



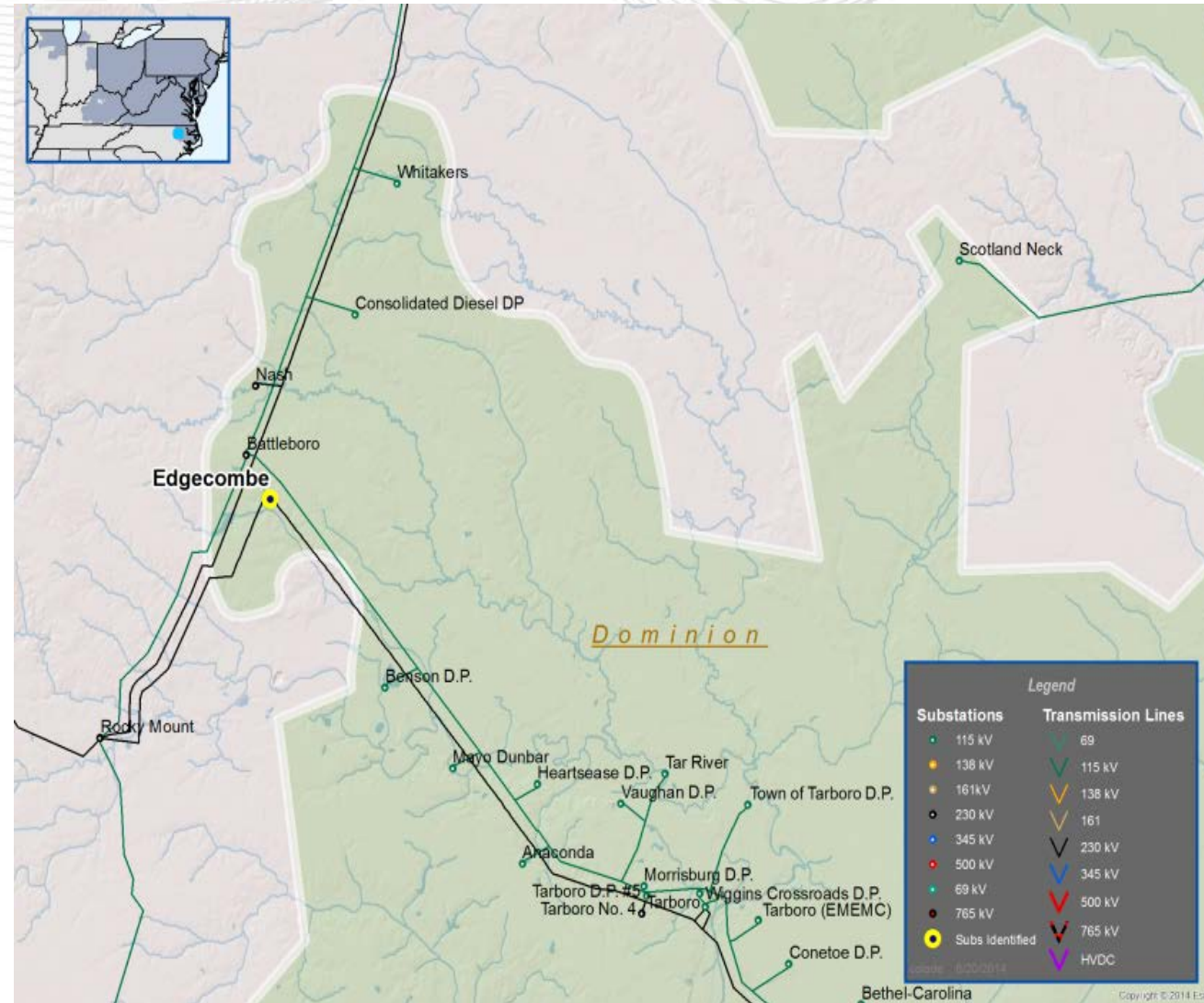
Sub Regional RTEP Committee PJM South

September 24, 2014



Reliability Analysis Update

- B1794 Cost Increase:
- Project Scope:
 - Build a new substation near the Edgecombe NUG to be called Morning Star Substation with a 230-115kV Tx, 4-230kV breakers in a breaker and half scheme, 3-115kV breakers in a ring. Re-configure Lines 80 (Battleboro – Anaconda), 229 (Edgecombe – Tarboro) and 2058 to terminate into Morning Star Substation.
- Cost increase due to revised engineering cost. The increased cost includes an additional \$1.2M for site development from previous estimate.
- Estimated Project Cost:
 Previous → \$ 14.5 M
 New → \$ 19 M
- Expected IS Date:
 5/30/2016



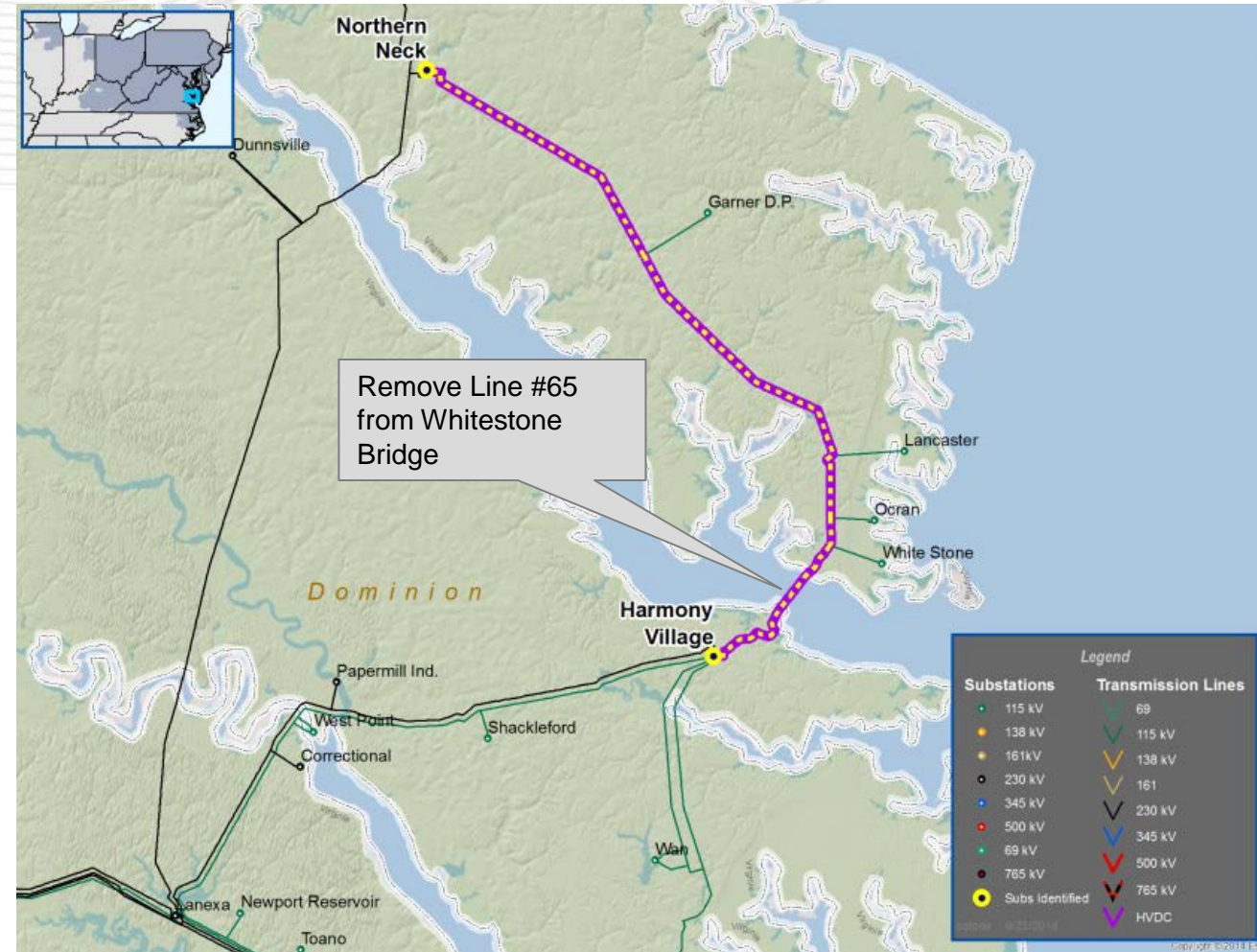
B2505 Cost Increase:

