PJM 'Data Center Planning Initiative'

2022 RTEP Window 3

Regional Transmission Expansion Planning

Transmission Planning & Potential Impacts to

All Others: VA Counties, MD, & PA

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Aug->Sept. 21, 2023

This Deck: Provides maps and high-level breakdown of information provided thru PJM (only as correct as the information which has been provided):

- Sources of information
- Description, What is Being Proposed, Where is Power Generated
- Scope, Purpose, Objective of Initiative
- What is 'Reliability'?
- Costs, Competitive Bids, Timeline
- Magnitude of Proposals: Transmission Lines, Substations, ROW
- Maps – PJM service Area, Virginia service area
- **All Other VA Counties, MD & PA-impacting proposals – 26**
  - Waterways, Historic Communities, Parks impacted
  - Maps, Scope components, Costs, Impacts
    - **Fredericksburg Area = 1**
    - **Albemarle-Gordonsville-Charlottesville-Augusta-Rockbridge-Fluvanna-Amherst = 9**
    - **Petersburg = 1**
    - **Habersham-Franklin = 2**
    - **Lynchburg-Bedford-Botetourt = 3**
    - **Campbell-Leesville = 1**
    - **Giles-Albemarle = 2**
    - **MD & PA = 7**
- Prince William, Loudoun, All Other areas - Overview

- Energy providers (PJM, Dominion, et al) are openly declaring that this transmission expansion initiative is to address **overload violations on the grid caused by *currently operating* Data Centers…**

- →**Violations** occurring on the grid **-- which could cause blackouts** -- **primarily because of all the Data Centers being brought onto the grid in Northern Virginia**
  - **NOTE: Data Centers**, which require many more times the power than ANY OTHER Industrial use, are being approved and tapping into the electrical grid **all across the state of Virginia**

- →Data Centers in Prince William County, VA, being *approved and supported by the current Chair and majority Supervisors on the PWC Board, are significantly contributing to the grid issues;* as well as Data Center approvals coming out of Loudoun County, VA, and other localities

- Although SOME proposals in this initiative would add grid functionality which MAY benefit SOME Data Center applications making their way through the PWC/regional *consideration* pipeline…

- The power for more yet-to-be approved Data Centers will be served by OTHER and ADDITIONAL PJM/Dominion transmission line and substation projects -- when and if any *other* Data Center plans are approved

- **→As more Data Center applications are approved, there will be EVEN MORE transmission lines and substations added to what is proposed here – This was CONFIRMED by PJM in a 9/5/23 meeting**

- **NOTE:** Data Centers required for Artificial Intelligence (AI) are predicted to require 7-8 times MORE than the power required by today's Data Centers

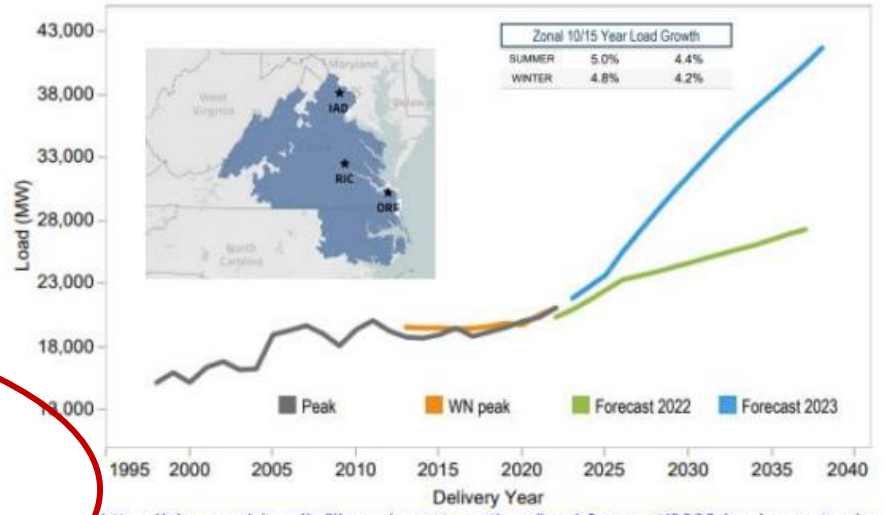
PJM Descriptions of Regional Transmission Expansion Program 2022 RTEP Window 3 Proposals – Source Documents

- **PJM - Redacted Public Proposals for Current and Closed Windows : >2022 Window 3 Redacted Proposals**
  - **72 Proposals**
- **MAPS:**
  - 20230808-item-07---reliability-analysis-update.ashx (pjm.com) Updated "complete" deck: August 30, 2023
  - However, there are still multiple issues with maps in this version as will be noted.
  - Maps were also provided on August 25, 2023 and July 11 2023, but had many errors, discrepancies, and omissions.
- **PJM Regional Transmission Expansion Planning Update ((pjm.com)**
  - Powerpoint deck (March 27, 2023) explaining the 2022 RTEP Window 3 initiative – Purpose, Objective, Requirements (pages 3-7). ***Data Centers a factor on every page.***
- **PJM 2022 Regional Transmission Expansion Plan - dated March 14, 2023**
  - Section 1 - Page 2 -- PJM Backbone Transmission System (as of March 2023) (included on Slide 12)
  - Section 6.11 - Page 221 -- PJM Service Area in Virginia - map of 345, 500, 765 kV transmission lines (as of March 2023). (Included on Slide 13)
  - **Page 44:** (emphasis added)
    - *"In the PJM 2022 Load Forecast Report,* ***Dominion requested that PJM consider a forecast adjustment to account for the growth of data centers in northern Virginia****. This adjustment has been in place in some form since the 2014 Load Forecast Report.* ***The rationale for making an adjustment for data centers is that these centers have a load impact that is disproportionate with their economic impact. Data centers generally require minimum staffing and thus would not have a significant impact on economic variables, but do have a considerable impact on energy demand."***
- **Other presentation decks accessed from PJM and Dominion websites:**
  - 20230207-item-09---2022-window-3-update.ashx (pjm.com) **Dated Feb. 7, 2023**
  - item-04---data-center-load-planning.ashx (pjm.com) **Dated Jan. 10, 2023**
  - item-04---data-center-industry-digital-realty.ashx (pjm.com) **Dated Sept. 12, 2022**
  - item-09---reliability-analysis-update.ashx (pjm.com) **Dated Aug. 9, 2022**
  - item-08---dominion-northern-virginia---immediate-need.ashx (pjm.com) **Dated July 12, 2022**
  - reliability-briefing---dominion-data-centers-alley.ashx (pjm.com) **Dated June 7, 2022**
  - **Dominion IRP –** 2023 Integrated Resource Plan **Filed May 1, 2023**
- **Access more published information:** 'PJM's Data Center Planning Initiative' / 'NoVa Dominion Data Center Alley' – The Coalition to Protect Prince William County (protectpwc.org)

PJM RTEP Planning Update – Dated March 27, 2023

2022 Competitive Window 3 – Data Center Load Planning Update

- Earlier in 2022, PJM shared its forecast for 2022 and indicated high Data Center Load growth activity, particularly in Northern VA
- In July 2022, PJM directed an Immediate Need transmission project to enable the integration of the forecasted load within the Dominion Data Center Alley up to and including year 2025
- Since then, Data Center Loads within Northern Virginia has been increasing at an unprecedented rate (2022 Summer Peak recorded 21,156 MW – Forecast 20,424 MW)
- The 2028 timeframe load will require major transfer reinforcements into the Doubs/Northern Virginia region to support high flows and VAR requirements
- PJM is working towards opening a competitive window in early February 2023 to address the identified violations



https://pjm.com/-/media/library/reports-notices/load-forecast/2022-load-report.ashx

What Is Being Proposed in the ‘PJM Data Center Planning Initiative’ 2022 RTEP Window 3?

- Add more NEW transmission lines
  - 230kV
  - 500kV
  - 765kV
- Add more NEW substations
  - 230kV/500kV
  - 500kV
  - 765kV
- Upgrade existing transmission lines from 230kV to 500kV
- Upgrade existing 230kV and 500kV substations with more 500kV functionality
- Increase Amps to 4000 or 5000 Amps; more
- Replace aging equipment
- **Connecting the Dots - What Will Be On New PJM Lines?**

What and Where is the Power Generated for MOST of these Transmission Proposals?

- **Ohio, West Virginia from the West**
  - First Energy's coal-fired Fort Martin Power Station, Fort Martin, WV
  - First Energy's coal-fired Harrison Power Station, Haywood, WV
  - AEP's Ohio fossil fuel plants

- **Pennsylvania from the Northeast**
  - Peach Bottom Atomic Power Station in Delta, PA
  - Gas-fired York Energy Center, Delta, PA

- **Why are new electrical transmission lines having to originate from outside of Virginia?**

- **We are also experiencing a POWER GENERATION problem**

Scope – PJM RTEP Update dated March 27, 2023 - (direct quotes)

Window Opened; February 24, 2023

- PJM posted preliminary planning basecases on January 31st 2023
- Window Closed – May 10, 2023

Purpose:

- **Address reliability needs in the Dominion and APS zones primarily associated with Data Center Load forecasts (up to 7,500 MWs by 2027-28)**
- Seeking robust and flexible solutions to address the reliability needs in those specific areas

Objective:

- Develop robust, holistic and expandable solutions that address the **2027-28 baseline violations** associated with:
  - **– Local constraints: resulting from directly serving the data center loads in APS and Dominion zones through the respective 230 kV networks and into the points of delivery:**
    - Goose Creek- Ashburn – Mars - Wishing Star and Brambleton – Loudoun Co VA
  - **– Regional constraints resulting from imports into load center areas (500 kV primarily):**
    - Doubs - Goose Creek – Frederick MD-Loudoun Co VA
    - Front Royal - Morrisville – Vint Hill – Loudoun/Mosby - Warren Co-Fauquier Co-Loudoun Co VA
    - Meadow Brook - Loudoun/Mosby – Loudoun Co VA
    - Morrisville – Bristers - Ox – Fauquier Co-Fairfax Co VA
    - Peach Bottom – Conastone – Brighton – Doubs – Maryland
  - **– Needed reactive power VAR reinforcements, both static and dynamic as deemed necessary, to address the reactive power needs of the system for the 2027-28 baseline scenario**

Requirements:

- Holistic solutions are to be designed such that they are robust and **expandable as the load grows within the area**.
- **A scalable solution ensures, at a minimum, near-term reliability needs are addressed while also enabling future expansion (beyond the 2027-28 baseline levels) as data center load increases in the Dominion and APS zones.**
  - – Consider flexibility, robustness and scalability of 2027-28-baseline solutions against the Interim 2027-28 Summer, Winter and Light Load basecases.
  - – Evaluate proposals for **their effectiveness towards existing reactive interfaces in the area, particularly those supporting the Dominion and APS zones.**
  - – Evaluate the **effectiveness of the proposed solutions towards the transmission system load deliverability into the Dominion and APS zones** (CETL).

What is ‘Reliability’?

- PJM has identified MULTIPLE N-1-1 violations in their transmission region
- N-1-1 means that you could experience interruptions of power on MORE than one transmission line
- N-1-1 = Threats of significant violations that could cause power disruptions ie: BLACKOUTS

2022 RTEP Window 3 – 72 Proposals

Estimated Costs - $51,192,146,194 - $51.1B

- ***Not all proposals, or all components in proposals, will be selected***
- ***Some components and costs are repeated and counted multiple times across multiple proposals***

- **PWC** Directly Impacting Proposals - **15** **$19,586,399,352 - $19.5B** **OVERVIEW**
  - Include impacts to other Counties and States

- **Loudoun** County Directly Impacting Proposals - **28**: **$26,745,769,448 - $26.7B** **OVERVIEW**
  - Include impacts to other Counties and States
  - Loudoun County is also impacted by multiple PWC proposals

- **Fauquier County** Directly Impacting Proposals - **1**: **$320,266,203 - $320.2M** **OVERVIEW**
  - Include impacts to other Counties and States
  - Fauquier County is also impacted by multiple PWC and Loudoun proposals
- **Fairfax County** Directly Impacting Proposals - **2**: **$895,459,401 - $895.4M**
  - Include impacts to other Counties and States
  - Fairfax County is also impacted by multiple PWC and Loudoun proposals

- **All Other Va. Counties and MD & PA** Directly Impacting Proposals - **26**: **$3,644,251,790 - $3.6B** **This Deck**
  - These others are also impacted by multiple PWC, Loudoun, Fauquier, and Fairfax proposals

Competitive Bids

- Many TO (Transmission Operator) energy providers have submitted bids to PJM in this 2022 RTEP Window 3 (72 proposals)
- *Not all work possibly to be awarded in the Dominion Zone will be done by Dominion Energy*
- Bids from competitors:
  - AEP - AEP.com
  - Exelon - Exelon Corporation - Home - Exelon
  - First Energy - FirstEnergy Corp. Home
  - LS Power - LS Power | Innovation and Investment in Energy
  - Nextera - NextEra Energy
  - PPL - PPL Corporation (pplweb.com)
  - PSEG - PSE&G (pseg.com)
  - Transource - About Us (transourceenergy.com)

Timeline

- PJM selection process:

  - **Oct. 3:** Announce top 3-4 “scenarios”- made up from 72 proposals
  - **Oct. 3 – 31:** Stakeholder feedback on “scenarios”
    - 1st read
    - 2nd read
  - **Dec. 5:** PJM TEAC bring final recommended solution to PJM Board from 3-4 scenarios
  - **TBD: Board approval**
    - Dec. 2023 in original timeline – not clear if that is still the plan
  - After PJM Board approval, winning providers take filings to their respective State Commissions (ie VA SCC)

