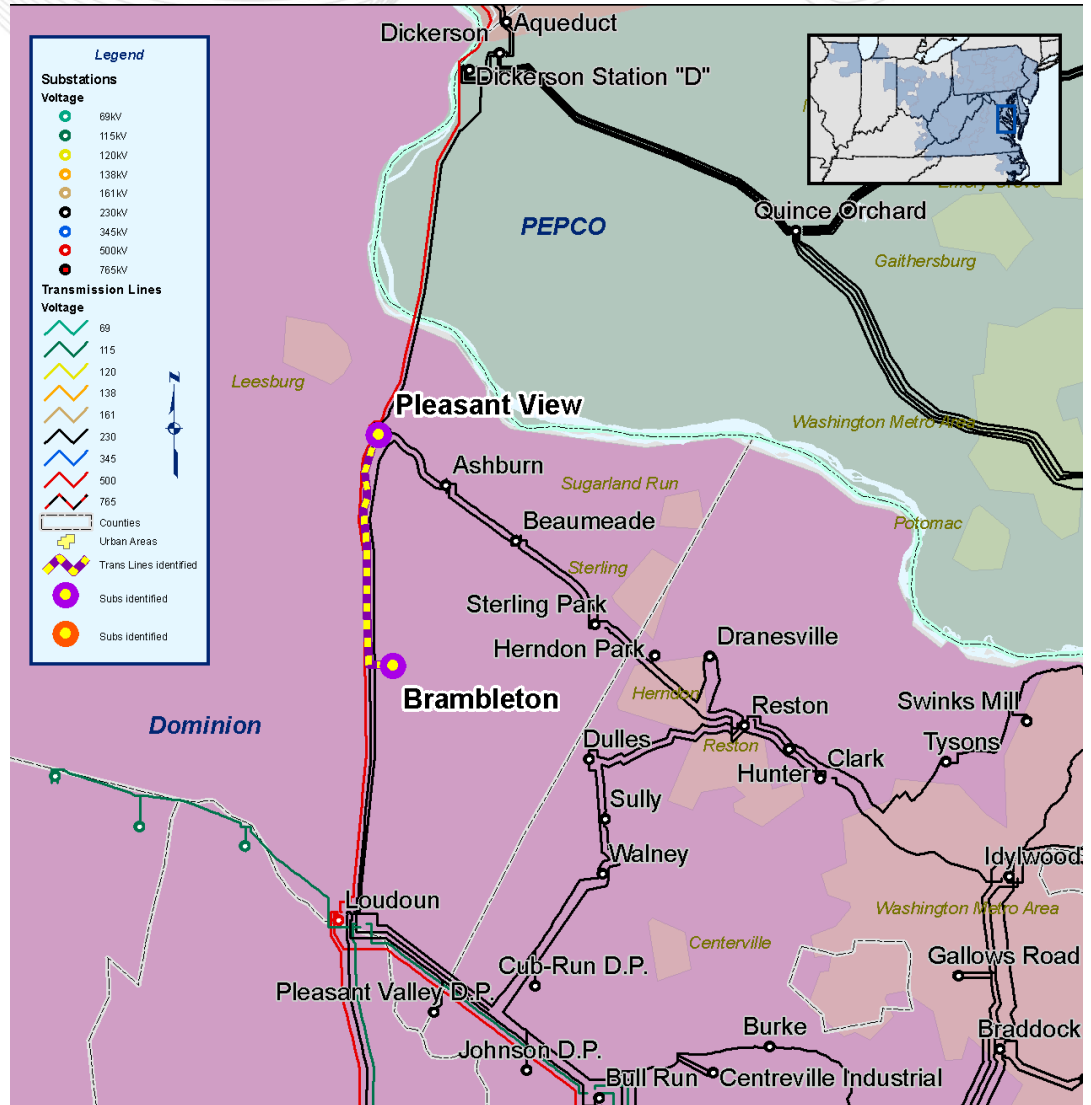


- Add Pasquotank 230-34.5 kV delivery point on the Elizabeth to Winfall 230 kV line
- Expected IS date: 5/1/2011

