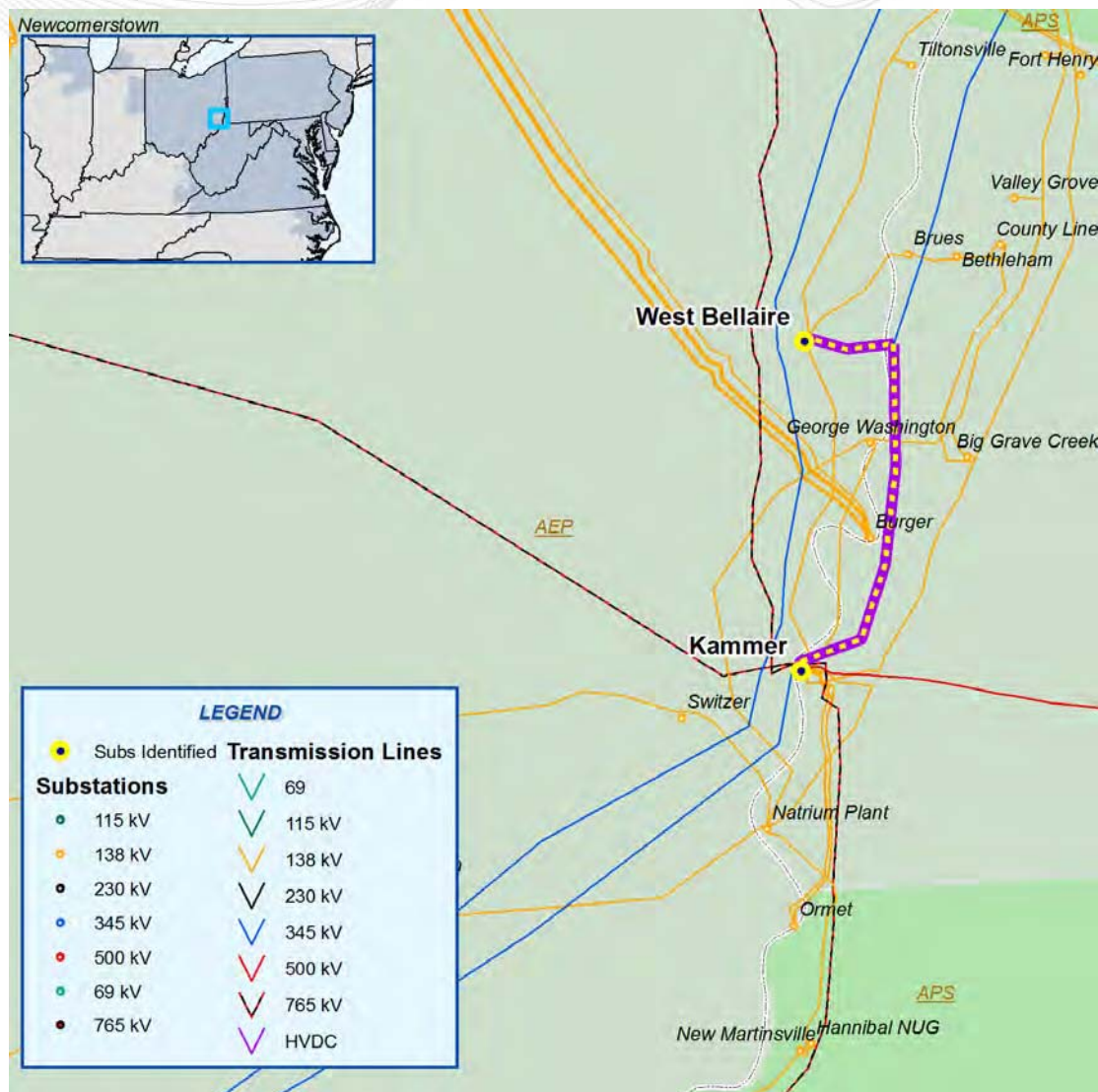
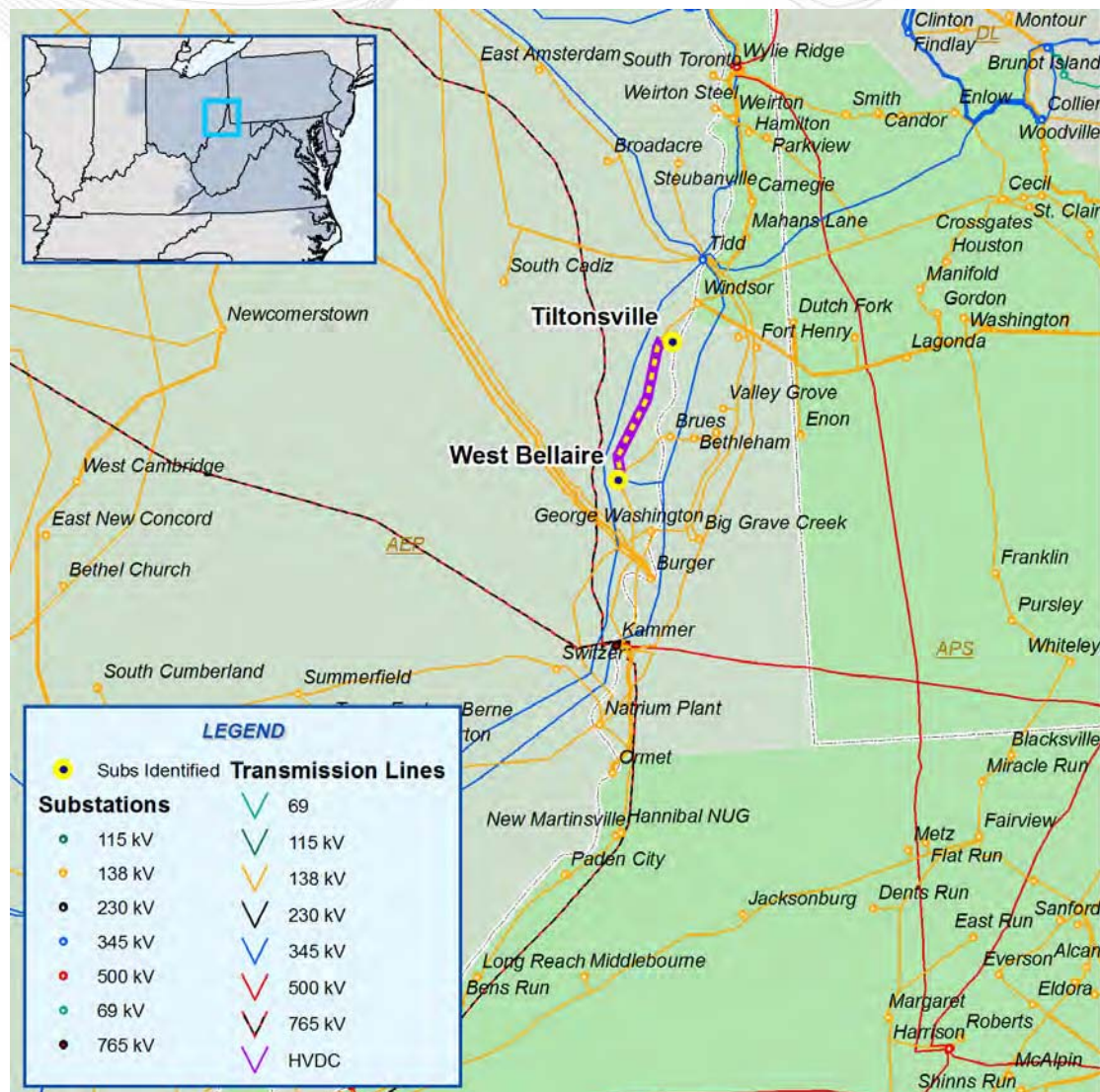


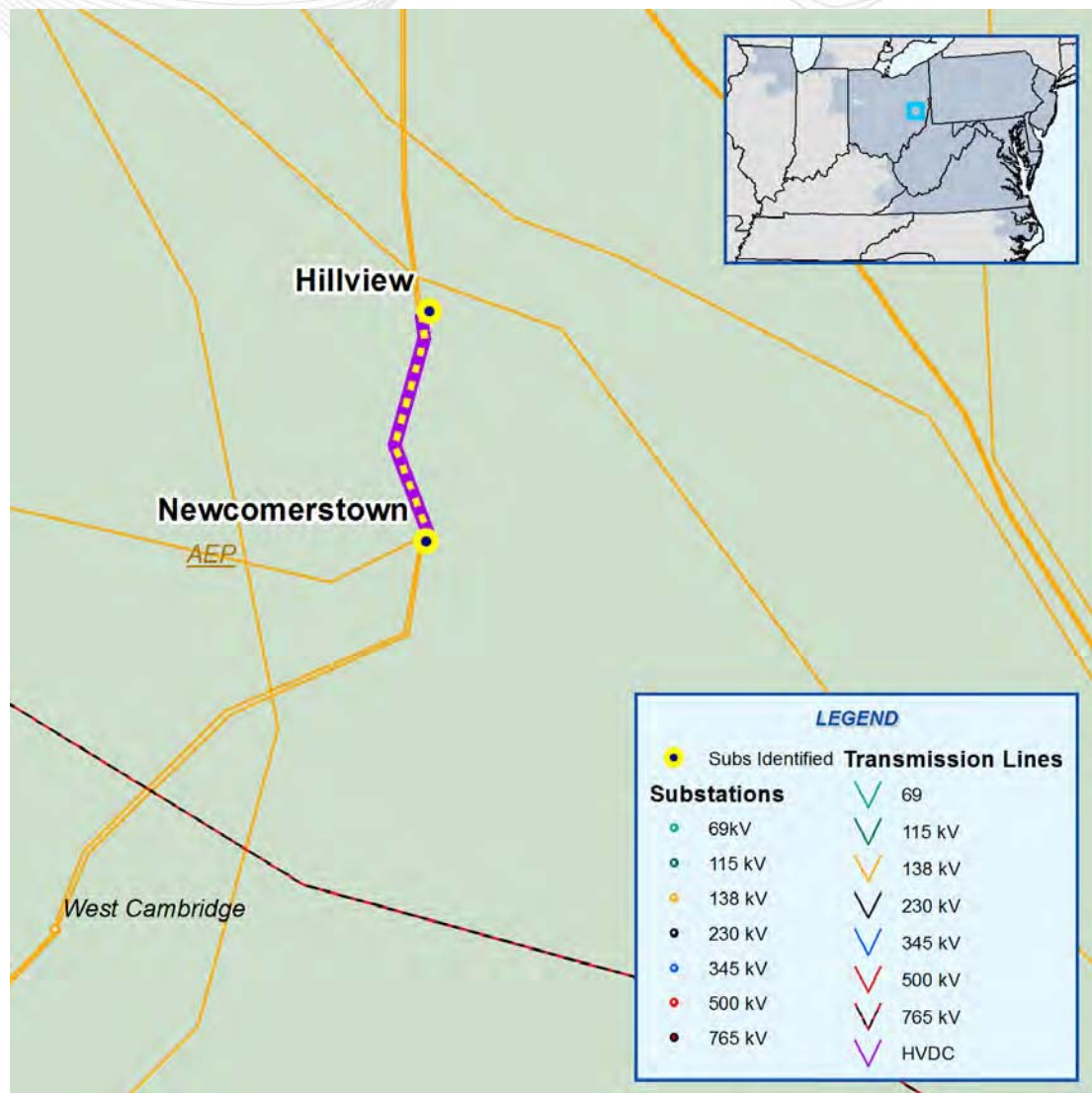
- Reconnector 13 miles of the Kammer – West Bellaire 345kV circuit
- Cost estimate: TBD
- Projected in-service date is 6/1/2014.



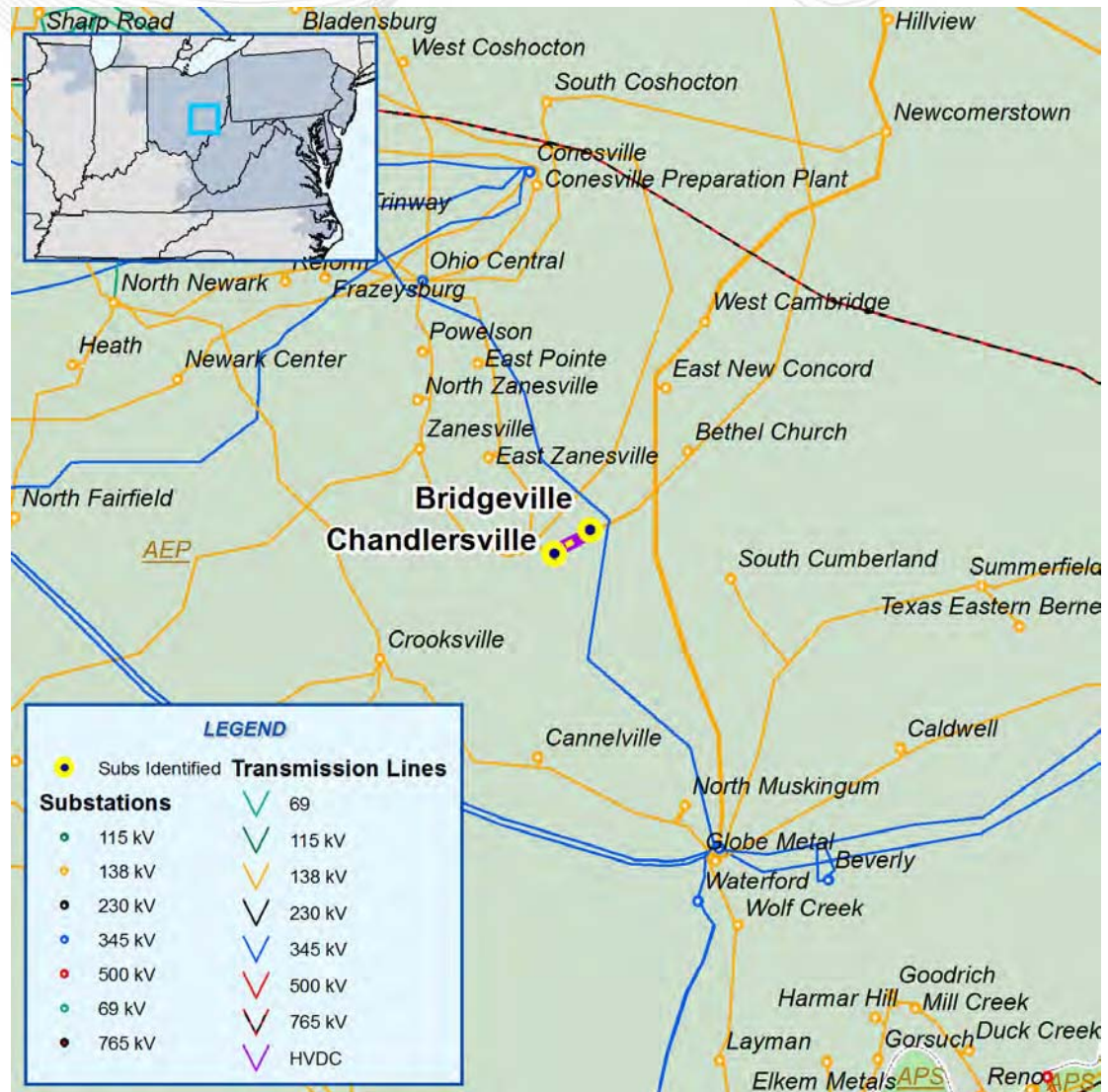
- Perform a Sag Study on section 1 (~12 miles) of the West Bellaire – Tiltonsville 138 kV line (existing base line upgrade b1457)
- Cost estimate: \$.02M
- Projected in-service date to complete the sag study is 12/1/2012



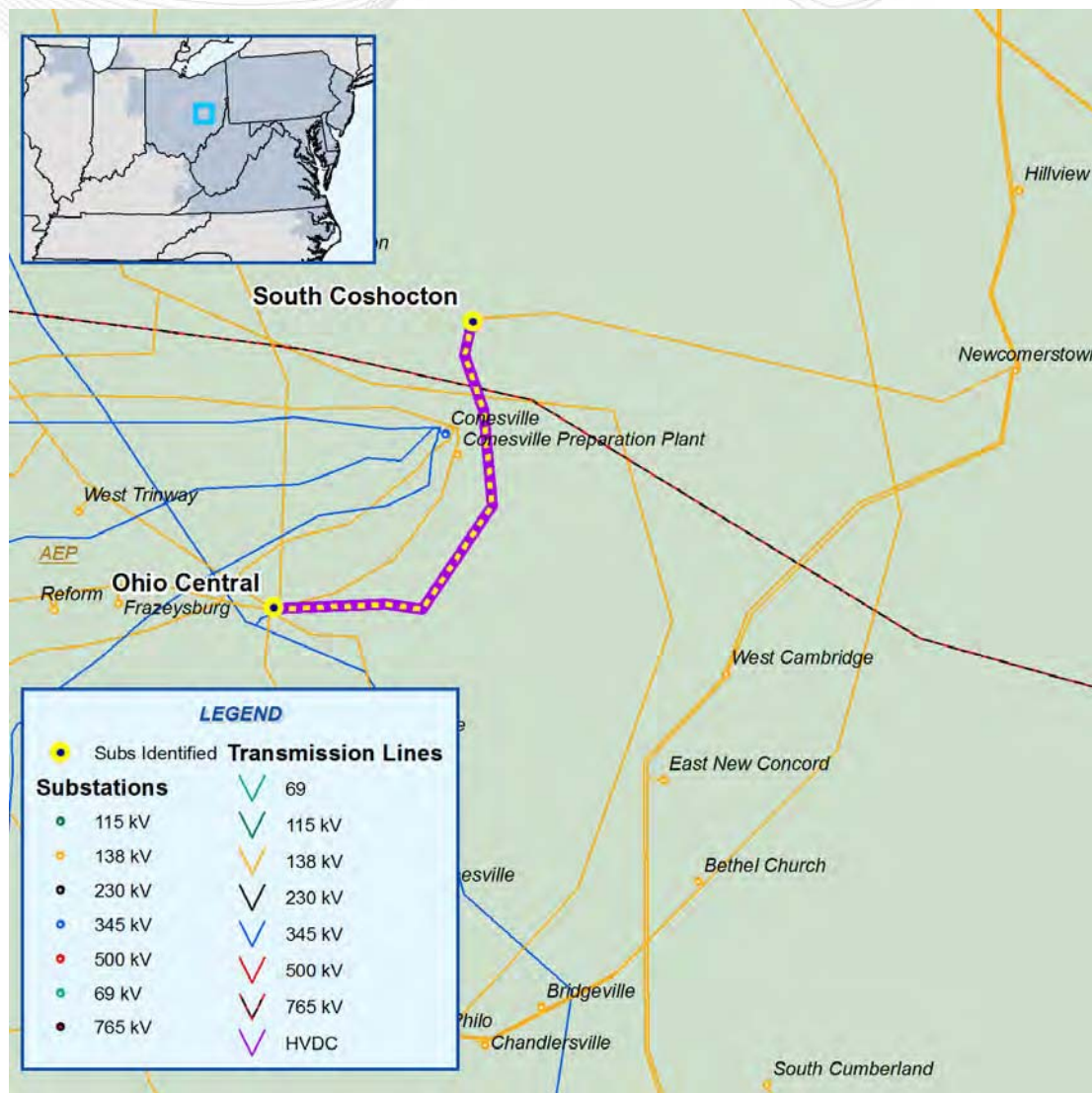
- Sag study of Newcomerstown - Hillview 138 kV line. Upgrade terminal equipment (existing base line upgrade b1737)
- Cost estimate: \$0.2M
- Projected in-service date is 12/01/2014.



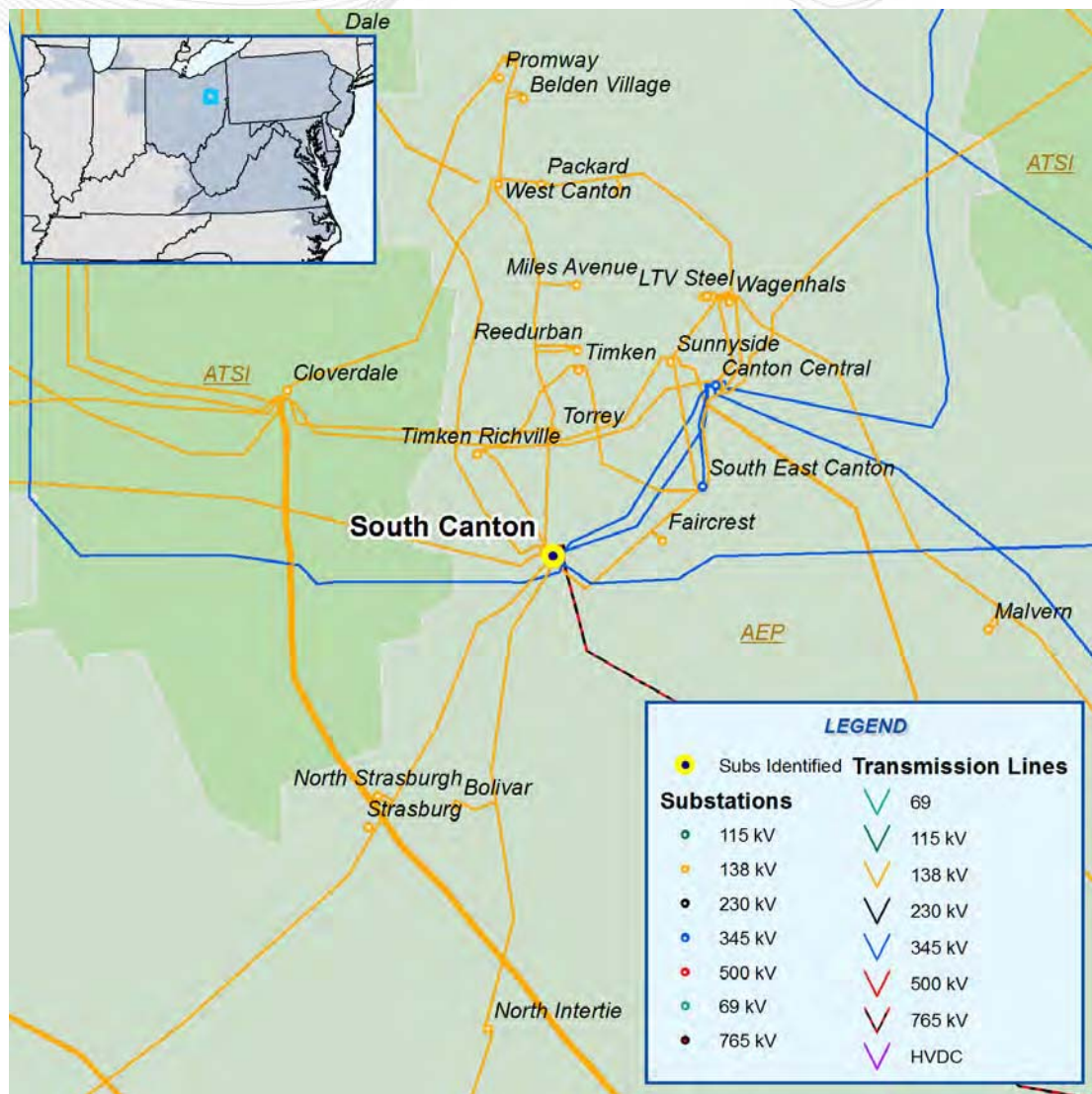
- Perform a sag study to improve the emergency rating on the Bridgeville – Chandlersville 138 kV line
- Cost estimate: TBD
- Projected in-service date is 12/01/2014.



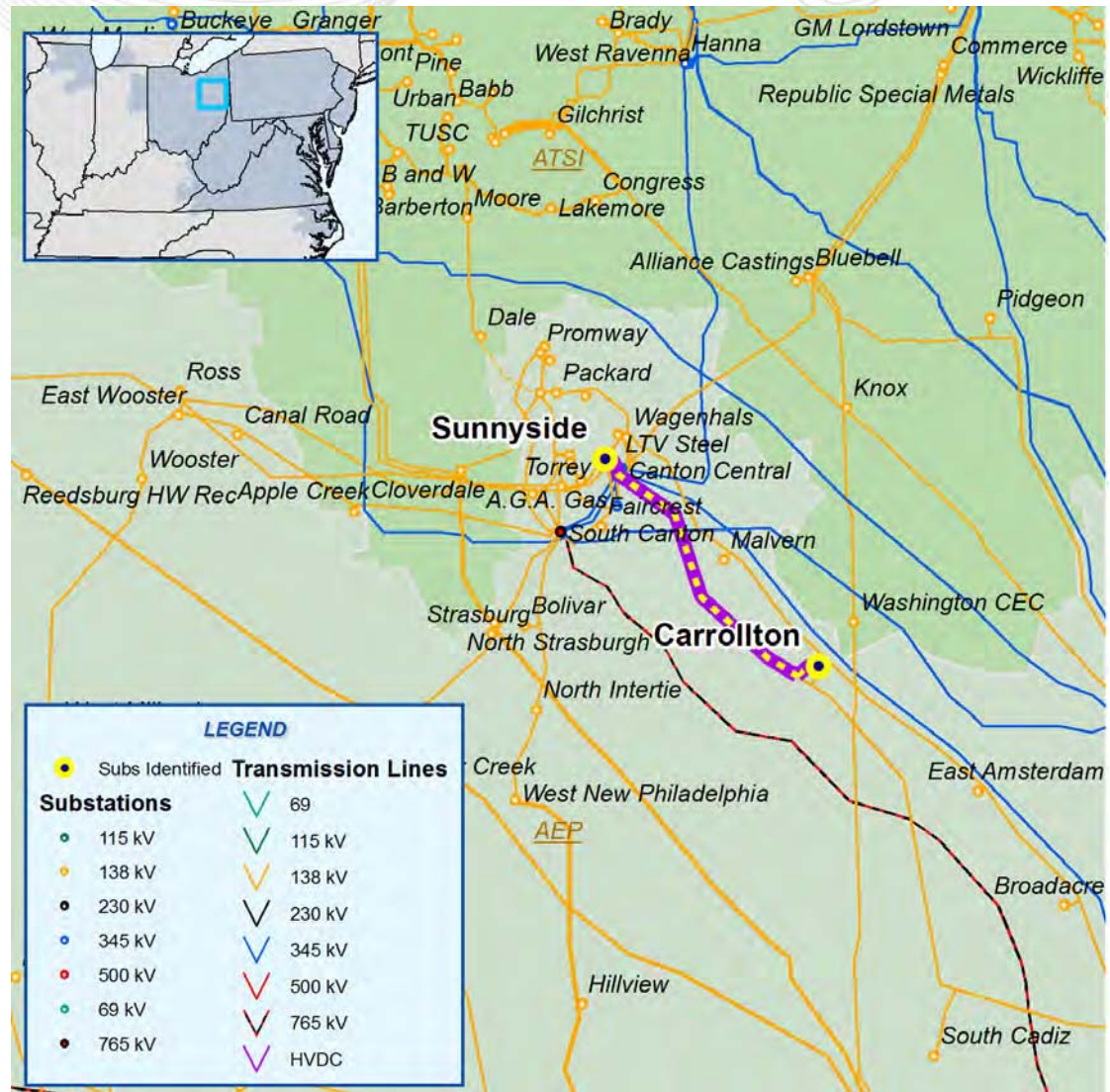
- Perform a sag study of the Ohio Central – South Coshocton 138 kV circuit (existing baseline upgrade b1869)
- Cost estimate: \$0.07M
- Projected in-service date is 12/01/2014.



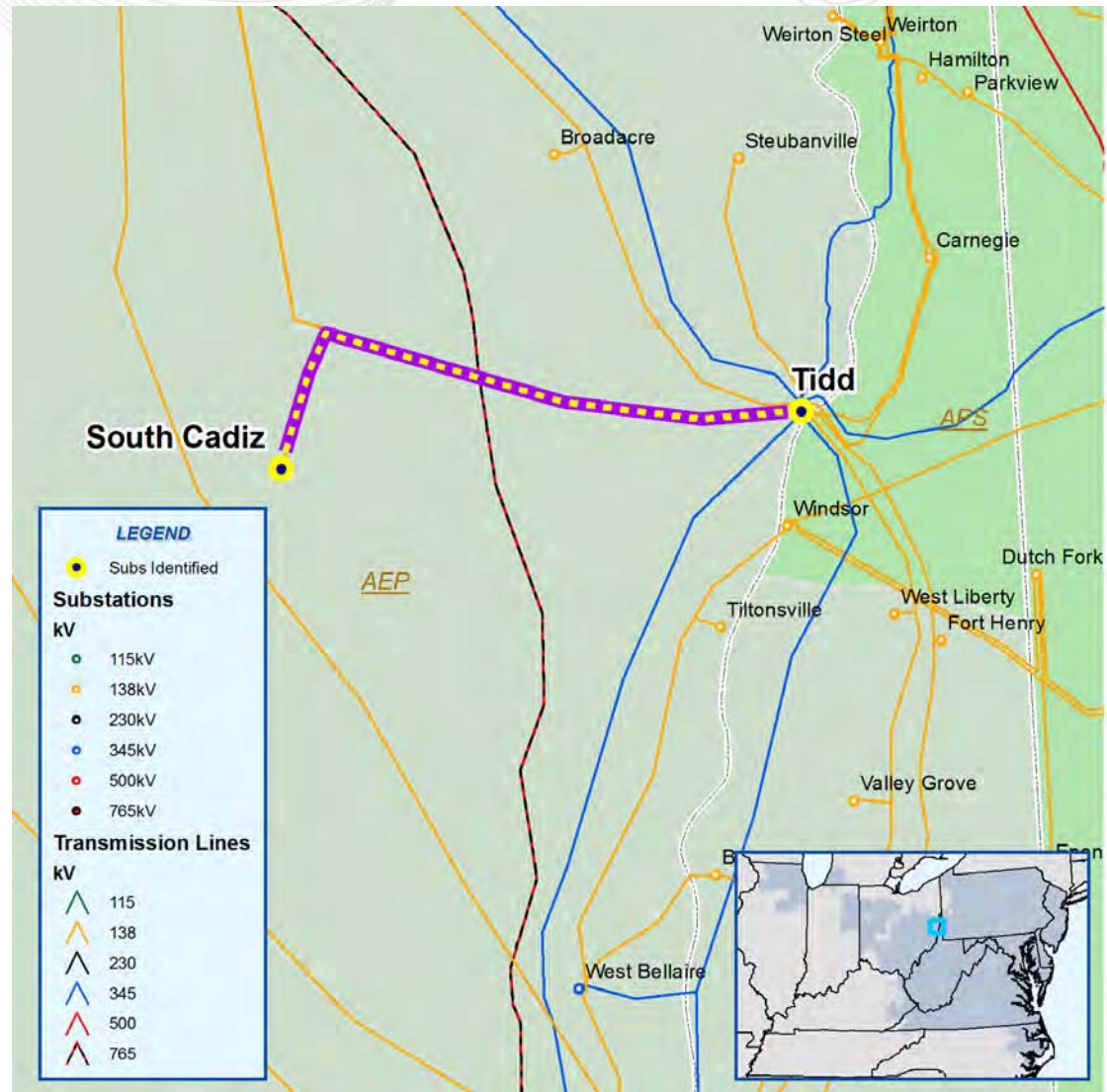
- Replace disconnect switch on the South Canton 765/345 kV transformer
- Cost estimate: TBD
- Projected in-service date is 12/01/2014.



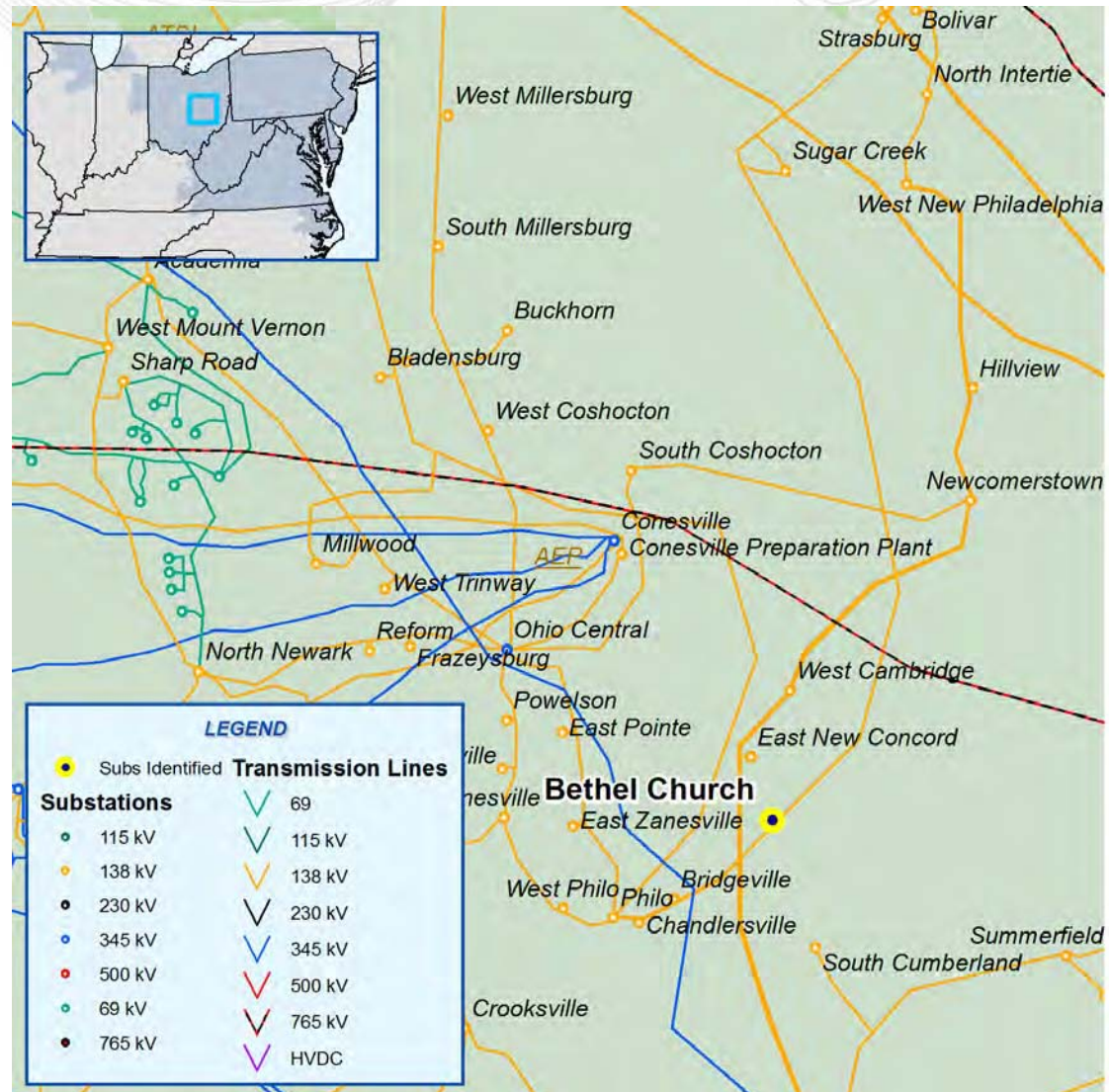
- Perform a sag study to improve the emergency rating on the Carrollton – Sunnyside 138 kV line
- Cost estimate: TBD
- Projected in-service date is 12/01/2014.



- Replace relays at both South Cadiz 138 kV and Tidd 138 kV (existing baseline upgrade b1462)
- Cost estimate: \$0.5M
- Projected in-service date: 12/01/2014



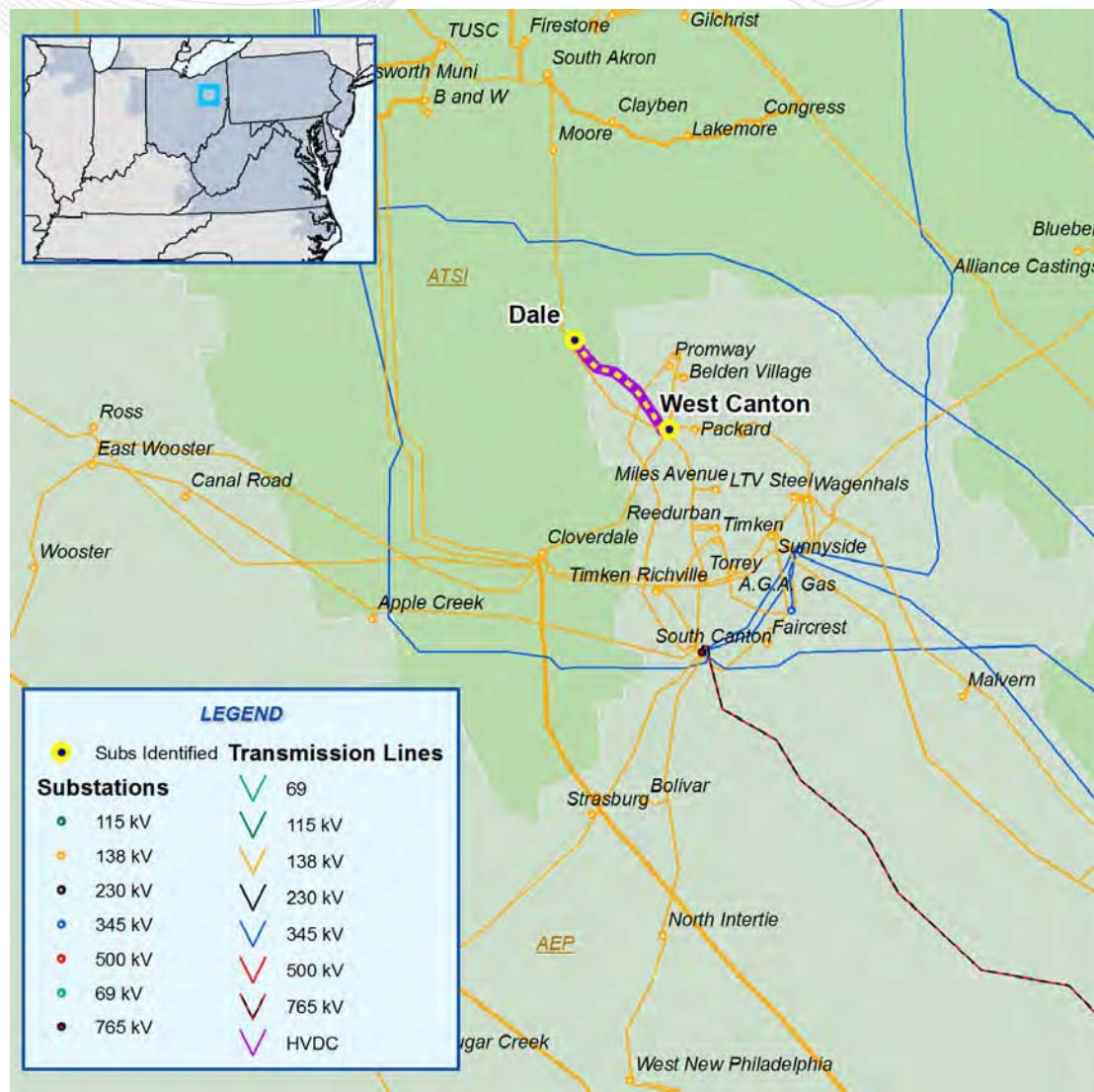
- Perform a sag study to improve the emergency rating on the Bethel Church – West Dover 138 kV line
- Cost estimate: TBD
- Projected in-service date is 12/01/2014.