NEW Transmission Lines & NEW Substations

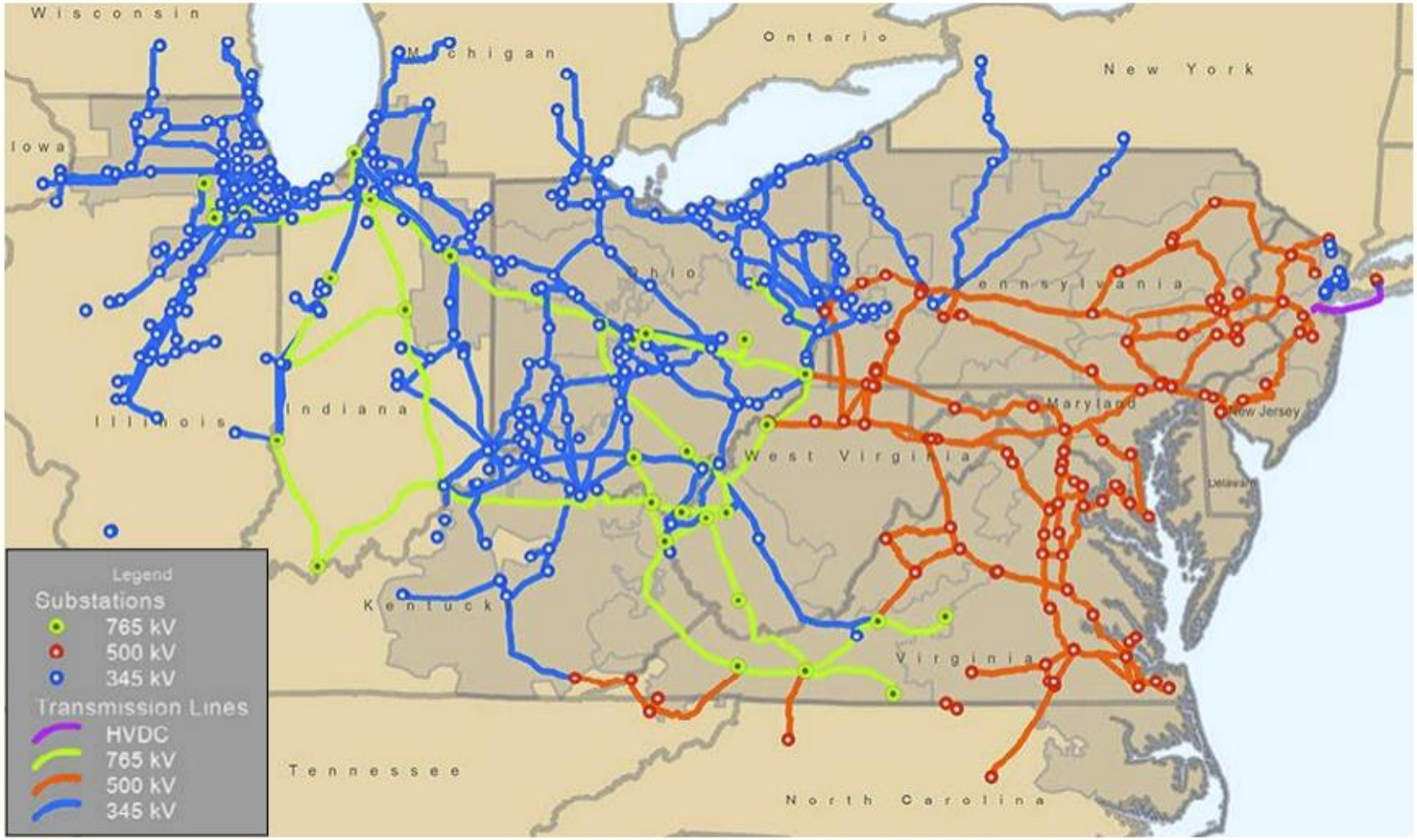
- *Totals are still being verified*
- **NEW 500 kV** transmission lines in **~43 of the 72 proposals**
- **New 500kV** substations in **~37 of the 72 proposals**
- Remaining scope is mostly bringing 500kV upgrades to existing lines and substations **across Virginia and in NJ, DEL, PA, WVA, MD**
- ALL bringing greater capacity to Loudoun and PWC to support current data center load demands and the grid reliability violations they are causing
- **Undergrounding:** Primarily in Loudoun County or under waterways
  - ***7 NEW 500kV transmission lines*** *proposed solutions -* ***complete or partial undergrounding****: #419, 445, 548, 691, 728, 846, 858*
  - ***3 NEW partially undergrounded 230kV lines****: 385, 564, 948*

NEW ROWs (Right of Way) & Land Acquisitions

- **NO ROUTES OR LOCATIONS IN THE PLAN ARE FIRMLY ESTABLISHED**
- Transmission providers will not finalize new line or substation routes/locations until later in the process. PJM does not determine routes or substation locations.
- Maps only serve as an *estimate* of line corridor, not a firm route. And a *hoped-for location* for new substation.
- Many proposals are silent as to ROW or land acquisitions
- Much of the specific ROW/Real Estate information is redacted
- Even upgraded substations and lines may require larger footprint/wider ROW
- **ASSUME NEW ROW AND LAND ACQUISITIONS FOR ANYTHING NEW - AND FOR MANY UPGRADES**
- Will involve condemnations and eminent domain “takes” across the region

PJM Backbone Transmission System Map - Existing

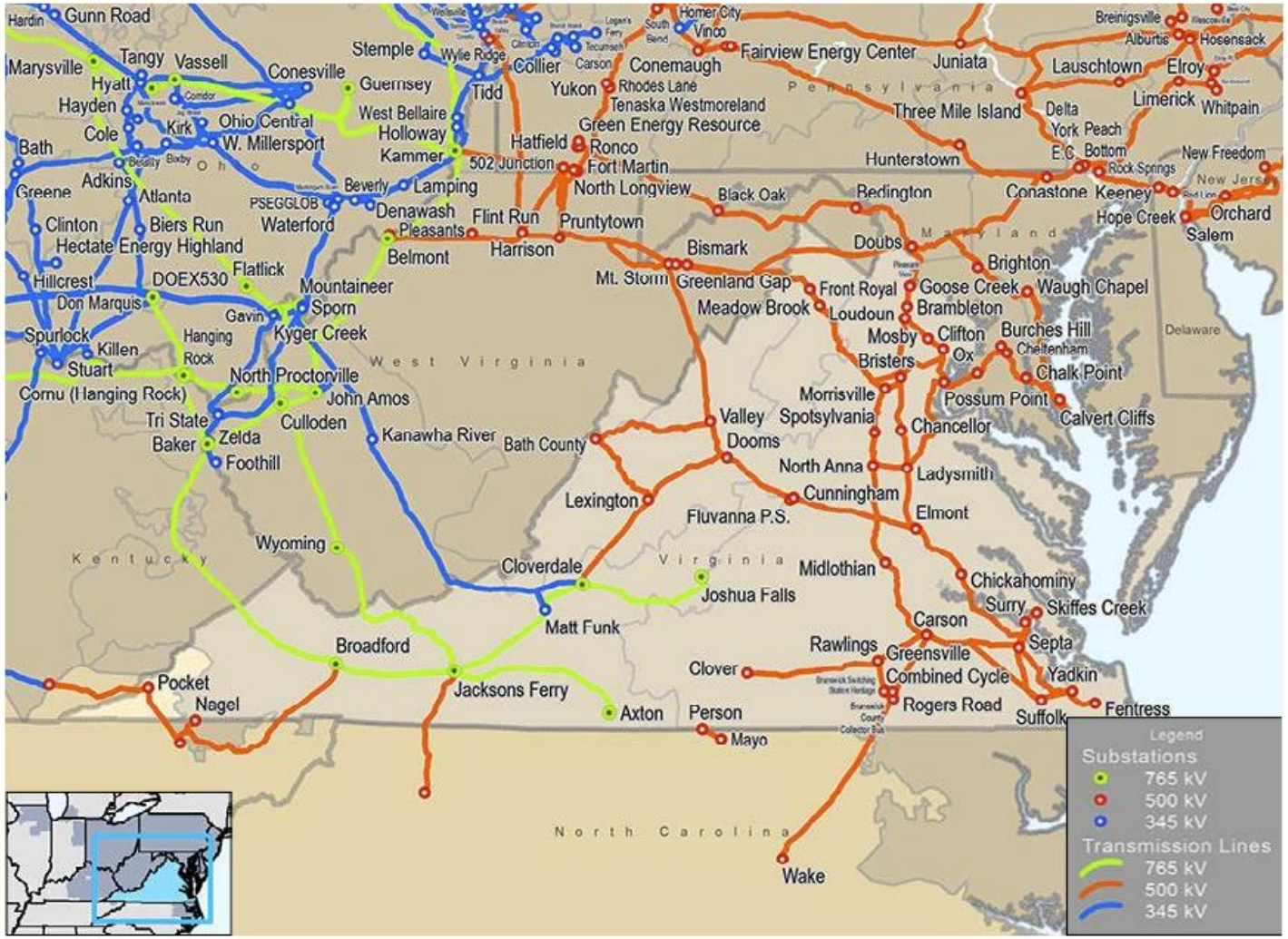
Map 1.1: PJM Backbone Transmission System



- Source: 2022-rtep-report.ashx (pjm.com) Dated March 13, 2023 Page 2
- **Does NOT show existing 230kV lines and substations**

PJM Service Area in Virginia – Existing

Map 6.46: PJM Service Area in Virginia



- Source: 2022-rtep-report.ashx (pjm.com) Dated March 13, 2023 Page 221
- **Does NOT show ANY existing 230kV lines and substations**

All Others: VA Counties, MD, & PA impacting Proposals

- **PROPOSALS = 26**

Virginia Counties

- **Fredericksburg Area – Stafford-Caroline Counties = 1**
  - Dominion: 74
- **Albemarle-Gordonsville-Charlottesville-Augusta-Rockbridge-Fluvanna-Amherst Counties = 9**
  - Dominion: 704, 211, 30, 967, 923
  - AEP: 181, 55, 9, 629
- **Petersburg = 1**
  - Dominion: 731
- **Habersham-Franklin Counties = 2**
  - AEP: 537, 477
- **Lynchburg-Bedford-Botetourt Counties = 3**
  - AEP: 524, 202, 410
- **Campbell-Leesville Counties = 1**
  - AEP: 856
- **Giles-Albemarle Counties = 2**
  - AEP: 196, 234

MD & PA = 7

- PSEG: 808
- Nextera: 217, 631, 530
- Exelon: 344
- PPL: 374, 606

- **ESTIMATED TOTAL COSTS = $3.6 BILLION ($3,644,251,790.00)**
  - Do not include the proposals listed/counted in the PWC, Loudoun, Fauquier and Fairfax totals

Impacted Waterways

– as noted in 26 All Others: VA Counties, MD, PA-impacting proposals

- Matta River
- Po River
- Ni River
- Mechums River
- Rivanna River
- Juniata River
- Markee Creek
- East Licking Creek

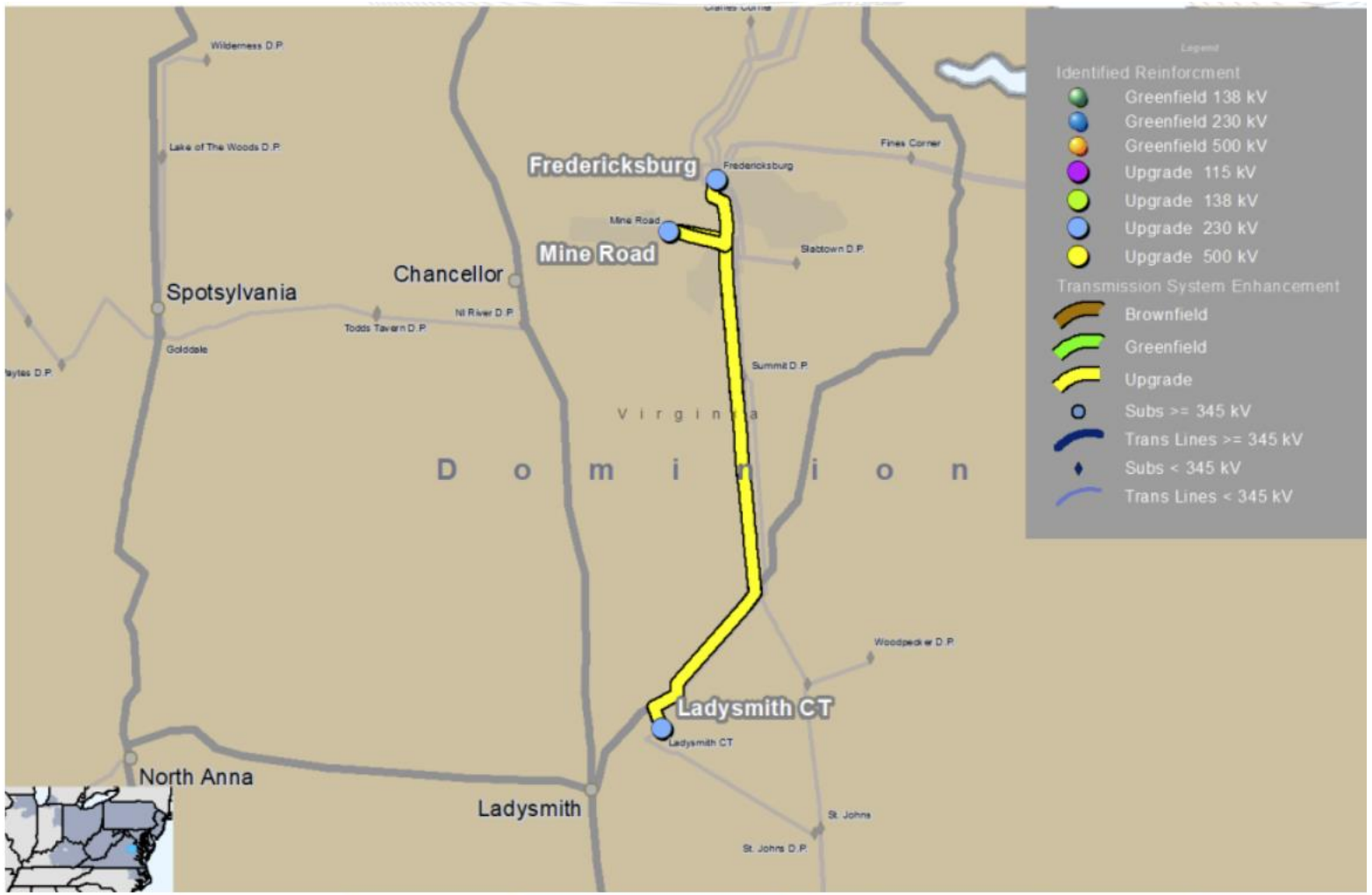
Impacted Historic Communities and Parks
– as noted in 26 All Others: VA Counties, MD, & PA-impacting proposals

- Shenandoah National Park
- Appalachian Trail

Fredericksburg Area – Stafford-Caroline VA Counties = 1

- Dominion: 74

Dominion 74



Impacts: Stafford, Caroline Counties VA

- The existing structures consist of mostly wood type SC 2 poles built in 1991.
- The existing structures will be replaced with new steel monopoles for this line rebuild.
- Upgrades to 230kV 4000A