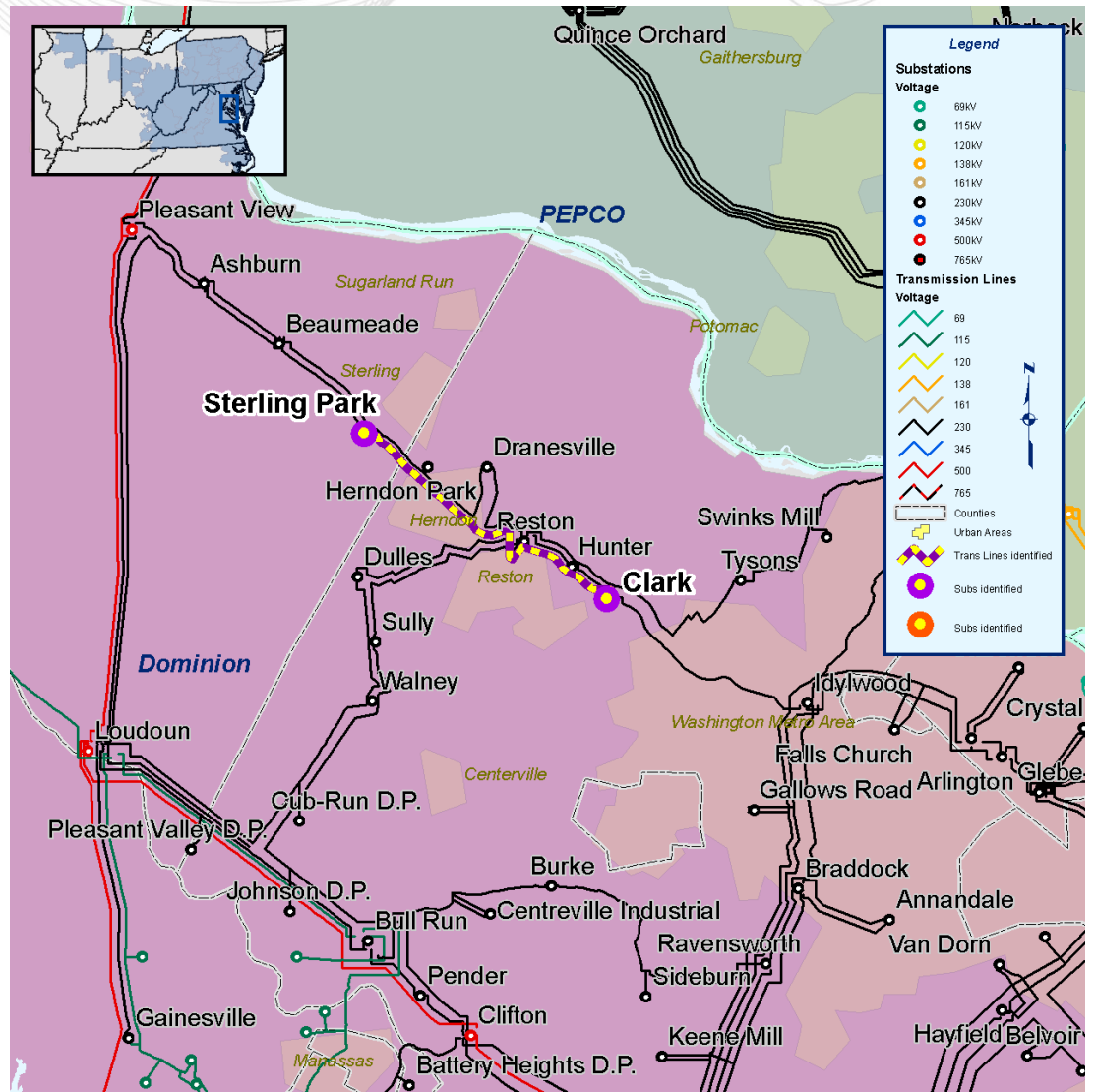


Dominion Supplemental Project - Cochran Mill

- Project s0121: New NoVEC delivery point
- Tap the Pleasant View to Loudoun 230 kV line
- Old IS date: 5/1/2009
- New Expected IS date: 5/1/2010