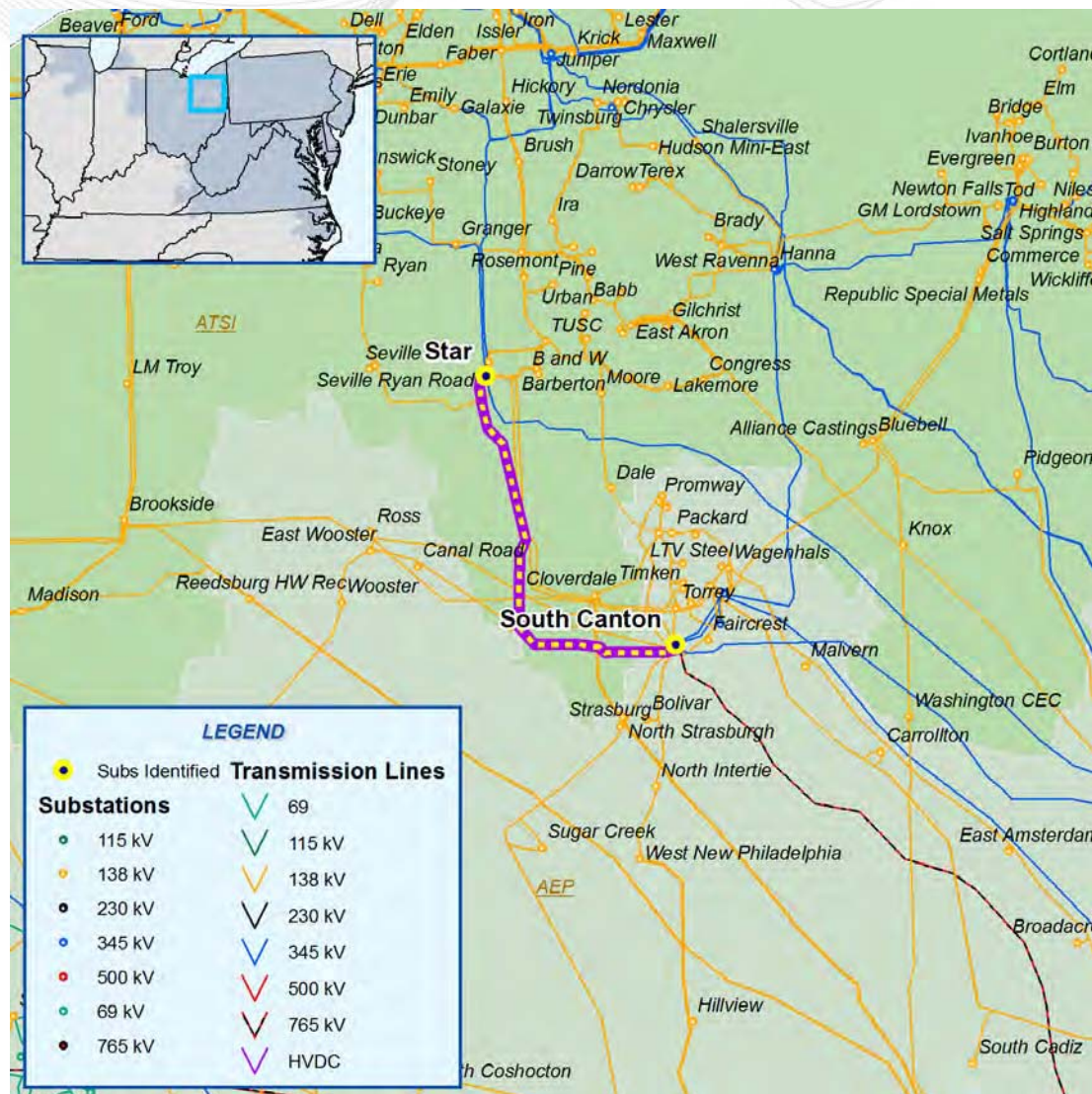
- Replace a switch at South Millersburg switch station
- Cost estimate: TBD
- Projected in-service is 12/01/2014.



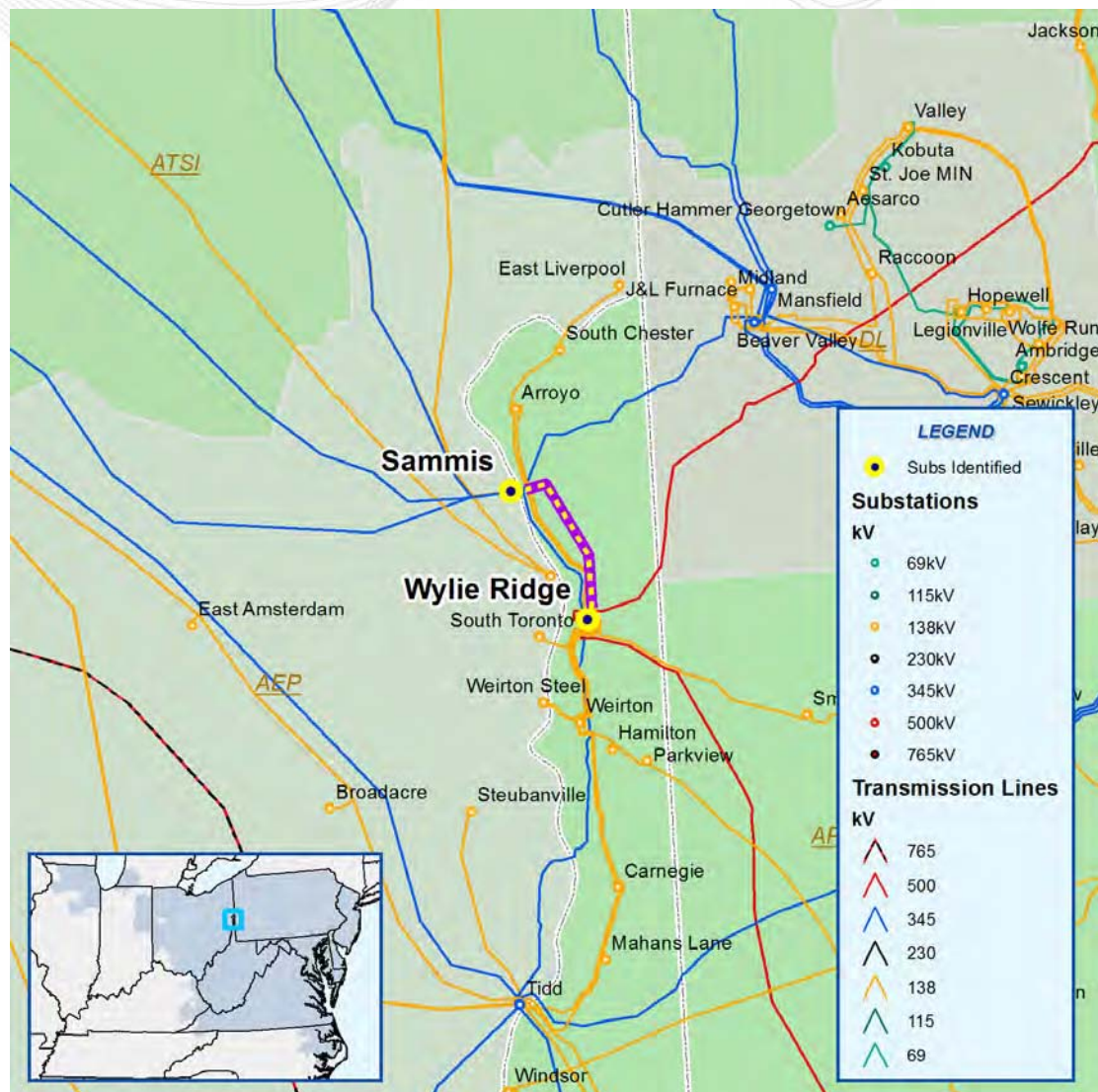
- Reconductor 0.83 miles of the Dale-West Canton 138kV Tie-line and upgrade risers at West Canton 138kV (existing baseline upgrade b1861)
- Cost estimate: \$1.7M
- Projected in-service is 6/01/2014.



- Reconductor ATSI portion of South Canton – Harmon 345 kV line
- Cost estimate: TBD
- Projected in-service date is 6/1/2015.



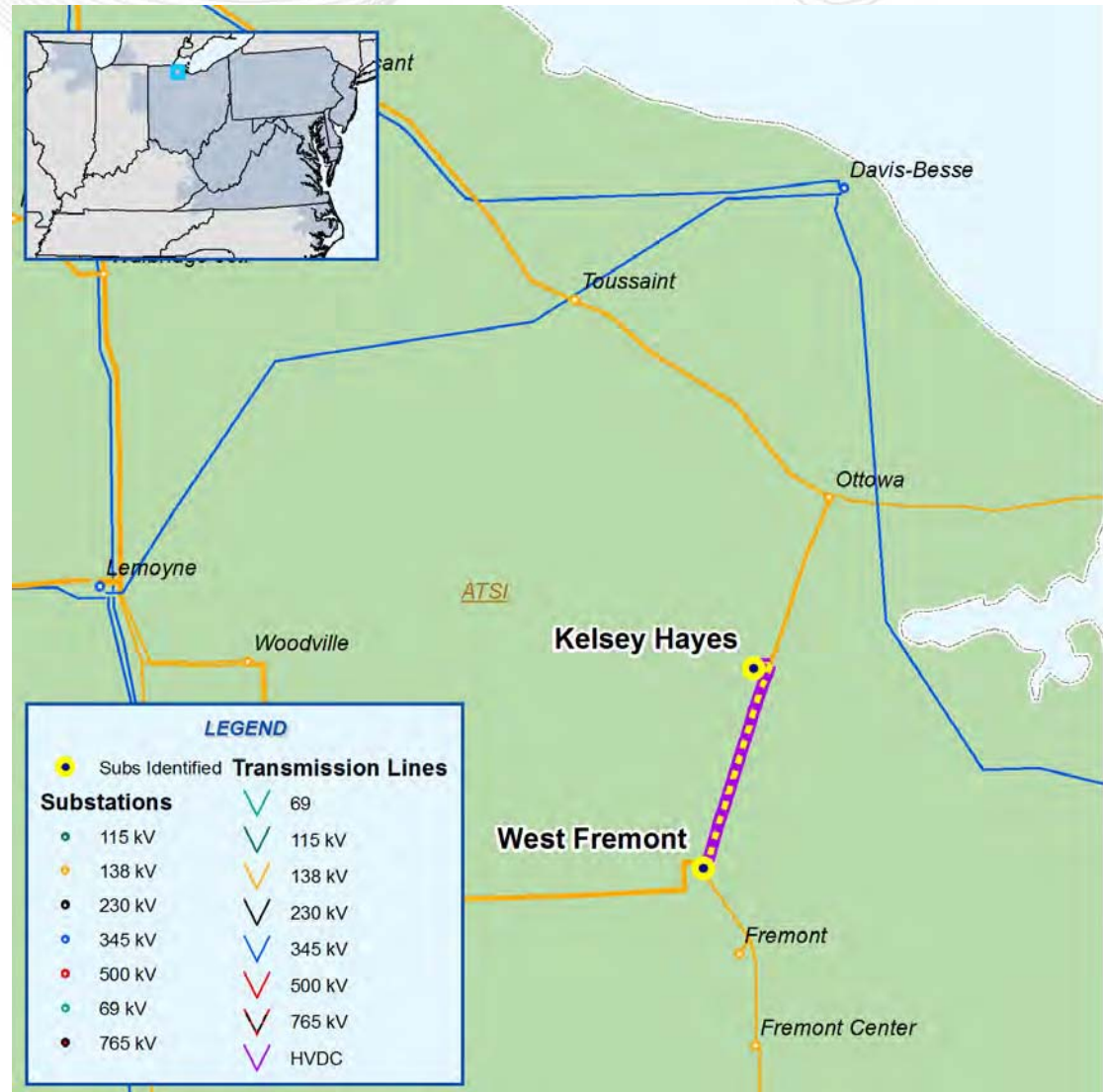
- Build new Toronto 345/138 kV substation by looping in the Sammis – Wylie Ridge 345 kV line and tie in four 138 kV lines.
- Build a new Toronto-Harmon 345kV line
- Cost estimate: TBD
- Projected in-service date is 6/1/2017.
- Short term
 - Open the Dale 138/69 kV transformer after the loss of the South Canton – Harmon 345 kV line.



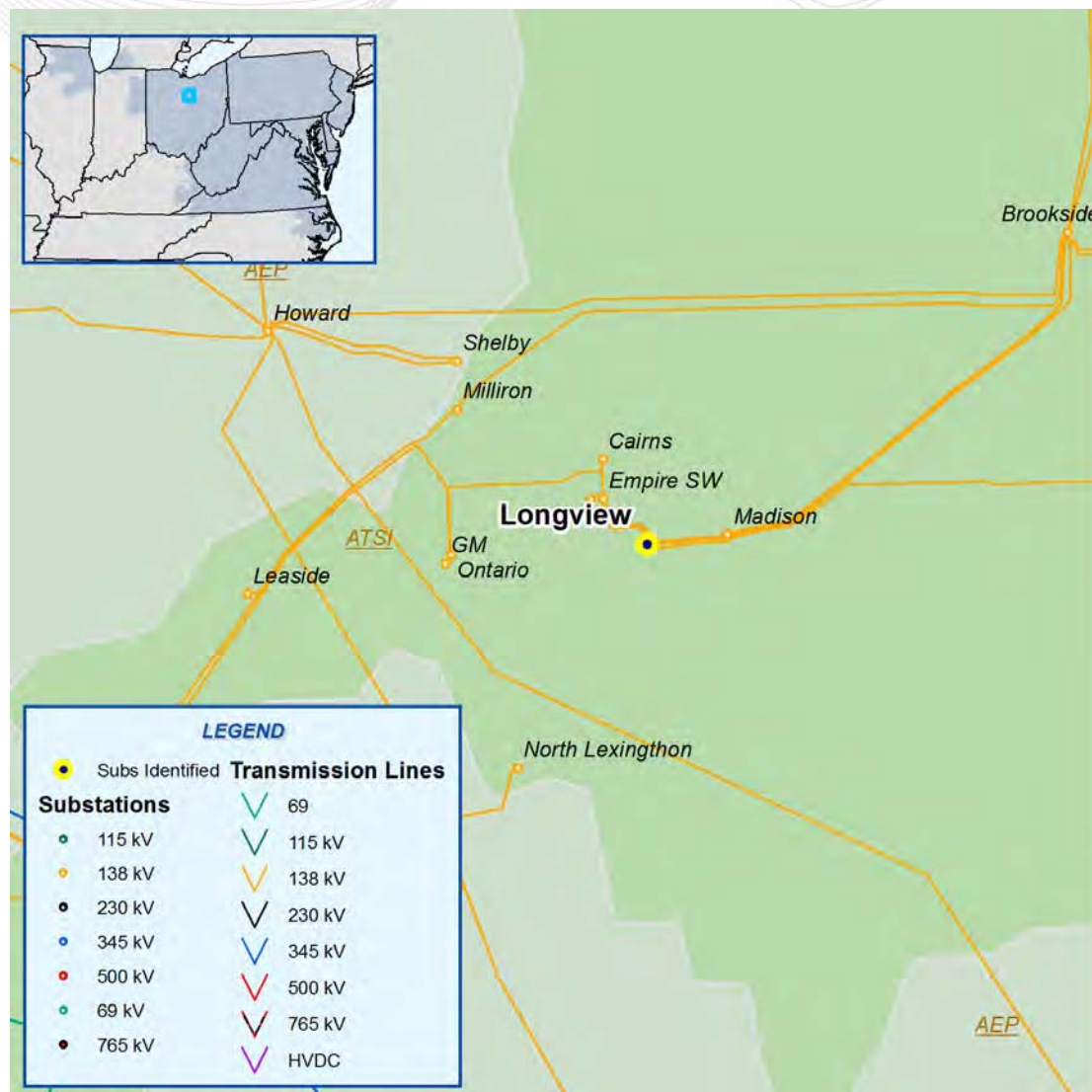
- Reconductor Inland – Clinic Health Q-11 138 kV line.
- Replace 795 ACSR SCCIR at Jordan substation
- Cost estimate: TBD
- Projected in-service date is 6/1/2015



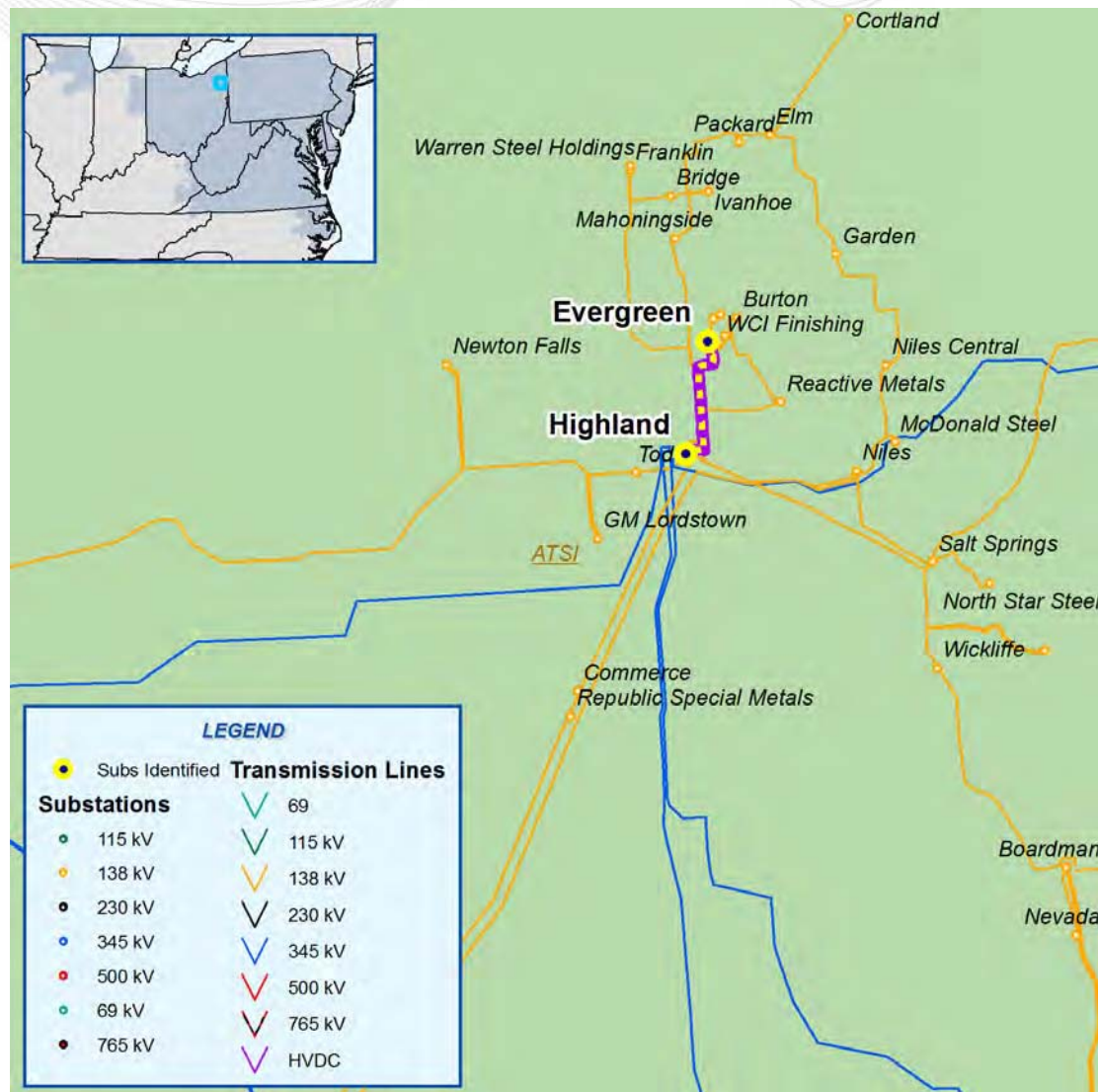
- New West Freemont – Groton – Hayes 138 kV line
- Cost estimate: TBD
- Projected in-service date is 6/1/2018.
- Short term: Existing operating procedure to open the Lakeview – Greenfield 138 kV line at Greenfield to avoid the overloads



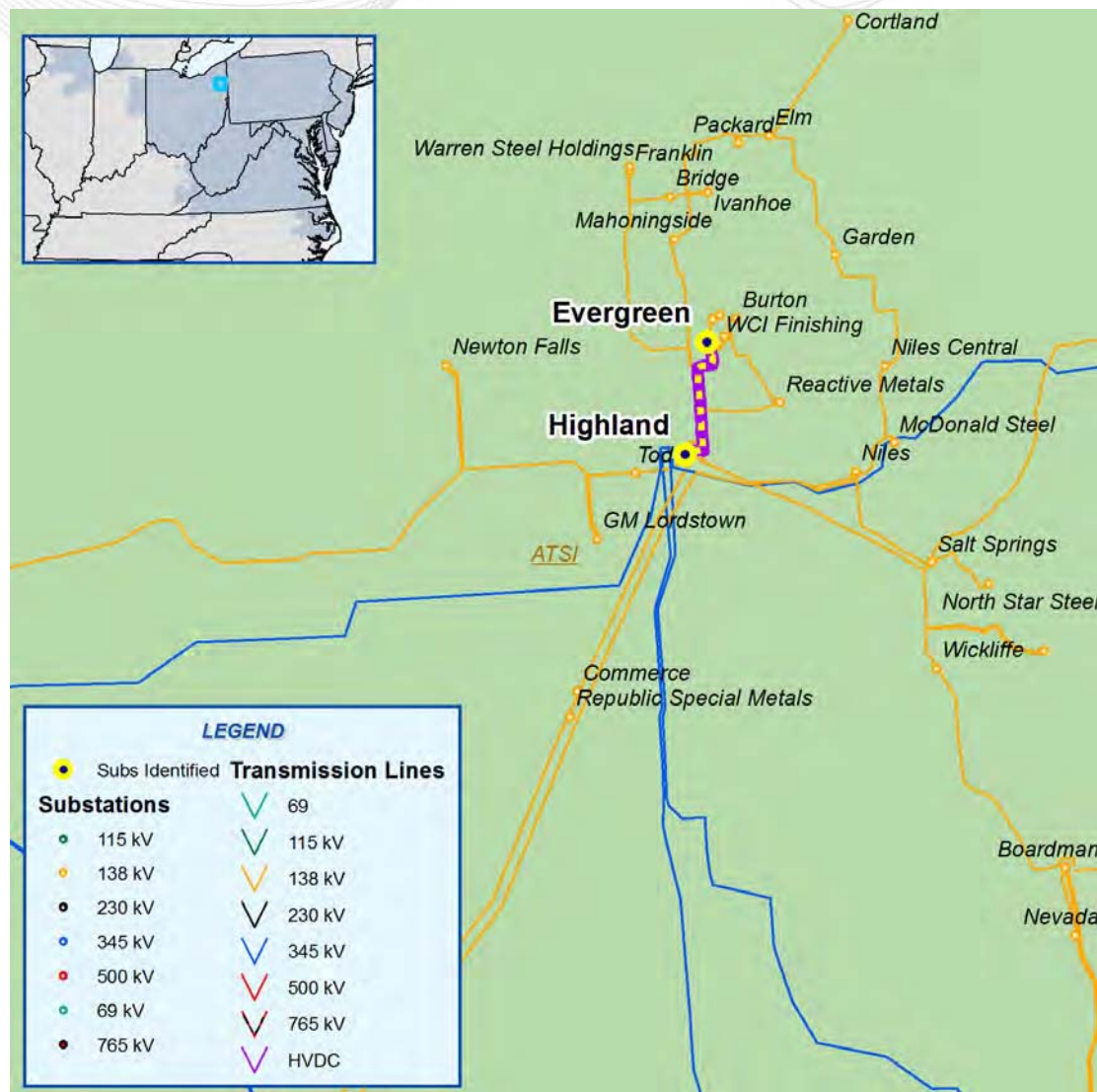
- Build a new ATSI/AEP 138 kV substation with a line to Longview
- Cost estimate: TBD
- Projected in-service date: 6/1/2016



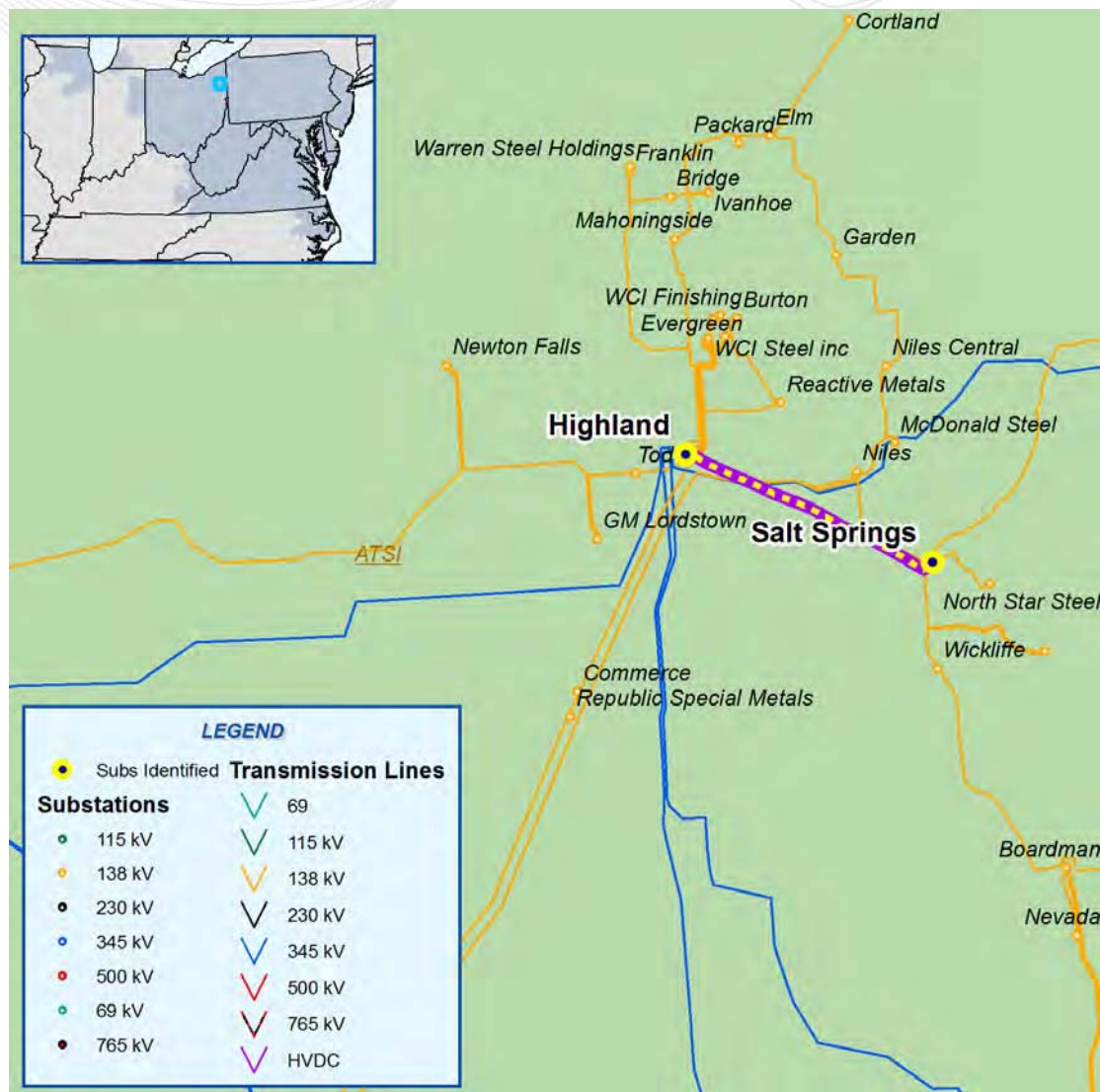
- Reconnector the Evergreen – Highland #1 138 kV line with 477 ACSS
- Cost estimate: TBD
- Projected in-service date: 6/1/2015



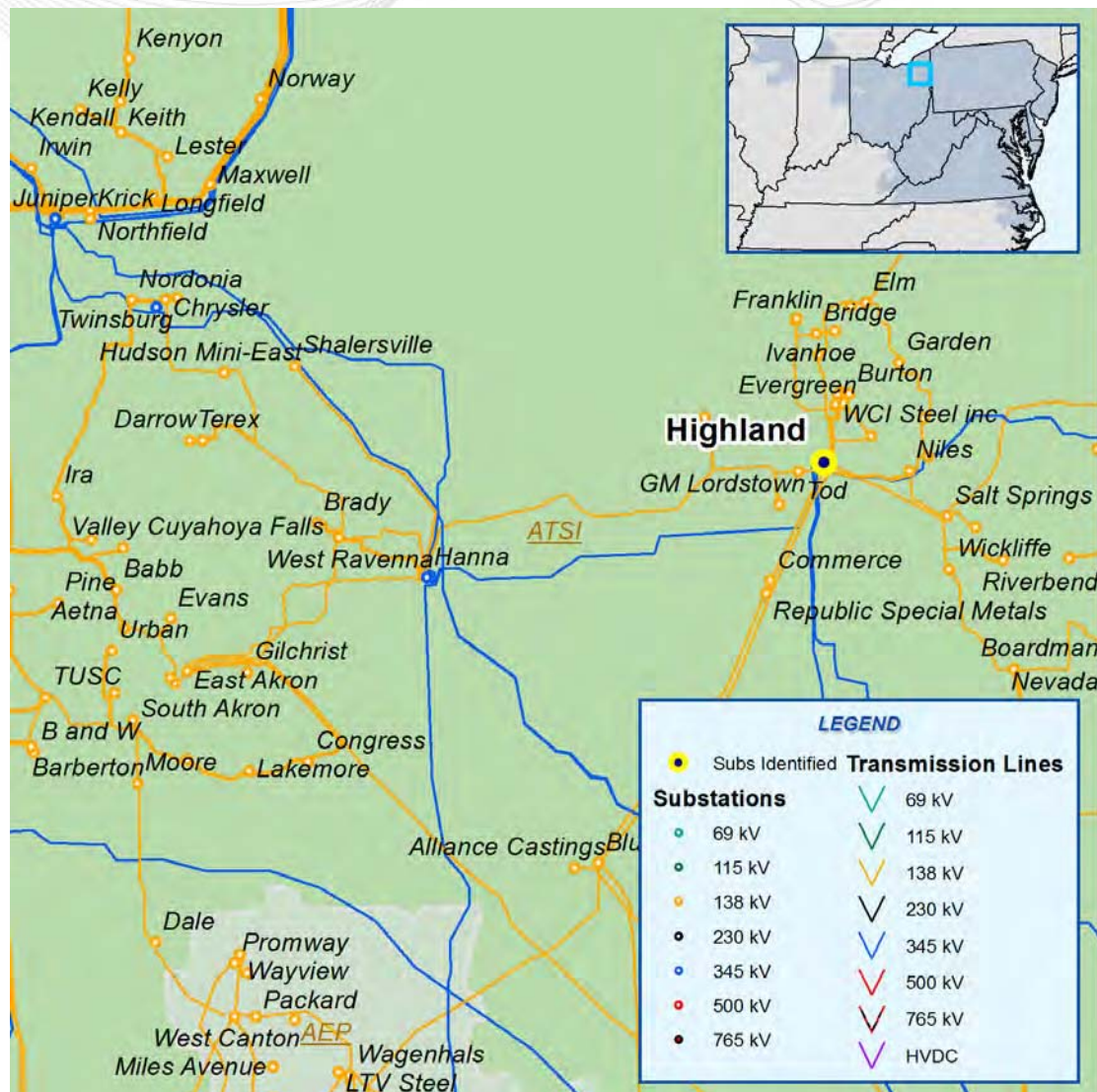
- Reconnector the Evergreen – Highland #2 138 kV line with 477 ACSS
- Cost estimate: TBD
- Projected in-service date: 6/1/2015



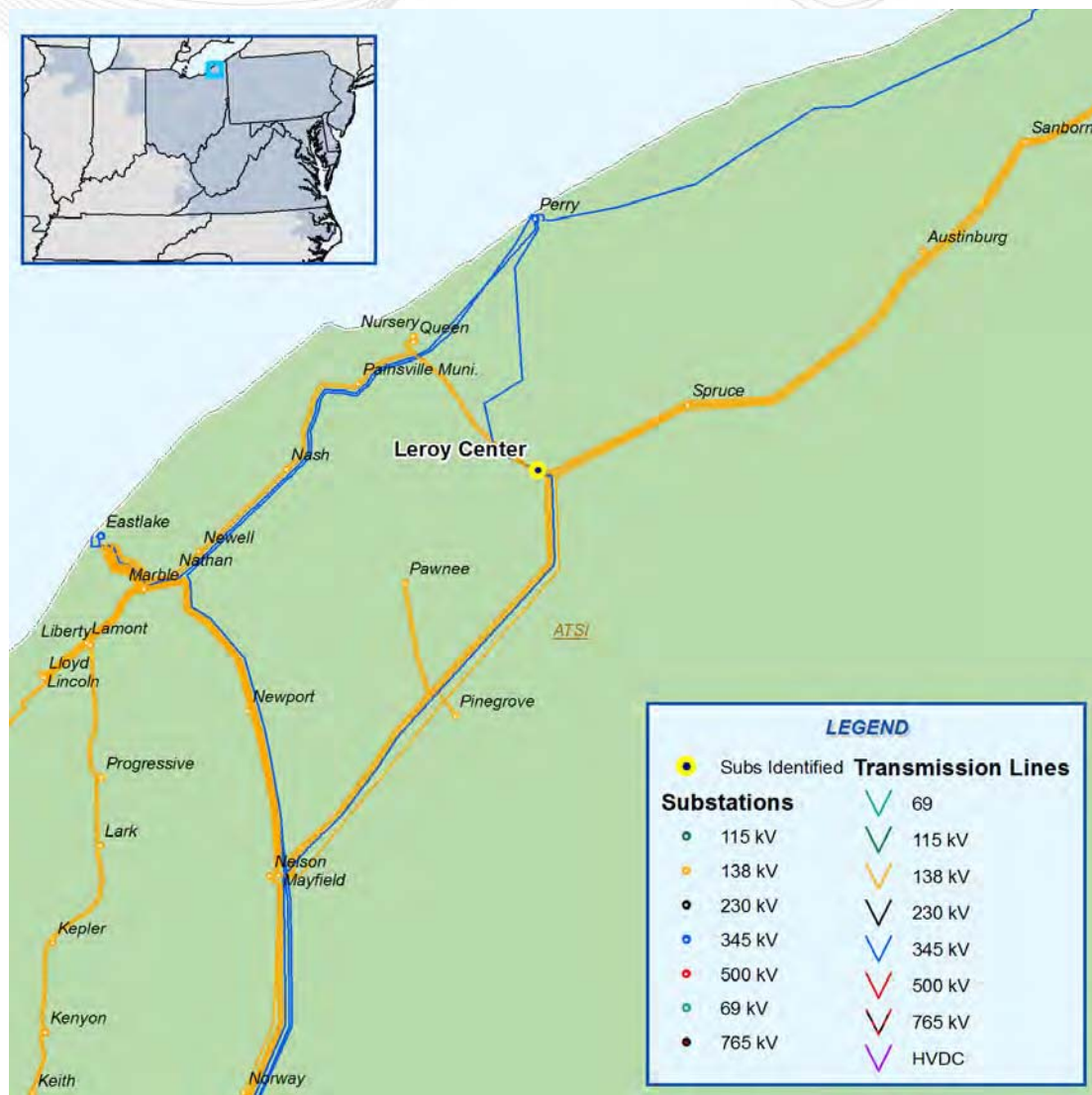
- Reconnector the Highland – Salt Springs 138 kV line with 795 ACSS.
- Cost estimate: TBD
- Projected in-service date: 6/1/2015



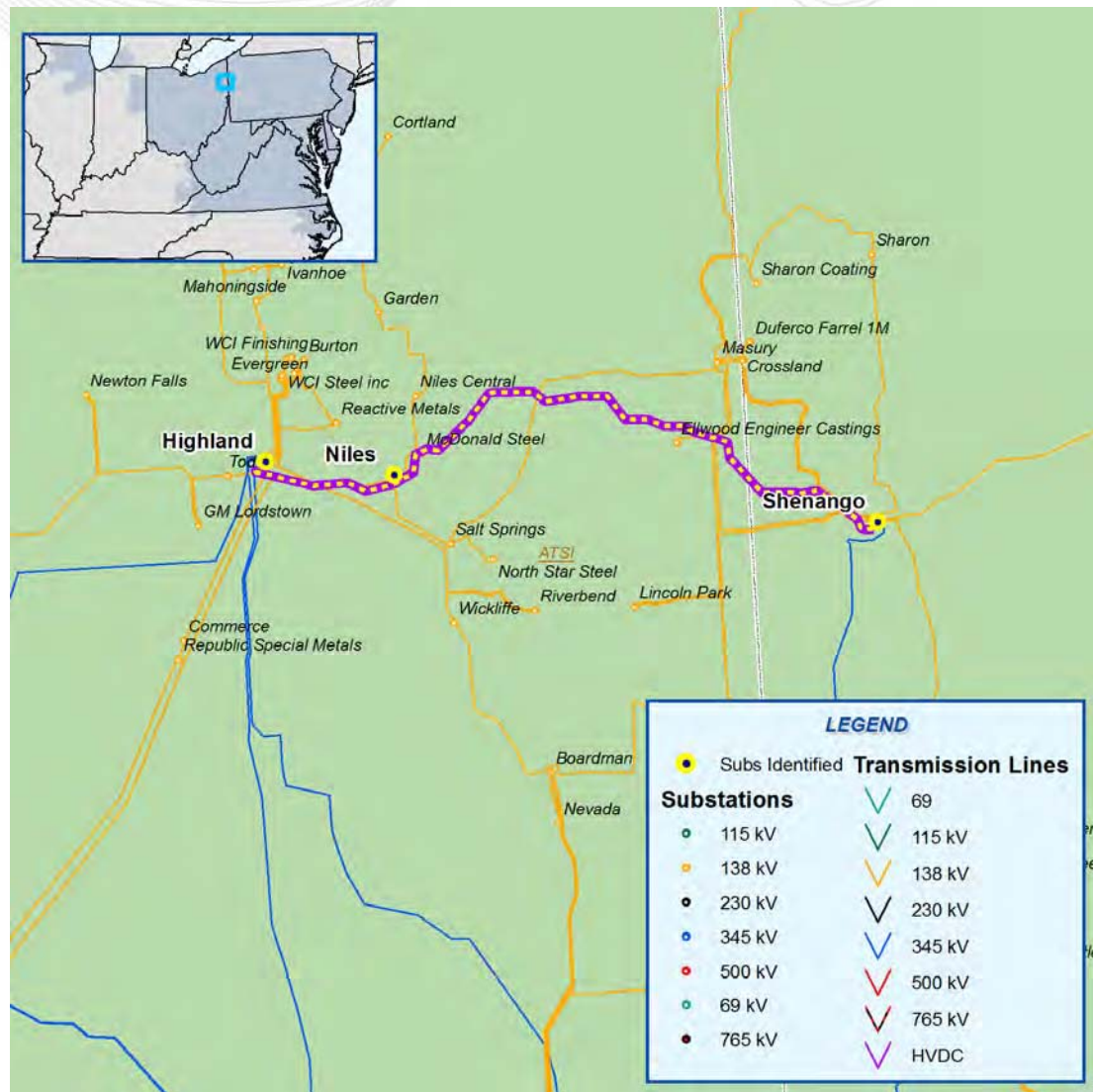
- Raise the design temperature to increase the thermal ratings on the Highland – 02R.M. 138 kV line
- Cost estimate: TBD
- Projected in-service date is 6/1/2015.