Dominion 74 Components

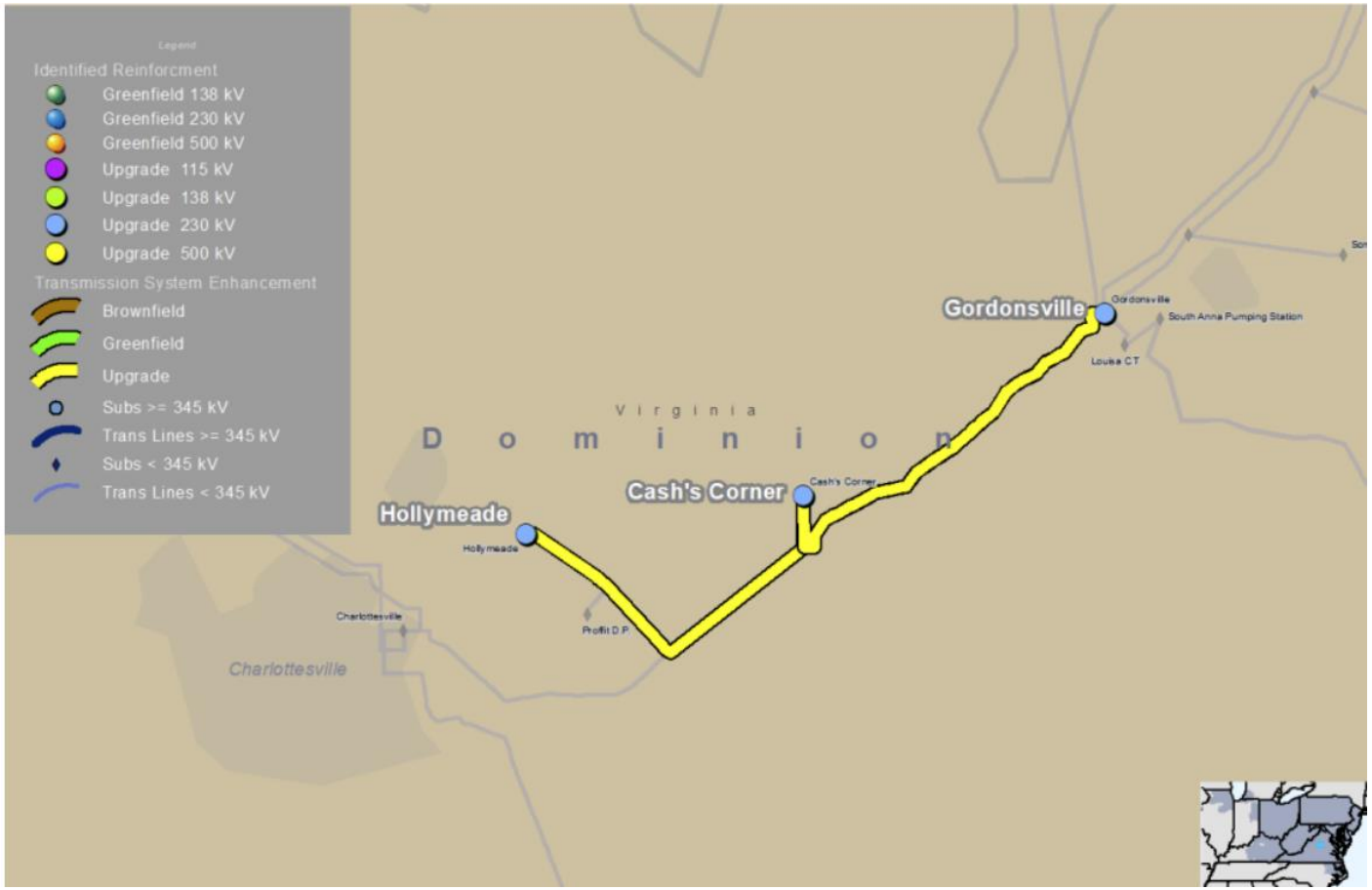
1. Fredericksburg Substation Equipment Upgrade – 230kV
2. Ladysmith CT Substation Equipment Upgrade – 230kV
3. Line #2090 (Ladysmith CT - Fredericksburg) 230kV Rebuild
4. Mine Road Conductor Upgrade

- **Green is NEW**
- **Impacts:**
  - Upgrade Fredericksburg and Ladysmith substations to 230kV – 4000A switches
  - Rebuild Ladysmith-Fredericksburg 230kV
- **ROW:**
  - Substations not being expanded
  - No new or additional ROW for transmission line rebuild
- **Waterways/History/Parks:** Matta River, Po River, Ni River
- **Estimated Cost:** $61,412,965
- Full details: PJM - Redacted Public Proposals for Current and Closed Windows : **>2022 Window 3 Redacted Proposals**

Albemarle-Gordonsville-Charlottesville-Augusta-Rockbridge-Fluvanna-Amherst VA Counties = 9

- Dominion: 704, 211, 30, 967, 923
- AEP: 181, 55, 9, 629

Dominion 704 & 211



Impacts: Albemarle, Gordonsville Counties VA

- The existing hardware were installed in 2014
- Existing structures shall be removed, and new structures will be used for the rebuild.
- 230kV vs 500kV upgrades

Dominion 704 & 211 Components

704:

1. Hollymeade Equipment Rating Upgrade
2. Gordonsville Substation
3. Line # 2135 (Hollymead to Gordonsville)
4. Cash Corner DP Equipment Rating Upgrade

211:

1. Hollymeade Equipment Rating Upgrade
2. Gordonsville Substation
3. Line # 2135 (Hollymead to Gordonsville)
4. Cash Corner DP Equipment Rating Upgrade

- **Waterways/History/Parks:**
  Rivanna River

- **Estimated Cost:**
  704: $39,504,603
  211: $58,748,912

- **Green is NEW**
- **Impacts:**
  - **#3 Components differ – 230kV vs 500kV:**

704: Permanent Facilities to be Installed:

1. Install fifty-nine (59) 230kV steel monopole double circuit tangents (12.612) on foundations.
2. Install three (3) 230kV self-supporting steel monopole double deadend structures (12.614) on foundations.
3. Install five (5) 230kV self-supporting steel 2-pole double deadend heavy angle structures (12.235) on foundations.
4. Install two (2) 230kV substation backbone structures (12.905).
5. Install approximately 7.1 miles of 1-set 3-phase 2-768.2 ACSS Maumee Type 13 conductor.
6. Install approximately 7.1 miles of two (2) DNO-11410 shield wire. a. Assumes 5 splices per OPGW throughout the line.
7. Install two (2) 4000A switches (213576 and 213579) to be supported by proposed backbone structure 2135/303.

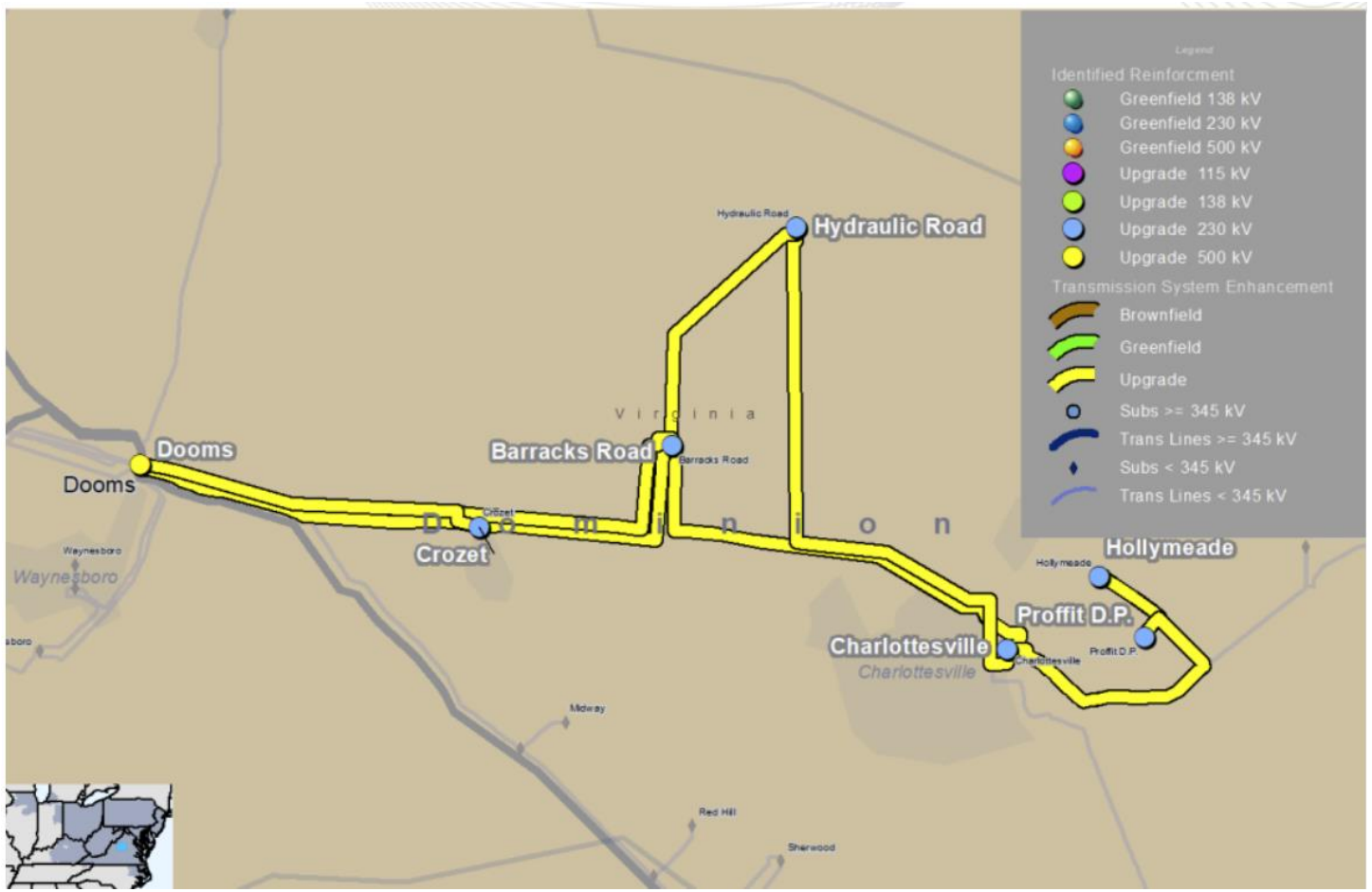
211: Permanent Facilities to be Installed (500kV *-more expensive*)

1. Fifty-nine (59) 500/230kV steel monopole double circuit tangents (15.205) on foundations.
2. Three (3) 500/230kV steel monopole double circuit small angles (15.215) on foundations.
3. Three (3) 500kV self-supporting heavy angle Strs. (15.212) on foundations.
4. Five (5) 230kV self-supporting heavy angle Strs. (15.212 w/ 230kV conductor) on foundations.
5. Two (2) 500kV self-supporting large angle steel deadends (modified 15.212 w/ two additional poles to catch the bottom two phases) on foundations. Modifications were made to reduce groundline moments.
6. Two (2) 230kV substation backbone Strs. (12.905).
7. Approx. 7.1 miles of 3-phase 2-768.2 ACSS Maumee Type 13 conductor.
8. Approx. 7.1 miles of two (2) DNO-11410 shield wire. a. Assumes 5 OPGW splices throughout the span.
9. Two (2) 4000A switches (213576 and 213579) to be supported by proposed backbone structure 2135/303.

- **ROW:**
  - **704:** "No new or additional right of way is required" "Substation will not be expanded"
  - **211:** "No new or additional right of way is required ""Substation is not being expanded."

- Full details: PJM - Redacted Public Proposals for Current and Closed Windows : **>2022 Window 3 Redacted Proposals**

Dominion 30 & 967



- **Impacts: Albemarle, Augusta Counties and Charlottesville VA**
- Only difference between proposals is Component 3 – Charlottesville-Hollymeade
  - 230kV vs 500kV upgrades
- Upgrading line #2054 (Charlottesville-Hollymeade), causes an overload on (Charlottesville-Dooms) lines #233 and #291 under Summer Generator Deliverability study for the loss of line #553.
- This overload can happen by adding some new loads in Louisa area as well.
- By wrecking and rebuilding (Charlottesville-Dooms) lines #233 and #291 using (2) 768.2 ACSS/TW (20/7) “MAUMEE” conductor with 3948A ampacity, 1573MVA, and upgrading the ratings of substation equipment at Charlottesville, Crozet, Barracks Rd, Hydraulic Rd and Dooms, the overload is mitigated.

Dominion 30 & 967 Components

30:

1. Hollymeade Substation Relay Revision
2. Charlottesville Substation Terminal Equipment Upgrade for Line #2054 Rebuild
3. Line # 2054 (Charlottesville to Hollymead)
4. Profit DP Substation Relay Revision
5. Barracks Rd Substation Relay Reset
6. Crozet Substation Relay Reset
7. Charlottesville Substation Terminal Equipment Upgrade for Line #233 & #291 Rebuild
8. Hydraulic Rd Substation Equipment Upgrade for Line #233 & #291 Rebuild
9. Dooms Substation Terminal Equipment Upgrade for Line #233 & #291 Rebuild
10. Line #233 (Charlottesville to Dooms) Rebuild
11. Line #291 (Charlottesville to Dooms) Rebuild

967:

1. Hollymeade Substation Relay Revision
2. Charlottesville Substation Terminal Equipment Upgrade for Line #2054 Rebuild
3. Line # 2054 (Charlottesville to Hollymead)
4. Profit DP Substation Relay Revision
5. Barracks Rd Substation Relay Reset
6. Crozet Substation Relay Reset
7. Charlottesville Substation Terminal Equipment Upgrade for Line #233 & #291 Rebuild
8. Hydraulic Rd Substation Equipment Upgrade for Line #233 & #291 Rebuild
9. Dooms Substation Terminal Equipment Upgrade for Line #233 & #291 Rebuild
10. Line #233 (Charlottesville to Dooms) Rebuild
11. Line #291 (Charlottesville to Dooms) Rebuild

- Green is NEW
- **Impacts:** Proposals differ in Component #3 – 230kV vs 500kV:

  30:

  1. Install seventy (70) 230kV steel monopole double circuit tangents (12.612) on foundations.
  2. Install five (5) 230kV self-supporting steel monopole double deadend structures (12.614) on foundations.
  3. Install seven (7) 230kV self-supporting steel 2-pole double deadend heavy angle structures (12.235) on foundations.
  4. Install one (1) 230kV substation backbone structure (12.905).
  5. Install approximately 8.72 miles of 3-phase 2-768.2 ACSS Maumee Type 13 conductor.
  6. Install approximately 8.72 miles of two (2) DNO-11410 OPGW. a. Assumes 5 splices per OPGW throughout the line.

  967: *(500kV - more expensive)*

  1. Install seventy (70) 500/230kV steel monopole double circuit tangents (15.205) on foundations.
  2. Install five (5) 500/230kV steel monopole double circuit small angles (15.215) on foundations.
  3. Install five (5) 500kV self-supporting heavy angle structures (15.212) on foundations.
  4. Install seven (7) self-supporting heavy angle structures (15.212 0.2w/ 230kV conductor) on foundations. 230kV
  5. Install two (2) 500kV self-supporting large angle steel deadends (modified 15.212 w/ two more poles to catch the bottom two phases) on foundations. Modifications were made to reduce groundline moments.
  6. Install one (1) 230kV substation backbone structure (12.905).
  7. Install approx. 8.72 miles of 3-phase 2-768.2 ACSS Maumee Type 13 conductor.
  8. Install approx. 8.72 miles of two (2) DNO-11410 OPGW. a. Assumes 5 OPGW splices throughout the line.