- The project is to remove Line #65 Harmony Village to Northern Neck 115 kV from the Whitestone Bridge by installing structures in the water to improve operability and reliability

Revised Project Cost: From \$10M to \$30M due to:

- Greater Water depth than anticipated.
- 11 H-Frame structures on quad cylinder pile foundations required in the river.
 - 9 structures at 120'
 - 2 structures at 200'
- 4 new structures on land required.
- Permitting required with FAA, Army Corps, Virginia Marine Resource Commission, local wetlands board (Lancaster and Middlesex Co)

Revised IS Date: 12/30/2017



NERC Category B Violation Identified in PJM 2014 RTEP Proposal Window #1

Problem:

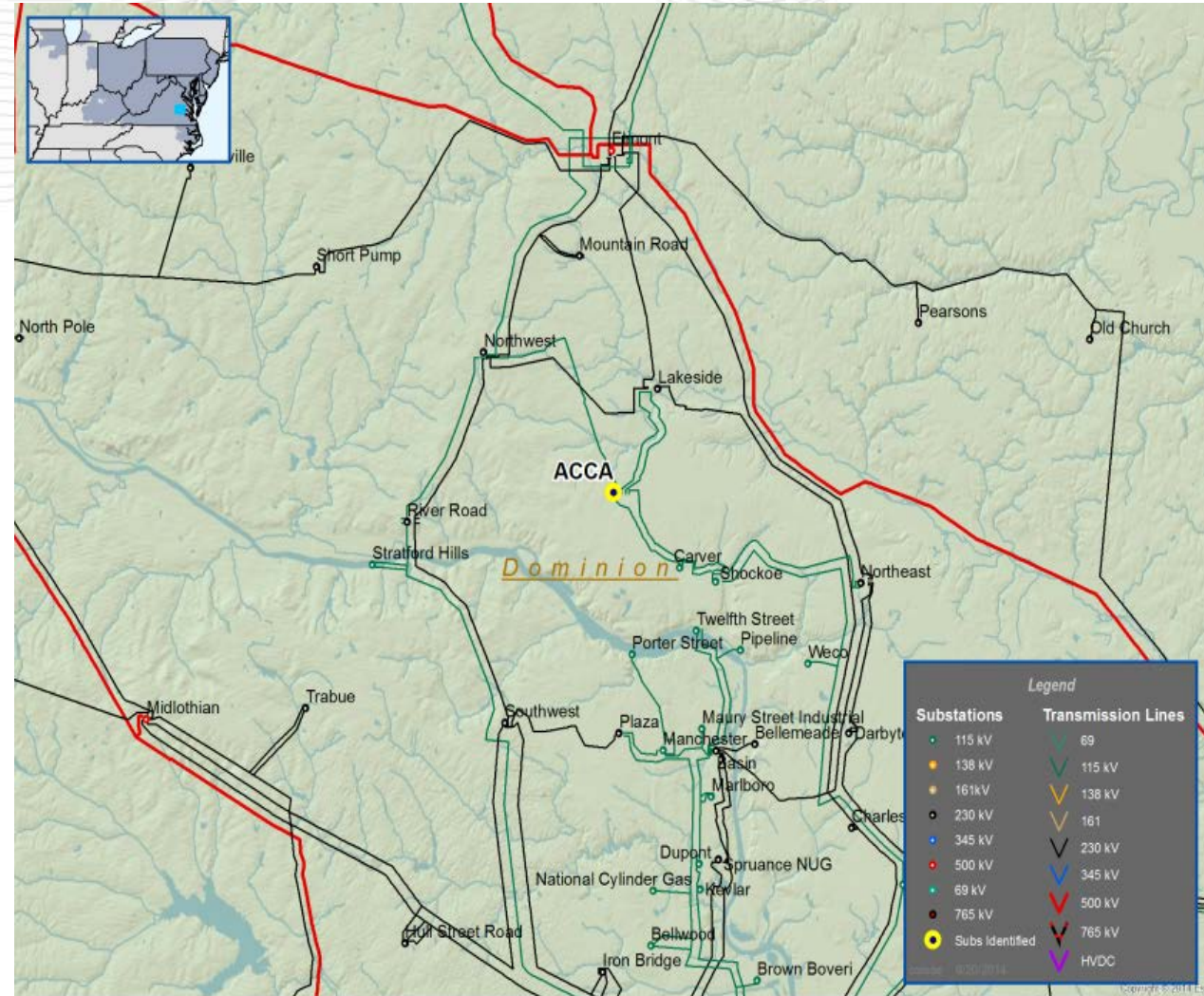
- The 2018 summer base case indicates that an outage of Northeast to Shockoe 115 kV Line #20 results in an overload of the Acca to Hermitage 115 kV section of Line #159..
- This overload also occurs in the PJM 2019 RTEP baseline and generation deliverability analysis for the same contingency