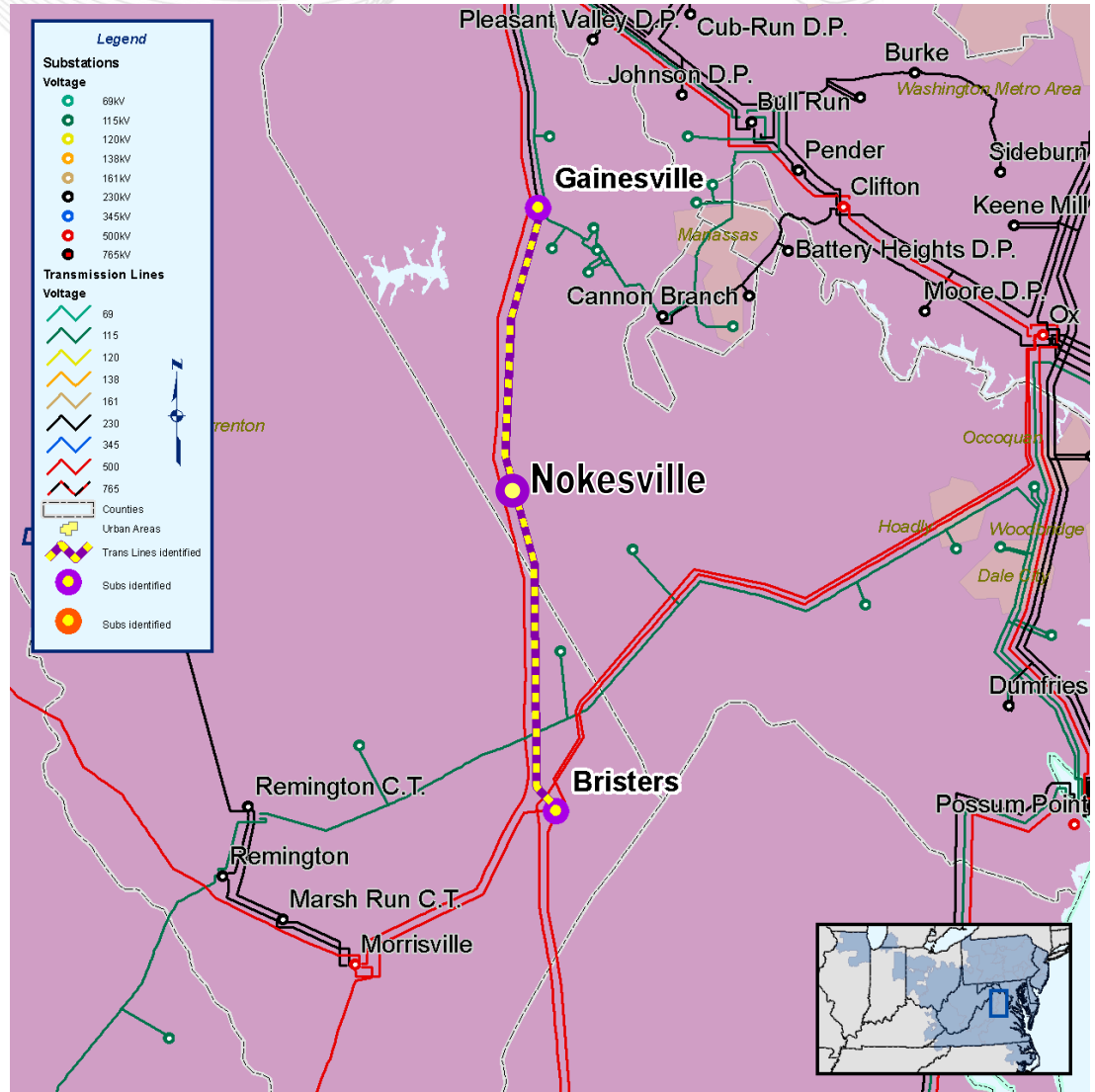


- Project s0127: Establish a new distribution substation along the existing Sterling Park to Clark 230 kV line
- Install two 230-34 kV transformers
- Old IS date: 5/1/2010
- New Expected IS date: 5/1/2011