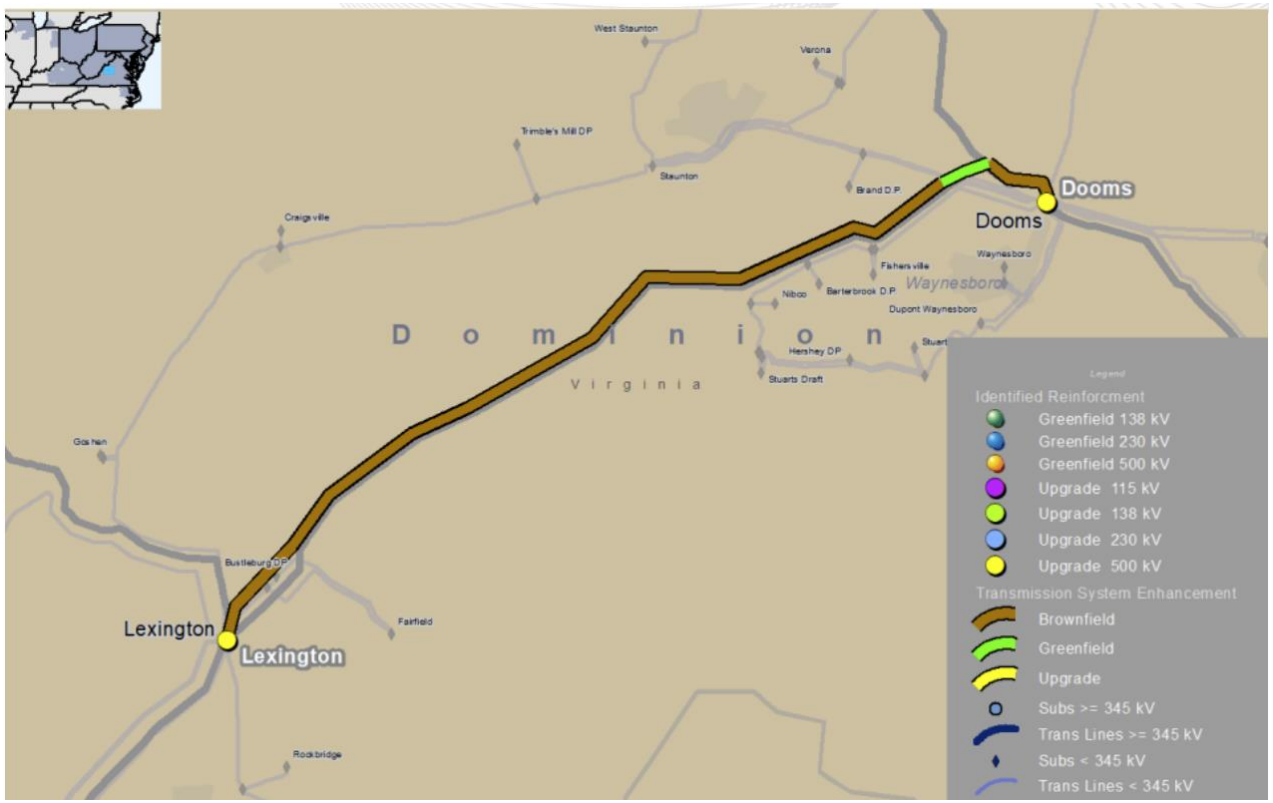
- **ROW:** "Substation is not being expanded" "Existing Right-of-Way will be used. No new Right-of-Way required"
- **Waterways/History/Parks:** Rivanna River, Shenandoah National Park, Appalachian Trail
- **Estimated Cost:**

  30: $171,218,806

  967: $196,511,355

- Full details: PJM - Redacted Public Proposals for Current and Closed Windows : **>2022 Window 3 Redacted Proposals**

Dominion 923



- **IMPACTS: Augusta, Lexington, Rockbridge Counties VA**
  - NEW 500kV Dooms-Lexington line
  - Upgrade Dooms and Lexington substations to 500kV

Ignore Brownfield – Line is NEW

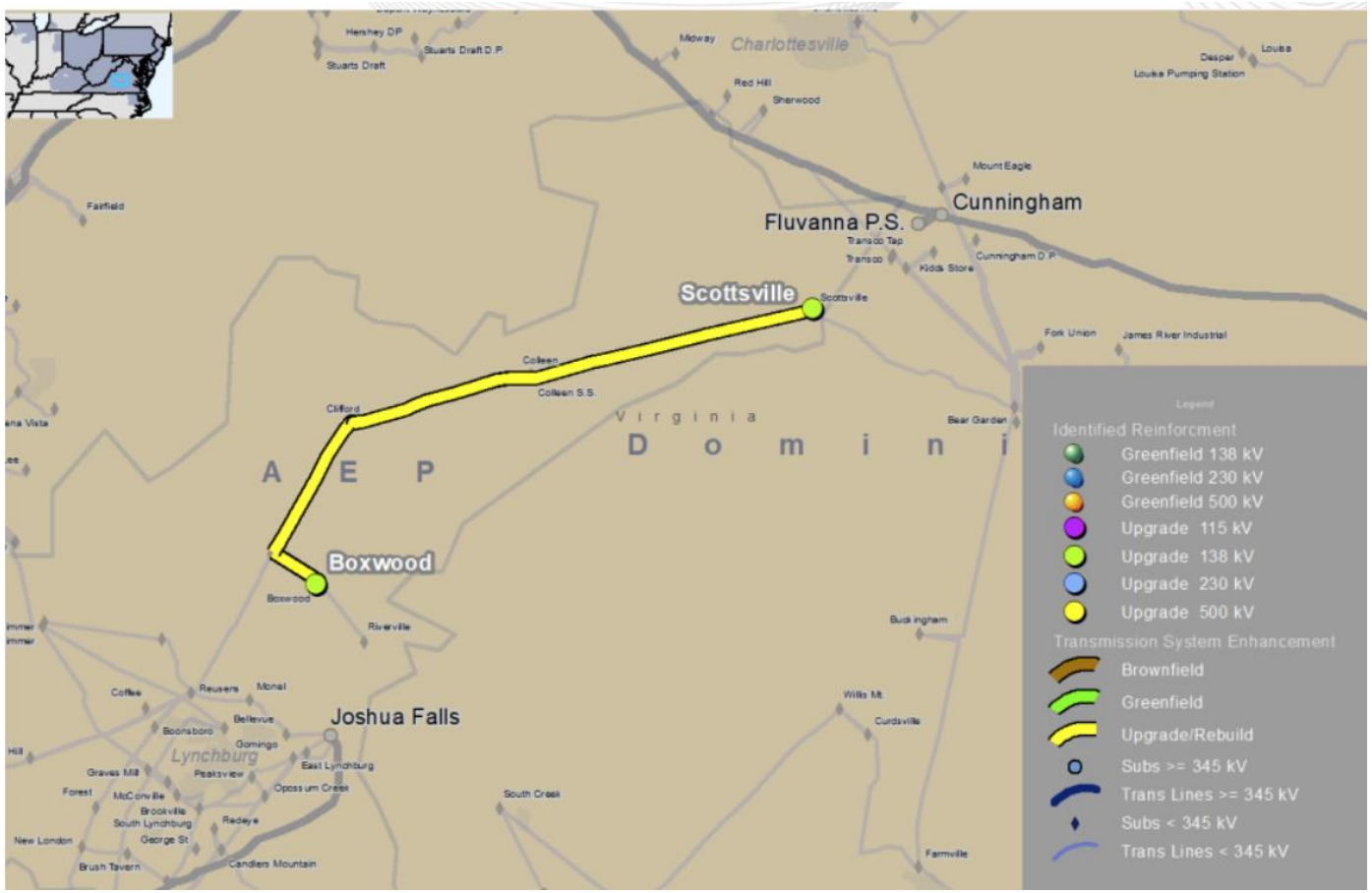
Dominion 923 Components

1. New 500 kV Line (Lexington to Dooms)
2. Dooms Substation
3. Lexington Substation

- Green is NEW
- **Impacts:**
  - New 500kV Lexington-Dooms line – 40.5 miles?
  - 2 substations upgraded to 500kV: Dooms, Lexington
- **ROW:**
  - "The new 500 kV line will run parallel to the existing Line # 555, and about 60 ft wide additional right of way would be needed for the entire length of the the line. 90 ft wide right of way would be needed at both Lexington and Dooms substations."
  - "The Substation is not being expanded."
- **Waterways/History/Parks:** Redacted
- **Estimated Cost:** $248,665,258

- Full details: PJM - Redacted Public Proposals for Current and Closed Windows : **>2022 Window 3 Redacted Proposals**

AEP 181 & 55



- **IMPACT: Amherst, Fluvanna, Albemarle Counties VA**
  - **181: Sag Study**
    - "…on the line sections between Boxwood and Scottsville 138 kV to identify and mitigate any clearance issues in order to operate above the identified line loadings."
  - **55: 138kV Rebuild**
    - "…in order to increase the emergency rating above the identified thermal overloads."
  - "Replaces towers originally installed in the 1940s and 1950s."

AEP 181 & 55 Components

181:

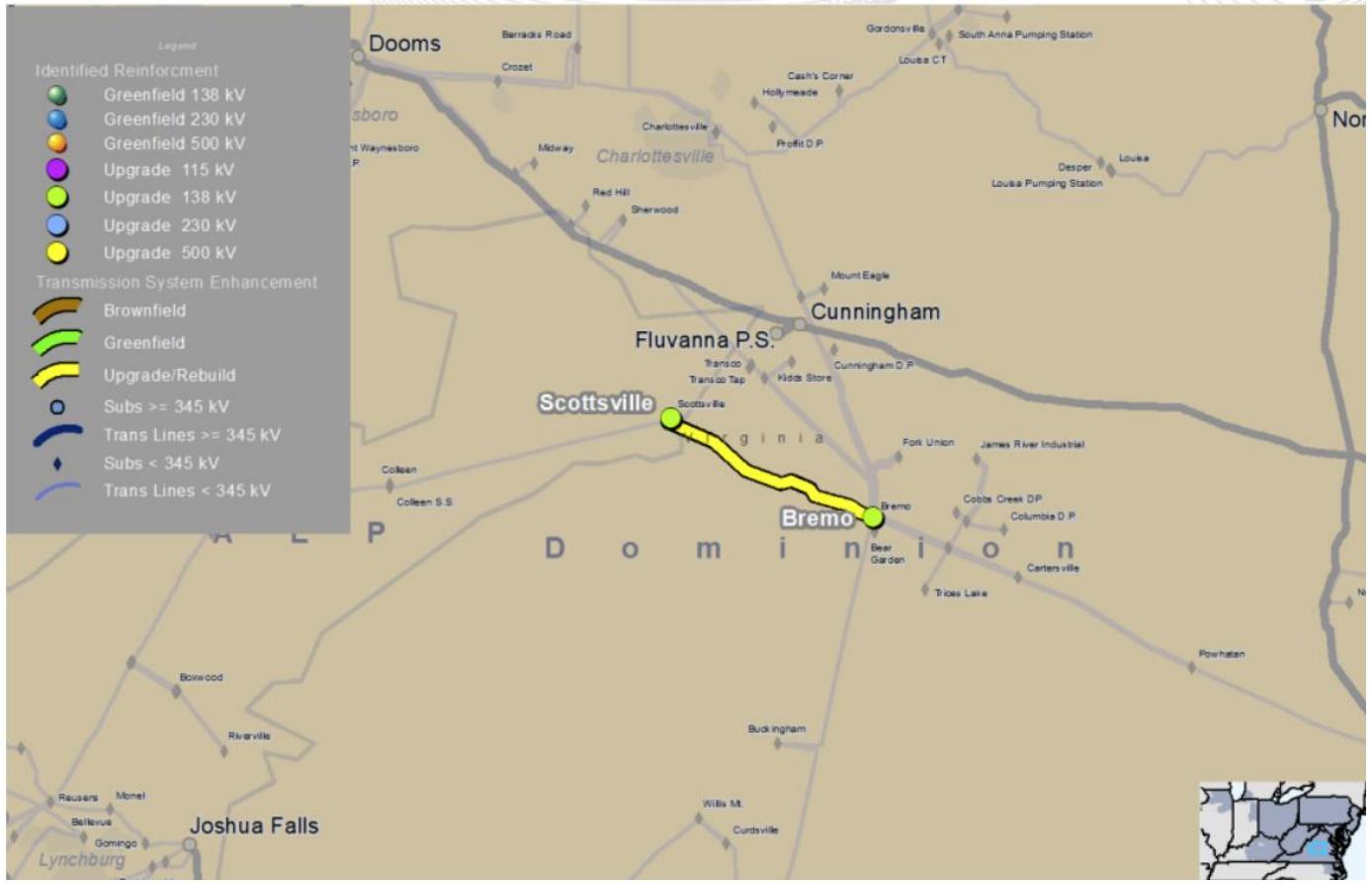
1. Boxwood-Scottsville 138 kV Sag Study

55:

1. Boxwood-Scottsville 138 kV Rebuild

- Green is NEW
- **Impacts:**
  - **181: Sag Study:** Existing structures are 1940-1950s vintage double circuit lattice towers
  - **55:** 37.5 miles "Replaces towers originally installed in the 1940s and 1950s"
- **ROW:** "Approximately 80% of the new line route will be in adjacent Rights of Way (RoW). This is due to outage constraints not allowing us to take the line and circuit out for months to years at a time to build in existing centerline. The 20% that will be built in existing centerline are existing structures being rebuilt to accommodate the new structures being installed around the existing Clifford station and the two new stations, Soapstone and James River. There are also some existing outside stakeholder easements and conditions (historical and environmental factors) that necessitate portions of the line to be rebuilt in the existing right of way.""Easements will need to be acquired for the new roads to access existing structures for modification and for installation of the new prop structures. Mitigation efforts will remain in centerline."
- **Waterways/History/Parks:** Redacted
- **Estimated Cost:**
  - **181**: $4,260,557
  - **55:** $104,876,322
- Full details: PJM - Redacted Public Proposals for Current and Closed Windows : **>2022 Window 3 Redacted Proposals**

AEP 9 & 629



- **IMPACT: Albemarle, Fluvanna Counties VA**
  - **9: Sag Study:**
    - "…to identify and mitigate any clearance issues in order to operate at or above the identified line loadings."
  - **629: 138kV Rebuild**
    - "Rebuild the AEP owned portion of the Scottsville-Bremo 138 kV line, approximately 7.5 miles"
  - "Steel lattice line originally installed in the 1940s-1950s."