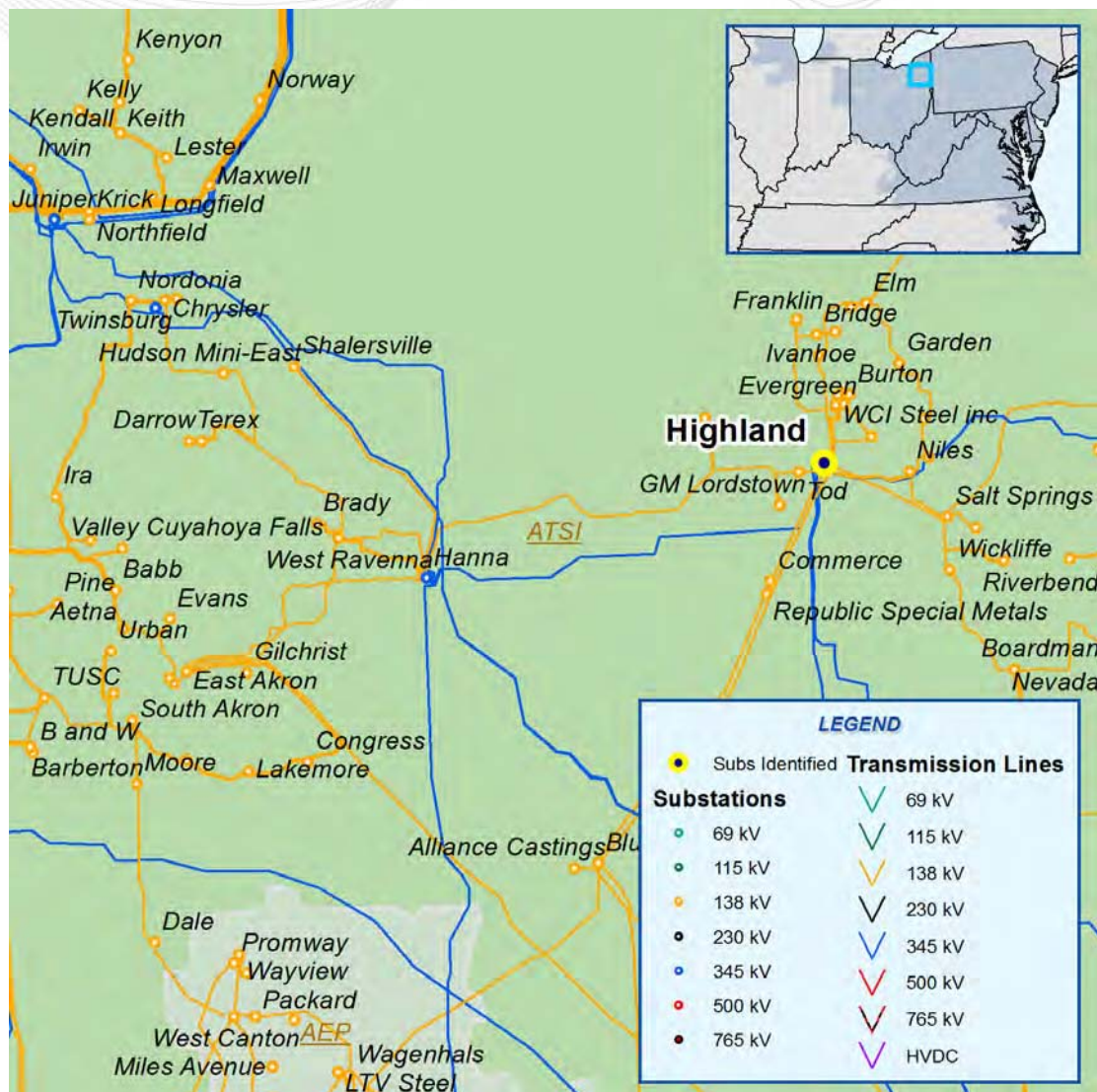
- New Beaver Valley - Leroy Center 345kV + Mansfield - Leroy Center 345kV lines
- Cost estimate: TBD
- Proposed in-service date: 6-1-2018
- Short term: Temporary Operating Procedure to Open Cloverdale-Barberton 138kV until 345kV lines are built.



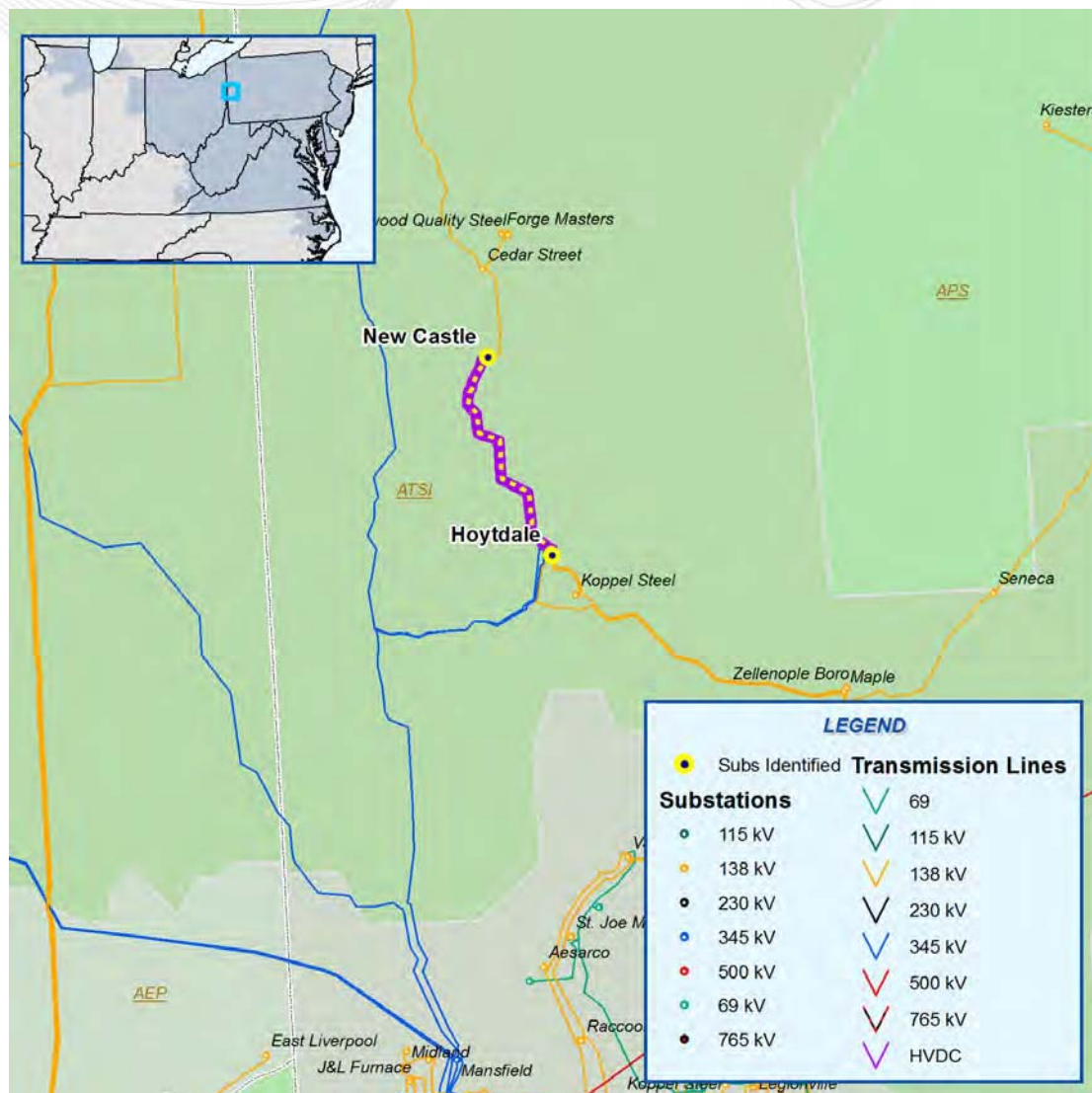
- Build 345-138kV Substation at Niles. 1.2 mile 345kV loop of the Highland – Shenango 345 kV line into substation. New 345/138 kV transformer. Project also increased short circuit levels to benefit power quality due to multiple EAF loads in the area
- Cost estimate: TBD
- Projected in-service date is 6/1/2015.



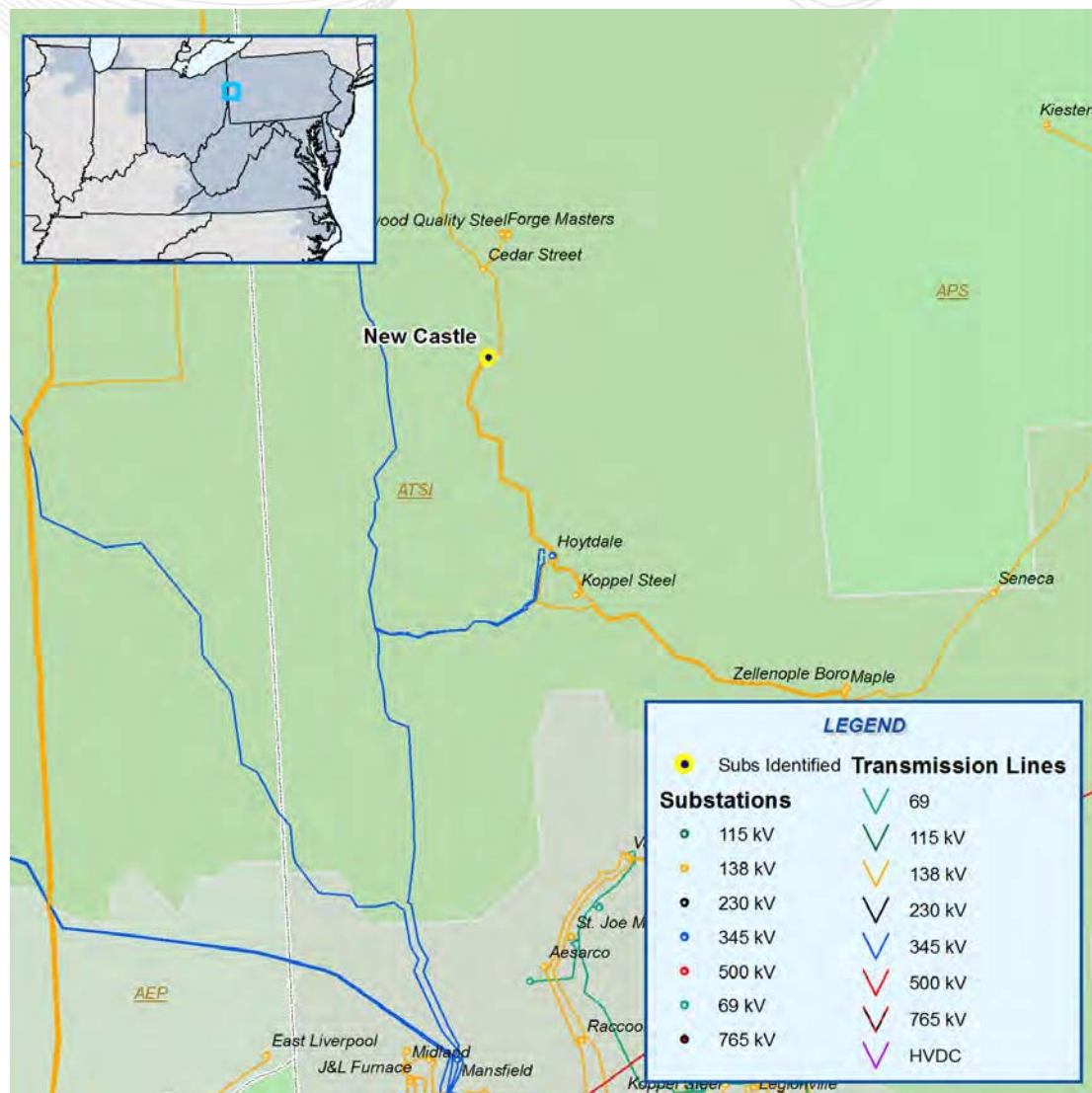
- Replace relay on the Highland – G689 138 kV line
- Cost estimate: TBD
- Projected in-service date is 12/31/2012.



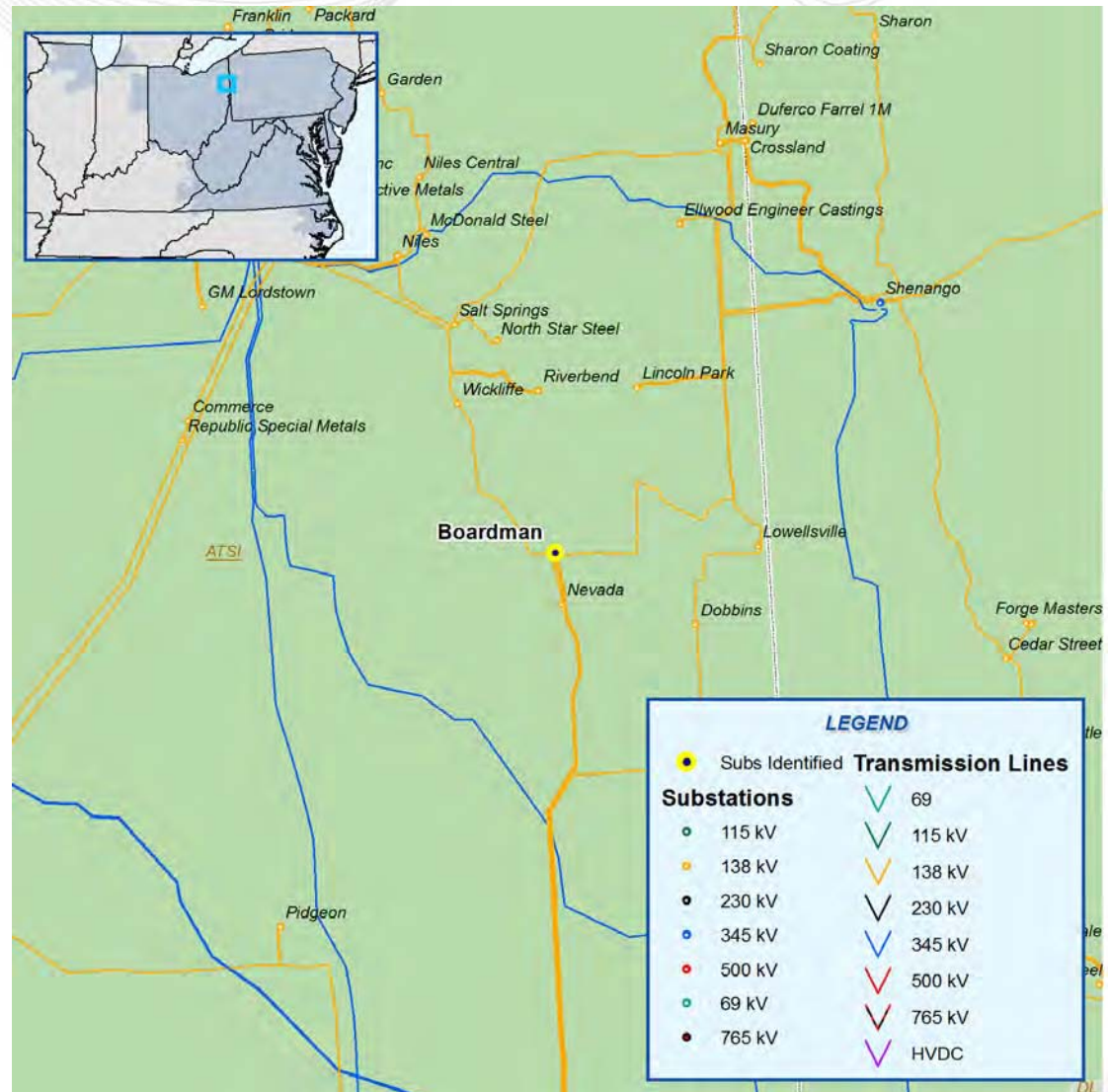
- Reconduct the Hoytdale – Newcastle 138 kV lines #1 and #2 with 795 ACSS
- Cost estimate: TBD
- Projected in-service date is 6/1/2015.



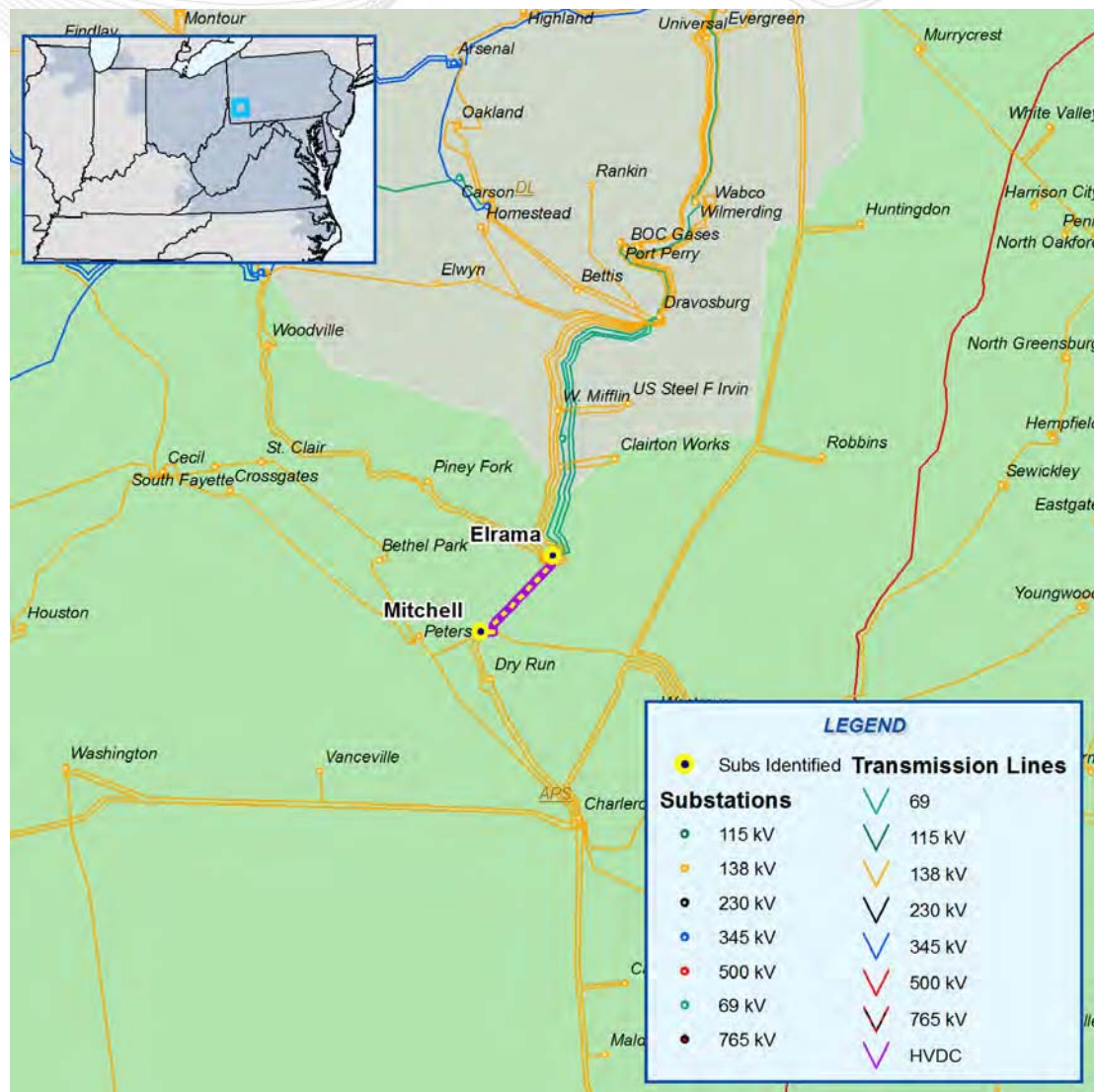
- Add 150 MVAR SVC and a 100 MVAR capacitor at New Castle
- Cost estimate: TBD
- Projected in-service date is 6/1/2015.



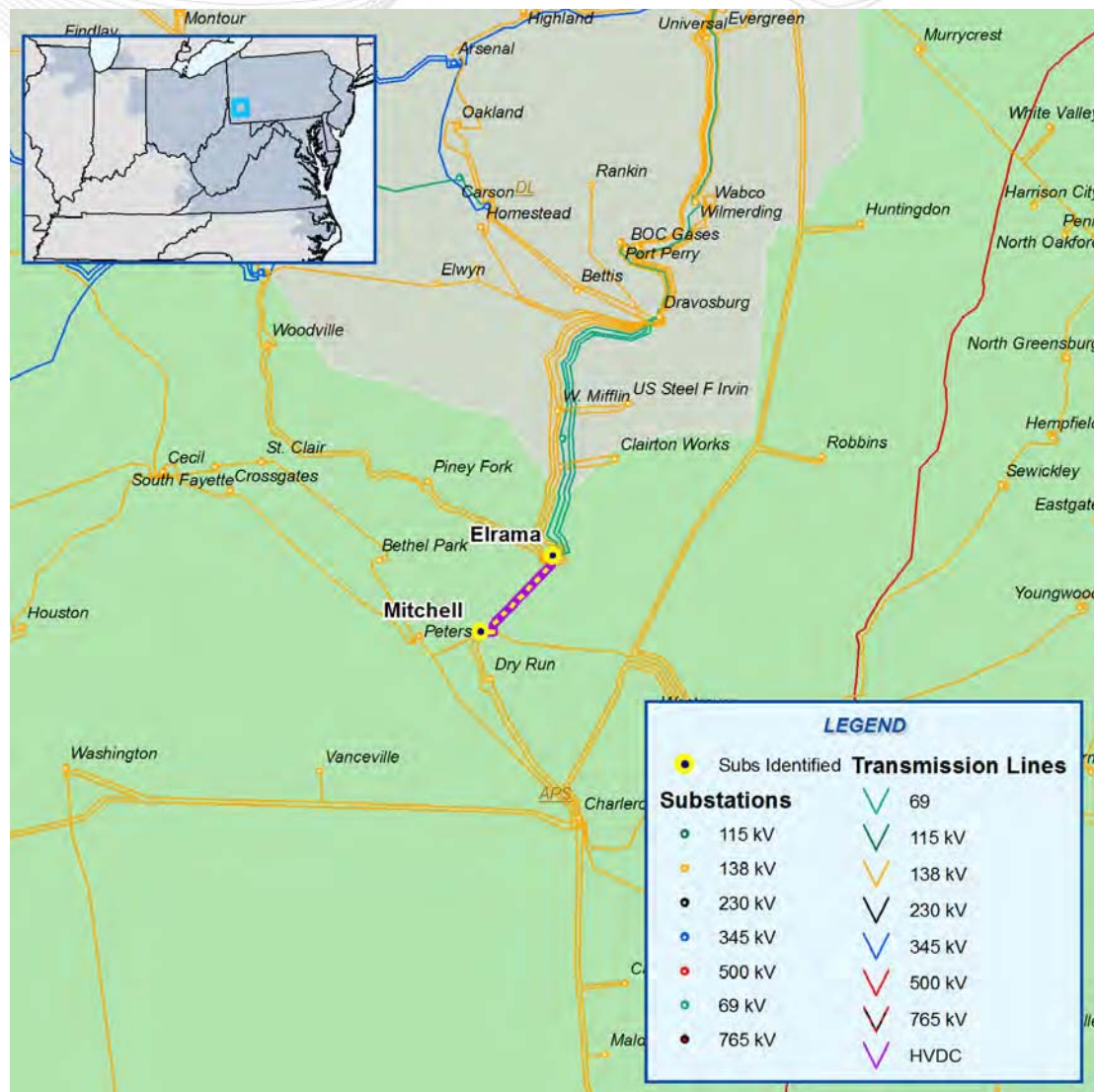
- Install a 50 MVAR capacitor at the Boardman 138 kV bus
- Cost estimate: TBD
- Projected in-service date is 6/1/2015.



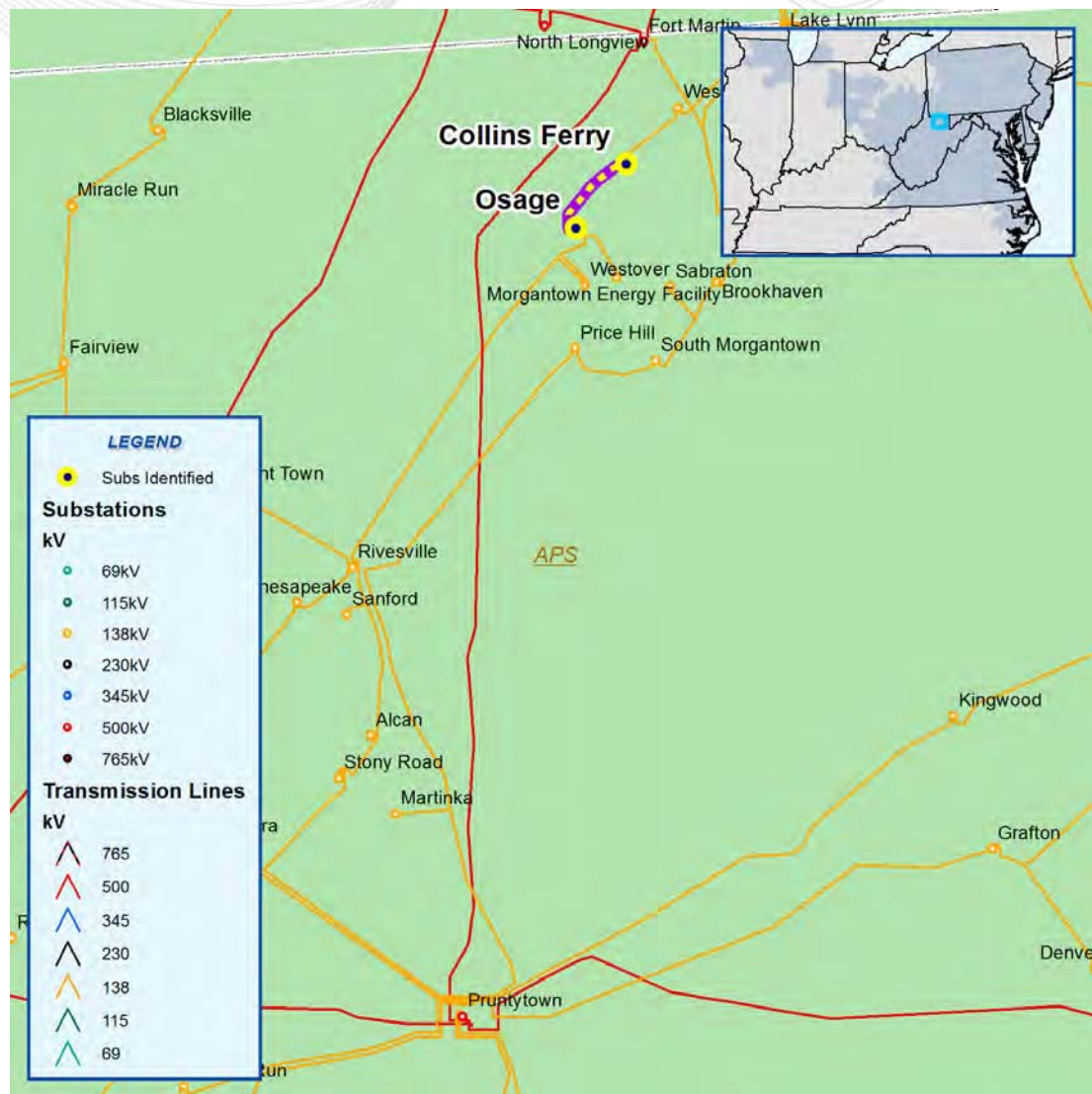
- Upgrade the Duquesne portion of the Elrama – Mitchell 138 kV line. (May include reconductoring the line and upgrading substation equipment.)
- Cost estimate: TBD
- Projected in-service date is 4/16/2015.



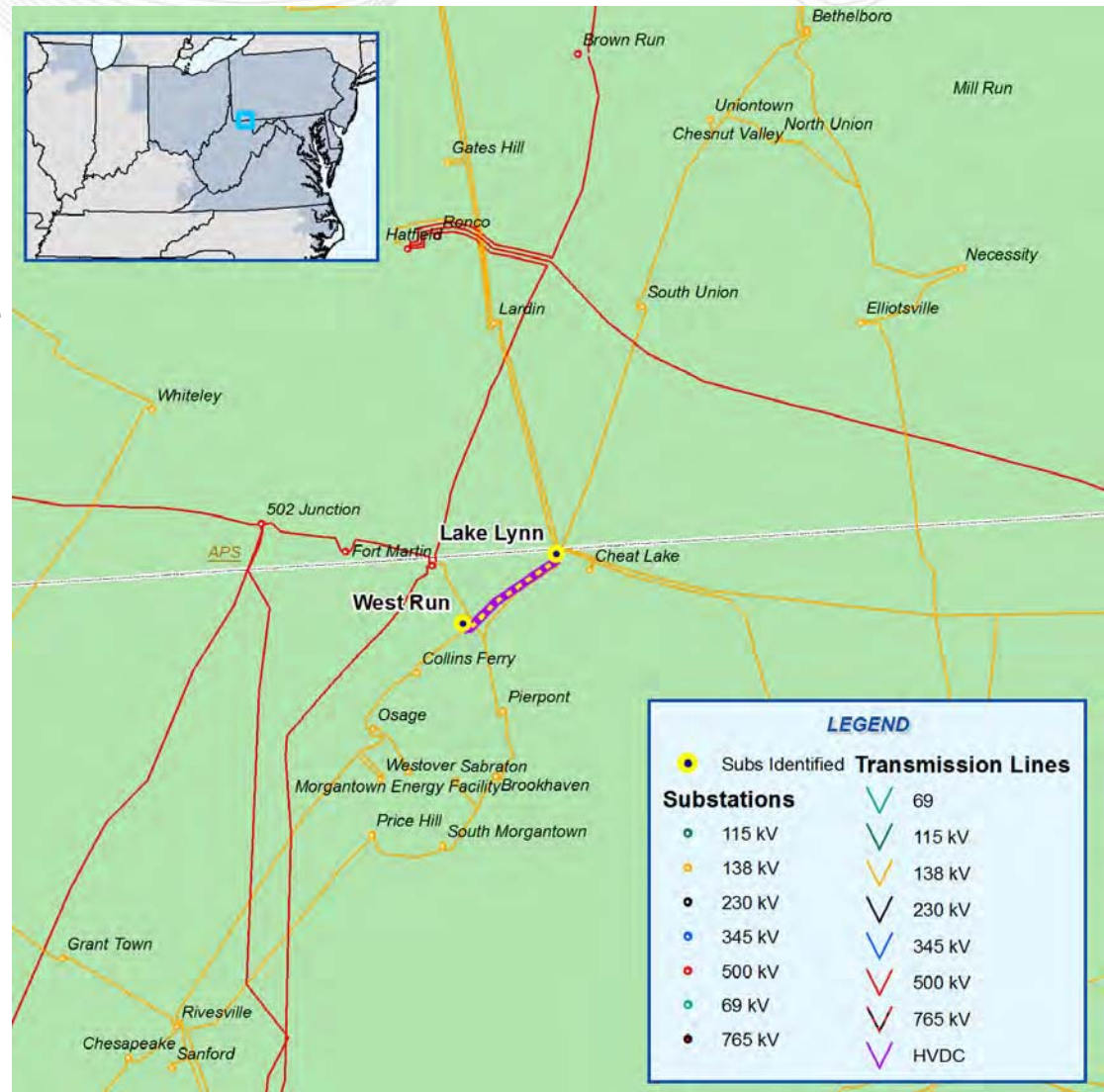
- Upgrade the AP portion of the Elrama – Mitchell 138 kV line by replace breaker risers on the Mitchell 138 kV bus on the Elrama terminal
- Cost estimate: TBD
- Projected in-service date is 6/1/2015.



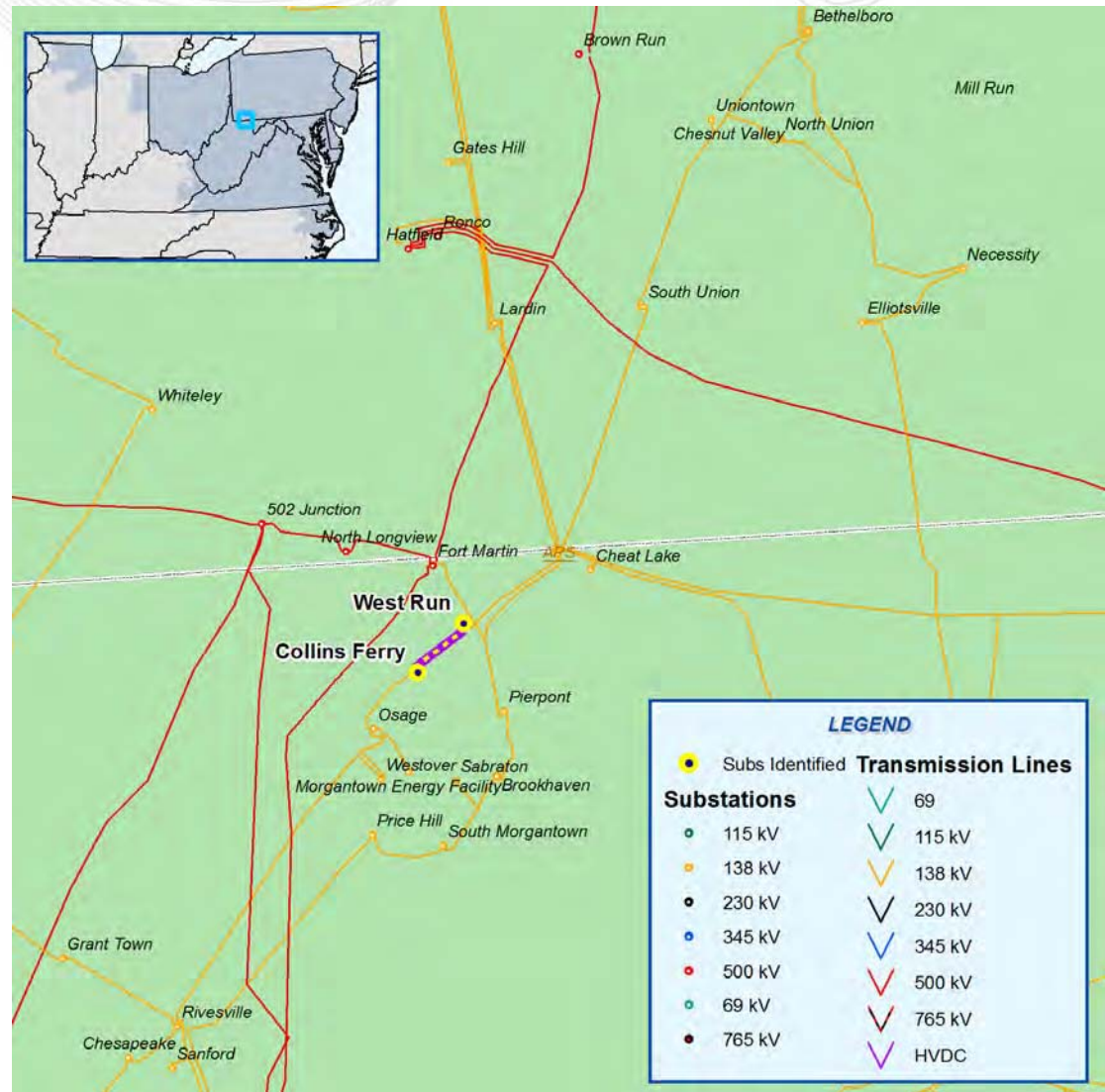
- Reconductor the Osage-Collins Ferry 138 kV line with 795 ACSS. Upgrade terminal equipment at Osage and Collins Ferry
- Cost estimate: TBD
- Projected in-service date is 6/1/2015.