Recommended Solution:

- Uprate the summer emergency rating of Line #159 to 353 MVA by reconductoring 1.5 miles between Acca and Hermitage and replacing the 1200a wave trap at Acca with a 2000a wave trap. **(b2565)**
- Project ID: P2014_1-4A-U from 2014 RTEP Proposal Window #1

Estimated Cost: \$1.82M

Required IS Date: 5/1/2018



NERC Category B Violation Identified in PJM 2014 RTEP Proposal Window #1

Problem:

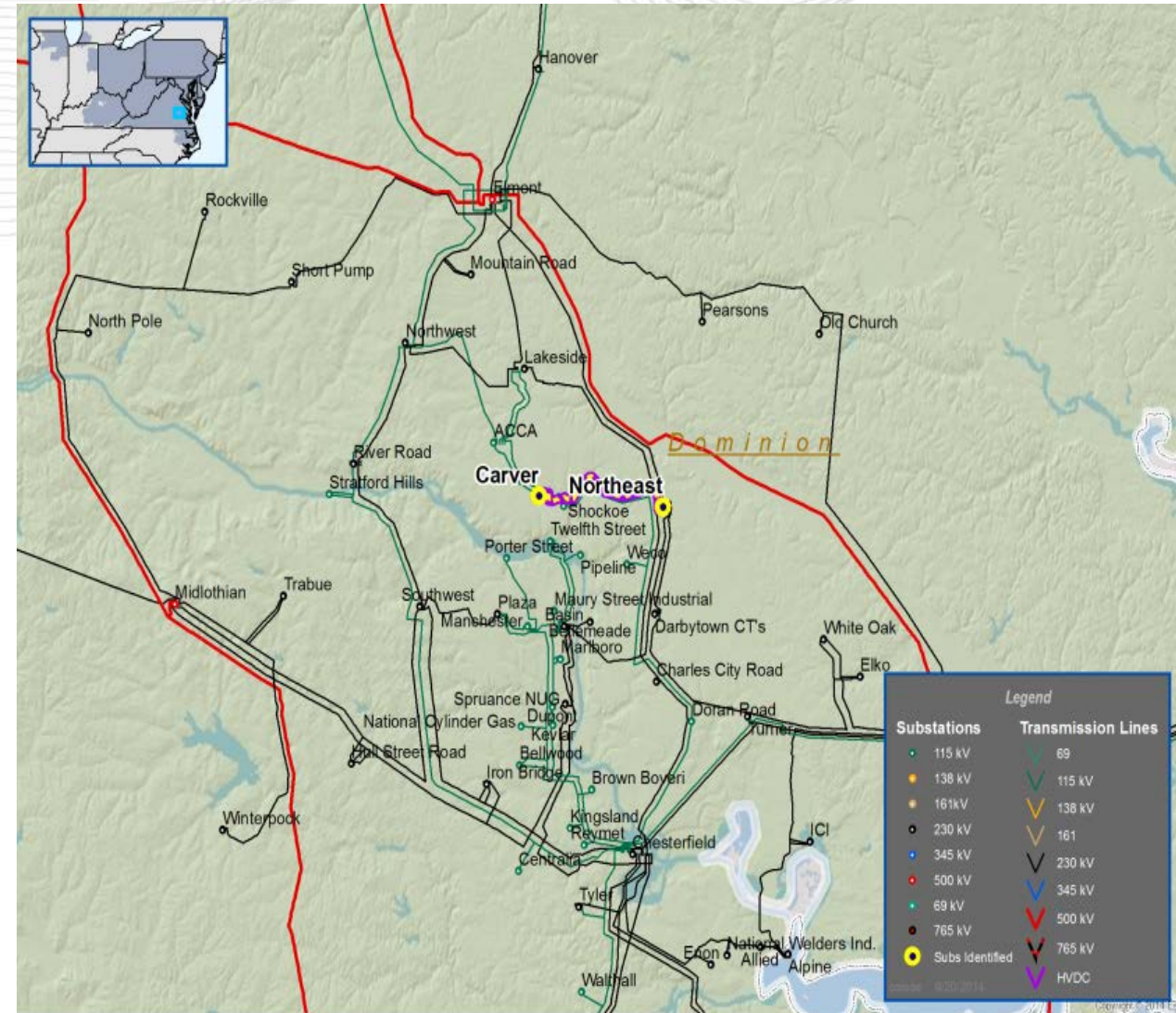
- The 2019 Baseline and Generation Deliverability RTEP analysis indicates that an outage of Northeast to Shockoe 115 kV Line #20 results in an overload of the Northeast to Carver 115 kV Line #3.

Recommended Solution:

- Uprate the summer emergency rating of Line #3 to 176 MVA by replacing the 800a wave trap at Carver with a 2000a wave trap. **(b2566)**
- Project ID: P2014_1-4B-U from 2014 RTEP Proposal Window #1