AEP 9 & 629 Components

9:

1. Scottsville-Bremo 138 kV Sag Study

629:

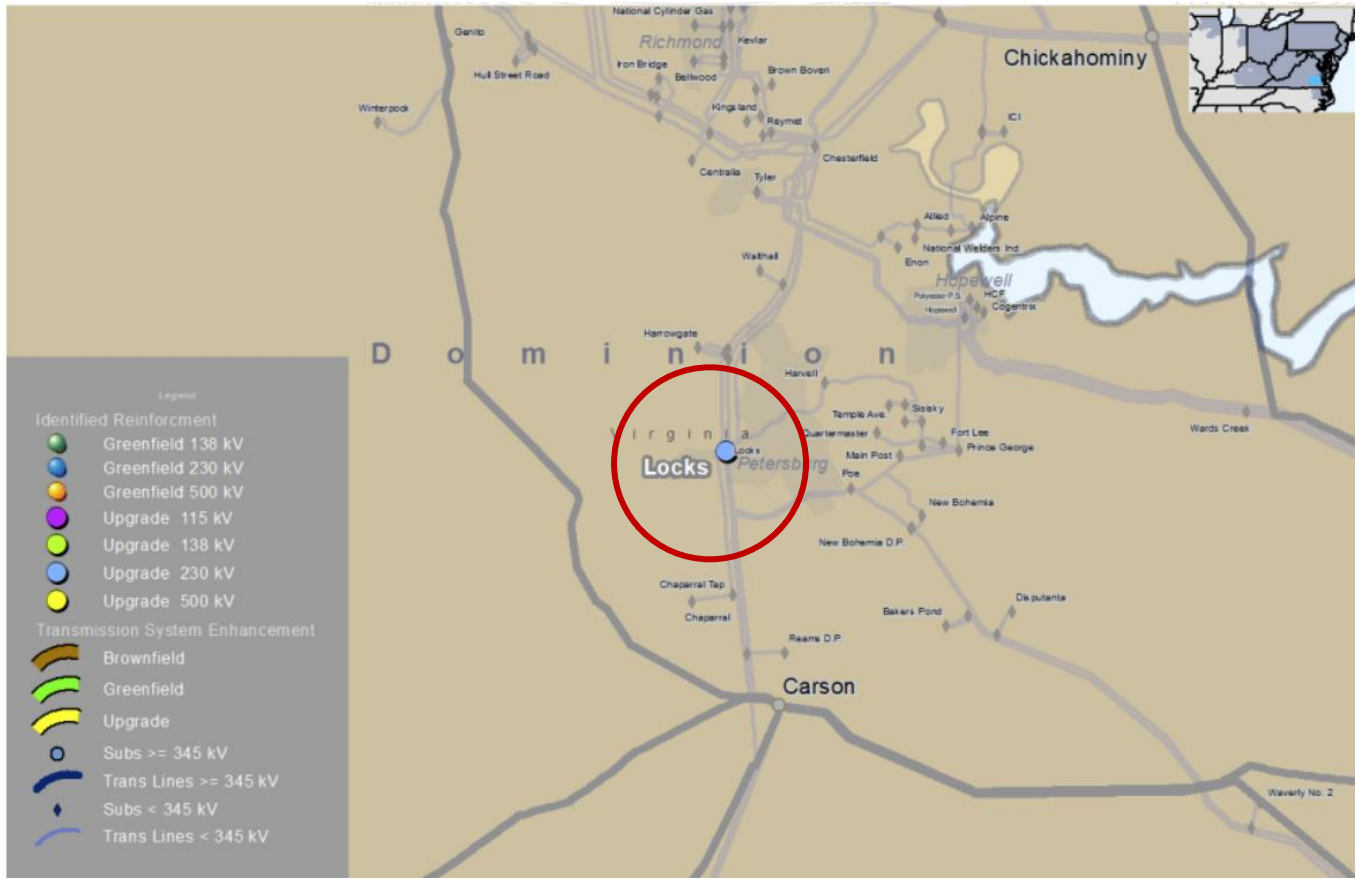
1. Scottsville-Bremo 138 kV Rebuild

- Green is NEW
- **Impacts:**
  - **9: "**Perform a sag study and implement sag mitigations on the AEP owned portion of the Scottsville-Bremo 138 kV tie line. PJM had previously identified this line as overloaded in the light load N-1 analysis. NOTE: The Dominion ratings in light load cases will be 205 MVA." "Steel lattice line originally installed in the 1940s-1950s."
  - **629:** Rebuild the AEP owned portion of the Scottsville-Bremo line, approximately 7.5 miles. Dominion will then set the limits on the line. The light load emergency rating for Dominion will be 205 MVA.
- **ROW:**
  - "Easements will need to be acquired for the new roads to access existing structures for modification and for installation of the new prop structures. Mitigation efforts will remain in centerline."
  - "Line will be rebuilt in or adjacent to existing ROW with supplemental easements obtained as needed"
- **Waterways/History/Parks:** Redacted
- **Estimated Cost:**
  - **9:** $1,272,634
  - **629:** $31,305,962
- Full details: PJM - Redacted Public Proposals for Current and Closed Windows : **>2022 Window 3 Redacted Proposals**

Petersburg VA = 1

- Dominion: 731

Dominion 731



- **IMPACTS: Petersburg VA**
  - 230kV substation – new transformers
    - Locks 230/115 kV transformer TX #7 gets overloaded under Gen Deliv in RTEP 2027 HG case.
    - Therefore, this project replaces TX #7 with new three phase transformers that have a higher rating of 224 MVA.
    - Lead lines at the 115 kV level will be upgraded to 2000 A.

Dominion 731 Components

1. Locks Substation

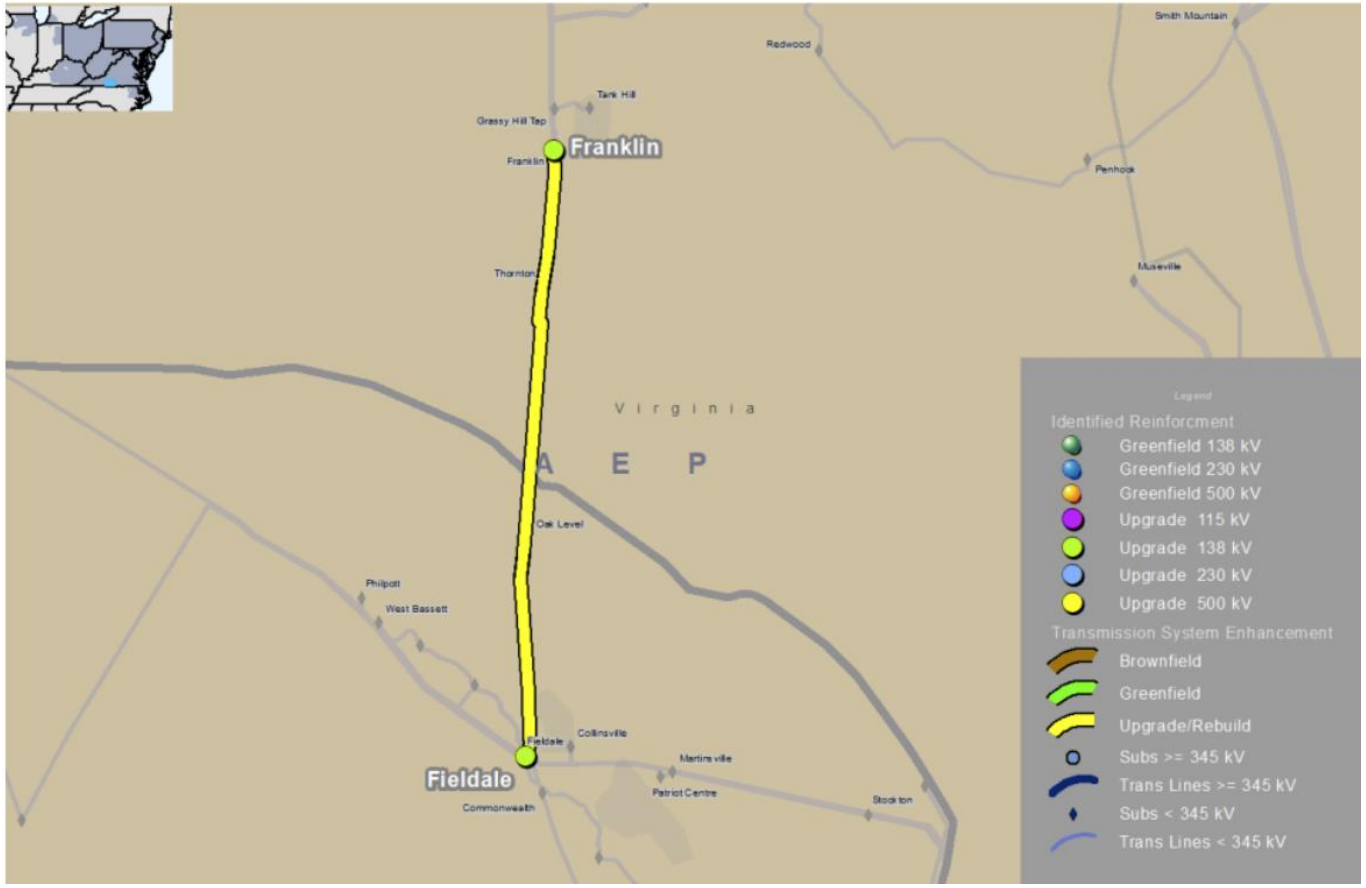
- Green is NEW
- **Impacts:** Petersburg VA: New transformers for Locks 230kV substation
- **ROW:**
  - "No new ROW will need to be purchased for the transmission scope as the new structures are within the substation property"
  - The substation will not be expanded for this project
- **Waterways/History/Parks:** Redacted
- **Estimated Cost:** $7,647,476

- Full details: PJM - Redacted Public Proposals for Current and Closed Windows : **>2022 Window 3 Redacted Proposals**

Habersham-Franklin VA Counties = 2

- AEP: 537, 477

AEP 537 & 477



- **IMPACT: Habersham, Franklin Counties VA**

537: Sag clearance study to increase the summer emergency rating above the reported loadings for the Fieldale-Thornton and Thornton-Franklin line sections. Preliminary review using existing LiDAR data for that line recommends replacement of ferrous clamp hardware at each structure.

477: 138kV Rebuild: The Fieldale-Franklin line section is associated with the larger Roanoke-Carolina 138 kV line asset, which has identified physical condition needs, described in Need AEP-2023-AP015. The rebuild will eliminate all physical condition issues between Fieldale and Franklin substations with a newly rebuilt line section.

- The existing double circuit lattice steel line between Fieldale 138kV and Franklin 138kV was placed into service in 1926.
- All of the originally installed materials are well beyond their intended useful life.

AEP 537 & 477 Components

537:

1. Fieldale-Franklin 138 kV Sag Study

477:

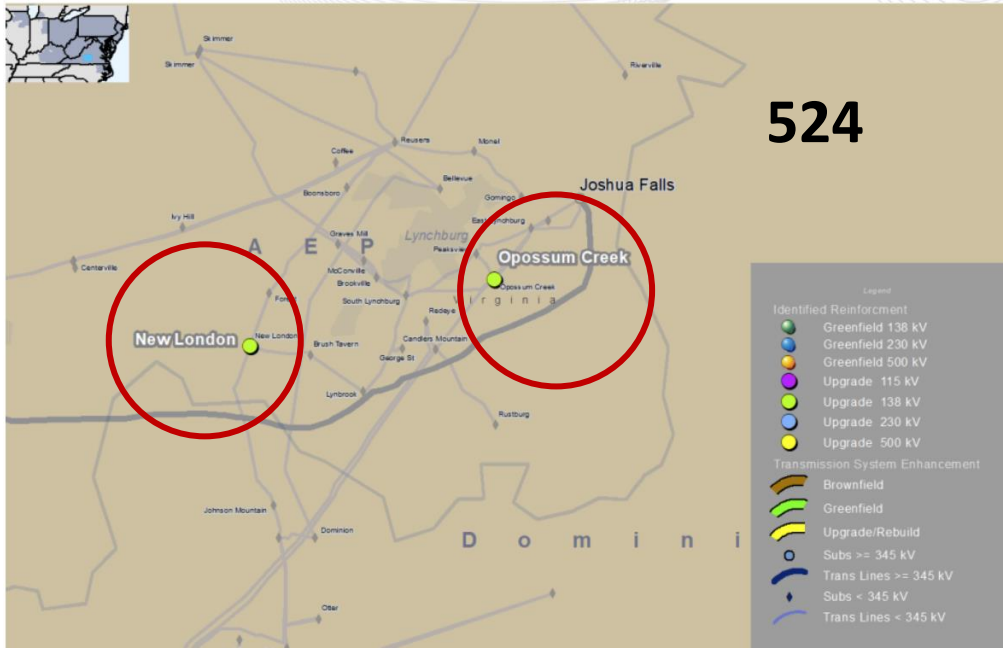
1. Fieldale-Franklin 138 kV Rebuild

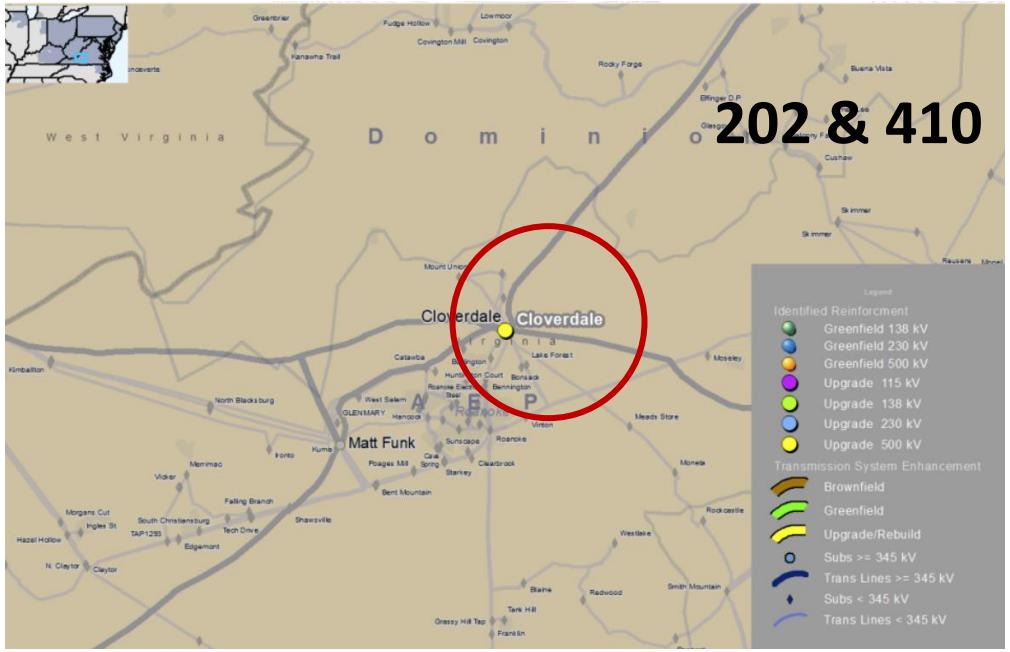
- Green is NEW
- **Impacts:**
  - **537:** Replace all insulator assemblies along the 19.2 mile long Fieldale-Franklin 138 kV line to increase the emergency rating of the line.
  - **477:** Rebuild 19.2 miles of the 138 kV double circuit line asset between Fieldale and Franklin substations. Update relay settings at Fieldale and Blaine substations.
- **ROW:**
  - **537:** No new ROW will be required for the insulator assembly project. It is assumed that all work can be performed under existing rights to maintain. The Proposing Entity will also pay for any crop damage and/or physical damage to property resulting from the construction and/or maintenance of the transmission line.
  - **477:** Due to the current outage availability of the corridor between Fieldale 138kV and Franklin 138kV, the project will be built directly adjacent to the existing line located within Henry and Franklin County. The majority of the line will be built approximately 50' from existing centerline to allow for proper construction and safety clearances. The proposed ROW width is 100', so approximately 50' will overlap with existing ROW, and 50' will be new ROW. After detailed analysis additional ROW width may be required in some spans to encompass conductor sway. The attached kmz shows how the proposed line will parallel existing ROW on undeveloped residential and commercial lands. Due to some siting constraints there are a few sections where the line must be built on existing cL or cross over the existing centerline
- **Waterways/History/Parks:** Redacted
- **Estimated Cost:**
  - **537:** $30,187,138
  - **477:** $74,887,399
- Full details: PJM - Redacted Public Proposals for Current and Closed Windows : **>2022 Window 3 Redacted Proposals**

Lynchburg-Bedford-Botetourt VA Counties = 3

- AEP: 524, 202, 410

AEP 524, 202 & 410





IMPACT: Lynchburg, Bedford, Botetourt Counties VA

524: Install a 5% reactor at Opossom Creek on the Opossum Creek-Redeye 138 kV line and a 5% reactor at New London on the New London-Altavista 138 kV line.