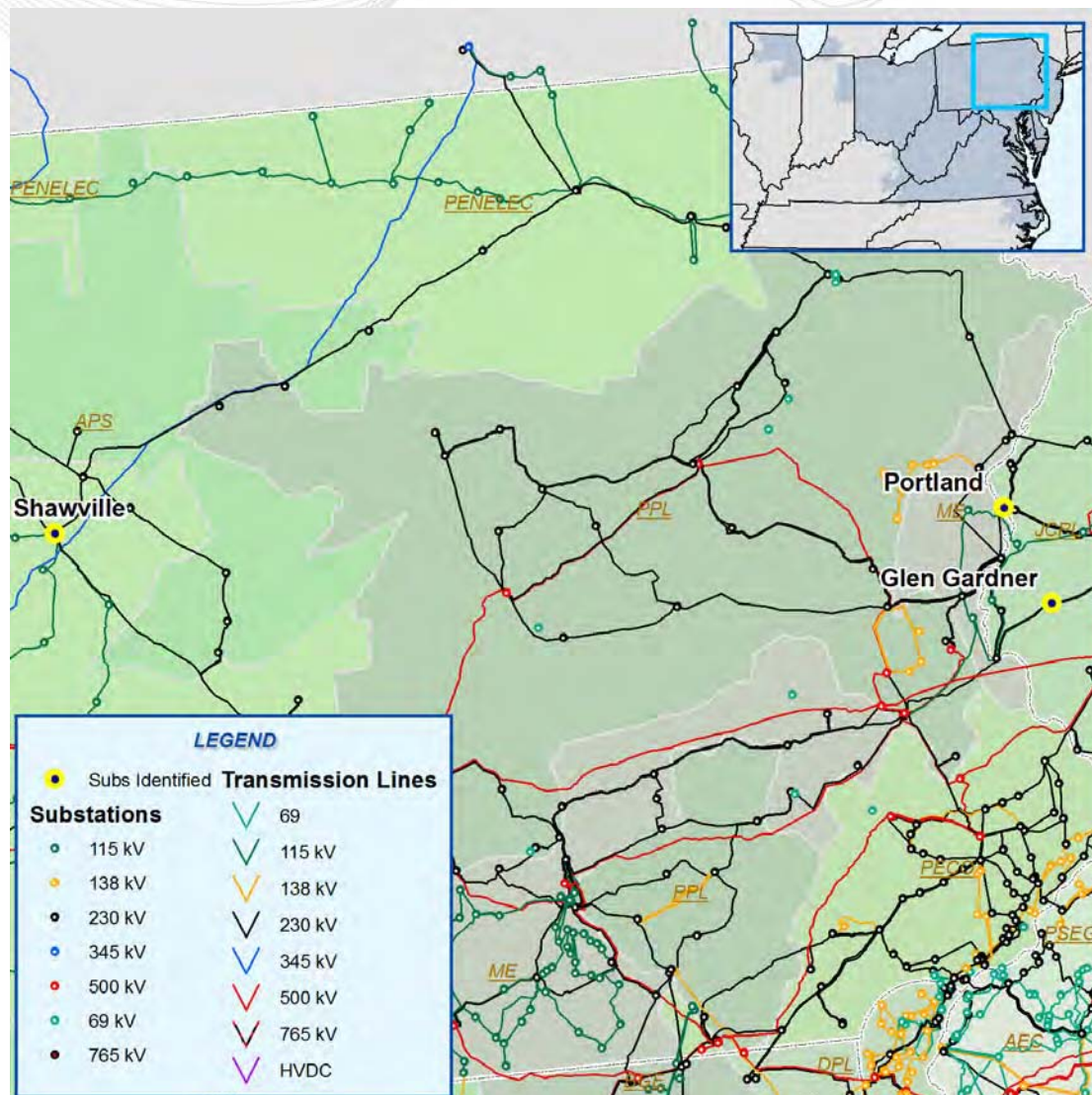
- Raise structures between Lake Lynn and West Run to eliminate the clearance de-rates on the West Run – Lake Lynn 138 kV line
- Cost estimate: TBD
- Projected in-service date is 6/1/2015.



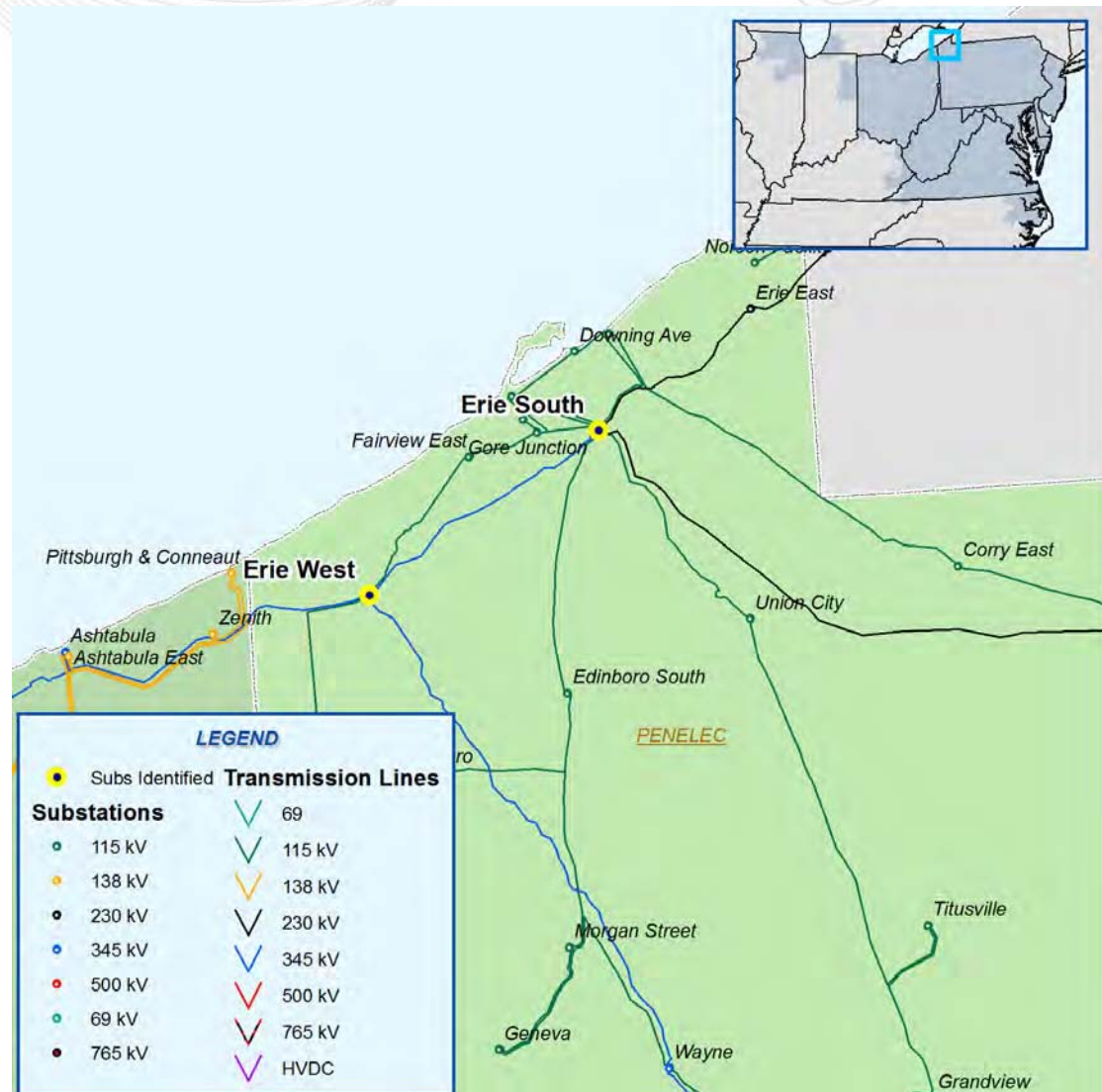
- Raise structures between Collins Ferry and West Run to eliminate the clearance de-rates on the Collins Ferry - West Run 138 kV line
- Cost estimate: TBD
- Projected in-service date is 6/1/2015.



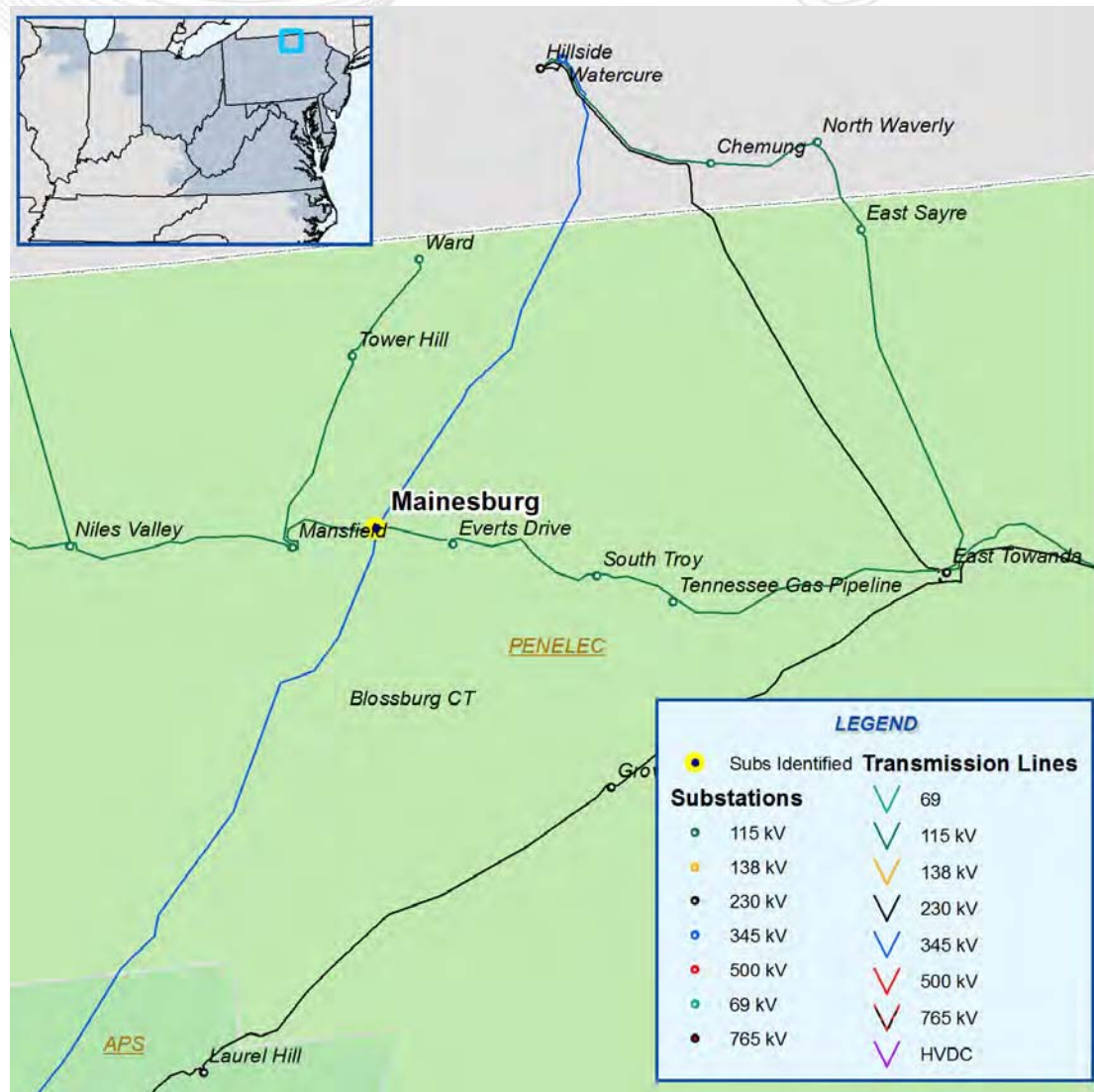
- Portland Unit 1 & 2
- Requested deactivation date: 1/7/2015
- Shawville Unit 1, 2, 3 & 4;
Titus Unit 1, 2 & 3
- Requested deactivation date: 4/16/2015
- Glen Gardner CT 1-8
- Requested deactivation date: 5/1/2015



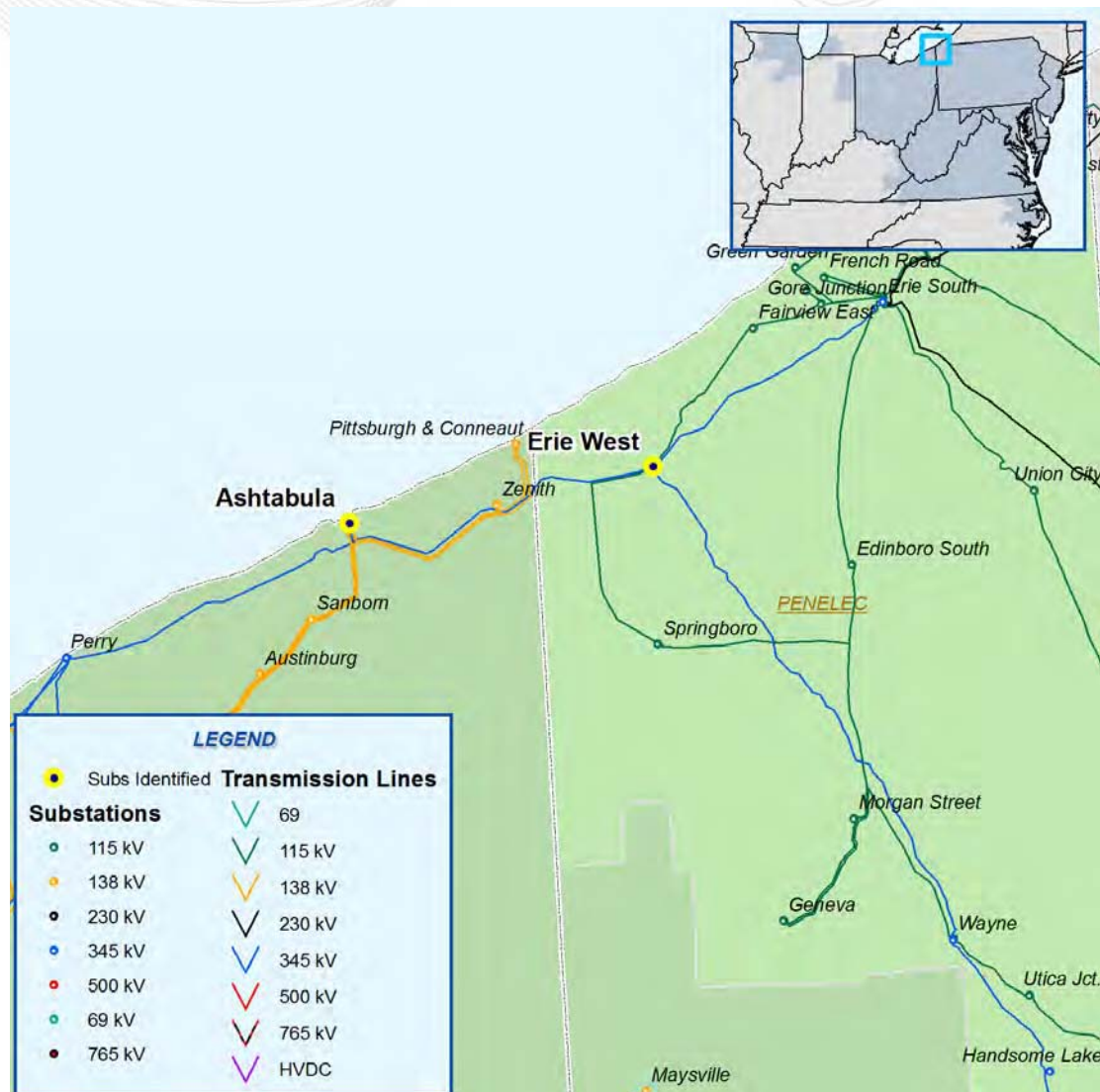
- Criteria violations
 - N-1 Voltage Magnitude
 - N-1 Voltage drop
 - N-1-1 Thermal
 - N-1-1 Voltage magnitude
 - N-1-1 Voltage drop
 - Generation Deliverability
- Load Deliverability
- Erie South & Erie West 345kV low voltage violations
- Multiple 115kV, 138kV, & 230kV low voltage and voltage drop violations
- Multiple 115kV & 230kV thermal violation
- Erie West 345/115kV transformer thermal overload



- N-1 Voltage
- Construct a new 345/115 kV substation (Mainesburg) and loop the Mansfield - Everts 115 kV (existing base line upgrade b1608)
- Cost estimate: \$13M
- Projected in-service date: 6/1/2014

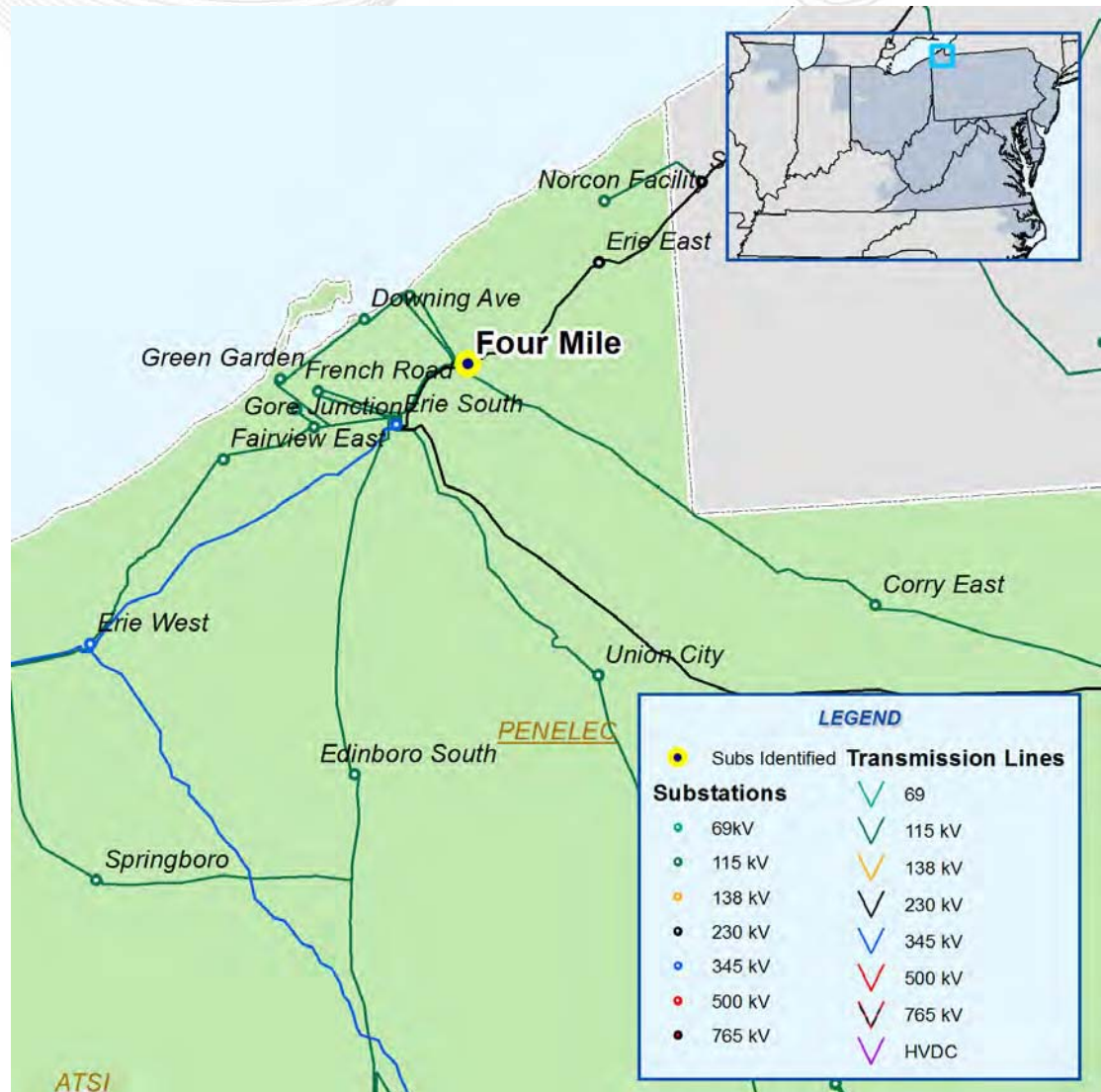


- N-1 Voltage, Generator Deliverability
- Re-configure the Erie West 345 kV substation, add a new circuit breaker and relocate the Ashtabula line exit (existing base line upgrade b1373)
- Cost estimate: \$.955M
- Projected in-service date: 6/1/2012

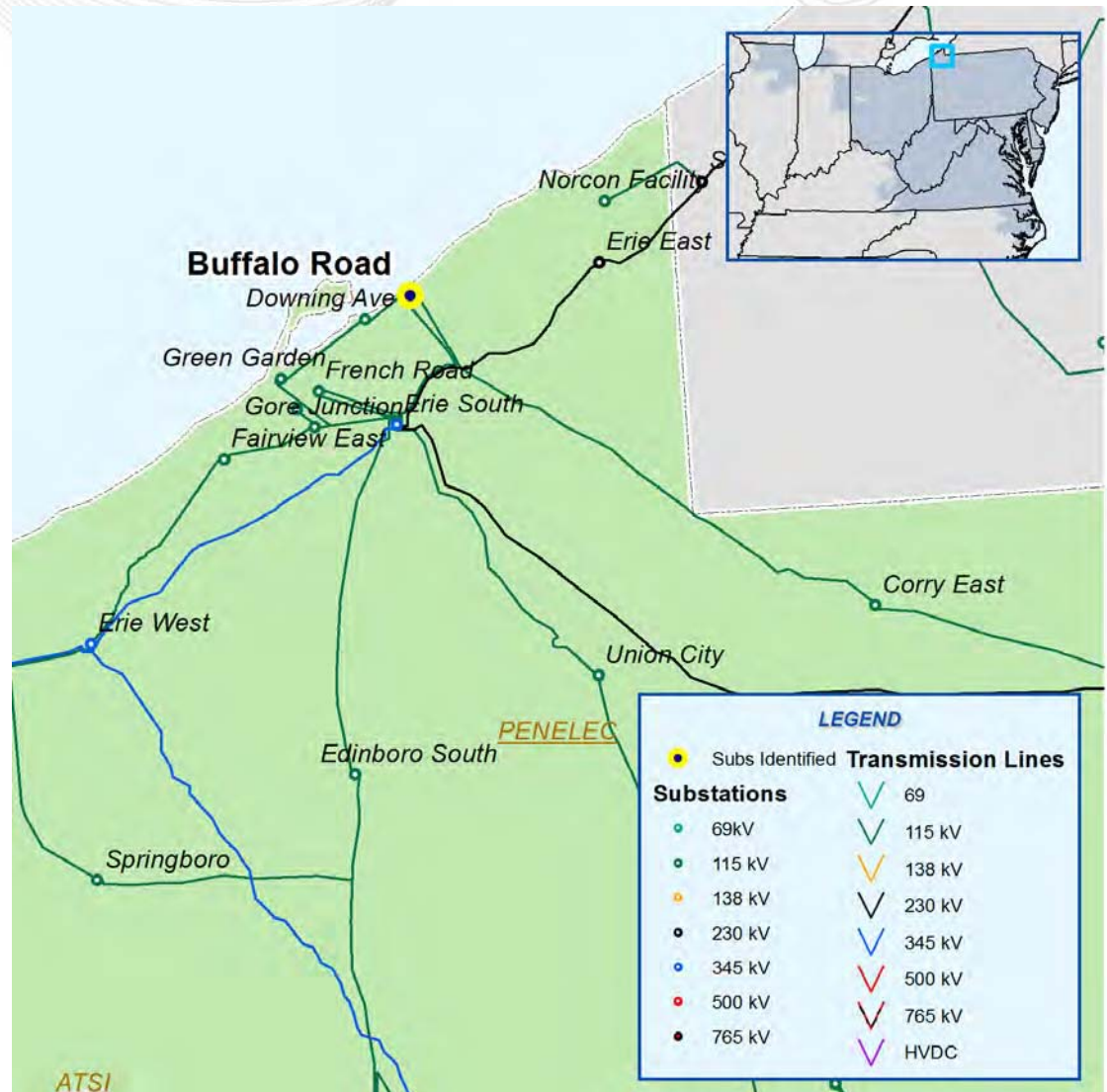


- N-1 Voltage
- Construct Four Mile Junction 230/115 kV substation. Loop the Erie South - Erie East 230 kV line, Buffalo Road - Corry East and Buffalo Road - Erie South 115 kV lines (existing base line upgrade b1609)
- Cost estimate: \$11.1M
- Projected in-service date: 6/1/2014

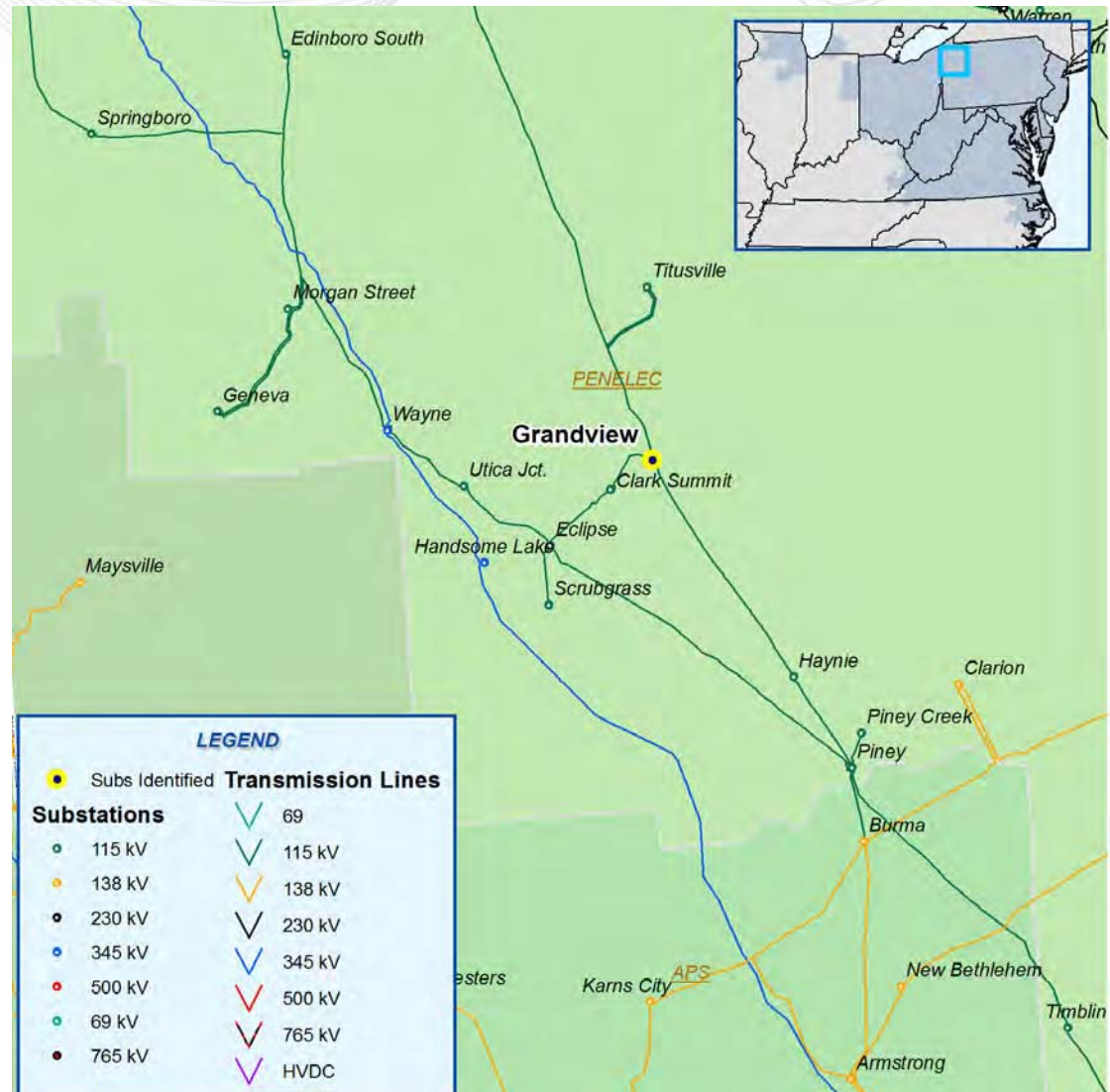
- N-1 Voltage
- Install a 75 MVAR cap bank on the Four Mile Junction 230 kV bus (existing base line upgrade b1769)
- Cost estimate: \$.95M
- Projected in-service date: 6/1/2014



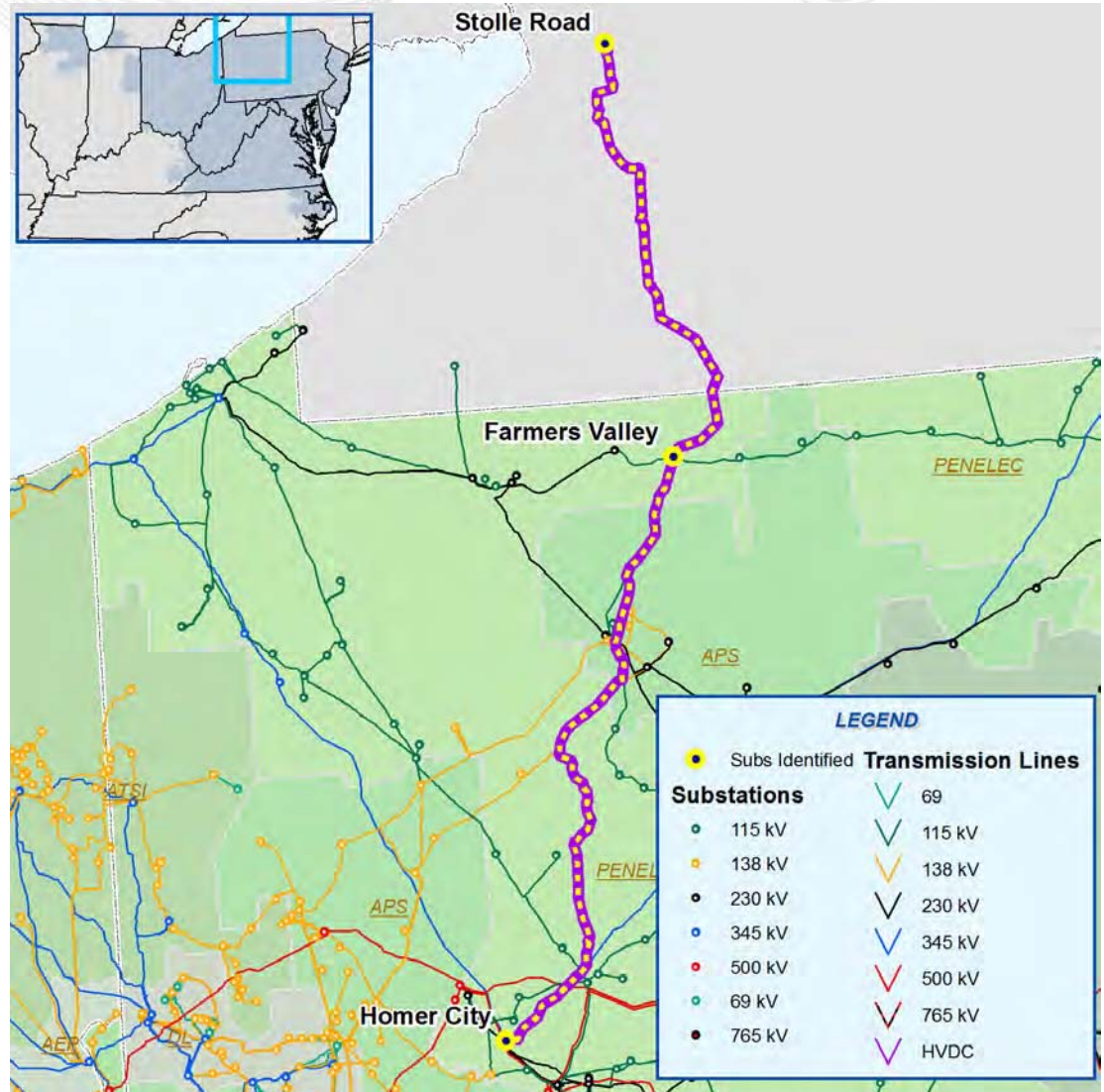
- N-1 Voltage
- Install a 50 MVAR cap bank on the Buffalo Road 115 kV bus (existing base line upgrade b1770)
- Cost estimate: \$.75M
- Projected in-service date: 6/1/2015



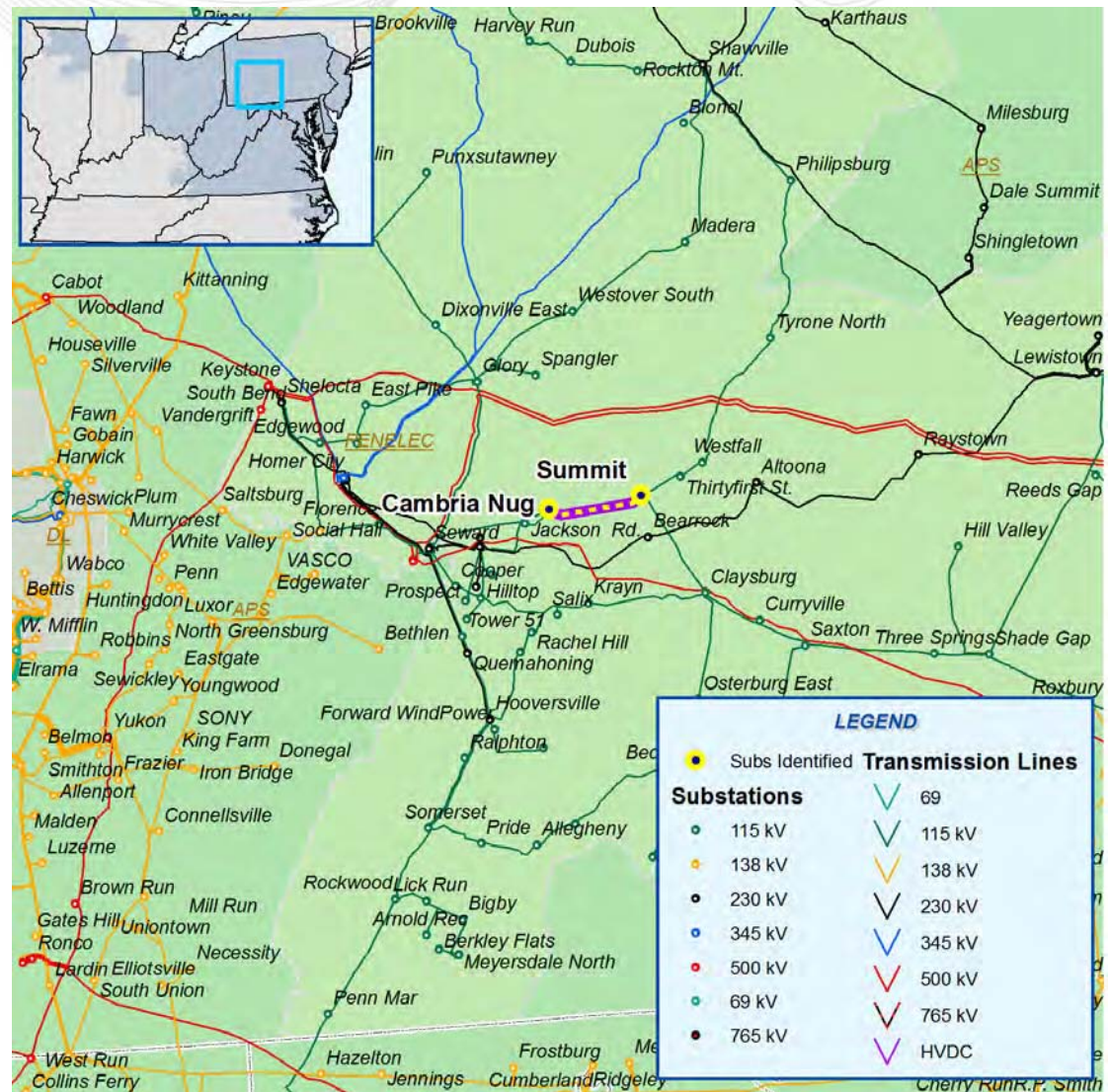
- N-1 Voltage
- Install a 25 MVAR 115 kV Capacitor at Grandview
- Cost estimate: TBD
- Projected in-service date: 6/1/2015