Estimated Cost: \$40K

Required IS Date: 5/1/2019



Supplemental Projects

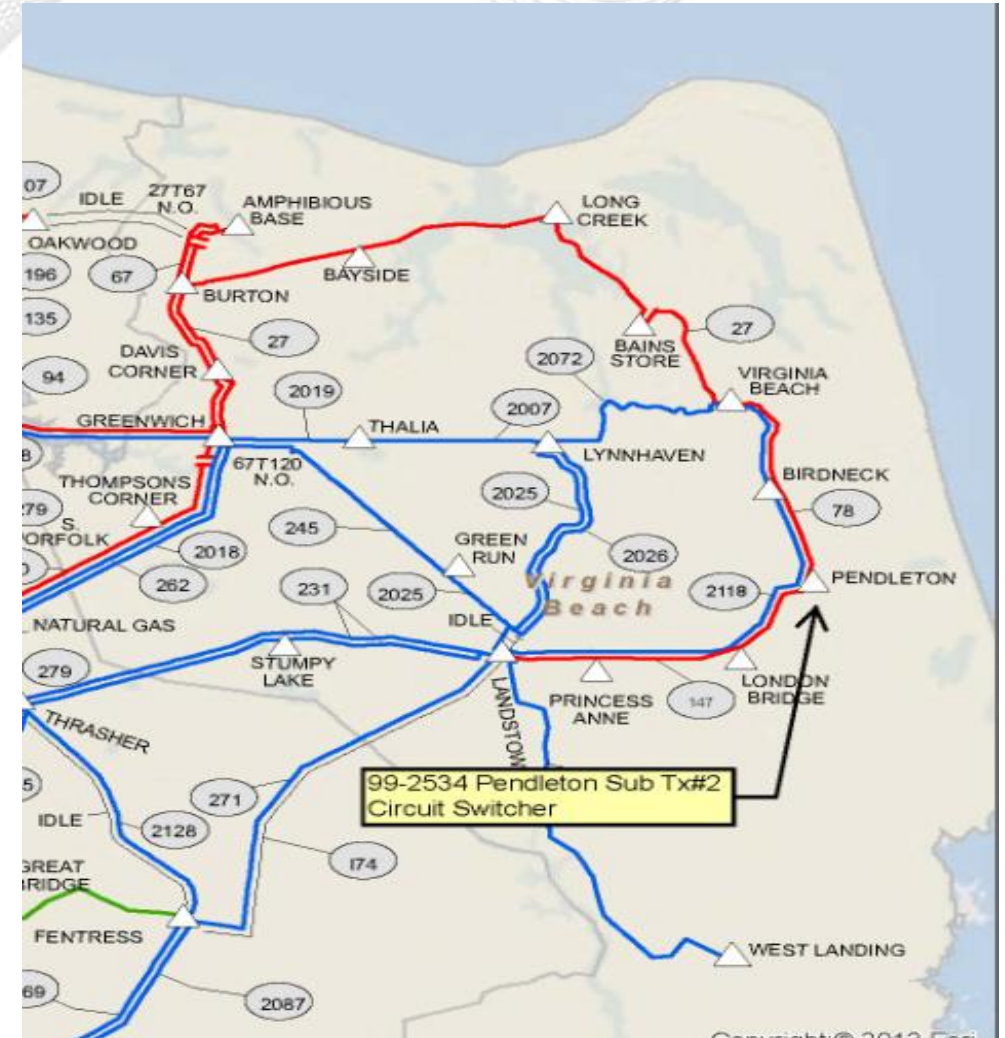
Pendleton 115 kV Substation Circuit Switcher

Problem:

- Dominion Distribution has identified the need to replace the existing 115kV Tx#2 at Pendleton Substation. A circuit switcher needs to be installed on high side of the transformer to replace existing MOAB and ground switch.

Estimated Project Cost: \$250K

Requested IS Date: 5/1/2015



Lebanon 230kV DP

Problem:

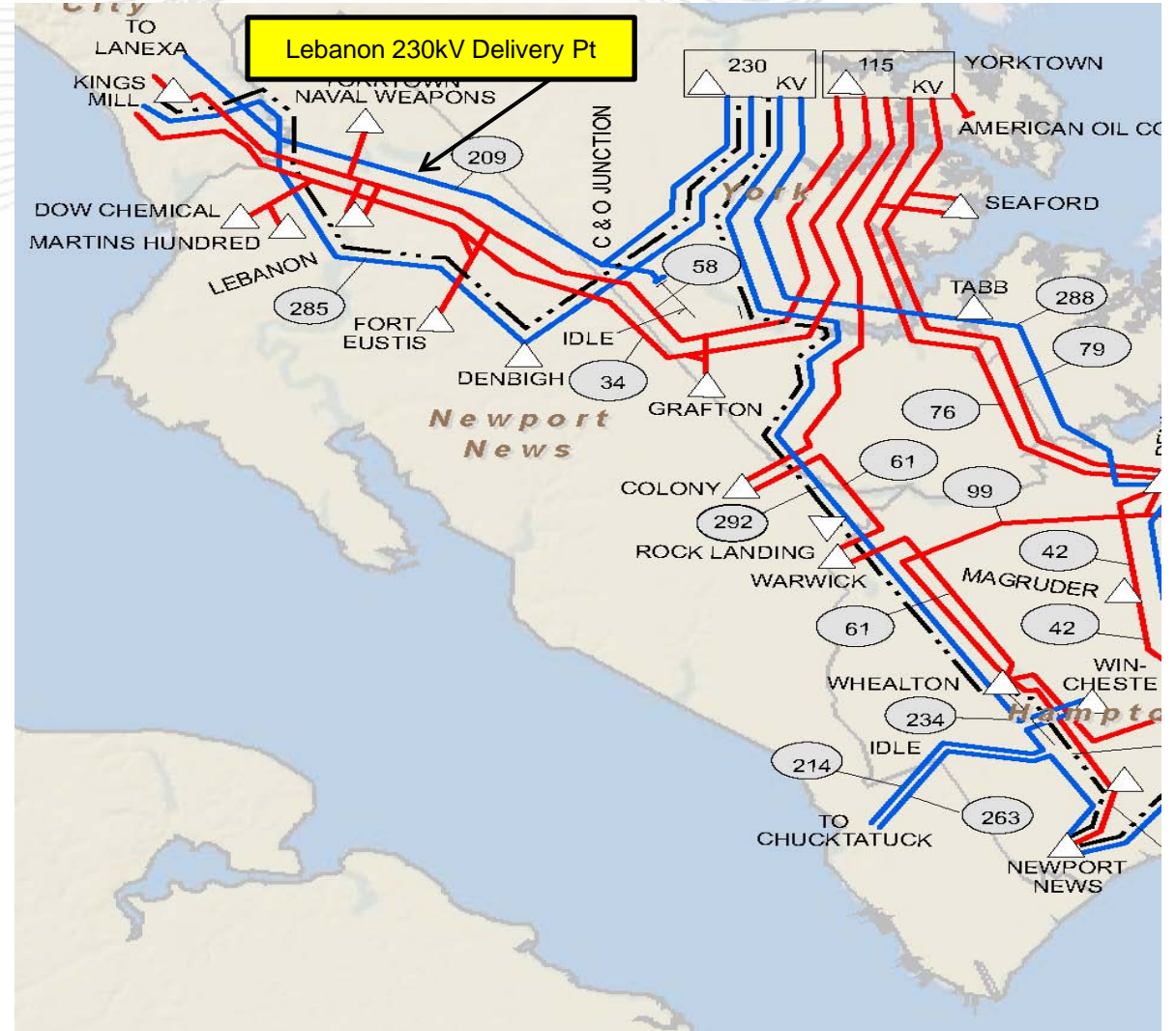
- Dominion Distribution has requested a new 230kV delivery point at the existing Lebanon Substation on Line #209 Skiffes Creek to Yorktown 230 kV and will retire the existing 115kV Tx #1 at this location
- Estimated load is 43 MW growing to 48 MW over 10 years.

Proposed Solution:

- Tap the 209 Line

Estimated Project Cost: \$600K

Projected IS Date: 5/1/2016



Haymarket 230kV DP

Problem

- Dominion Distribution (DVP) has submitted a Delivery Point (DP) Request for a proposed Haymarket Substation (site to be acquired) with an energization date of 05/15/2017. The main driver for the new substation is a block load addition. Initial load will be approximately 85 MVA, growing to over 100 MVA by 2018.

Proposed Solution:

- Loop (in-and-out) an overhead, double-circuit, 230kV transmission line extension approximately 6 miles (along new right-of-way) from a point in the corridor north of Gainesville to the proposed Haymarket Substation site. Install four 230kV breakers in a ring arrangement to accommodate the connection of DVP's 84 MVA ,230-34.5kV transformers (two initial, three ultimate).

Estimated Project Cost: \$45M

Projected IS Date: 5/1/2017