202: establish a new 500/345 kV, 1500 MVA transformer and a new breaker string consisting of two new 500 kV circuit breakers, located in the Cloverdale 500 kV yard. A new 345 kV tie-line between the 500 kV yard and 345/138 kV yards will be required. In addition, a new 345 kV breaker string and two new 345 kV circuit breakers will be required in the 345/138 kV yard.

410: establish a new 500 kV breaker position for the low-side of the existing 765/500 kV transformer at Cloverdale Station. The new position will be between two new 500 kV circuit breakers located in a new breaker string, electrically converting the 500 kV yard to "double-bus double-breaker" configuration.

AEP 524, 202 & 410 Components

524:

1. New London Reactor Install

2. Opossom Creek Reactor Install

202:

1. Cloverdale Transformer Addition 500/345kV

410:

1. Cloverdale 500 kV Breaker Reconfiguration

- Green is NEW
- **Impacts:**

  524:
  - Expand New London station, Install new 138kV box bay, 2-138kV circuit breakers and re-terminate Reusens and Brush Tavern 138kV lines. Install series reactors on the Altavista 138kV line. Update relay settings at Brush Tavern, Reusens, and Altavista stations
  - At Opossum Creek station, relocate Cap Bank BB and install a 5% series reactors on the Redeye 138kV line. Update relay settings at Redeye station due to the reactor install.

  202:
  - Add a third 500/345 kV transformer at Cloverdale station

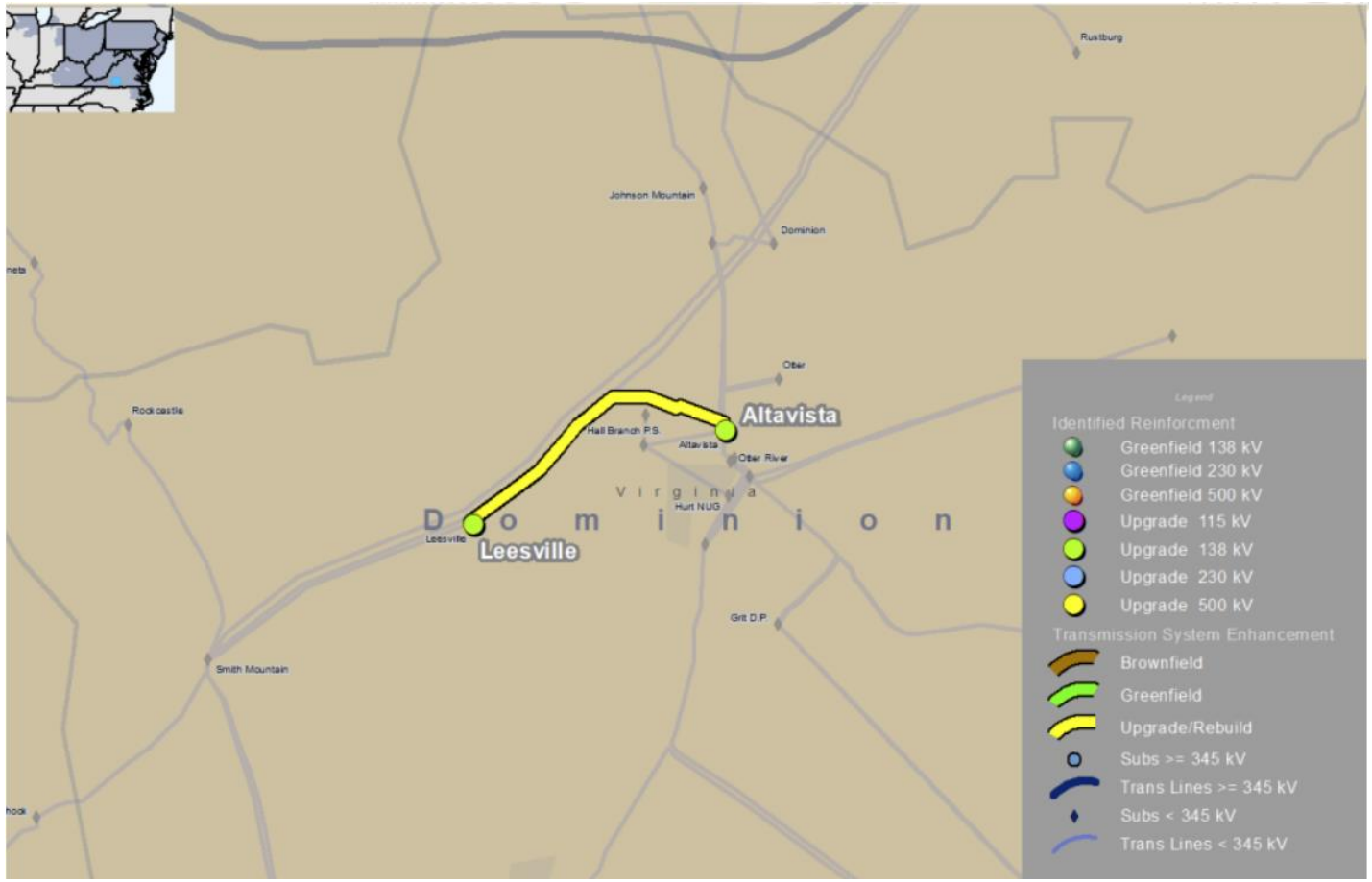
  410:
  - Build new 2 breaker string in Cloverdale East 500kV yard and re-terminate 765/500kV XF#14 in this new position

- **ROW:**
  - **524**: "New London: Assume property (farmland) adjacent to station is available for purchase." "Opossom Creek: New equipment will be constructed on AEP property in the existing station footprint. No station expansion required."
  - **202:** "Project will utilize available space on AEP owned property inside the existing station fence. No new land or station expansion is required."
  - **410:** "All work will be performed on AEP-owned land. No station expansion work is required."
- **Waterways/History/Parks:** Redacted
- **Estimated Cost:**
  - **524:** $8,862,826
  - **202:** $57,285,348
  - **410:** $11,590,271
- Full details: PJM - Redacted Public Proposals for Current and Closed Windows : **>2022 Window 3 Redacted Proposals**

Campbell-Leesville VA Counties = 1

- AEP: 856

AEP 856



- **IMPACTS: Campbell, Leesville Counties VA**
  - Rebuild the Leesville - Altavista 138kV line asset in the clear.

AEP 856 Components

1. Leesville-Alta Vista 138 kV Rebuild

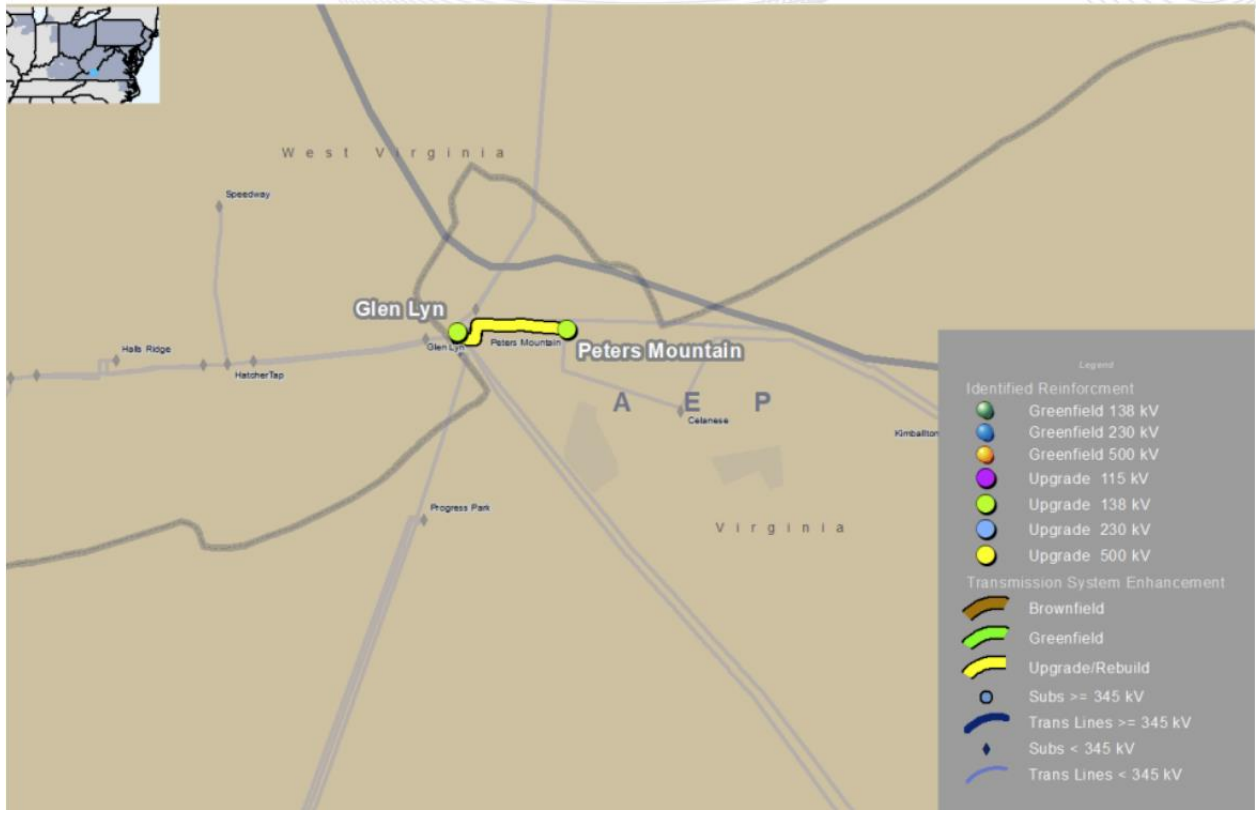
- Green is NEW
- **Impacts:** The entire circuit between Altavista and Leesville Station will be constructed in the clear on new right-of-way utilizing single steel monopoles. The Smith Mountain-Opossum Creek 138 kV Line Asset will not be rebuilt under this scope of work.
- **ROW:** 8.5 miles. The entire Altavista-Leesville 138 kV Circuit will be constructed on a new 100-foot wide right-of-way, except where additional right-of-way will be required due to conductor sway under active wind conditions. The areas in which additional right-of-way may be required due to the conductor sway under active wind conditions are dependent upon the completion of final design.
- **Waterways/History/Parks:** Redacted
- **Estimated Cost:** $28,845,591

- Full details: PJM - Redacted Public Proposals for Current and Closed Windows : >**2022 Window 3 Redacted Proposals**

Giles-Albemarle VA Counties = 2

AEP: 234, 196

AEP 234 & 196



- **IMPACT: Giles, Albemarle Counties VA**
  - **234:** Sag study the 138kV circuit from Glen Lyn station to Peter Mountain station at roughly 3.6 miles. The current line from Glen Lyn to Peters Mountain is sag derated to 205 MVA in the Summer case. To mitigate the overload, the Summer emergency rating needs to be 214 MVA or above.
  - **196:** Rebuild the double circuit 138kV line from Glen Lyn station to Peter Mountain station at roughly 3.6 miles. The current line from Glen Lyn to Peters Mountain is sag derated to 205 MVA in the Summer case. To mitigate the overload, the Summer emergency rating needs to be 214 MVA or above.
  - Addresses towers that were originally installed in 1951

AEP 234 & 196

234:

1. Glen Lyn-Peters Mountain 138 kV Sag Study

196:

1. Glen Lyn-Peters Mountain 138 kV Rebuild

2. Peters Mountain Reconfiguration

- Green is NEW
- **Impacts:**
  - **234:** Approximately 3.59 line miles are being evaluated with the re-rate Sag Study. Applicable section is from the existing Glen Lyn Station Frame to existing Structure 42-16 (Glen Lyn - Hancock 138kV Line) and further through existing Structure 36-1A (Peters Mountain 138kV Loop) into the existing Peters Mountain Station Frame.
  - **196:** Rebuild 3.59 miles of the Glen Lyn - Hancock 138kV double circuit line asset from Glen Lyn to Peters Mountain stations.
- **ROW:**
  - **234:** Initial findings to be confirmed with a FULL Sag Study evaluation using to-be-acquired LiDAR in support of verifying existing structure locations, conductor attachment points, wires tensions, ground surface, encroachment/objects in the ROW, and vegetation issues. Existing ROW width is assumed to be the historical 100 FT (50 FT to each side of centerline), which is representative of a double circuit 138kV line
  - **196:** Project is required to be built mainly off centerline in new standard 100 FT right-of-way due to outage constraints and terrain considerations. The following spans may require expanded rights-of-way given evaluated conductor zone under an active blowout condition: a) Span between proposed STRs 42-4A to 42-5A: 110 FT blowout width for 1,426 FT span length. b) Span between proposed STRs 42-8A to 42-9A: 110 FT blowout width for 1,430 FT span length. c) Span between proposed STRs 42-11A to 42-12A: 360 FT blowout width for 2,726 FT span length. d) Span between proposed STRs 42-14A to 42-15A: 110 FT blowout width for 1,530 FT span length
- **Waterways/History/Parks:** New River
- **Estimated Cost:**
  - 234: $802,651
  - 196: $21,889,828
- Full details: PJM - Redacted Public Proposals for Current and Closed Windows : **>2022 Window 3 Redacted Proposals**

MD & PA = 7

- PSEG: 808
- Nextera: 217, 631, 530
- Exelon: 344
- PPL: 374, 606

PSEG 808

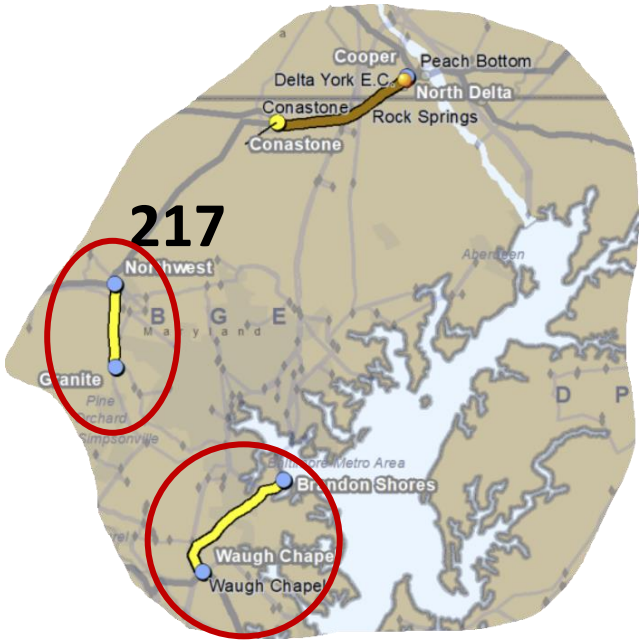
- **IMPACTS: Frederick MD, MD, PA**
  - 500kV Greenfield line from Peach Bottom to New Raphael Station
  - 500kV Greenfield line from New Raphael Station to Waugh Chapel
  - 500kV Greenfield line from Doubs Station to Peach Bottom Station
  - NEW Raphael Rd. 500kV substation