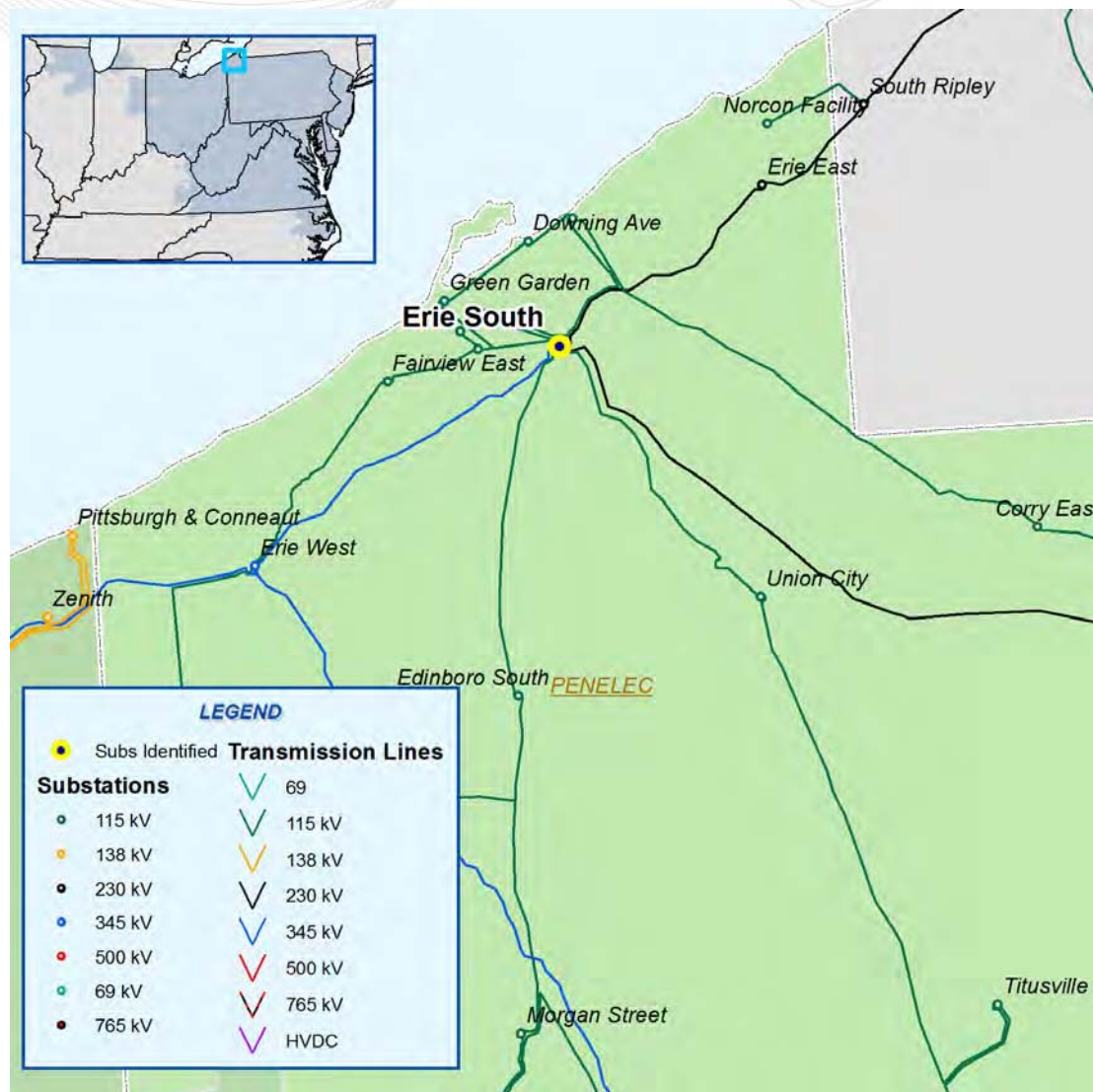
- Generator Deliverability, N-1-1 Thermal
- Construct Farmers Valley 345/230 kV and 230/115 kV substation. Loop the Homer City-Stolle Road 345 kV line into Farmers Valley
- Cost estimate: TBD
- Projected in-service date: 6/1/2015



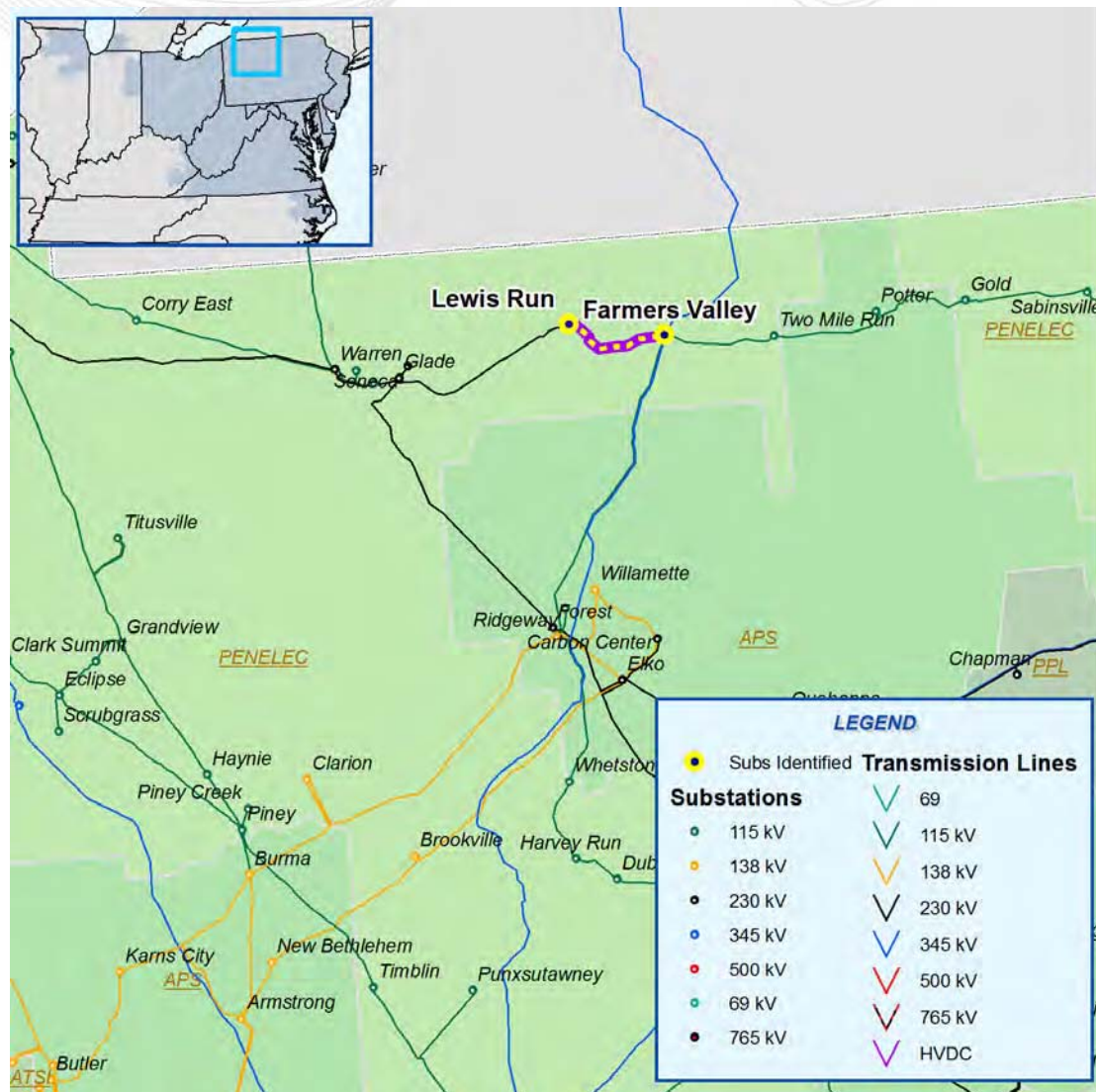
- Generator Deliverability
- Reconductor Cambria Slope-Summit 115kV with 795 ACSS Conductor
- Cost estimate: TBD
- Projected in-service date: 6/1/2015



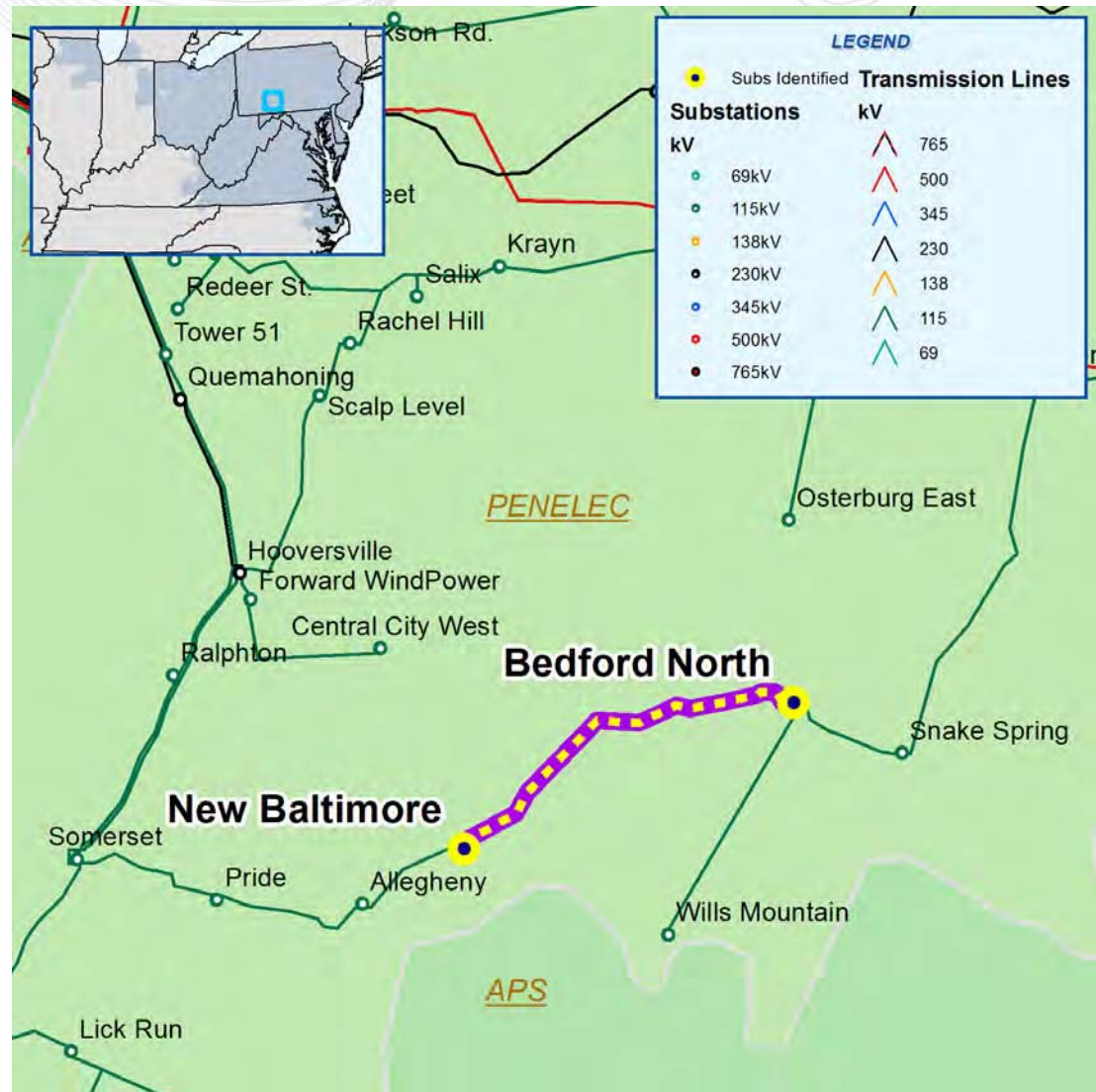
- Generator Deliverability
- Relocate the Erie South 345 kV line terminal
- Cost estimate: TBD
- Projected in-service date: 6/1/2015



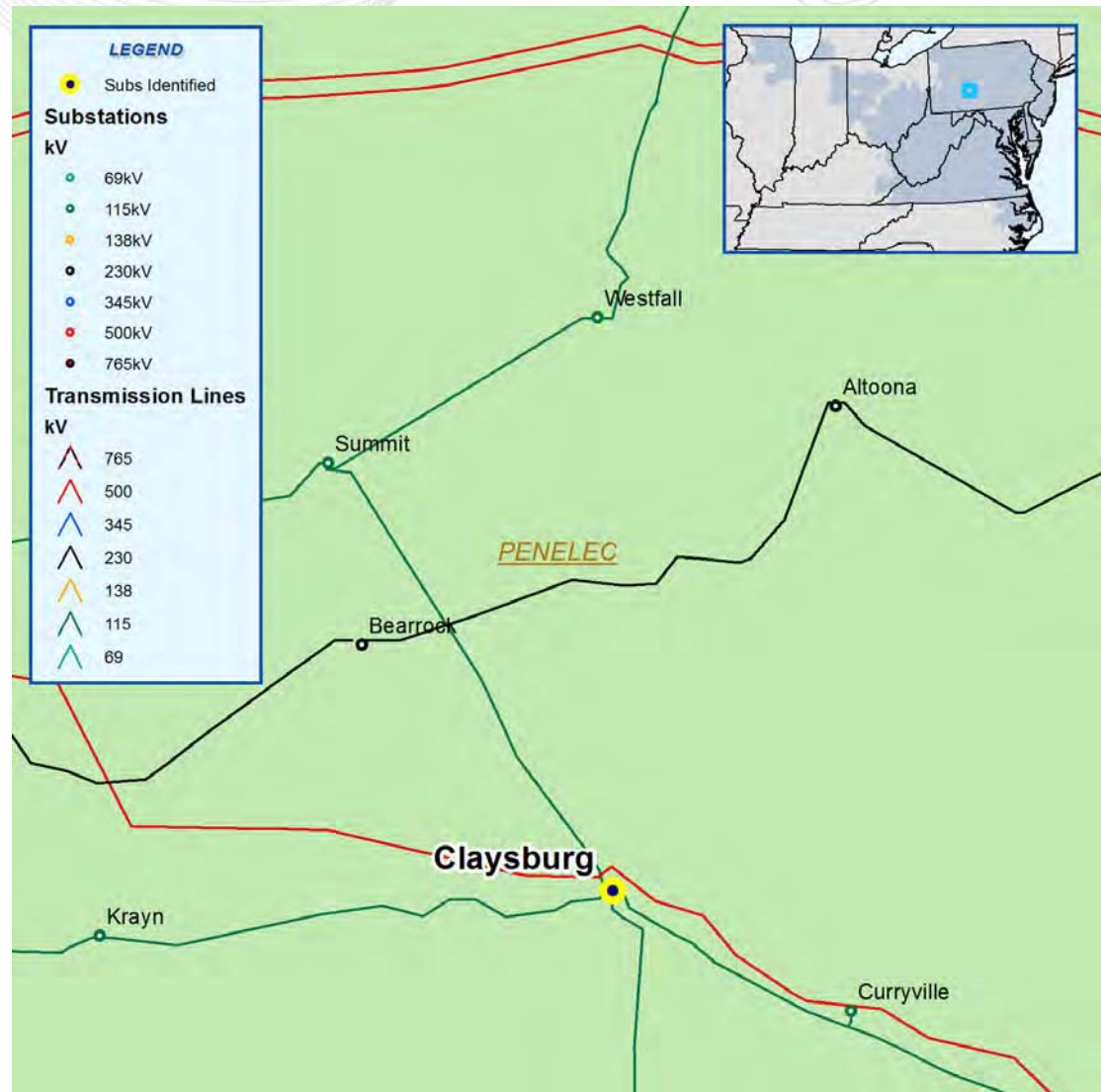
- Generator Deliverability
- Convert Lewis Run-Farmers Valley to 230 kV using 1033.5 ACSR conductor. Project to be completed in conjunction with new Farmers Valley 345/230 kV transformation
- Cost estimate: TBD
- Projected in-service date: 6/1/2015



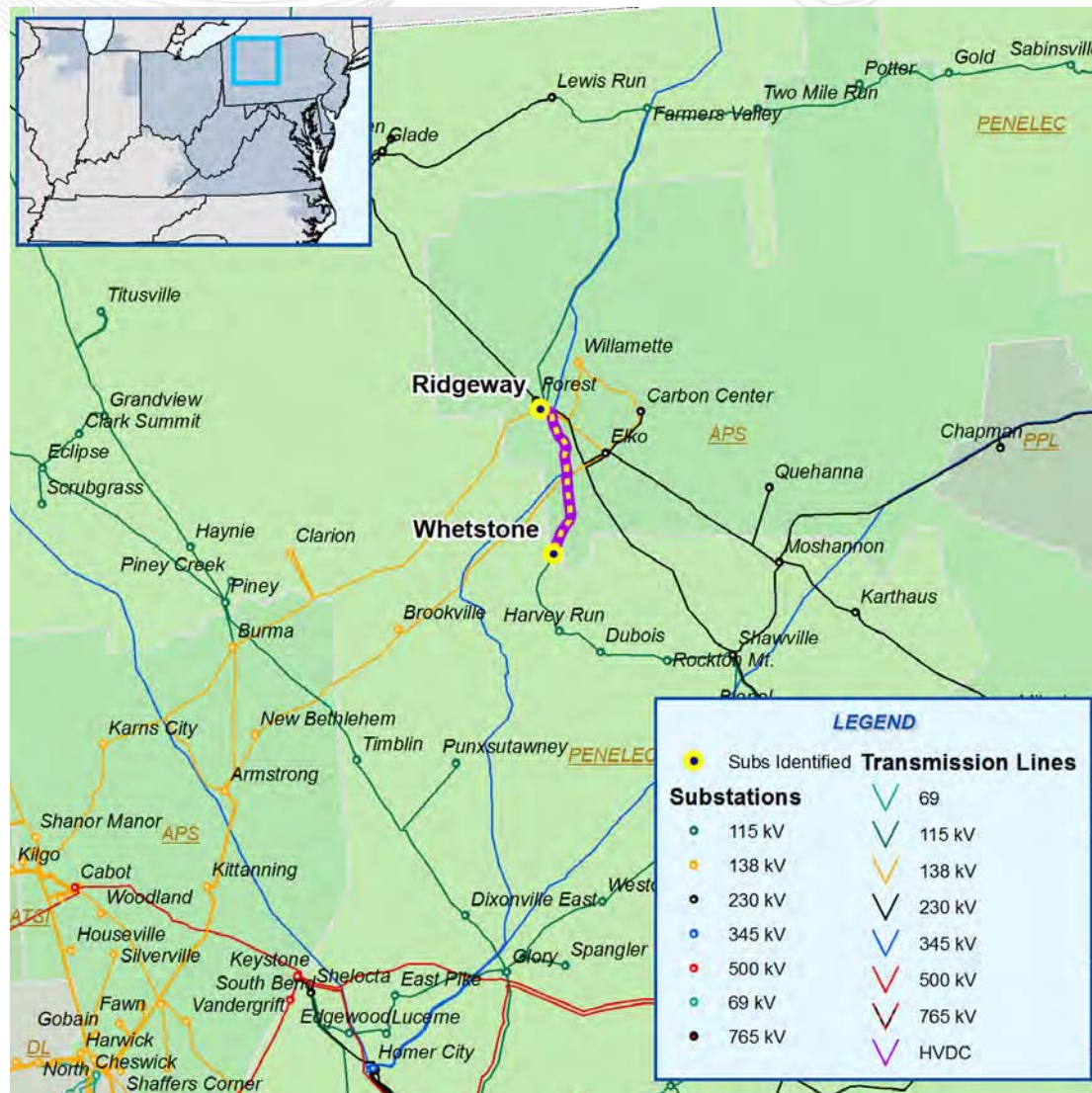
- Generator Deliverability
- Reconnector the New Baltimore - Bedford North 115 kV (existing base line b1607)
- Cost Estimate: \$11M
- Projected in-service date: 6/1/2015



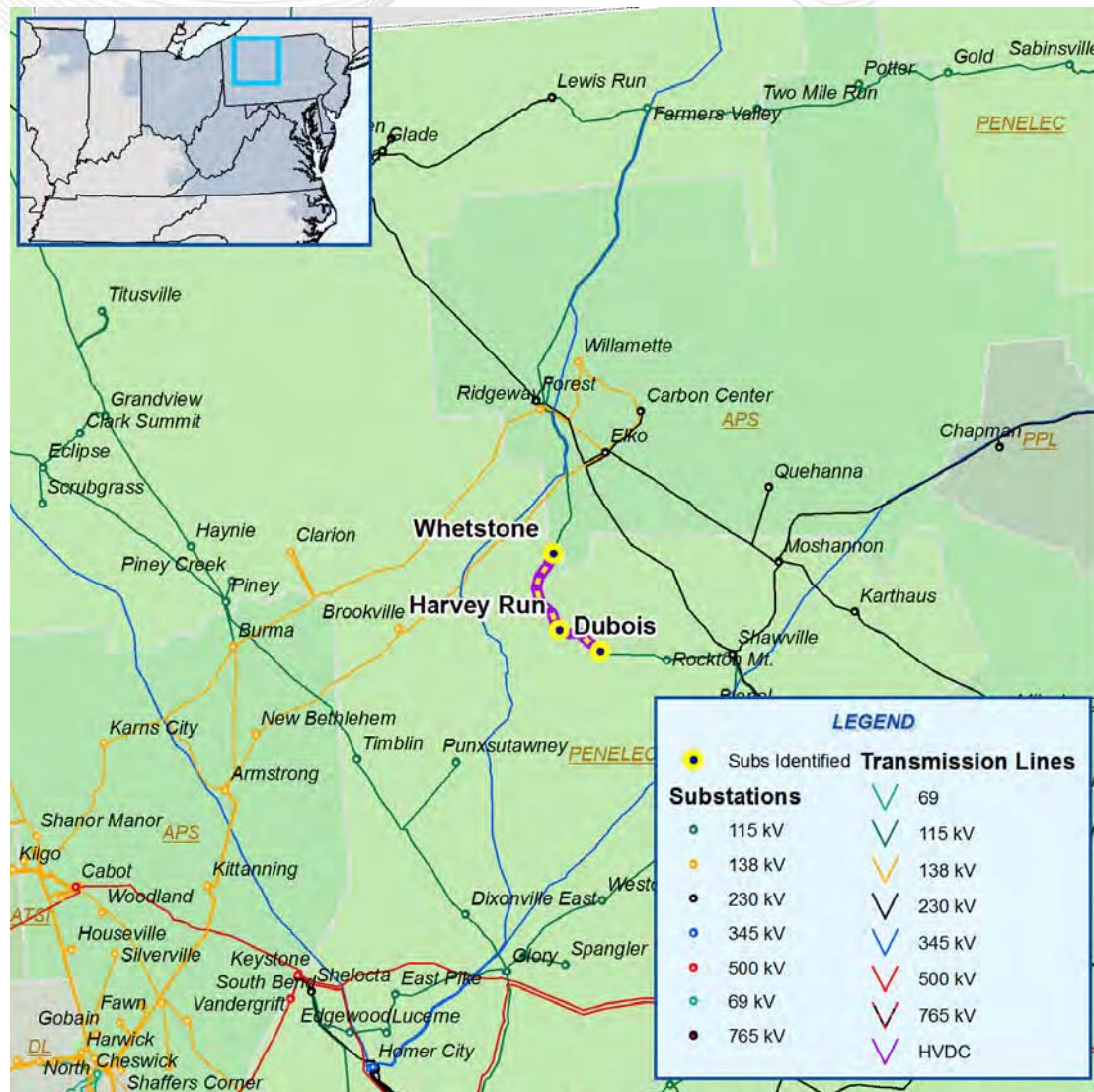
- Generator Deliverability
- Change CT Ratio at Claysburg
- Cost estimate: TBD
- Projected in-service date: 6/1/2015



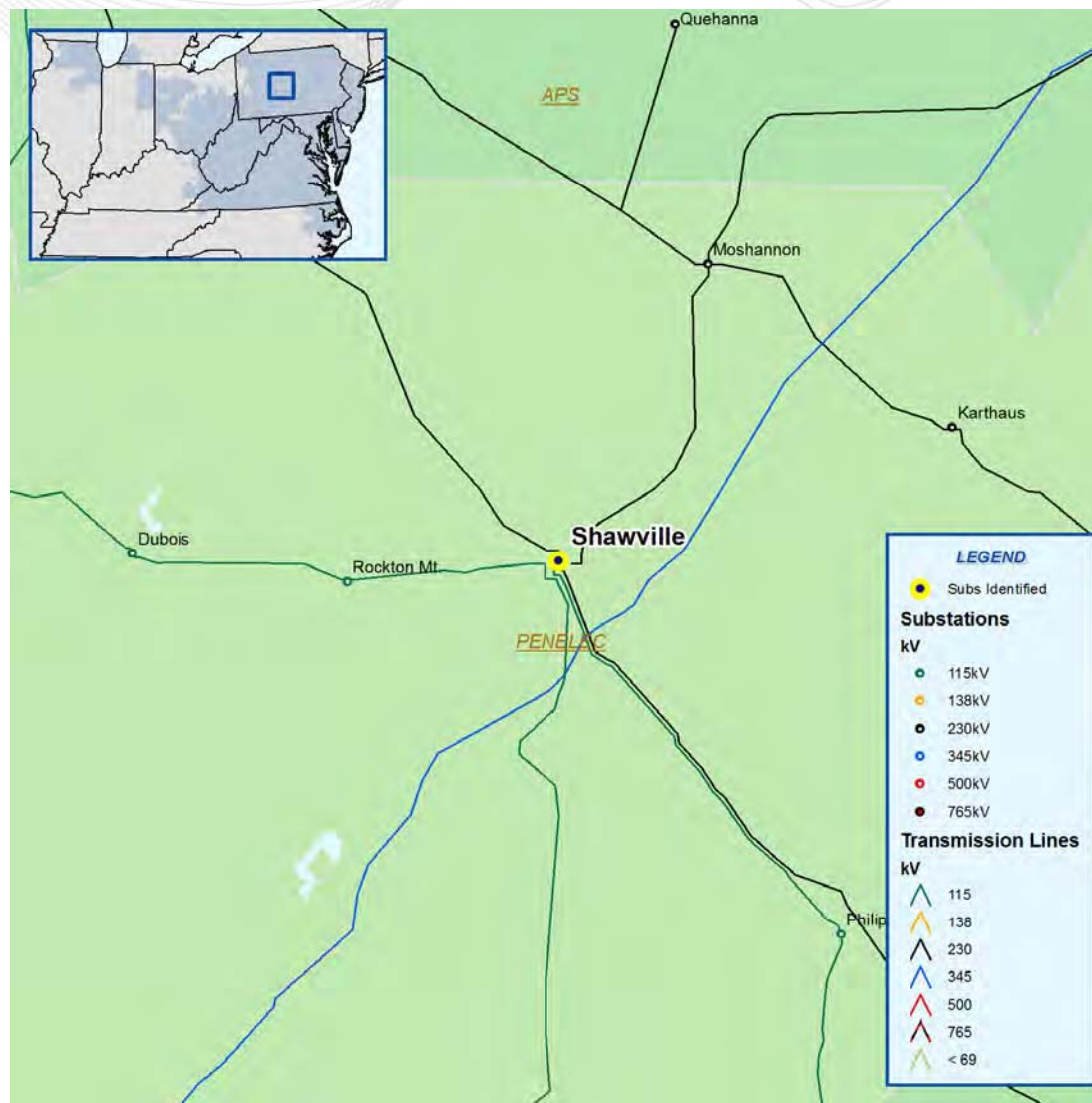
- Generator Deliverability
- Replace 600 Amp Disconnect Switches on Ridgeway-Whetstone 115 kV line with 1200 Amp Disconnects. Reconductor Ridgeway and Whetstone 115 kV Bus. Replace Wave Trap at Ridgeway. Change CT Ratio at Ridgeway
- Cost estimate: TBD
- Projected in-service date: 6/1/2015



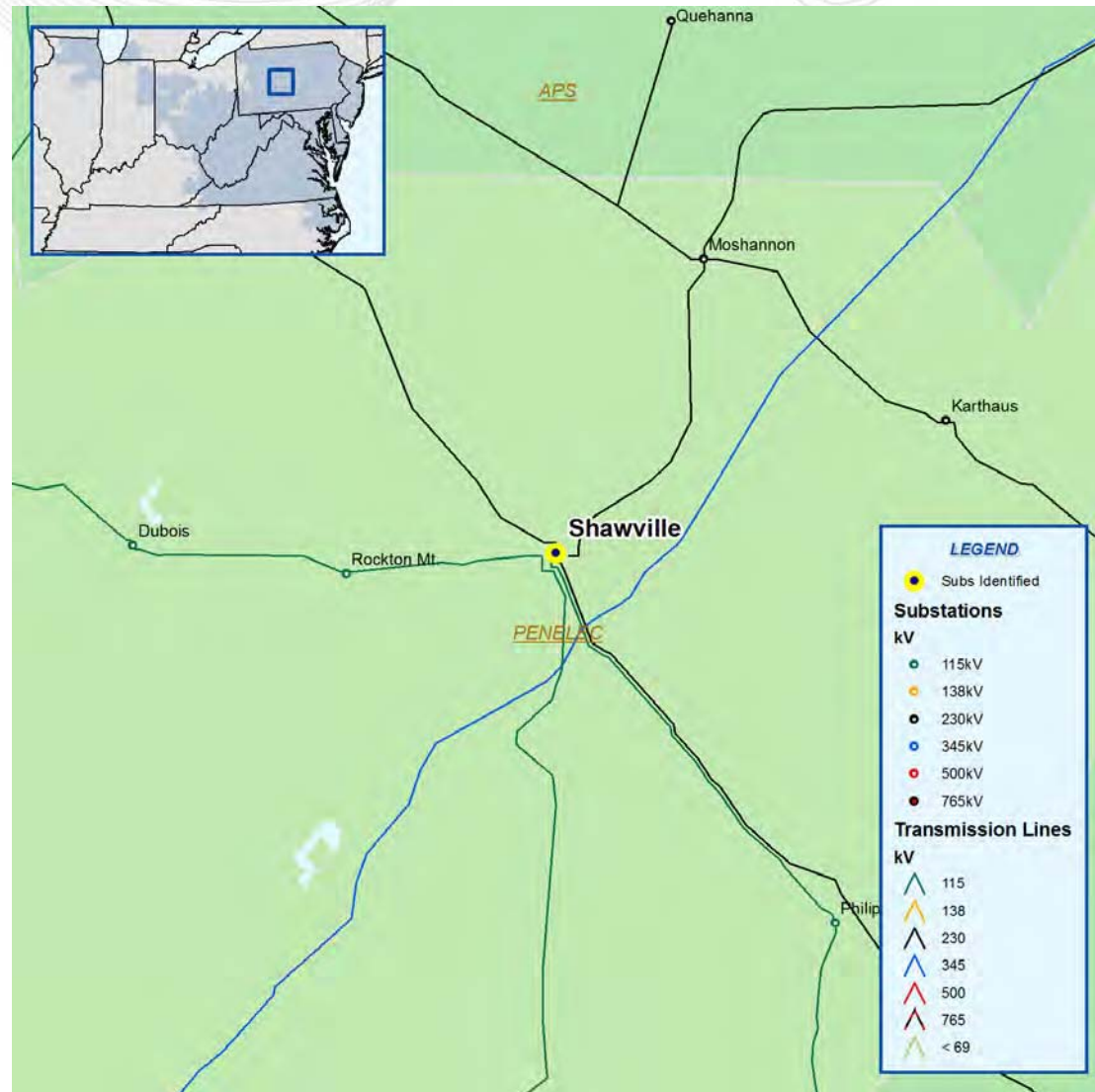
- Generator Deliverability
- Replace 600 Amp Disconnect Switches on Dubois-Harvey Run-Whetstone 115 kV line with 1200 Amp Disconnects
- Cost estimate: TBD
- Projected in-service date: 6/1/2015



- Generator Deliverability
- Replace Shawville 115kV breaker '#1A XFMR' (existing baseline upgrade b1169)
- Cost estimate: \$.313M
- Projected in-service date: 6/1/2015



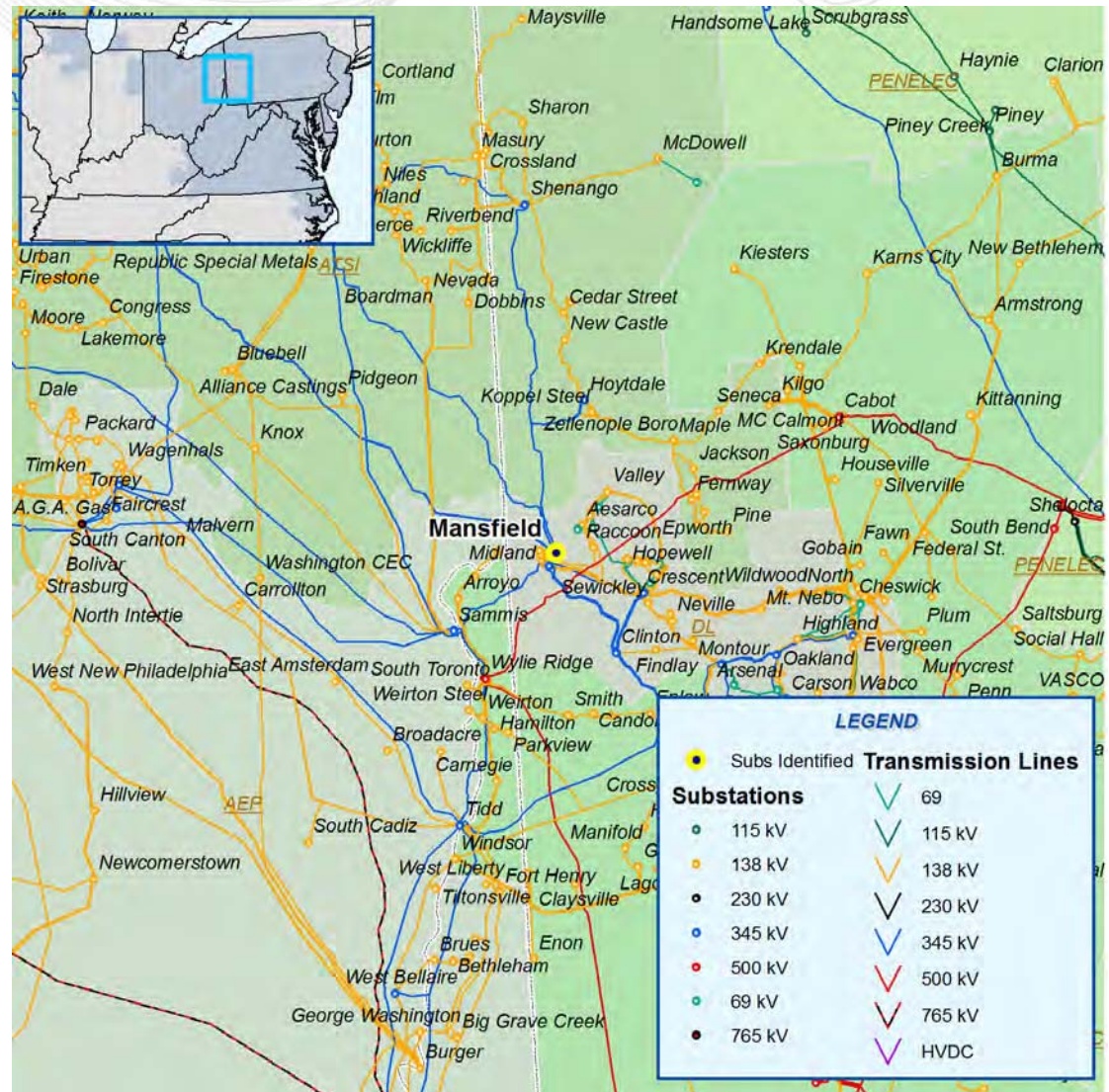
- Install a 75 MVAR 115 kV Capacitor at Shawville
- Cost estimate: TBD
- Projected in-service date: 6/1/2015