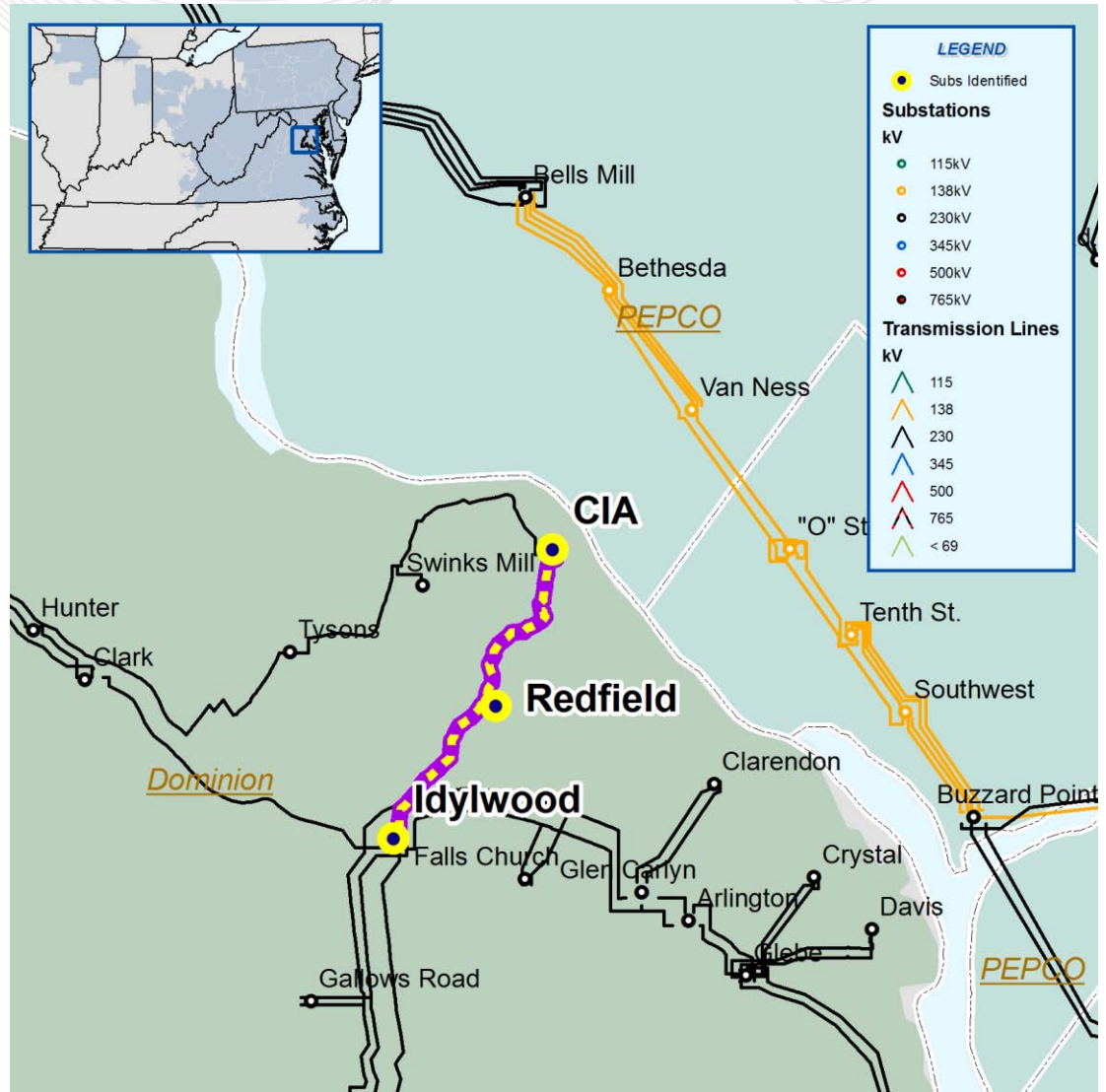
Dominion Supplemental Project - Nokesville

- Project s0129: Tap the Bristers to Gainesville 230 kV line
- Install new distribution substation to serve local load.
- Old IS date: 5/1/2010
- New Expected IS date: 5/1/2011