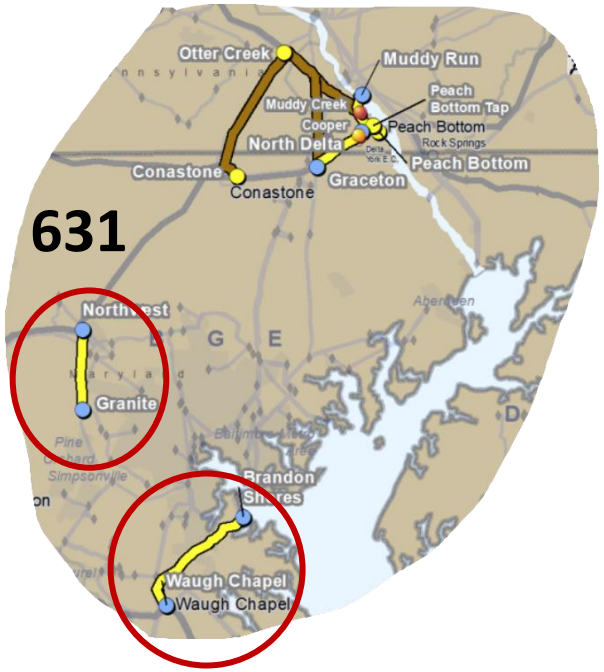
PSEG 808 Components

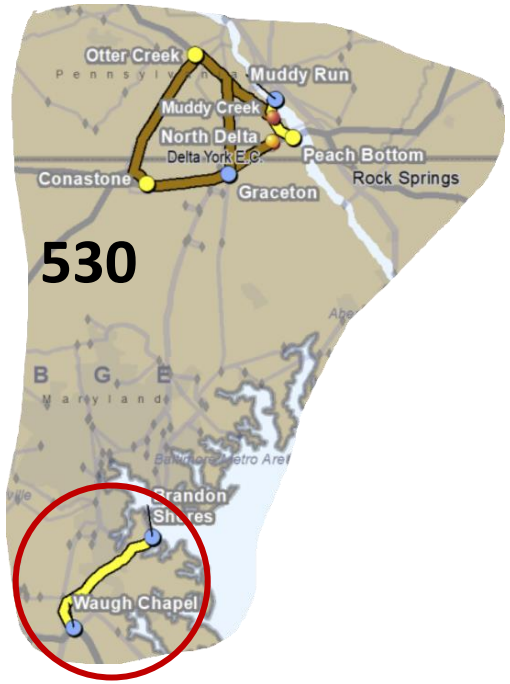
1. Peach Bottom-New Raphael 500kV
2. New Raphael-Waugh Chapel 500kV line
3. Doubs-Peach Bottom 500kV Line
4. Reconductor Peach Bottom North to Peach Bottom South Tie #1 and #2
5. New Raphael 500kV Station
6. Peach Bottom 500kV Upgrade
7. Doubs 500/230kV Upgrade
8. Northeast 230/115kV Upgrade
9. Raphael Rd 230kV Upgrade
10. Waugh Chapel 500kV Upgrade
11. Conastone/Brighton 500kV Upgrade

- Green is NEW
- **Impacts: Frederick MD, MD, PA**
  - 3 NEW 500kV lines
  - 1 NEW 500kV substation
  - 6 other substation upgrades: 4 500kV, 2 230kV
- **ROW:**
  - NEW 500kV Peach Bottom-Raphael Rd – 35 miles, require ROWs with widths of 80-85 feet in residential areas, 125-130 feet in farmland, 150 feet in farmland, and 170 feet at the Patapsco River
  - NEW 500kV Raphael Rd-Waugh Chapel – 37 miles, require ROWs with widths of 80-85 feet in residential areas, 125-130 feet in farmland, 150 feet in farmland, and 170 feet at the Patapsco River
  - NEW 500kV Doubs-Peach Bottom – 87 miles, require ROWs with widths of 80-85 feet in residential areas, 125-130 feet in farmland, 150 feet in farmland, and 170 feet at the Patapsco River
  - NEW Raphael Rd. 500kV station - PSEG has identified several properties that are suitable for this proposed solution. The Project Team has initiated contact with the property owners and will continue to work to acquire site control in the event of award. PSE&G contemplates the need for access roads and areas, as part of any lands to be acquired.
  - Remaining use existing ROW, no substation expansion is anticipated.
- **Waterways/History/Parks:** Patapsco River, most is redacted
- **Estimated Cost:** $1,259,268,839 $1.2B
- Full details: PJM - Redacted Public Proposals for Current and Closed Windows : **>2022 Window 3 Redacted Proposals**

Nextera 217, 631, 530



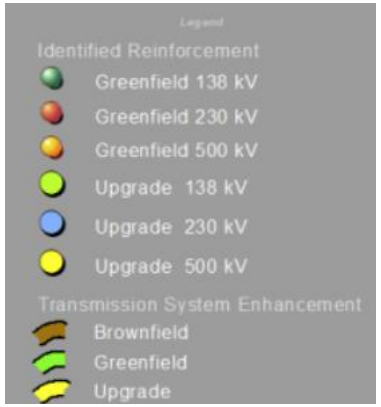




IMPACT: MD & PA

- One NEW 500kV line – North Delta-Conastone
- Two NEW 230kV lines
- Two NEW substations: North Delta 500/230kV, Muddy Creek 230kV
- One 500kV line upgrade/rebuild
- Five 230kV line upgrades/rebuilds
- Three 230kV or 500kV substation upgrades

Ignore "Brownfield" – Line or circuit is NEW



Nextera 217, 631, 530 Components

217:

1. 24e - North Delta to Cooper 230kV rebuild
2. 24f - North Delta to Graceton 230kV rebuild
3. 26d - Waugh Chapel to Brandon Shores 230kV upgrade
4. 26A - New 500kV transmission line from new North Delta substation to BGE's Conastone substation.
5. 26e - Granite to North West 230kV upgrade
6. 26C - Conastone substation single 500kV breaker expansion
7. 26b2 - New North Delta Substation - 10 terminal

631:

1. 24e - North Delta to Cooper 230kV rebuild
2. 24f - North Delta to Graceton 230kV rebuild
3. 25B - New double circuit 230kV transmission line from new Muddy Creek switchyard to the point where PPL's Manor - Graceton 230kV transmission line crosses Peach - Otter Creek 500kV transmission line
4. 26d - Waugh Chapel to Brandon Shores 230kV upgrade
5. 25F - Muddy Run to Peach Bottom 230kV upgrade
6. 25C - New single circuit 230kV transmission line from where PPL's Manor - Graceton 230kV transmission line crosses Peach Bottom - Otter Creek 500kV transmission line to where the Otter Creek - Conastone 230kV transmission line begins
7. 26e - Granite to North West 230kV upgrade
8. 27d - North Peach Bottom to South Peach Bottom 500kV rebuild
9. 25d - Graceton substation single 230kV breaker expansion
10. 25a - New Muddy Creek Substation- 6 terminal
11. 24a - New North Delta Substation- 4 terminal
12. 25b2 - Muddy Creek to Graceton 230kV Brownfield Component
13. 25c2 - Muddy Creek to Conastone 230kV Brownfield Component
14. 25e - Conastone substation 230kV termination

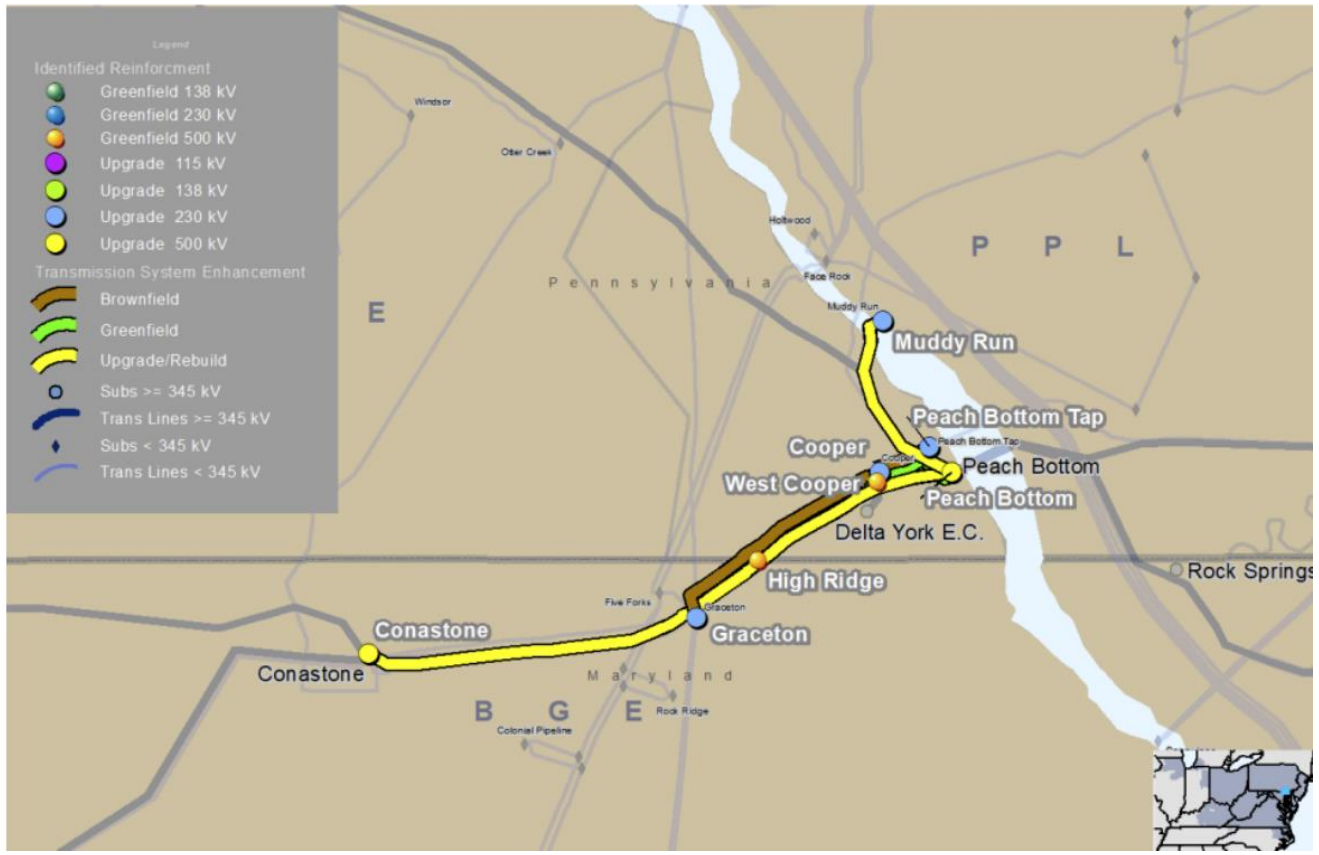
530:

1. 25B - New double circuit 230kV transmission line from new Muddy Creek switchyard to the point where PPL's Manor - Graceton 230kV transmission line crosses Peach - Otter Creek 500kV transmission line
2. 25C - New single circuit 230kV transmission line from where PPL's Manor - Graceton 230kV transmission line crosses Peach Bottom - Otter Creek 500kV transmission line to where the Otter Creek - Conastone 230kV transmission line begins
3. 26d - Waugh Chapel to Brandon Shores 230kV upgrade
4. 25F - Muddy Run to Peach Bottom 230kV upgrade
5. 26A - New 500kV transmission line from new North Delta substation to BGE's Conastone substation.
6. 25a - New Muddy Creek Substation- 6 terminal
7. 25d - Graceton substation single 230kV breaker expansion
8. 26C - Conastone substation single 500kV breaker expansion
9. 26b - New North Delta Substation - 3 terminal
10. 25b2 - Muddy Creek to Graceton 230kV Brownfield Component
11. 25c2 - Muddy Creek to Conastone 230kV Brownfield Component
12. 25e - Conastone substation 230kV termination

- **ROW:** Mostly Redacted, "Use of existing ROW to extent practicable"
  - 26A NEW North Delta-Conastone 500kV: "15 miles - The majority of the new right of way will be an expansion of an existing transmission line corridor, where a 135ft additional width will be required beyond the existing, assumed, ROW edge."
  - 25B & 25C NEW 230kV: 6.1 and 4.9 miles – "The majority of the new right of way will be an expansion of an existing transmission line corridor, where a 45 ft additional width will be required beyond the existing, assumed, ROW edge."
  - NEW North Delta substation: "The substation is being proposed to be built on a parcel that is already under purchase option."
  - NEW Muddy Creek 230kV substation: "Land acquisition"
- **Waterways/History/Parks:** Mostly Redacted, Susquehana River, Monocacy River
- Full details: PJM - Redacted Public Proposals for Current and Closed Windows : **>2022 Window 3 Redacted Proposals**

- **Green is NEW**
- **Estimated Cost:**
  - **217: $166,799,317**
  - **631: $198,570,119**
  - **530: $178,444,134**

Exelon 344



- **IMPACTS: MD, PA**

  This proposal has been designed to

  - 1) bring the significant generation interconnected at or near PECO's Peach Bottom substation through the BGE territory
  - 2) direct the power flow around BGE'S territory toward High Ridge substation in the west and Riverside substation in the east to aid in sending power towards the new load areas and
  - 3) provide reactive support in PEPCO with a new STATCOM at Brighton amongst other upgrades and
  - 4) enhance the existing FirstEnergy, PEPCO and Dominion seam through a collaboratively developed Joint Proposal.

Structures to be rebuilt vary between 13, 27, and 52 years old.