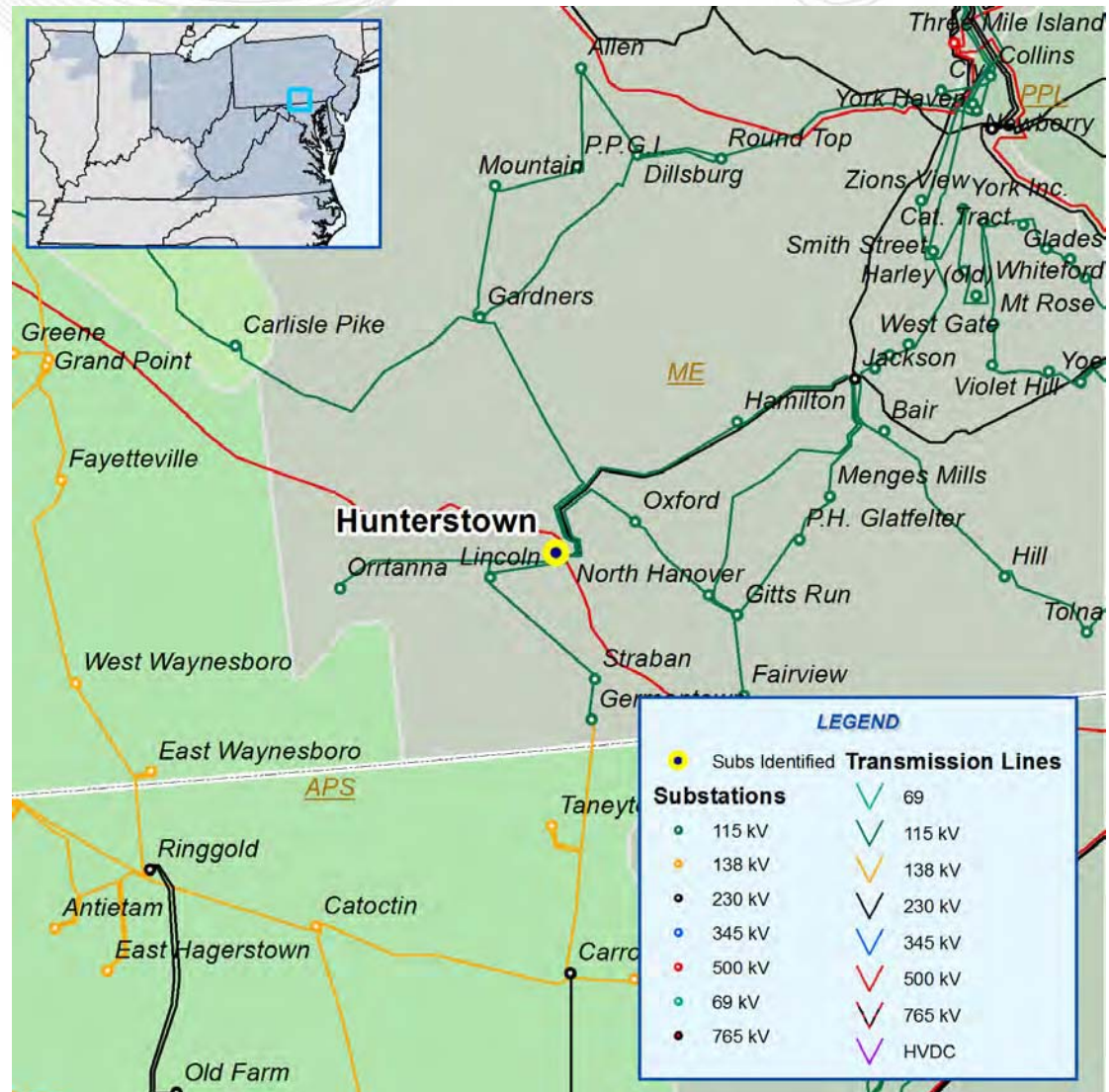
- Install a 250 MVAR SVC at Altoona 230 kV (existing base line upgrade b1801)
- Cost estimate: \$43M
- Projected in-service date: 6/1/2015 (no advancement needed)



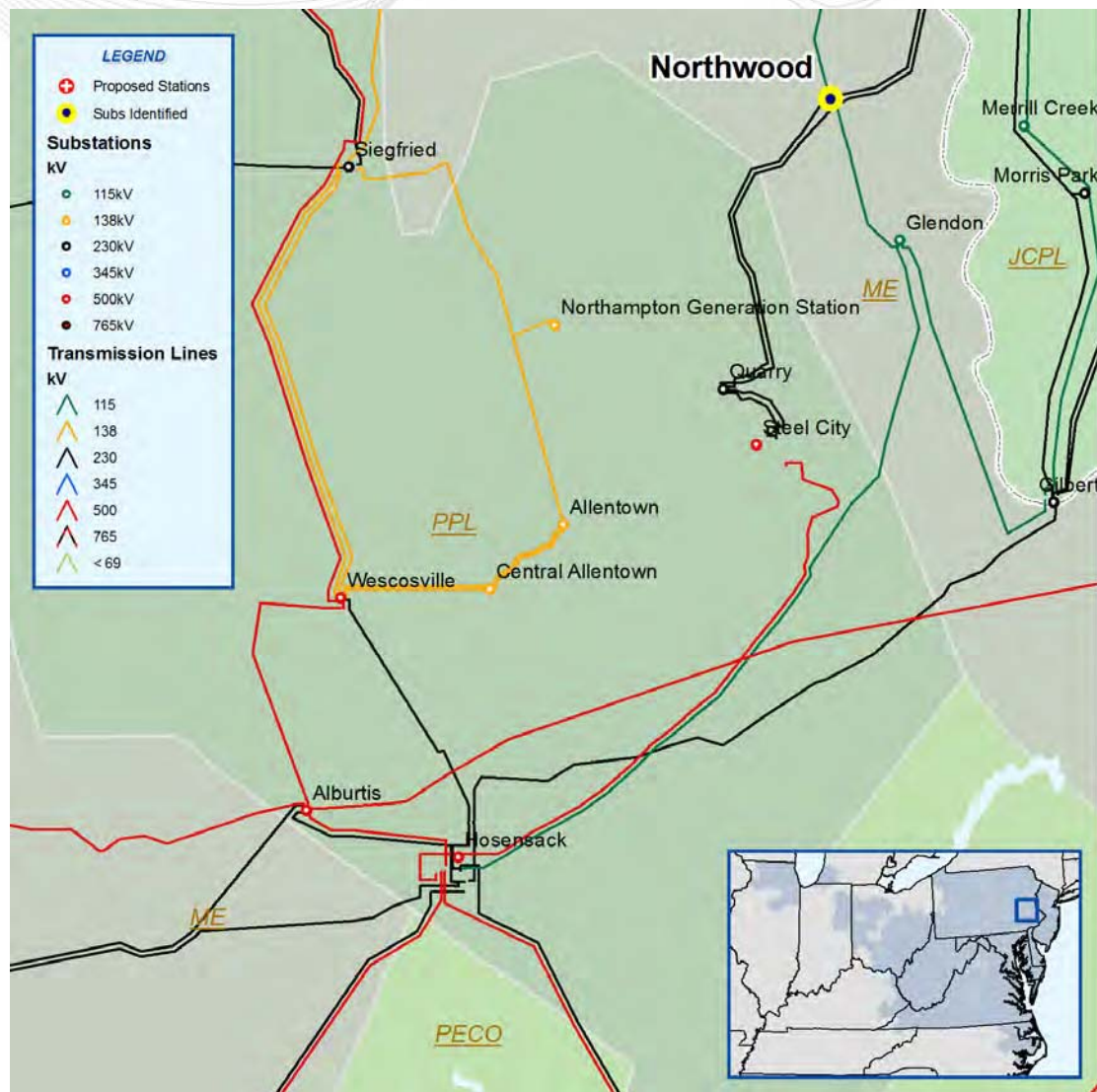
- Install a 100 MVAR Fast Switched Shunt and 200 MVAR Switched Shunt at Mansfield 345 kV (existing base line upgrade b1802)
- Cost estimate: \$6.1M
- Projected in-service date: 6/1/2015 (no advancement necessary)



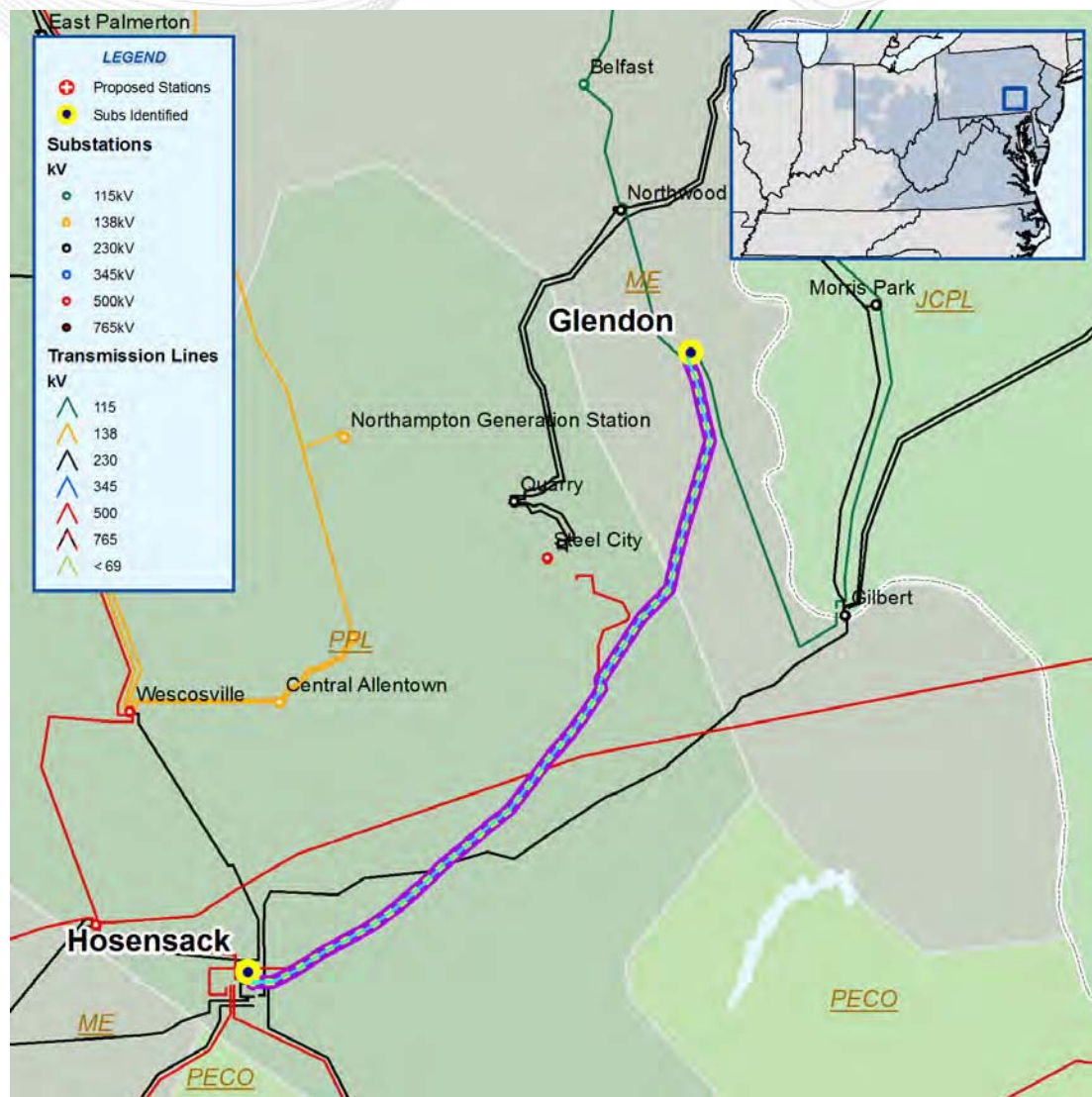
- Criteria violations
 - N-1-1 Thermal
 - N-1-1 Voltage
 - Generation Deliverability
- Multiple 230kV thermal violations
- Multiple 115kV low voltage violations
- Hunterstown 500kV low voltage
- Hunterstown 500kV and 230kV voltage drop



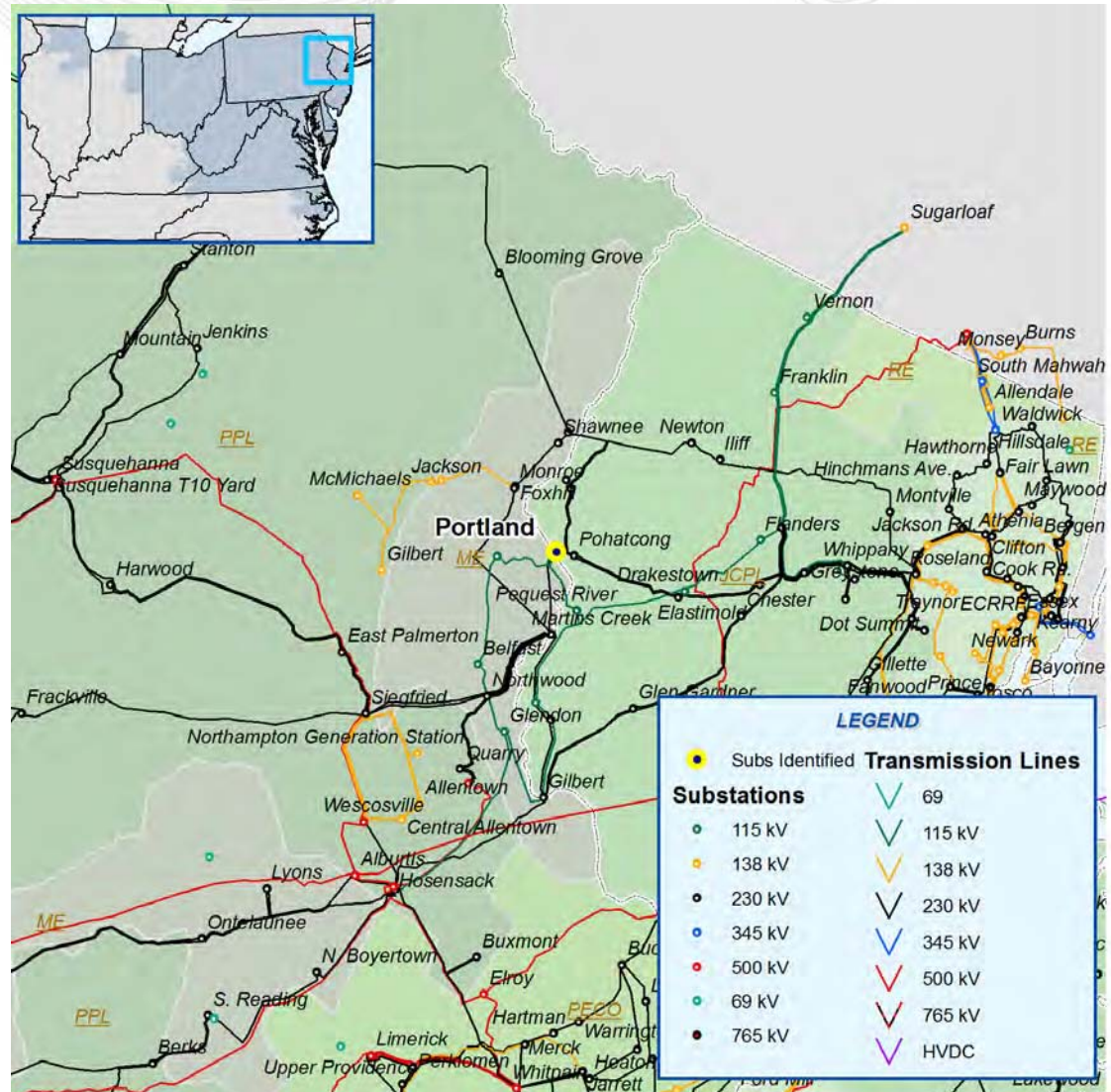
- Generator Deliverability
- Northwood substation.
Replace limiting wave trap,
circuit breaker, substation
conductor, relay and current
transformer components.
The revised rating is 221
MVA(Normal)/ 326
MVA(Emergency)
- Cost estimate: TBD
- Projected in-service date:
6/1/2015



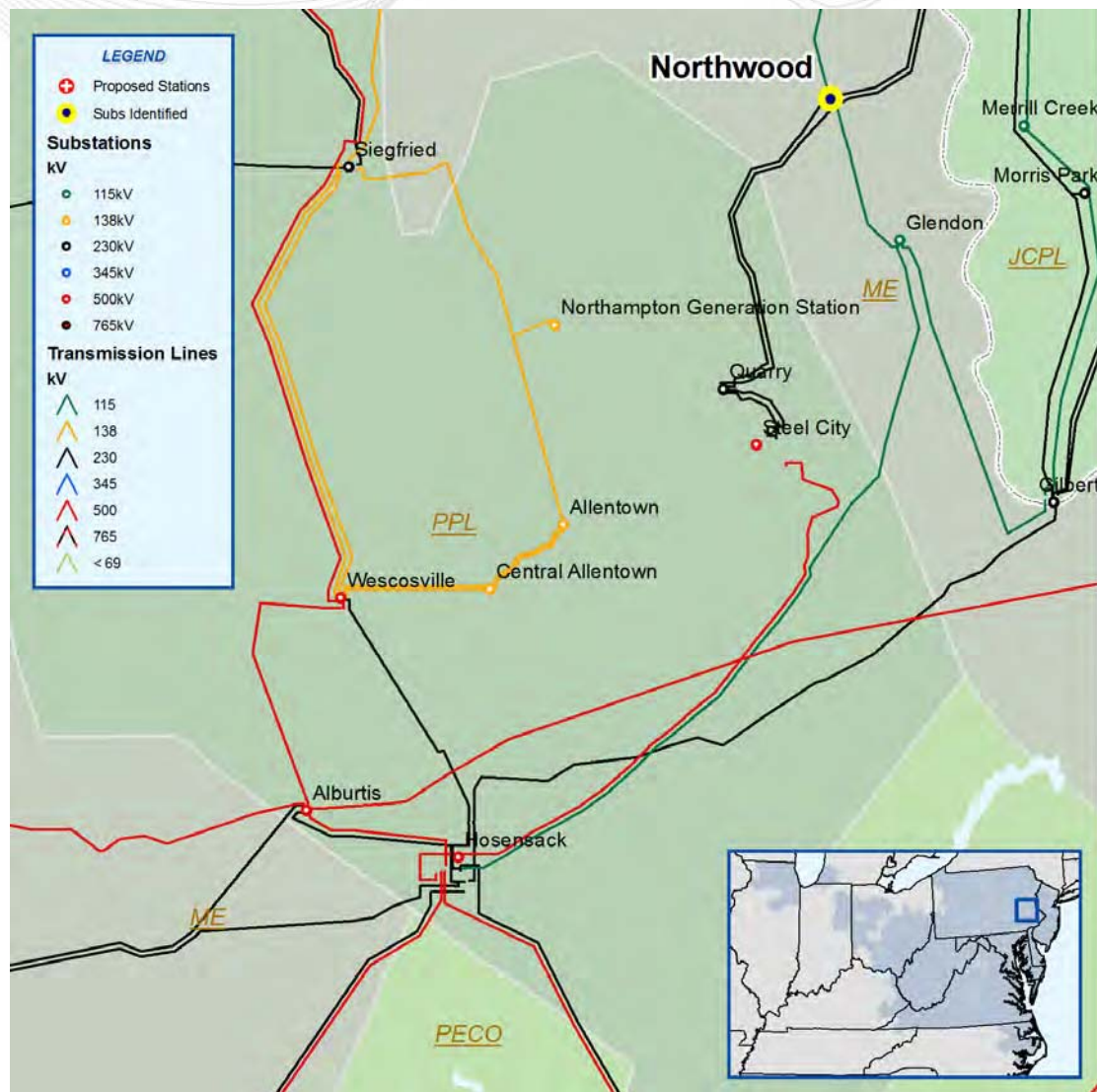
- Replace limiting wave trap on the Glendon - Hosensack line. The revised rating is 134 MVA(Normal)/ 162 MVA(Emergency)
- Cost estimate: TBD
- Projected in-service date: 6/1/2015



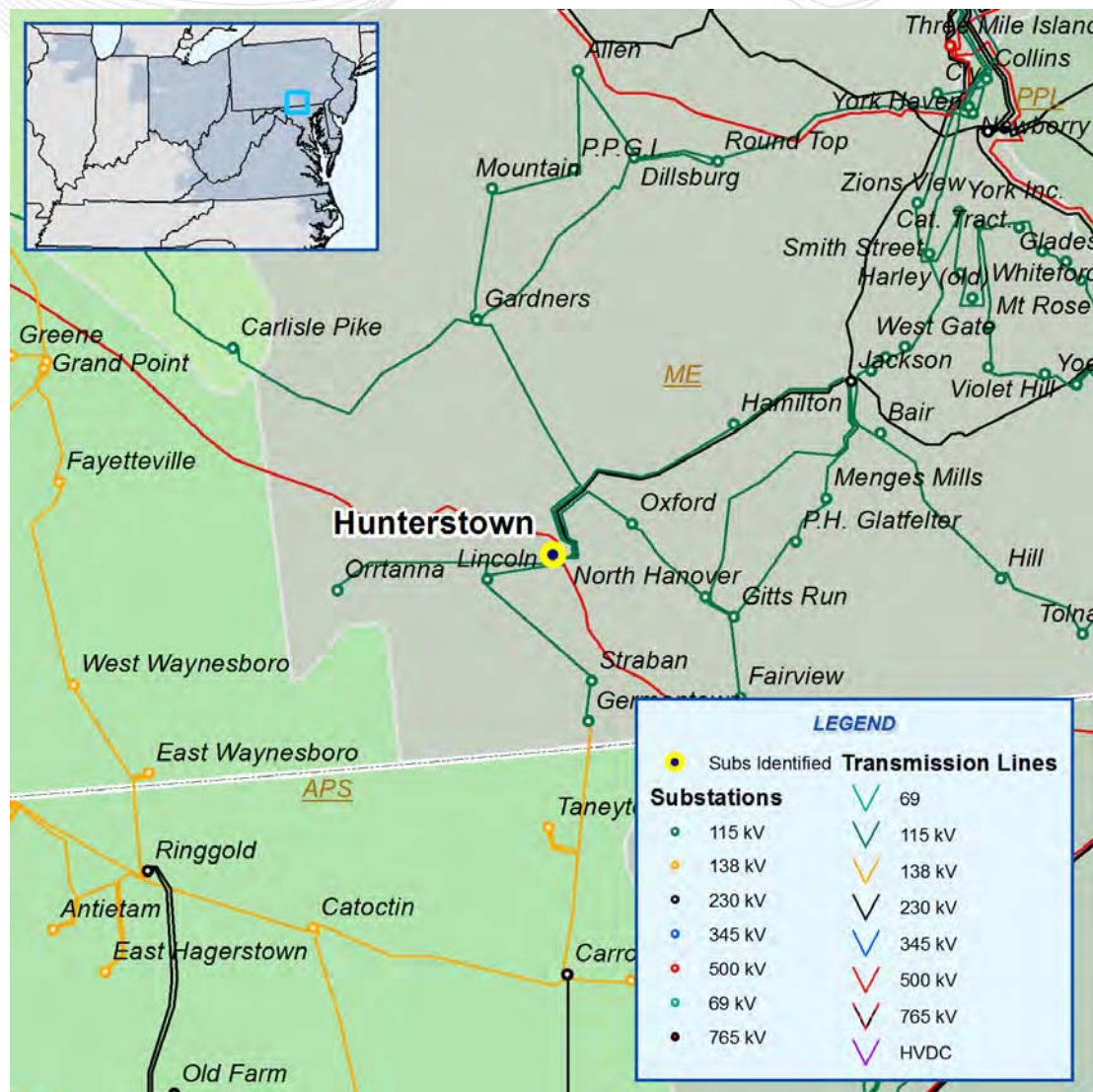
- Replace limiting circuit breaker and substation conductor transformer components at Portland 230kV. The revised rating is 233 MVA(Normal)/ 317 MVA(Emergency)
- Cost estimate: TBD
- Projected in-service date: 6/1/2015



- Northwood 230/115 kV Transformer upgrade
- Cost estimate: TBD
- Projected in-service date: 6/1/2015



- N-1-1 voltage
- Install a 500 MVAR SVC at the Hunterstown 500 kV substation (existing base line upgrade b1800)
- Cost estimate: \$82M
- Projected in-service date: 6/1/2015 (no advancement needed)

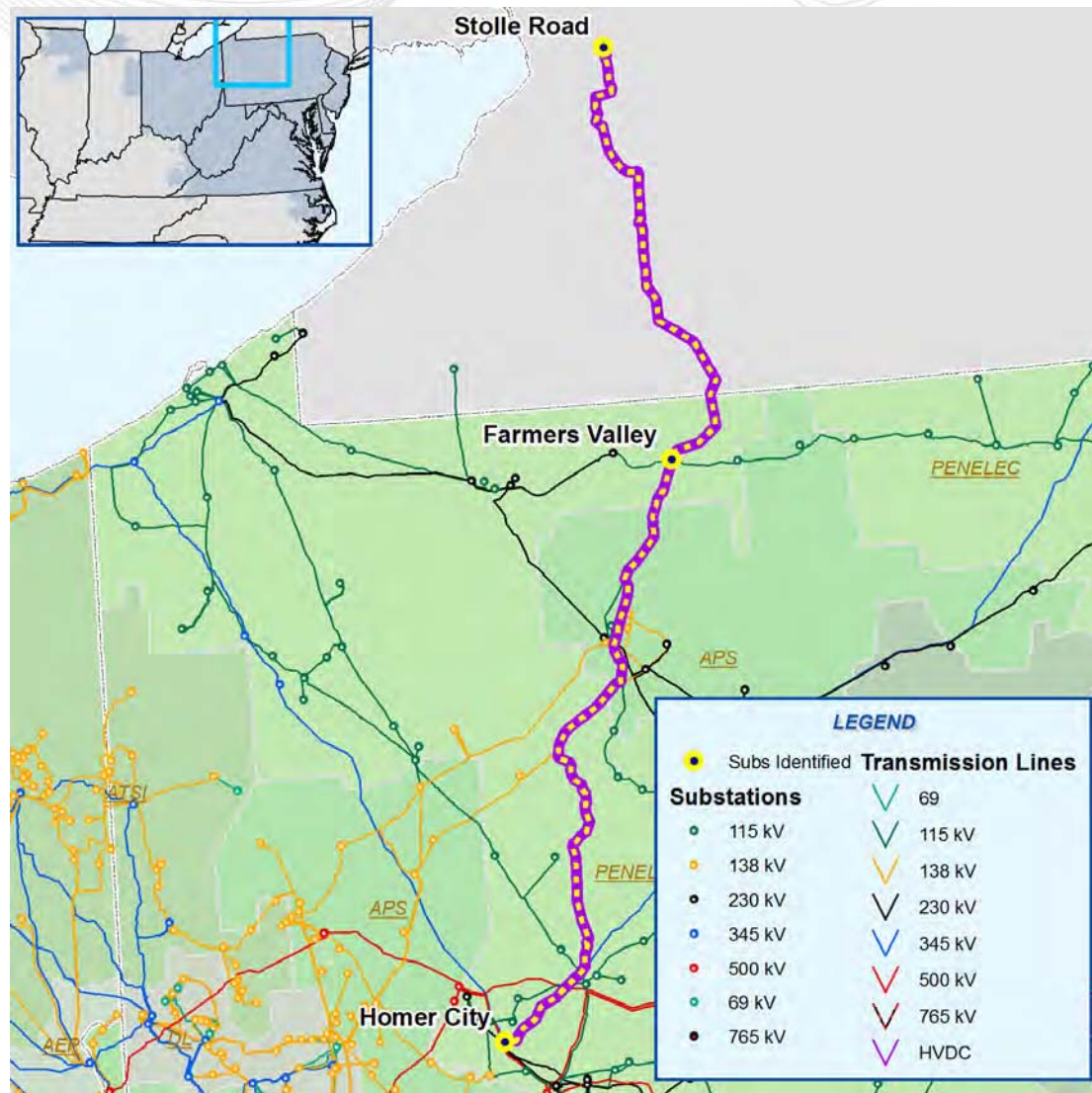


- Criteria violations
- N-1-1 Voltage magnitude
- N-1-1 Voltage drop
- Multiple 230kV bus voltage drop violations
- Multiple 115kV and 230kV low voltage violations

-
- LEGEND**
- | Substations | | Transmission Lines | |
|-------------|-----------------|--------------------|--------|
| ● | Subs Identified | ↘ | 69 |
| ● | 115 kV | ↘ | 115 kV |
| ● | 138 kV | ↘ | 138 kV |
| ● | 230 kV | ↘ | 230 kV |
| ● | 345 kV | ↘ | 345 kV |
| ● | 500 kV | ↘ | 500 kV |
| ● | 69 kV | ↘ | 765 kV |
| ● | 765 kV | ↘ | HVDC |

- Criteria violations
- N-1 Voltage drop
- Multiple 115kV, 138kV and 230kV voltage drop violations

- N-1 voltage drop
- Construct Farmers Valley 345/230 kV and 230/115 kV substation. Loop the Homer City-Stolle Road 345 kV line into Farmers Valley
- Cost estimate: TBD
- Projected in-service date: 6/1/2015

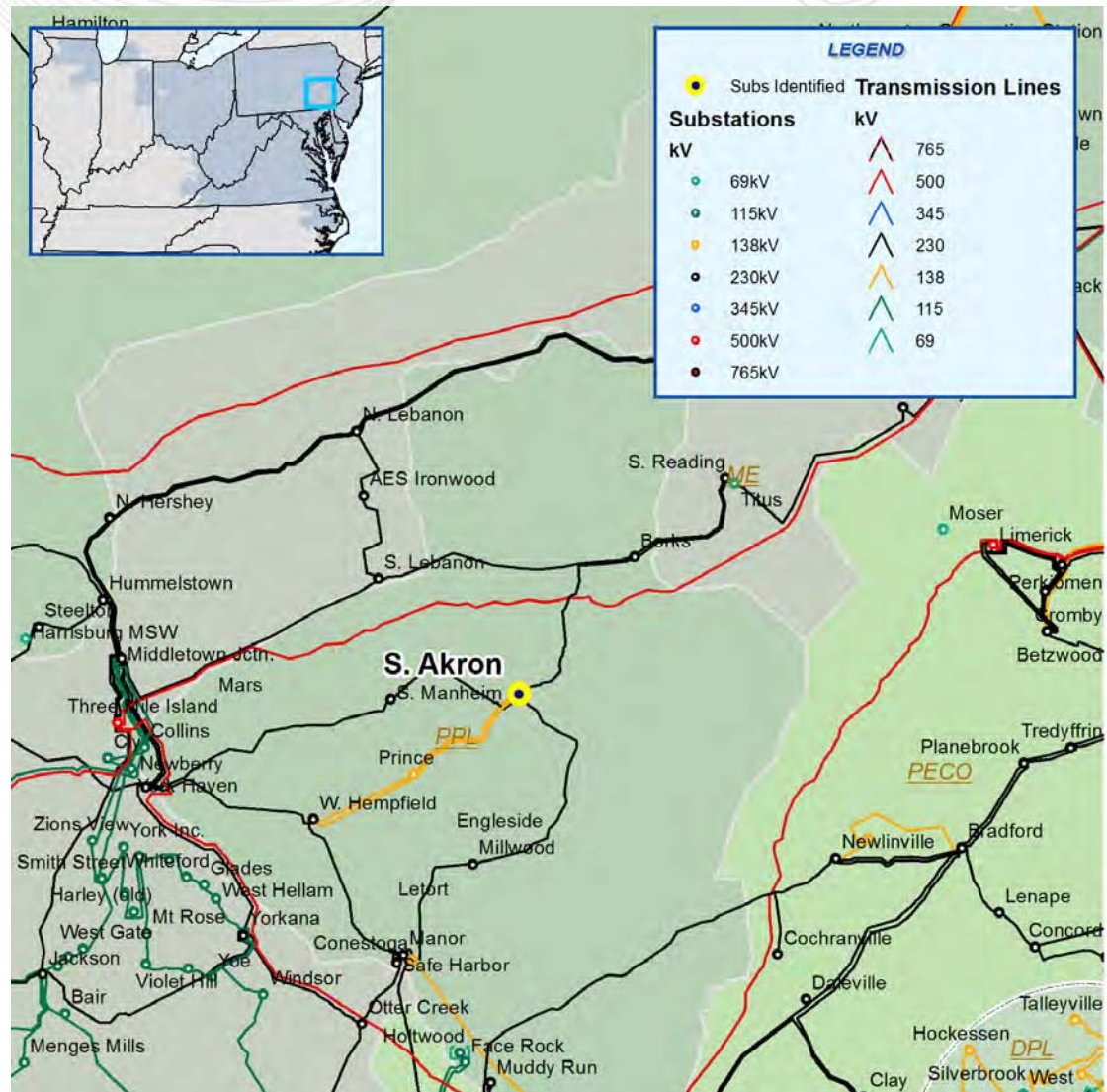


- Criteria violations
 - N-1-1 Thermal
 - N-1-1 Voltage magnitude
 - N-1-1 Voltage drop

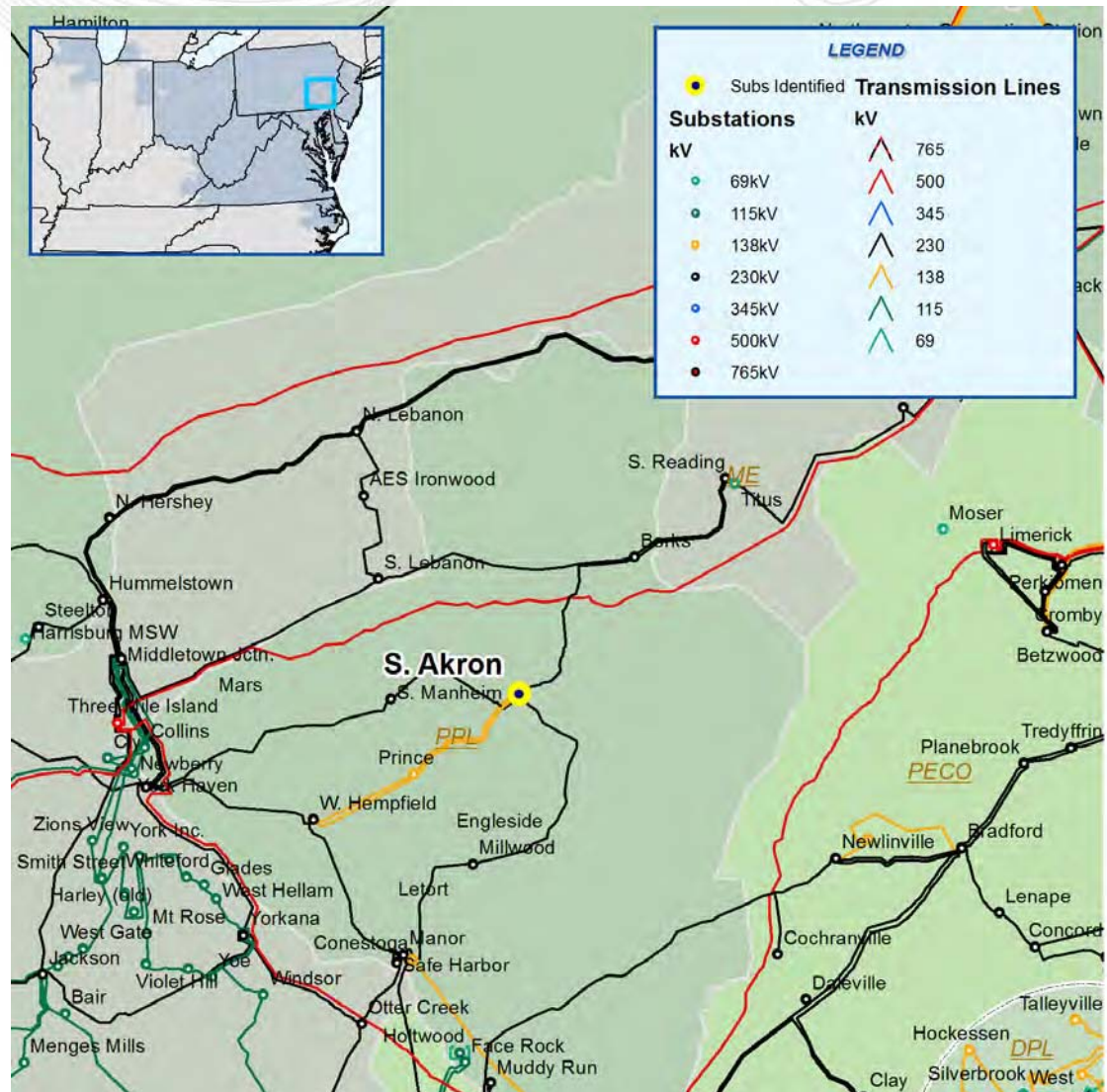
 - N-1 Voltage Magnitude
 - N-1 Voltage drop
 - Generation Deliverability
 - Load Deliverability

- Multiple 138kV low voltage violations
- Multiple 230kV line thermal violations
- Multiple 230kV low voltage violations