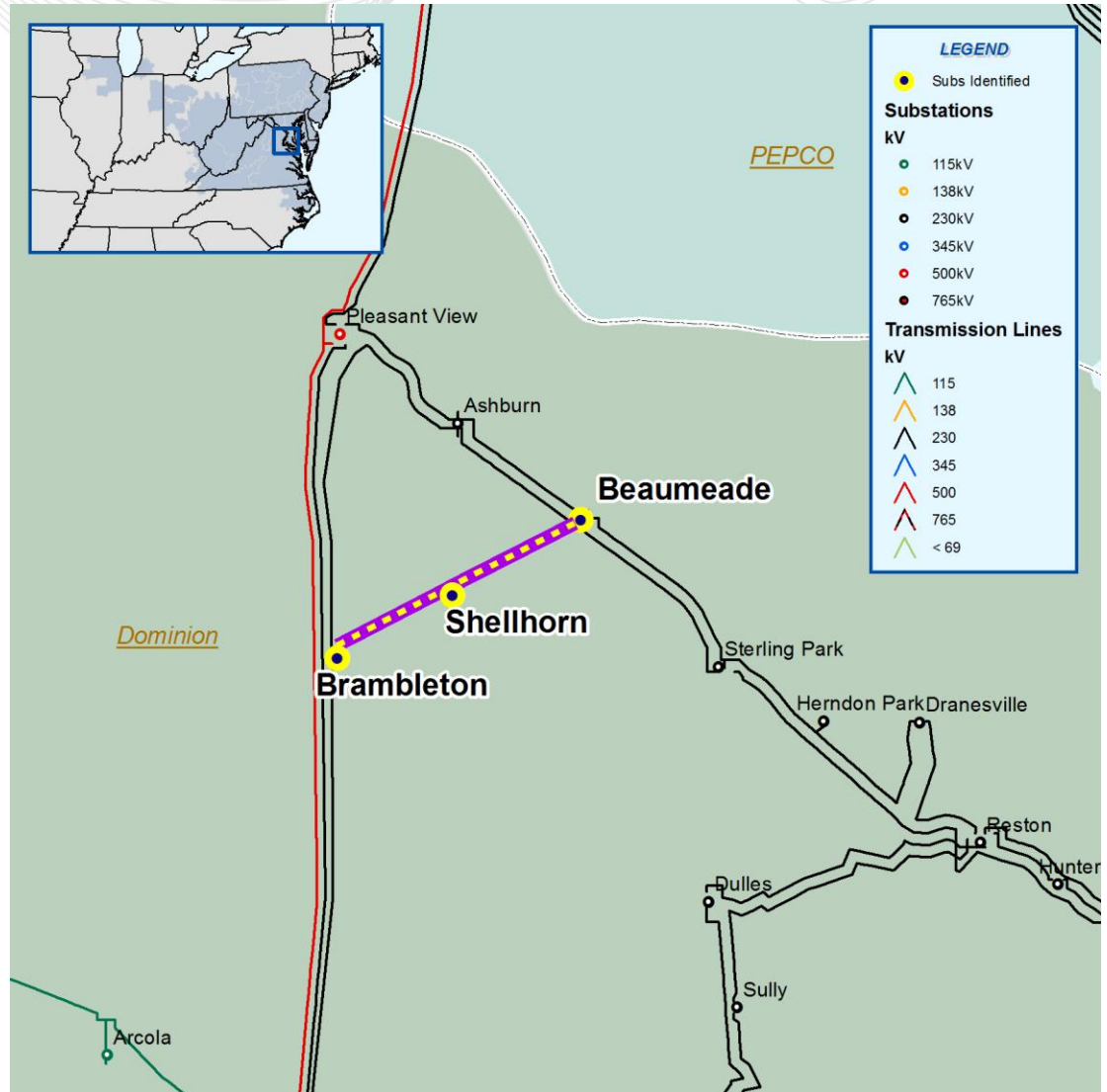
Dominion Supplemental Project - Redfield

- Project: s0134 Tap the existing Idylwood to CIA 230 kV line
- New Redfield distribution delivery point to serve local load
- Old IS date: 7/1/2010
- New Expected IS date: 5/1/2011



Dominion Supplemental Project - Shellhorn

- Tap the existing Brambleton to Beaumeade 230 kV line
- New Shellhorn 230-34.5 kV delivery point to serve local load
- Expected IS date: 5/1/2012



- Tap the existing Frederickburg to Possum Point 230 kV line
- Extend 230 kV line to new Garrisonville Substation to serve distribution load
- Old IS date: 5/1/2009
- New Expected IS date: 12/1/2010