Exelon 344 Components

1. New 500kV 4 Leg BAAH Substation (West Cooper): PECO

2. New 230kV Line from Cooper to West Cooper: PECO

3. Peach Bottom North Expansion: PECO

4. Peach Bottom North (PECO) - Graceton (BGE) New 500kV Line: PECO Portion

5. West Cooper - Peach Bottom South New 500kV Line: PECO

6. Rebuild 5012 500kV Line and Cut-in West Cooper (Peach Bottom South - West Cooper): PECO

7. Rebuild 5012 500kV Line and Cut-in West Cooper (Graceton - West Cooper): PECO Portion

8. New BAAH Leg at Peach Bottom North: PECO

9. Peach Bottom North (PECO) - High Ridge (BGE) New 500 kV Line: PECO Portion

10. West Cooper (PECO) - High Ridge (BGE) New 500 kV Line: PECO Portion

11. New Peach Bottom West Substation: PECO

12. Cooper - Peach Bottom West New 230 kV Line: PECO

13. Peach Bottom South Substation Upgrades: PECO

14. Calpine-Peach Bottom South 500 kV Line Cut In: PECO

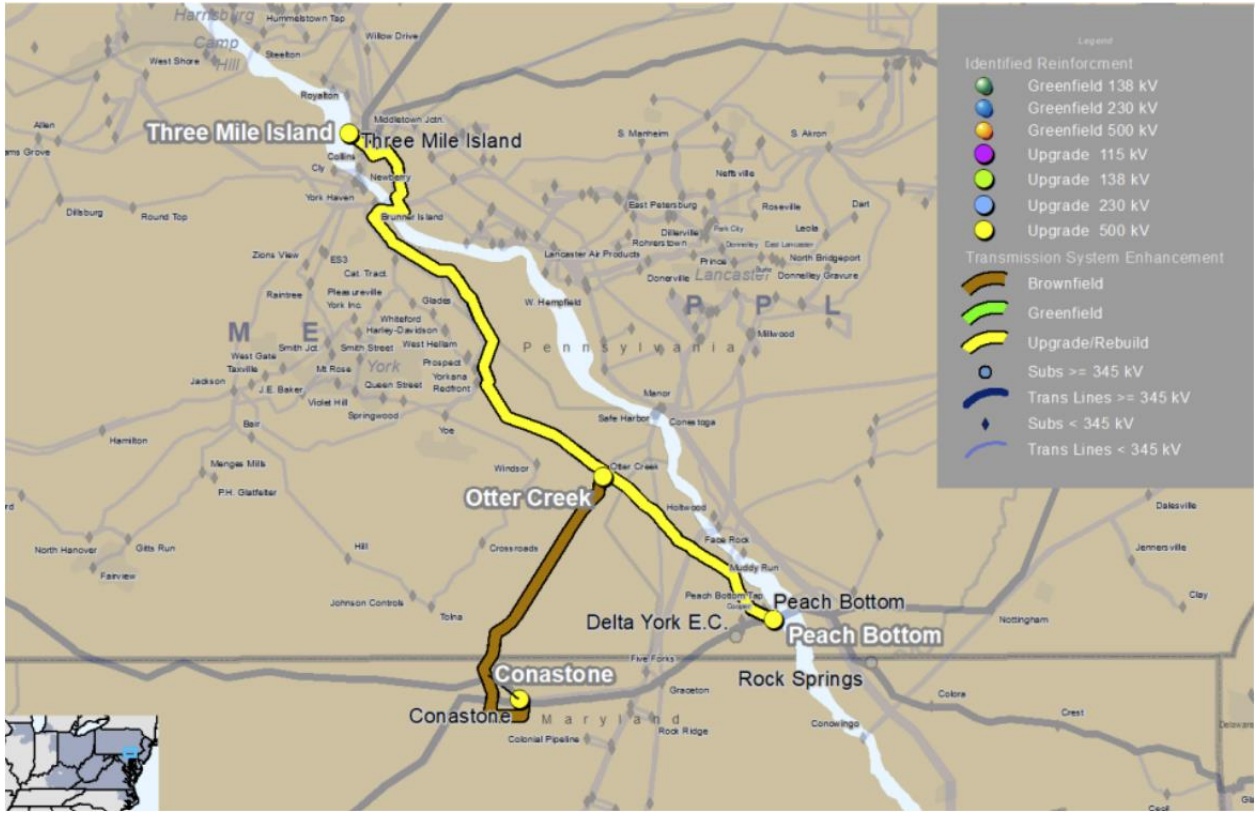
15. Peach Bottom South Substation Bypass: PECO

16. Rebuild 5012 Peach Bottom South (PECO)- Conastone (BGE) 500 kV Line: PECO Portion

17. Cut into 22007 Peach Bottom North-Muddy Run 230 kV Line: PECO

- Green is NEW
- **Impacts: MD & PA**
  - NEW West Cooper 500kV substation
  - NEW 230kV line Cooper-West Cooper
  - NEW 500kV line Peach Bottom North-Graceton
  - NEW 500kV line West Cooper-Peach Bottom South
  - NEW 500kV line Peach Bottom North-High Ridge
  - NEW 500kV line West Cooper-High Ridge
  - NEW 230kV line Cooper-Peach Bottom
  - NEW Peach Bottom West substation
- **ROW:**
  - NEW West Cooper 500kV substation: "Real estate will engage property owners in geographical area near Cooper substation to find adequate property
  - Peach Bottom North expansion: "6 Acres of additional space needed for substation expansion.
  - NEW Peach Bottom North-Graceton 500kV line: "ROW will have 275 ft of existing ROW in the majority of the path and require an additional 250 ft of new ROW alongside existing ROW between Cooper and Peach Bottom North."
  - NEW West Cooper-Peach Bottom South 500kV line: "250 ft expansion on 5012 ROW for 1.25 miles."
  - New BAAH Leg at Peach Bottom North: "6 Acres of additional space needed for substation expansion"
  - NEW Peach Bottom North-High Ridge 500kV line: "250 ft of new ROW"
  - NEW Peach Bottom West 230kV substation: "Real estate will engage property owners in geographical area near Peach Bottom North substation to find adequate property.
  - NEW Cooper-Peach Bottom West 230kV line: "Real estate will engage property owners in geographical area near Peach Bottom North substation to find adequate property."
- **Waterways/History/Parks:** Mostly Redacted. "The study area is primarily agricultural. PECO will begin coordination with local, state and federal agencies in the early stages of the project to identify potential mitigation and/or avoidance measures. Additionally, the majority of the project parallels existing extra-high voltage lines which will minimize new environmental impacts."
- **Estimated Cost: $360,816,047**
- Full details: PJM - Redacted Public Proposals for Current and Closed Windows: **>2022 Window 3 Redacted Proposals**

PPL 374



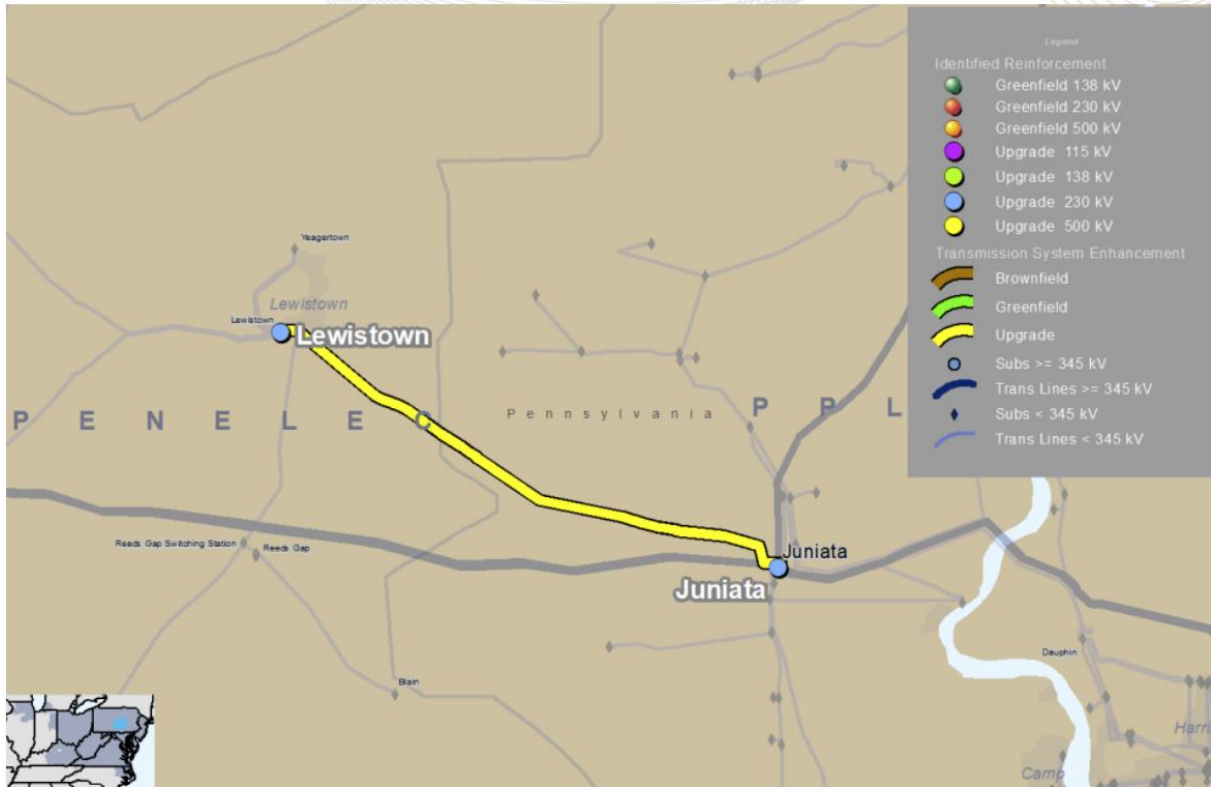
- **IMPACTS: MD, PA**
  - Construct a new Otter Creek 500 kV 3-breaker Switching Station
  - Bring the Three Mile Island - Peach Bottom 500 kV line in and out of the new switching station.
  - Construct a new 500 kV line from the new Otter Creek 500 kV Switching Station to the existing Conastone 500 kV Substation

PPL 374 Components

1. Tap TMIS - Peach Bottom 500 kV line
2. Otter Creek - Conastone 500 and 230 kV DCT line (PPL EU Section)
3. Otter Creek - Conastone 500 and 230 kV DCT line (BGE Section)
4. Otter Creek 500 kV Switchyard
5. Conastone 500 kV Substation upgrade
6. Peach Bottom South Yard bus upgrades

- Green is NEW
- **Impacts: MD & PA**
- **ROW:**
  - Otter Creek - Conastone 500 and 230 kV DCT line: ROW will be acquired to widen the existing transmission line corridor from 150 feet to 200 feet. Approximately 102 acres of additional ROW will be acquired, which is all privately owned. Negotiations with private landowners will be based on fair market values determined by a third-party appraiser. Negotiations with private landowners will be conducted by PPL ROW Agents and PPL contracted ROW agents.
  - Otter Creek - Conastone 500 and 230 kV DCT line (BGE Section): ROW will be acquired to widen the existing transmission line corridor from 150 feet to 200 feet. Approximately 102 acres of additional ROW will be acquired, which is all privately owned.
  - Otter Creek 500kV Switchyard: Land Acquisition Plan
- **Waterways/History/Parks:** Redacted
- **Estimated Cost: $171,261,451**
- Full details: PJM - Redacted Public Proposals for Current and Closed Windows : **>2022 Window 3 Redacted Proposals**

PPL 606



- **IMPACTS: PA**
  - Construct a new 32-mile Juniata - Lewistown 230 kV # 2 line by utilizing the existing brownfield 69 kV line route between Juniata and Mifflintown, and then building a greenfield line from Mifflintown to Lewistown.

The line is a combination of aging wood and steel pole infrastructure

PPL 606 Components

1. Juniata - Lewistown 230/69 kV multi-circuit brownfield line upgrade
2. Juniata - Lewistown 230 kV greenfield line segments
3. Juniata 230 kV Bus Upgrade
4. Lewistown 230 kV Bus Upgrade

- Green is NEW
- **Impacts: PA**
- **ROW:**
  - Juniata-Lewiston 230kV line upgrade (15.85 miles) and NEW (16.15 miles): The proposed transmission line will be located within a 100' to 150'-wide ROW corridor. The brownfield section of the corridor will mainly consist of 100' of existing ROW, with an additional 25 feet of new ROW on each side. The greenfield section of the 100' to 150'-wide corridor will consist solely of new ROW. A total of approximately 435 acres of additional ROW will be acquired, with 418 acres privately owned and approximately 17 acres publicly owned. Negotiations with private landowners will be based on fair market values determined by a third-party appraiser. Negotiations with public landowners will be conducted through PPL ROW and negotiations with private landowners will be conducted by PPL ROW Agents and PPL contracted ROW agents.
- **Waterways/History/Parks:** Juniata River, Markee Creek, East Licking Creek
- **Estimated Cost: $149,315,981**

- Full details: PJM - Redacted Public Proposals for Current and Closed Windows : **>2022 Window 3 Redacted Proposals**

Prince William County VA impacting Proposals

- See PWC impacting proposals overview
- Bring increased 500kV capacity to substations and more 500kV lines to PWC and surrounding counties and states
- **PROPOSALS = 15**
- Proposals: **24, 125, 129, 175, 231, 325, 548, 577, 598, 663, 691, 711, 766, 904, 977**
- **ESTIMATED TOTAL COSTS = $19.5 BILLION ($19,586,399,352.00)**
  - Do not include the proposal costs listed/counted in the Loudoun totals
- PWC proposals include Lines/Substations *also* in or through other Va. counties &/or other states:
  - Loudoun = 9 #175, 231, 325, 548, 577, 598, 663, 711, 766
  - Fauquier = 10 #175, 325, 548, 577, 598, 663, 711, 766, 904, 977
  - Fairfax = 2 #711, 977
  - Other VA counties and other states: Amherst, Albemarle, Augusta, Bedford, Buckingham, Campbell, Caroline, Culpeper, Fluvanna, Frederick Co. (VA), Lexington, Louisa, Nelson, North Anna, Orange, Rappahannock, Rockbridge, Saltville, Smyth, Spotsylvania, Stafford, Staunton, Warren, Washington; Frederick, MD, MD, PA, WVA, DEL, NJ

- PJM - Redacted Public Proposals for Current and Closed Windows : **>2022 Window 3 Redacted Proposals**

Loudoun County VA impacting Proposals

- See Loudoun impacting proposals overview
- Bring increased 500kV capacity to substations and more 500kV lines to Loudoun County and surrounding counties and states (but not into PWC VA)
- PROPOSALS = **28**
- **Proposals: #23, 28, 116, 255, 279, 347, 385, 419, 445, 487, 516, 564, 600, 642, 660, 676, 685, 692, 719, 728, 741, 837, 846, 853, 858, 948, 951, 962**
- **ESTIMATED TOTAL COSTS = $26.7 BILLION ($26,745,769,448.00)**
  - Do not include the proposal costs listed/counted in the PWC totals
- Loudoun proposals include Lines/Substations *also* impacting other Va. counties &/or other states:
  - PWC = 0
  - Fauquier = 0
  - Fairfax = 1 #516
  - Warren = 1 #487
  - Frederick Co, VA = 9 #279, 347, 642, 676, 685, 719, 846, 853, 951,
  - Frederick Co, MD = 12 #23, 28, 116, 255, 419, 445, 516, 660, 741, 837, 846, 962
  - MD = 18 #23, 28, 116, 255, 385, 419, 445, 487, 564, 600, 660, 728, 741, 837, 846, 948, 962
  - PA = 16 #23, 28, 116, 255, 385, 419, 445, 487, 564, 600, 660, 741, 837, 846, 948, 962
  - WVA = 13 #23, 28, 279, 347, 487, 642, 676, 685, 719, 837, 846, 853, 951
- Loudoun is also impacted by PWC proposals
- **ALL Loudoun proposals are expanding transmission grid in Loudoun to 500kV – multiple new lines and substations, and upgraded lines and substations.**

- PJM - Redacted Public Proposals for Current and Closed Windows : **>2022 Window 3 Redacted Proposals**

Fauquier & Fairfax Counties VA impacting Proposals

- See Fauquier & Fairfax impacting proposals overview
- Don’t come into PWC or Loudoun, but bring increased 500kV capacity

- **Fauquier County VA:**
  - PROPOSALS = **1**
    - **Proposal: #671**
      - Also impact Warren Co, VA, MD, PA
  - **ESTIMATED TOTAL COSTS = $320,266,203.00**
    - Do not include the proposal costs listed/counted in the PWC, Loudoun, and Fairfax totals
  - Fauquier County is also impacted by PWC and Loudoun proposals – see those overviews

- **Fairfax County VA:**
  - PROPOSALS = **2**
    - **Proposals: #229, 637**
      - Also impact Frederick Co MD, MD, PA
  - **ESTIMATED TOTAL COSTS = $895,459,401**
    - Do not include the proposal costs listed/counted in the PWC, Loudoun, and Fauquier totals
  - Fairfax County is also impacted by PWC and Loudoun proposals – see those overviews

- PJM - Redacted Public Proposals for Current and Closed Windows : **>2022 Window 3 Redacted Proposals**