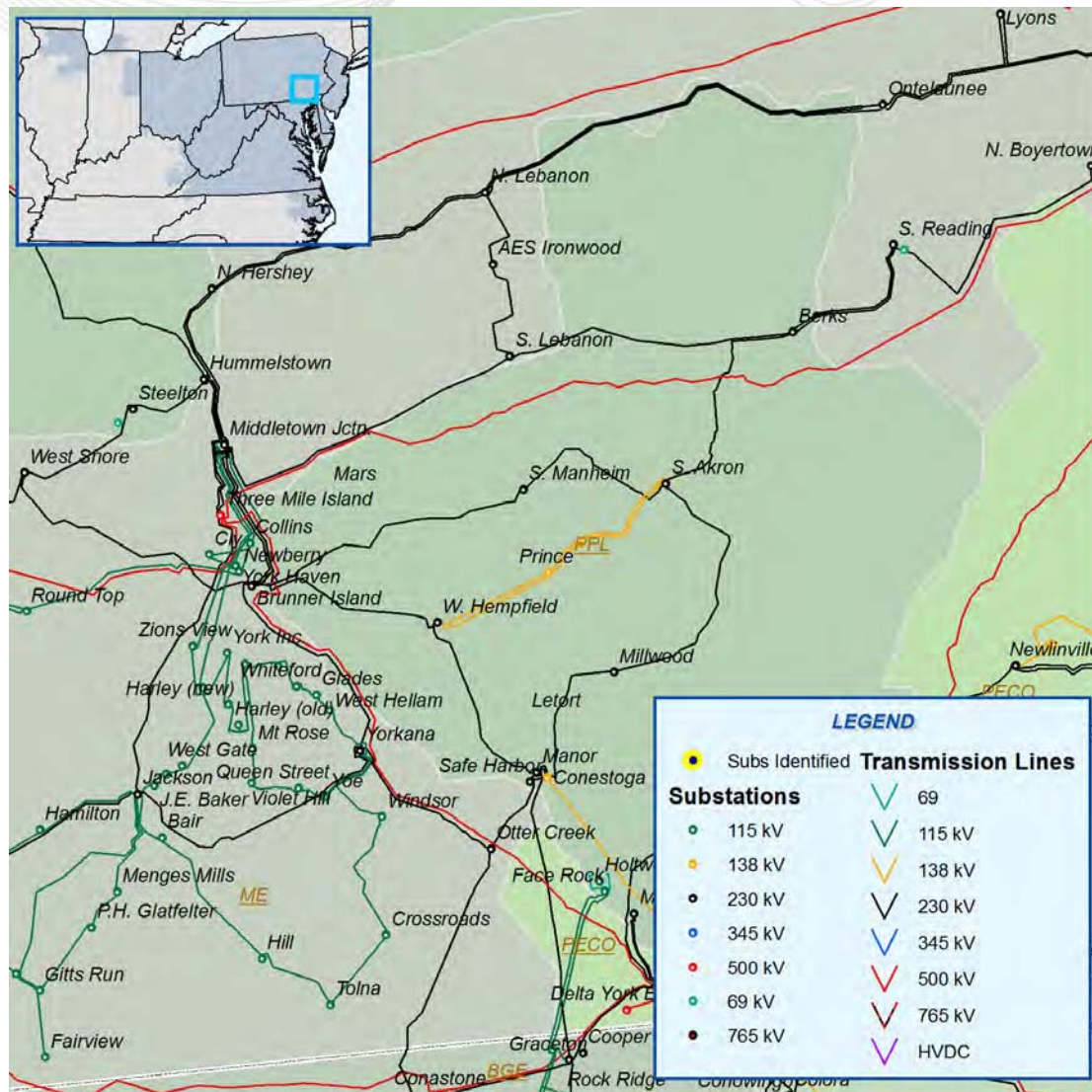
- Temporary
- Replace the CTs and switch in South Akron Bay 4 to increase the rating to 493/624 SN/SE MVA.
- Operating procedure to transfer load
- Modify existing SPS
- Cost estimate: \$.525M
- Projected in-service date: 6/1/2014



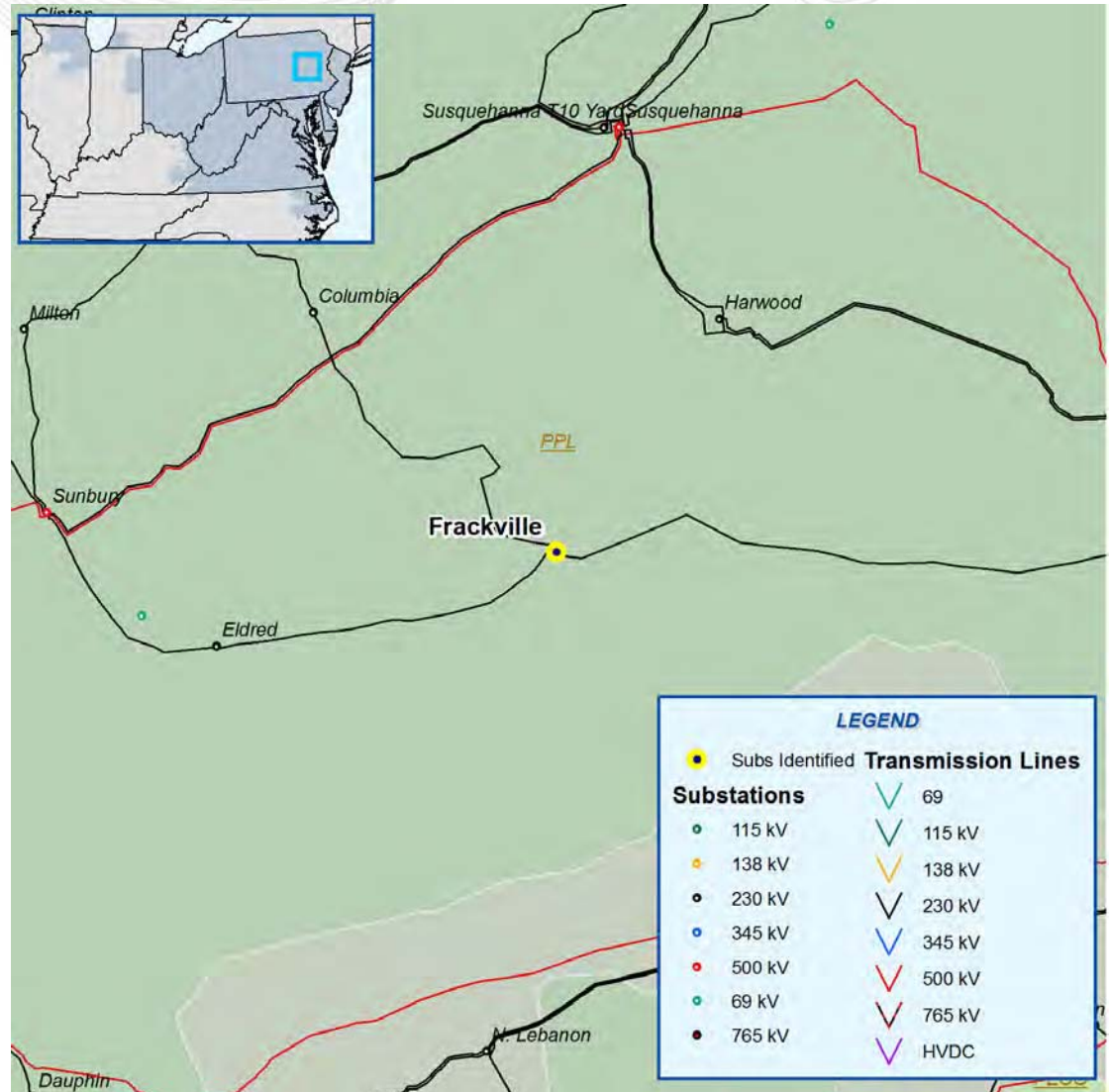
- Temporary
- Replace the CTs and switch in SAKR Bay 3 to increase the rating of the Millwood-South Akron 230 kV Line to 493/624 SN/SE MVA and increase the rating in Bay 3 to 664/793 SN/SE MVA.
- Operating procedure to transfer load
- Modify existing SPS
- Cost estimate: \$.525M
- Projected in-service date: 6/1/2014



- Permanent
- Install North Lancaster 500/230 kV substation
- Cost estimate: \$42M
- Projected in-service date: 6/1/2017

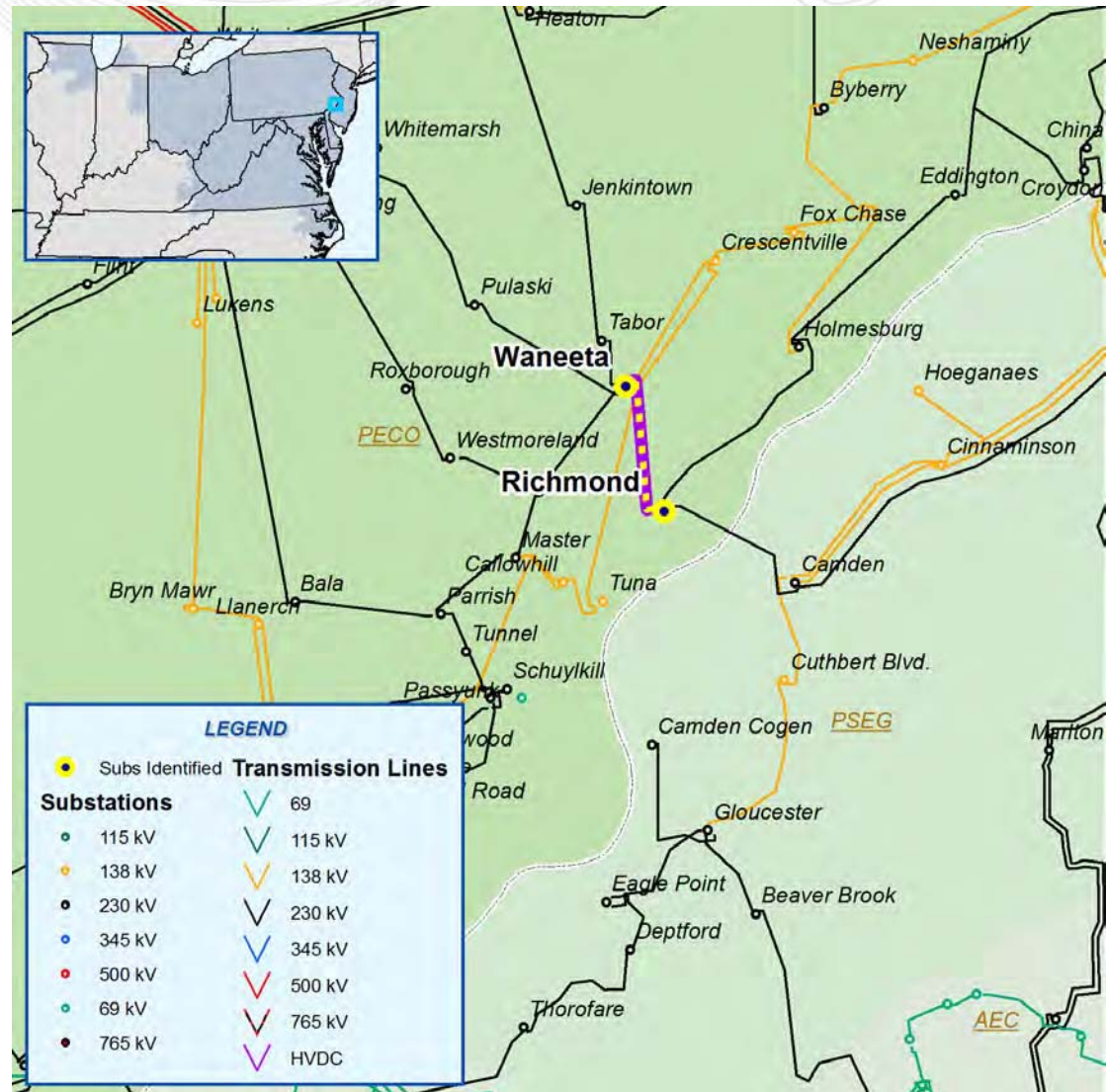


- N-1-1 voltage
- Install a 90 MVAR capacitor bank at the Frackville 230 kV Substation (bus 207973)
- Cost estimate: \$3M
- Projected in-service date: 6/1/2015

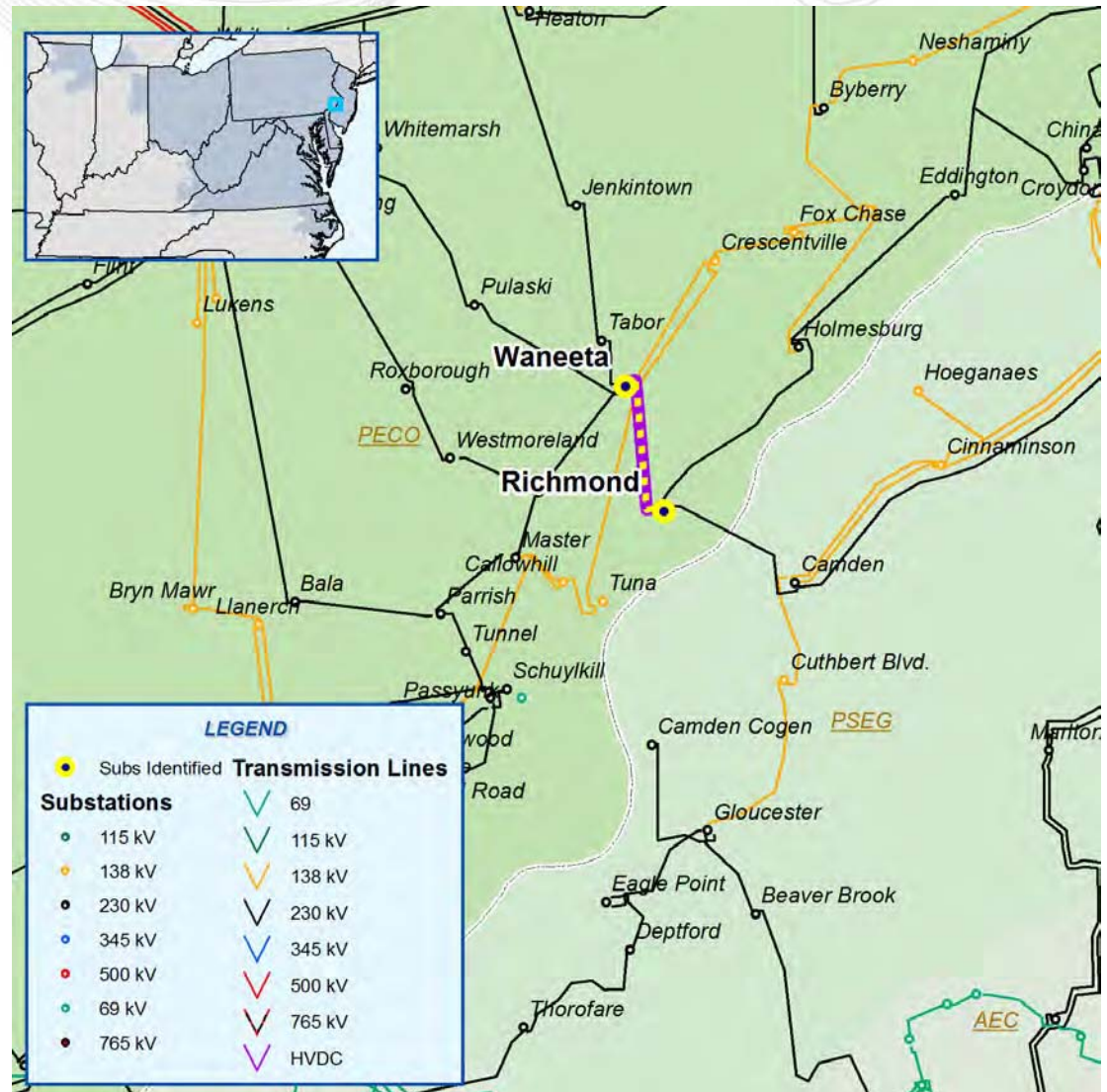


- Criteria violations
 - N-1-1 Thermal
 - Generation Deliverability
- Multiple 138kV thermal violations
- Multiple 230kV thermal violations

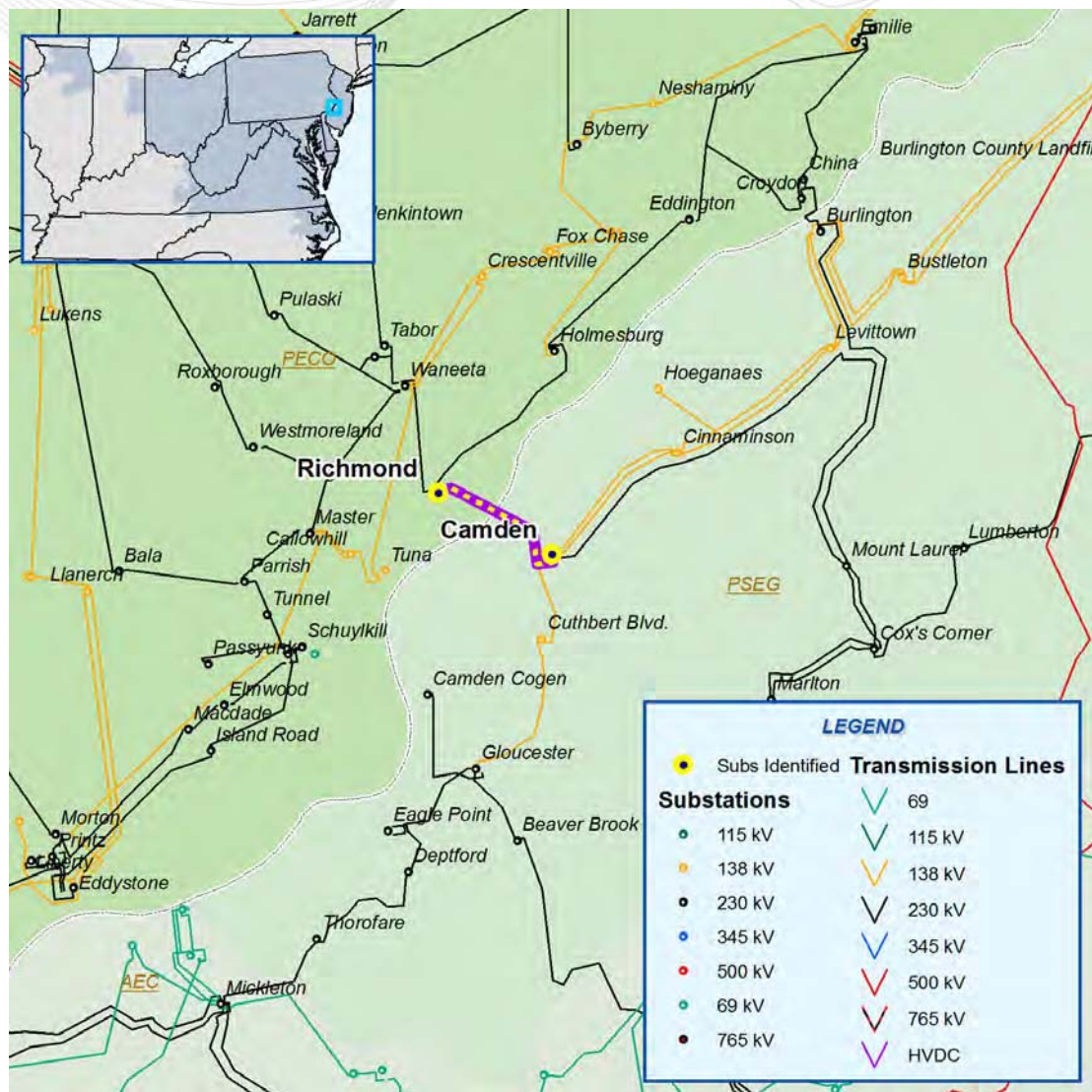
- Reconductor Richmond – Waneeta 230 kV and replace terminal equipments at Waneeta substation (existing baseline b1398.8)
- Cost Estimate: \$4M
- Projected in-service date: 6/1/2015



- Reconductor the underground portion of the Richmond - Waneeta 230 kV and replace terminal equipments (existing base line upgrade b1591)
- Cost estimate: \$12M
- Additionally, the scope of b1591 will be increased to include replacing three 230 kV circuit breakers. (Replacing the three 230 kV circuit breakers is estimated to cost \$867K.) This will result in a new emergency rating of 1195 MVA.
- Projected in-service date: 6/1/2016



- Upgrade the PECO portion of the Camden - Richmond 230 kV to a six wire conductor (existing base line upgrade b1590.1)
- Cost estimate: \$2.7M
- Replace terminal equipment at Richmond (Camden - Richmond 230 kV) (existing base line upgrade b1590.2)
- Cost estimate: \$0.8M
- Projected in-service date: 6/1/2015 (advance from 2016)



- Criteria violations
 - N-1-1 Thermal
 - Generation Deliverability
- Multiple 230kV thermal violations

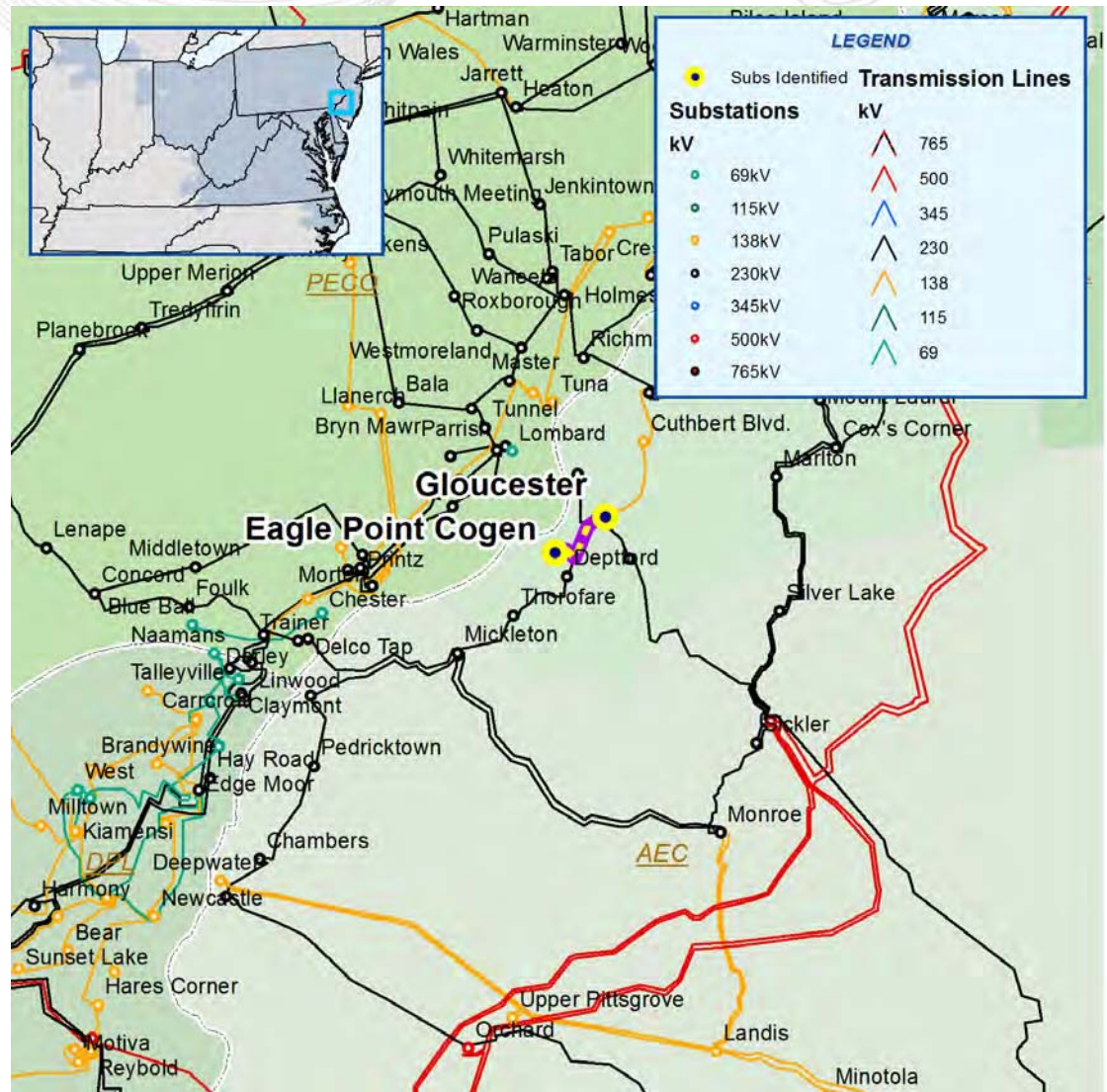
Solution under review

- Tosco – G22_MTX5 : Re-conductor 0.3 miles of the circuit
- Cost estimate: TBD
- Projected in-service date: 6/1/2015



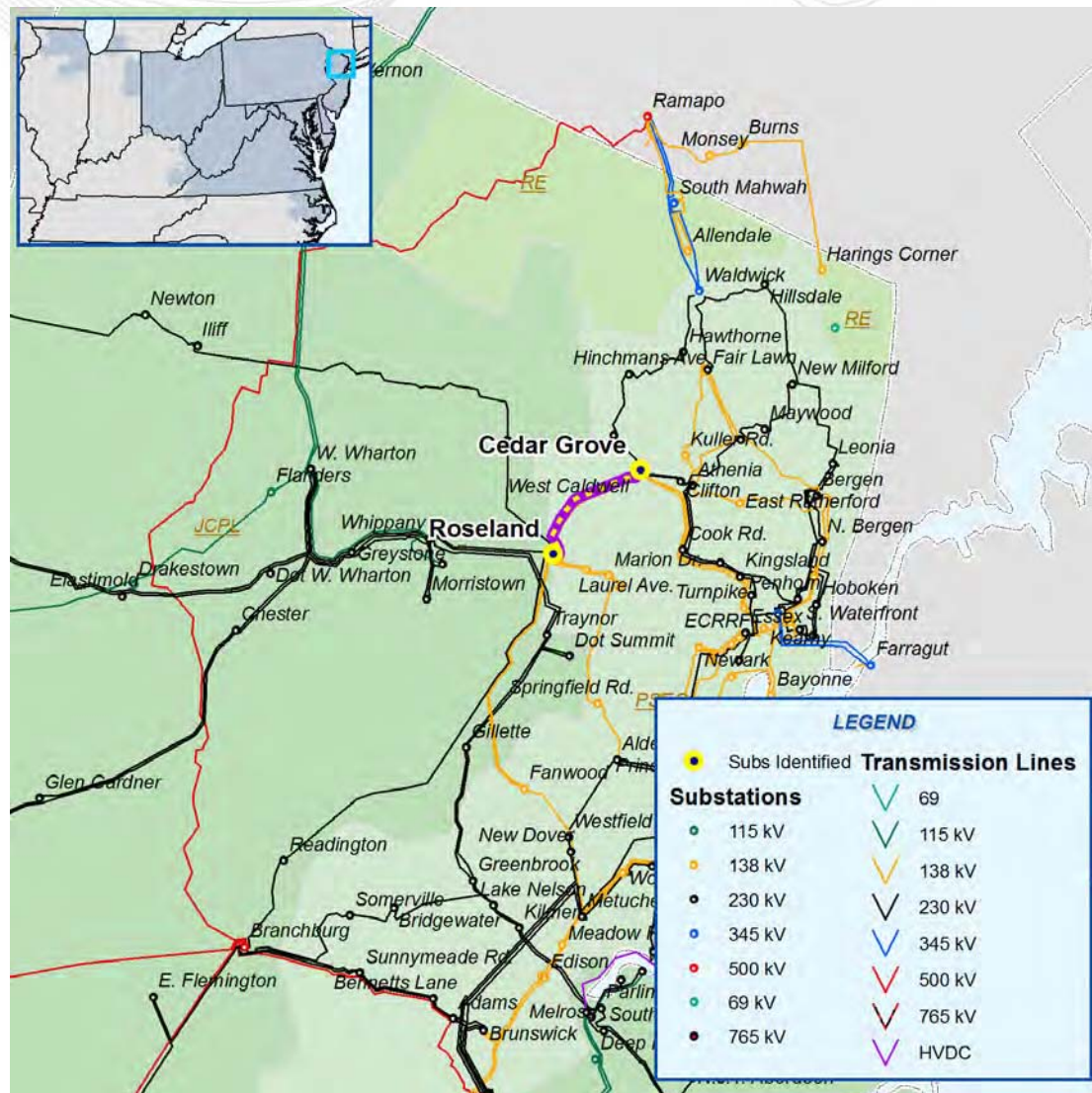
Solution under review

- Reconnector the Eagle Point - Gloucester 230 kV circuit #1 and #2 (existing base line upgrade b1588)
- Cost estimate: TBD
- May require an SPS From 6/1/2015 to 6/1/2016
- Projected in-service date: 6/1/2015 - 6/1/2016



Solution under review

- Reconnector the B and F circuits of the Cedar Grove - Roseland 230kV line
- Cost estimate: TBD
- Projected in-service date: 6/1/2015



- Criteria violations
 - Generation Deliverability
- 230kV thermal violation

- The Station H – Quince Orchard 032 230kV line gets overloaded to 101.88% of its emergency rating for a tower contingency
- Reconductor feeder 23032 and 23034 (these feeders share common towers and cross arms would need to be raised) to the high temperature conductor (10 miles)
- Cost estimate: \$16M
- Projected in-service date: 6/1/2015



- Avon Lake and AEP deactivation analysis underway
 - Potential aggravation of existing violations
- Finalize 2015 plan for all current deactivations
- Consider 2016, 2017 & 2018 effects

2012 RTEP Scenario and Sensitivity Analyses

2012 RTEP - Renewable Portfolio Standards Scenarios

- Status
 - RPS targets (MWh) update
 - Wind capacity factor update
 - Nameplate MW update

- Overall Assumptions
 - Model the latest Renewable Portfolio Standards (RPS) state targets
 - Assume production from renewable wind
 - Update target PJM installed renewable MW requirements
 - Update installed reserve calculation
 - 2012 PJM Load Forecast Report
 - 15 Year Load Forecast
 - Include Demand Response (DR) and Energy Efficiency (EE)
 - Incorporate findings from 2011 RTEP RPS scenario studies

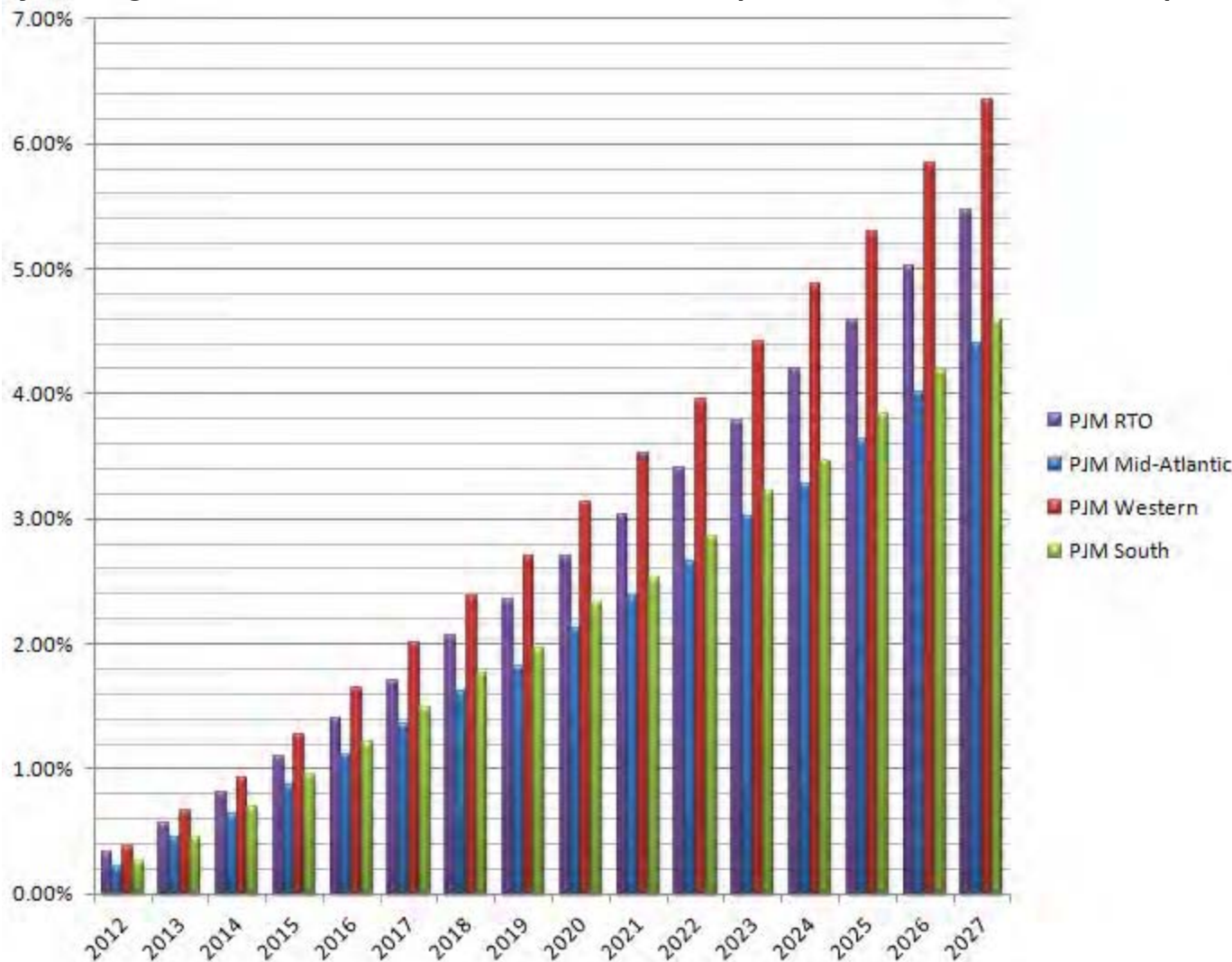
- Assumptions
 - Assume RPS supply from PJM resources
 - **7 GW Offshore**
 - Study year: 2027
- Analysis
 - Reliability Analysis
 - Generator Deliverability (50/50 load level)
 - Common Mode Outage test (50/50 load level)
 - Market Efficiency Analysis
 - Security Constrained Optimal Power Flow (SCOPF)
 - Production cost simulation using PROMOD
- Result
 - Thermally overloaded facilities
 - Congestion \$'s
 - Develop transmission overlay

- Assumptions
 - **0 GW Offshore**
 - Otherwise, same as RPS – Scenario #1 but with a 0 GW offshore assumption
 - The remainder of the state target RPS will be sourced from inland PJM resources

- Assumptions
 - **RPS Source from Neighboring Entities**
 - Otherwise, same as RPS – Scenario #2 (assume 0 offshore)
 - The remainder of the state target RPS will be sourced from inland PJM resources
- Neighboring Entities
 - Assume 40% of the PJM RPS supplied from renewable wind in the Midwest ISO (MISO)
 - Assume DC injection points from MISO to PJM
 - Injection points to PJM to be determined

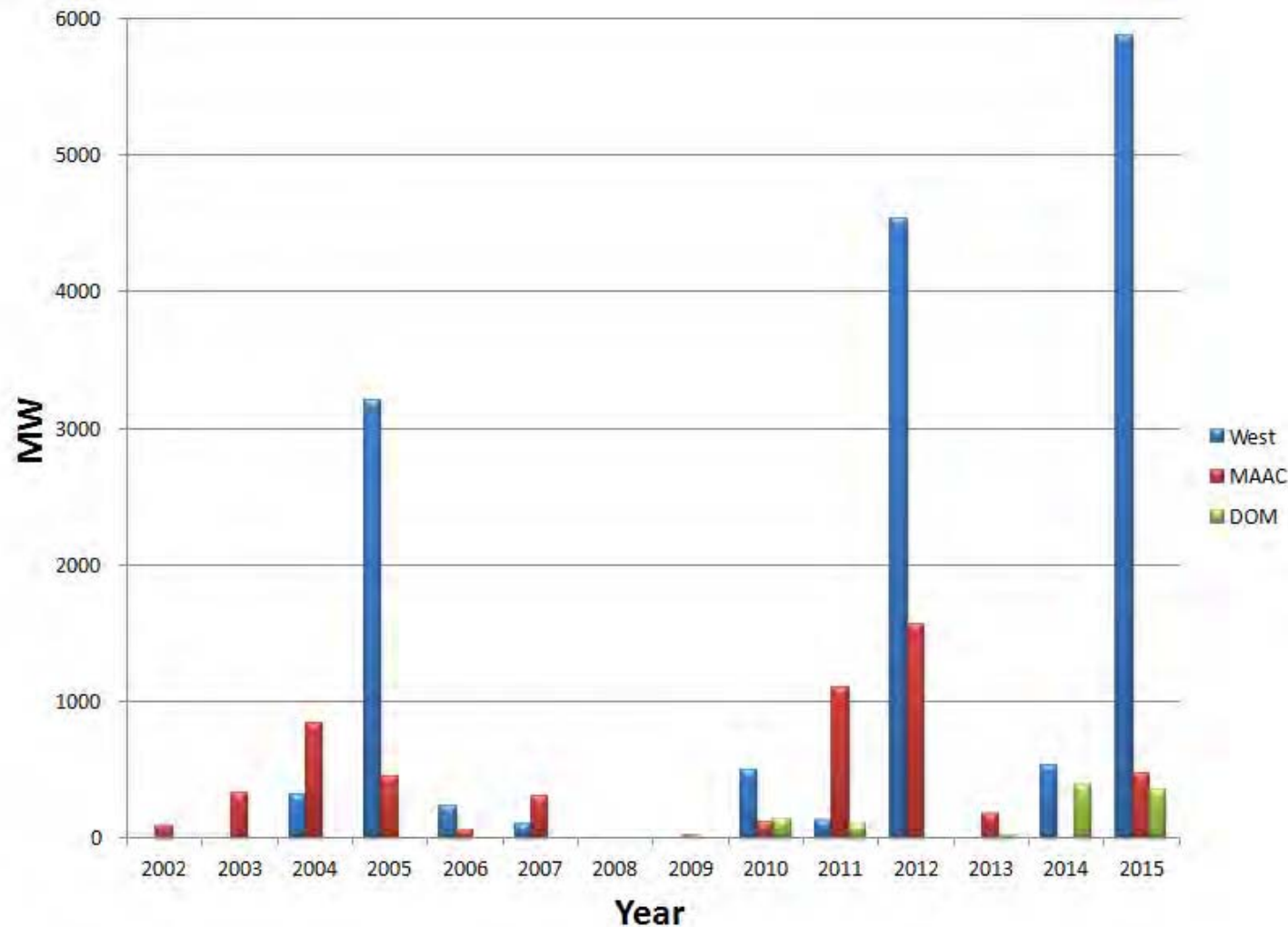
2012 RTEP - High Load Growth Scenario

Moody's High Economic Load Growth Compared to RTEP Assumption



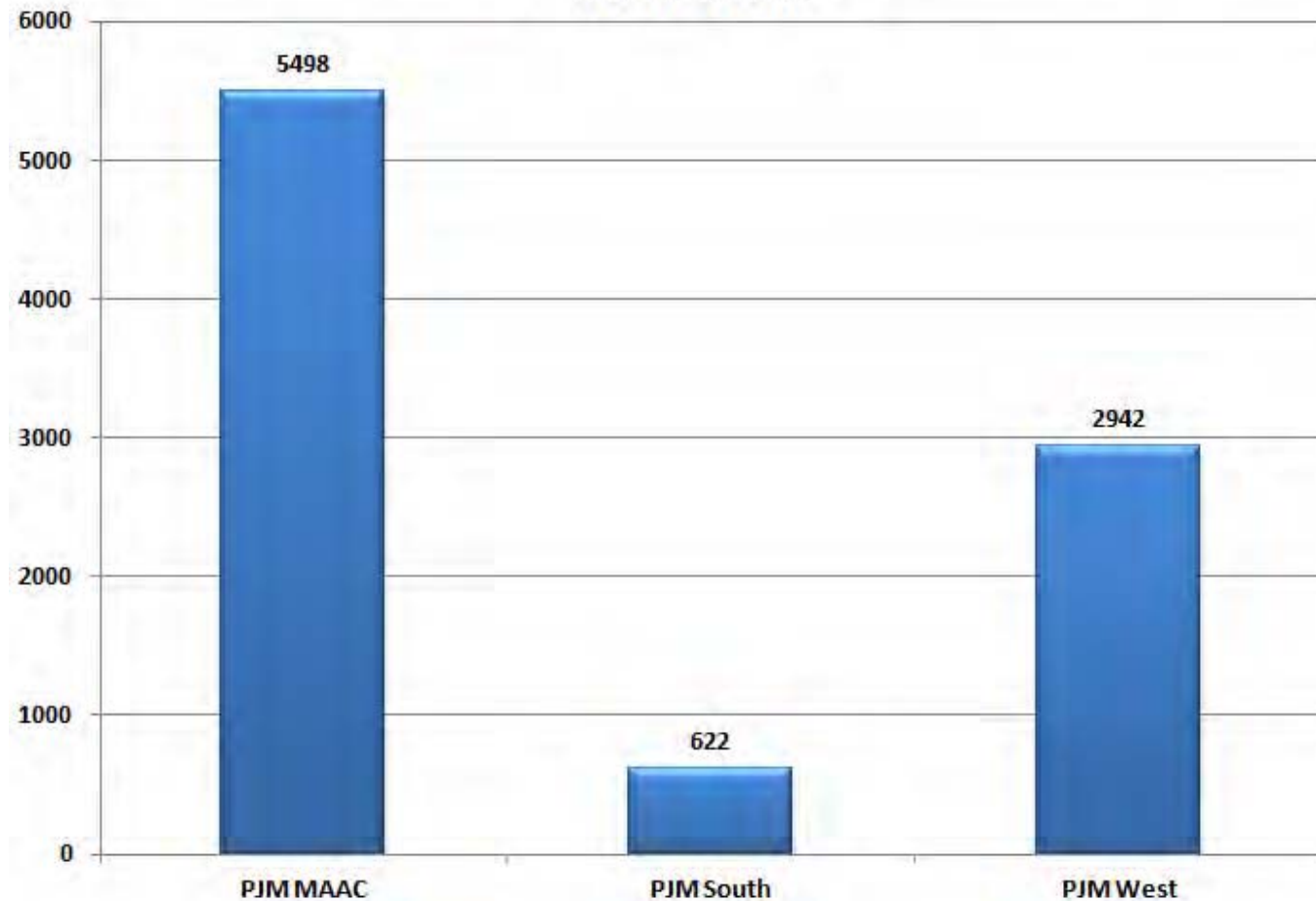
- Overall Assumptions
 - 2012 PJM Load Forecast Report
 - 15 Year Load Forecast
 - Include Demand Response (DR) and Energy Efficiency (EE)
 - PJM Load Forecast based on Moody's High Economic Growth Forecast
 - 2017 RTEP Base Case
- Analysis
 - Reliability Analysis
 - 15 Year Analysis
- Result
 - Thermally overloaded facilities with and without the high load growth forecast that demonstrate the relative impact of the alternate forecast

2012 RTEP - At Risk Generation Scenarios



- Over 8,900 MW deactivated since 2002
- Over 15,000 announced retirements pending deactivation

At-Risk MW in addition to known Deactivation Notifications



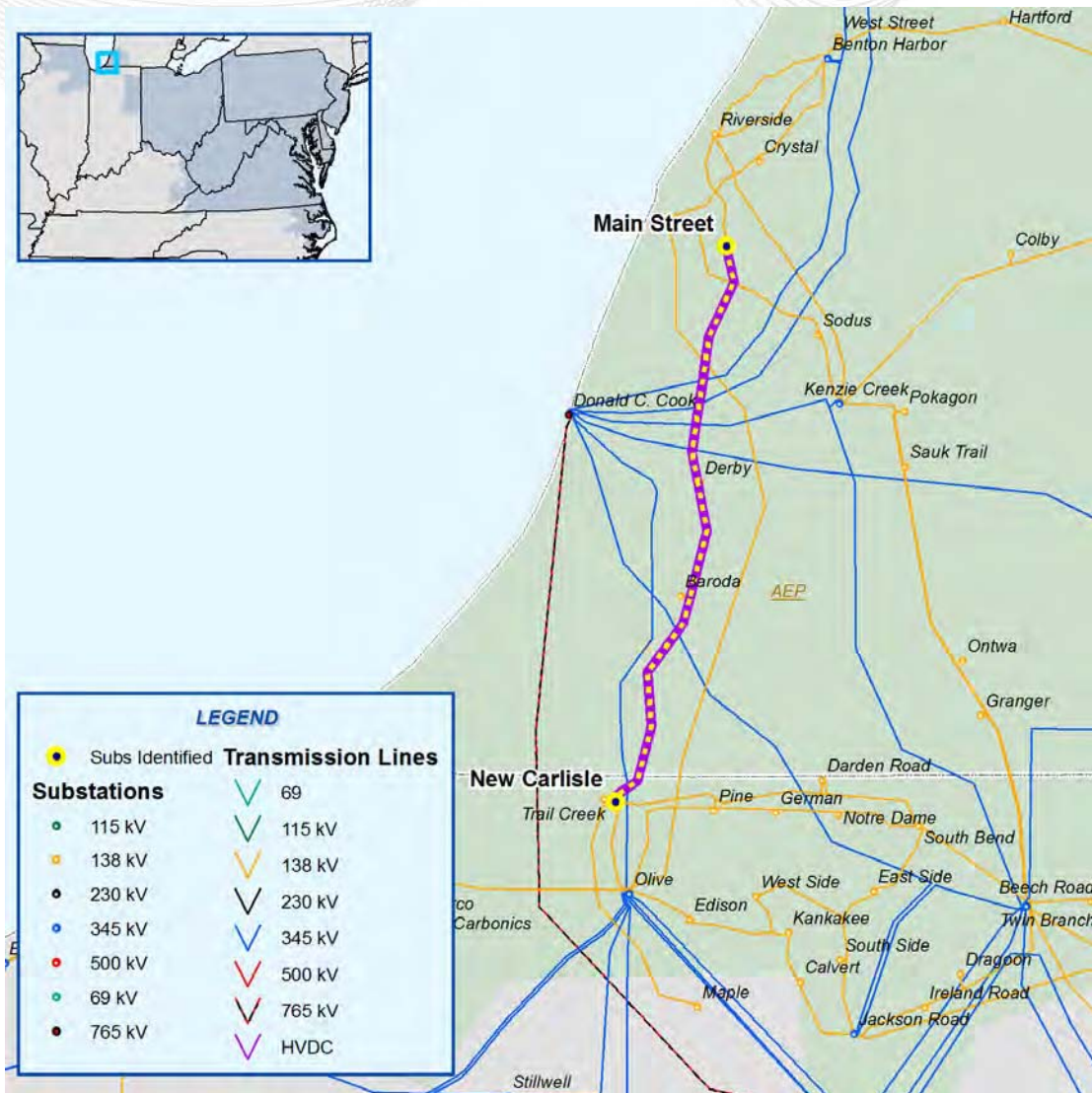
- At-Risk MW in addition to known Deactivation Notifications
- At-Risk machine list posted with 4/12/2012 TEAC materials

- Purpose
 - Identify potential regional and local reliability concerns
- Overall Assumptions
 - 2016 RTEP Base Case
 - 2012 PJM Load Forecast Report
 - Include Demand Response (DR) and Energy Efficiency (EE)
- At-risk generation
 - Announced retirements
 - Coal Plant Size and Age
 - State agency feedback
 - Media publication
 - Other at-risk

- Assumptions
 - Same as 2012 RTEP base except “at-risk” generation
- Analysis
 - Reliability Analysis
 - Generator Deliverability (50/50 load level)
 - Common Mode Outage test (50/50 load level)
 - N-1-1 outage test (50/50 load level)
 - Load Deliverability (90/10 load level)
- Result
 - Thermal overloads & voltage violations

2012 PJM Baseline Reliability

- NERC Category B Violation
 - Loss of the South Bend 138/69 kV transformer overloads Lake Street – Lake Head 69 kV Tap and Lake Head Tap – Niles 69 kV lines beyond their emergency ratings
 - Loss of the Laport Junction 138-69/34.5 kV transformer causes the voltage on the Laport Junction's 69 kV bus to fall below 0.92 PU causing voltage levels at New Buffalo and Springville stations to fall below 0.92 PU.
- Convert S0411.1 – 0411.5 to baseline
- Cancel S0411.1 – 0411.5
 - Construct a new 138-69 Michiana Station near Bridgman by taping the New Carlisle – Main Street 138 kV line and the Bridgman – Buchanan Hydro 69 kV line. (B1904.1)
 - Establish a new 138/12 kV New Galien station by taping the Olive – Hickory Creek 138 kV line. (B1904.2)
 - Retire the existing Galien station and move its distribution load to New Galien station. Retire the Buchanan Hydro – New Carlisle 34.5 kV line. (B1904.3)
 - Implement an in and out scheme at Cook 69 kV by eliminating the Cook 69 kV tap point and by installing two new 69 kV circuit breakers. (B1904.4)
 - Rebuild the Bridgman – Cook 69 kV line and the Derby – Cook 69 kV. (B1904.5)
- Estimated Cost: \$30M
- Expected IS date: 12/31/2014



• Project Scope/Cost Change

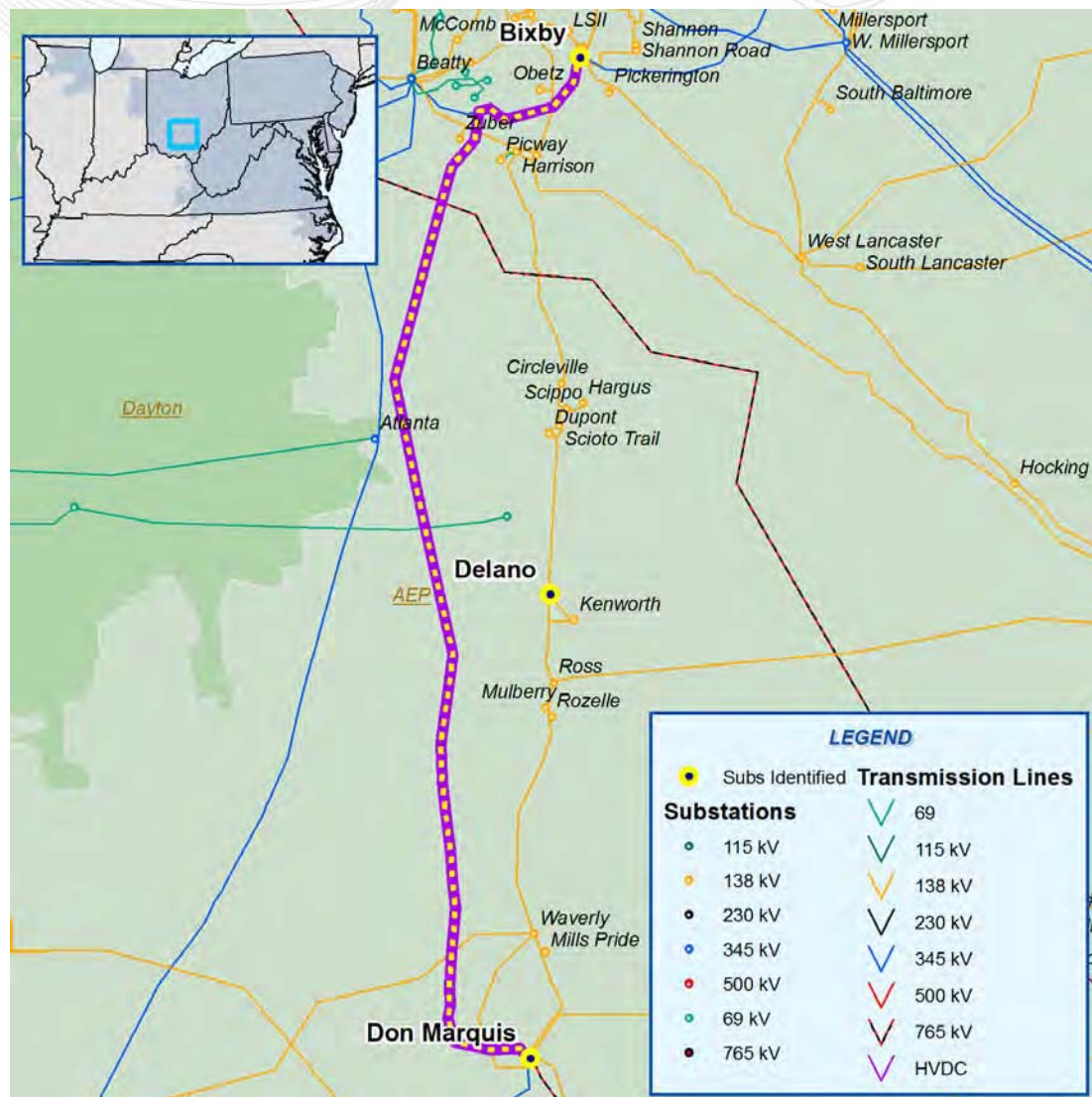
• B1302

Old Scope:

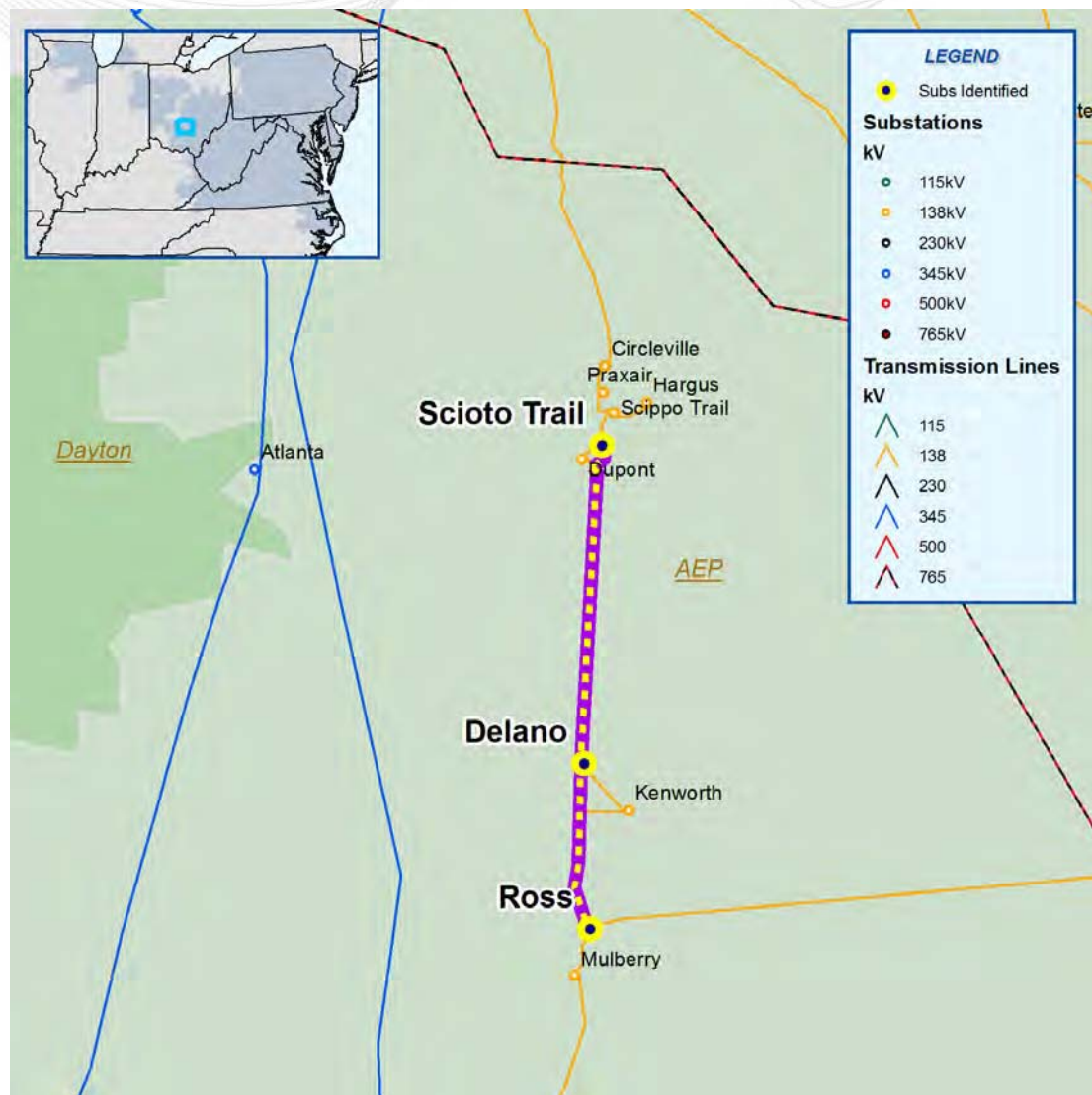
- b1032.1 Construct a new 345/138kV station on the Marquis-Bixby 345kV line near the intersection with Ross - Highland 69kV
- b1032.2 Construct two 138kV outlets to Delano 138kV station and to Camp Sherman station
- b1032.3 Convert Camp Sherman - Circleville 69kV to 138kV
- b1032.4 Install 138/69kV transformer at new station and connect in the Ross - Highland 69kV line
- Cost Estimate: \$50M

New Scope:

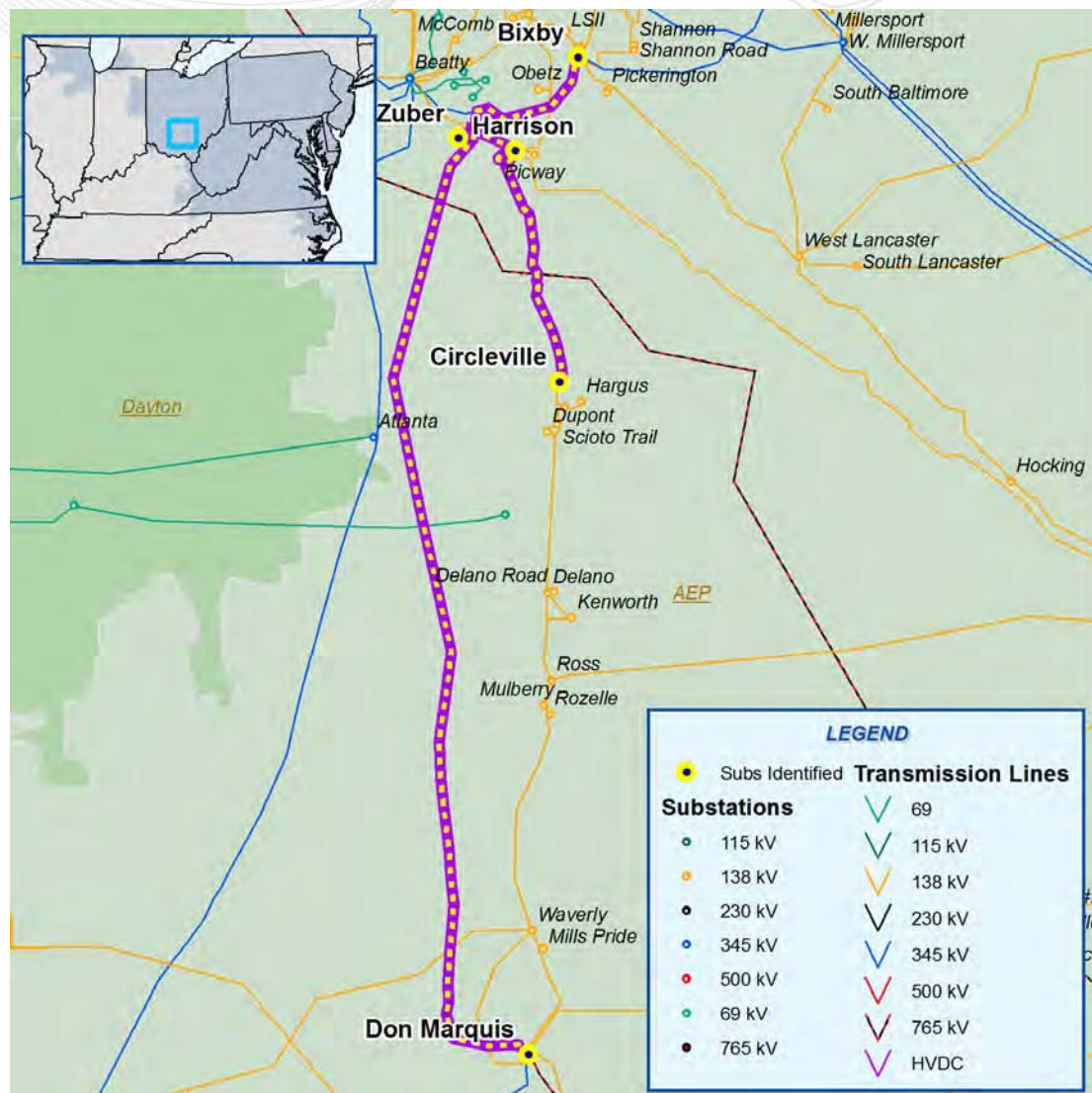
- B1032.1 Construct a new 345/138/69 kV station on the Marquis-Bixby 345 kV line near the intersection with Ross-Highland 69 kV
- b1032.2 Construct two 138 kV outlets to Delano 138 kV station (via new 138/12 kV Hopetown station, a replacement for Camp Sherman station) and to Circleville station. Install new 138 kV breaker string at Delano station to terminate new line.
- b1032.3 convert Camp Sherman-Circleville 69 kV to 138 kV or build new 138 kV in the clear and retire the 69 kV line
- b1032.4 Install 138/69 kV transformer at new station and connect in the Ross-Highland 69 kV line with two 69 kV exits.
- Cost Estimate: \$89.345 M



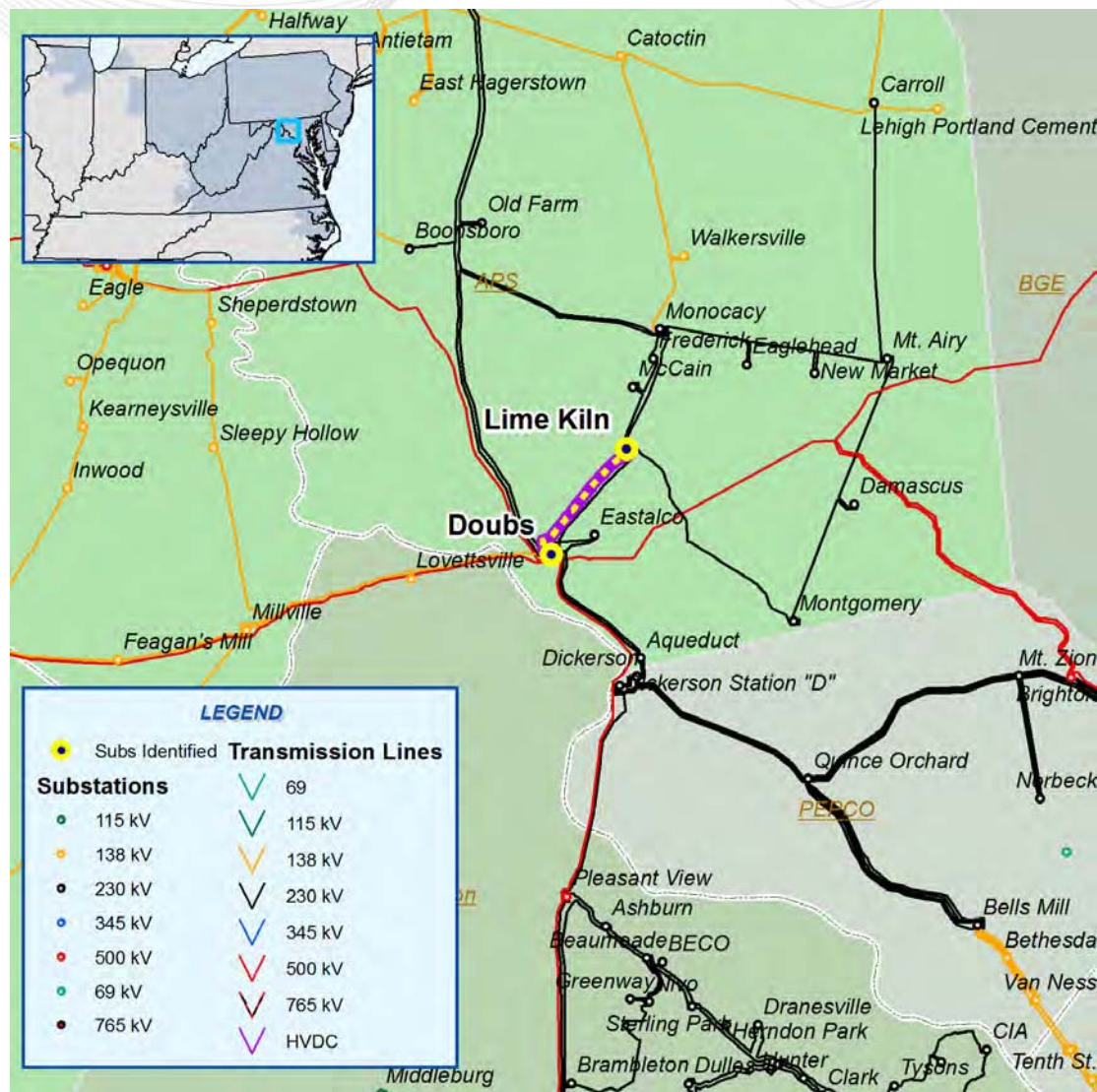
- Project Cost Change
- B1454
- Perform an electrical clearance study on the Ross - Delano - Scioto Trail 138kV line to determine if the emergency rating can be utilized
- Old Cost Estimate: \$0.064M
- New Cost Estimate: \$0.3041M



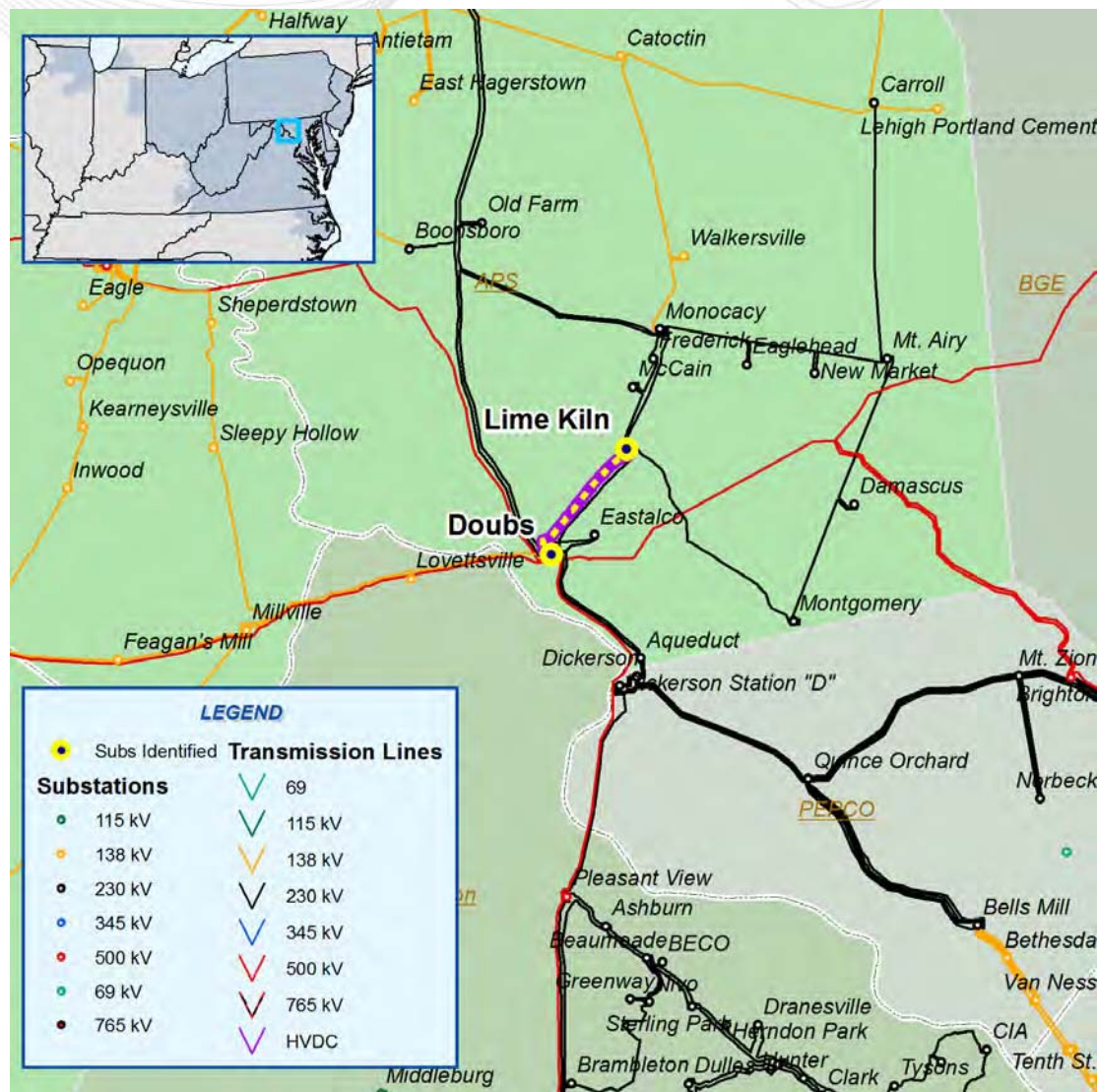
- Project Cost Change
- B1458
- Install three new 345kV breakers at Bixby to separate the Marquis 345kV line and transformer #2. Operate Circleville - Harrison 138kV and Harrison - Zuber 138kV up to conductor emergency ratings
- Old Cost Estimate: \$0.078M
- New Cost Estimate: \$3.8914M



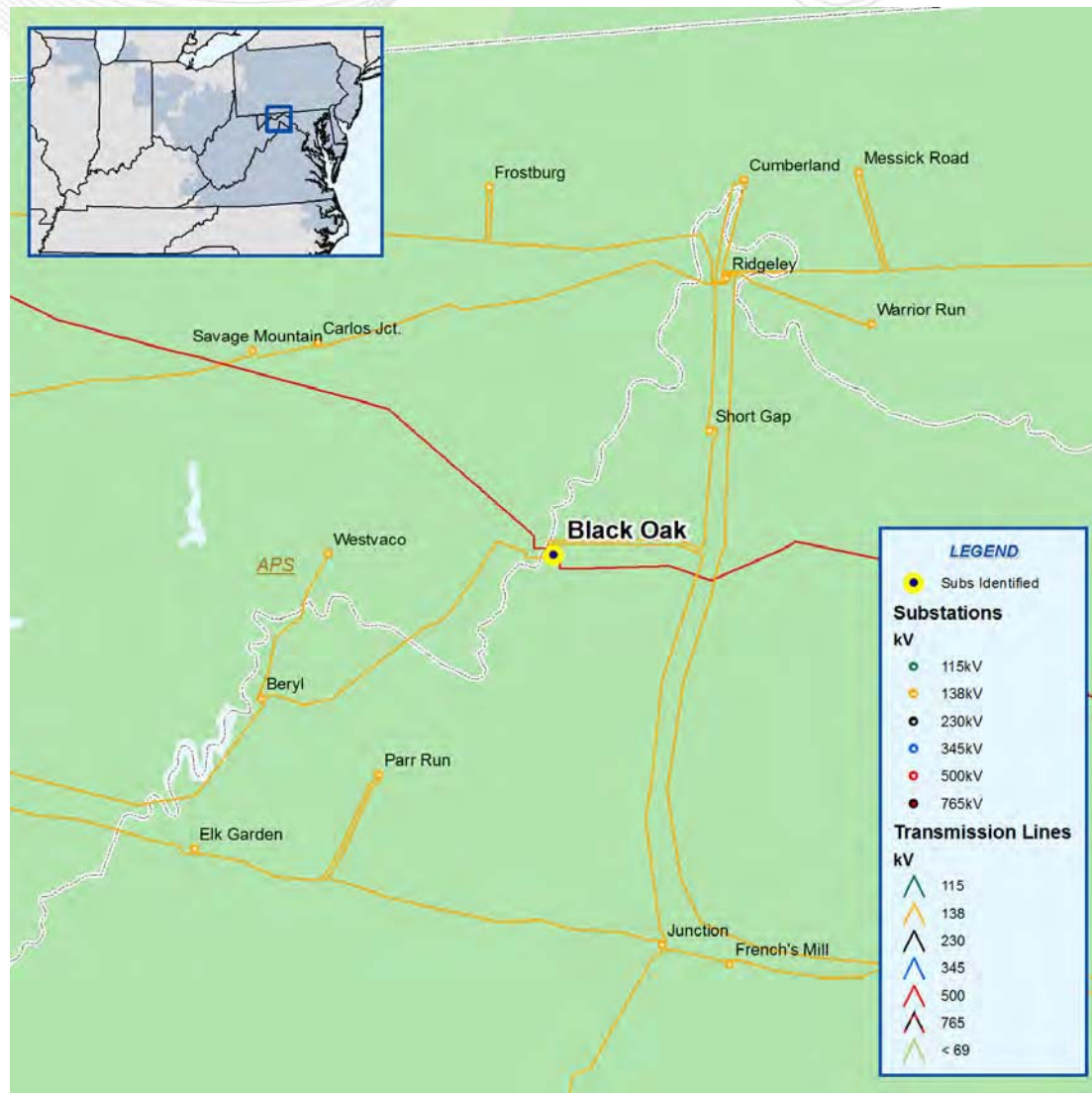
- Project Replacement
- Cancel B0676.1:
 - Reconductor Doubs - Lime Kiln (#207) 230kV
 - Estimated Cost: \$3.5M
 - Expected IS Date: 06/01/2013
- Replaced with B1832:
 - Replace the 1200 A line side and bus side disconnect switches with 1600 A switches, replace bus side, line side, and disconnect leads at Lime Kiln SS on the Doubs-Lime Kiln 1 (207) 230 kV line terminal..
 - Estimated Cost: \$0.15M
 - Expected IS date: 06/01/2016



- Project Replacement
- Withdrawal of B0676.2:
 - Reconductor Doubs - Lime Kiln (#231) 230kV
 - Estimated Cost: \$3.1M
 - Expected IS Date: 06/01/2013
- Replaced by B1833:
 - Replace the 1200 A line side and bus side disconnect switches with 1600 A switches, replace bus side, line side, and disconnect leads at Lime Kiln SS on the Doubs-Lime Kiln 2 (231) 230 kV line terminal.
 - Estimated Cost: \$0.15M
 - Expected IS date: 06/01/2016



- Project Cancellation
- Cancel B1171.3:
 - Install four 500 kV breakers and remove BOL1 500 kV breaker at Black Oak
 - Estimated Cost: \$9.17M
 - Expected IS Date: 06/01/2013



Supplemental Projects

Upgrade ID	Required IS Date	Description	Cost Estimate(millions)	Action
S0184	12/1/2013	Replace the WK-1, WK-2, WK-3, WK-4, WK-5 and WK-6 345 kV breakers at Wylie Ridge	N/A	Cancel
S0194	12/1/2014	Replace the BDL-1, BDL-2 and BDL-3 500 kV breakers at Bedington	N/A	Cancel
S0195	12/1/2013	Replace the BOL-1, BOL-2 and BOL-3 500 kV breakers at Black Oak	N/A	Cancel
S0193	12/1/2012	Replace the DL-50 500 kV breaker at Doubs	N/A	Cancel
S0202	6/1/2017	Reconductor approximately 24.93 miles of Doubs - Monocacy 230kV with 1622 ACSS TW; upgrade terminal equipment at Doubs and MonocacyR	N/A	Cancel

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in

Case No(s). 12-0504-EL-FOR

Summary: Correspondence Supplement to the Ohio Edison Company, The Cleveland Electric Illuminating Company, The Toledo Edison Company and American Transmissions Systems, Inc. 2012 Electric Long-Term forecast report Part 4 of 11 - Attachment I (Part 2 of 2) electronically filed by Karen A Sweeney on behalf of Ohio Edison Company and The Cleveland Electric Illuminating Company and The Toledo Edison Company and American Transmissions Systems, Inc. and Eberts, Bradley D. Mr.