



# Transmission Expansion Advisory Committee Market Efficiency Update

July 9, 2015



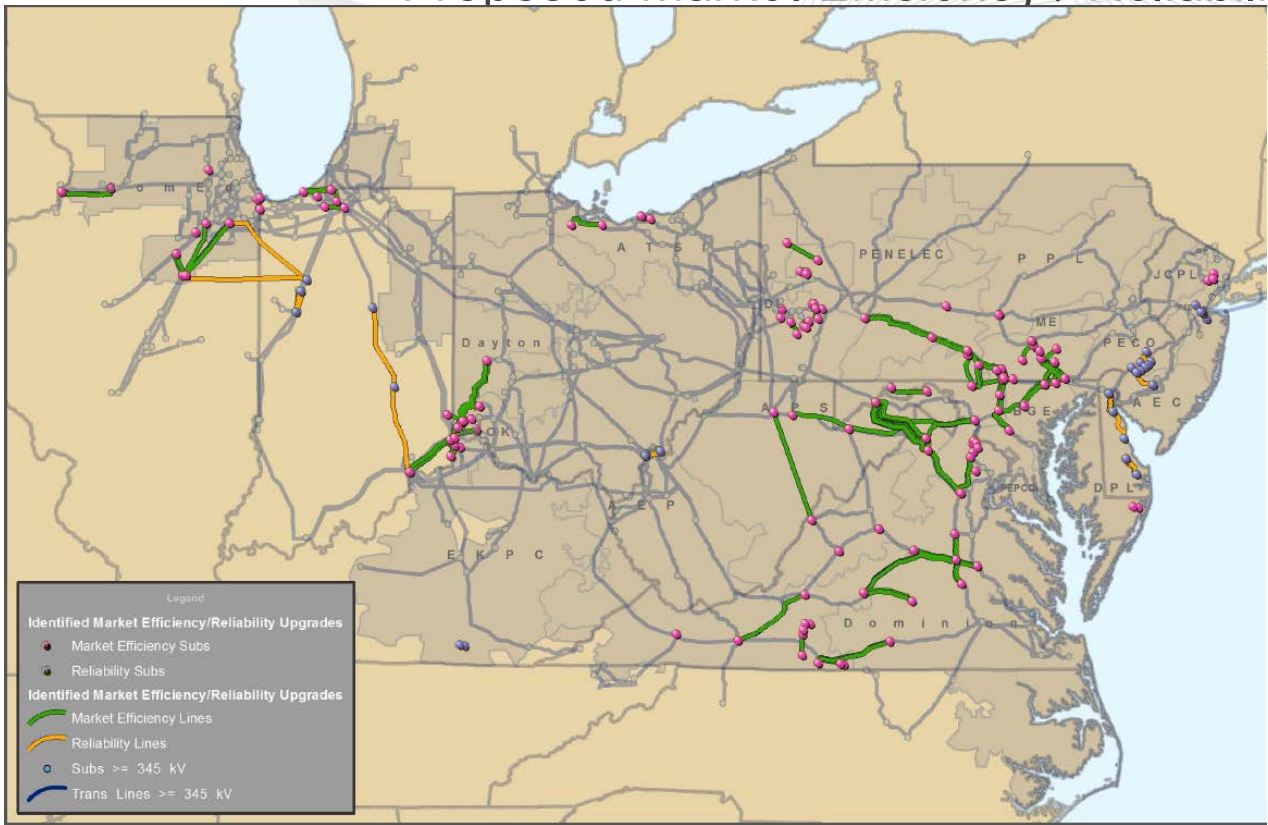
# Market Efficiency Long Term Proposal Window Update

- 93 Market Efficiency Proposals
  - 35 Transmission Owner Upgrades
    - Cost range of \$0.1M to \$68M
  - 58 Greenfield Projects
    - Cost range of \$9.2M to \$432.5M



# 2014/15 RTEP Long Term Proposal Window: Market Efficiency

<b>AREA of Proposal</b>	<b>Number of proposals</b>
AEP	2
APS	6
APSOUTH and/or AEP-DOM Area	41
ATSI	4
BGE/PPL	4
ComEd	15
DEOK	8
DPL	1
DUQ	4
PECO	5
PSEG	3
Grand Total	93





## Completed:

- Step 1: Review projects - **completed**.
- Step 2: Benefit/Cost tests - **completed**.
  - Completed first round of runs using the 2014 published assumptions.
  - Completed sensitivity runs using updated 2015 assumptions: load forecast, fuel forecast, reactive limits, in-service date, etc.

## Next steps:

### August TEAC:

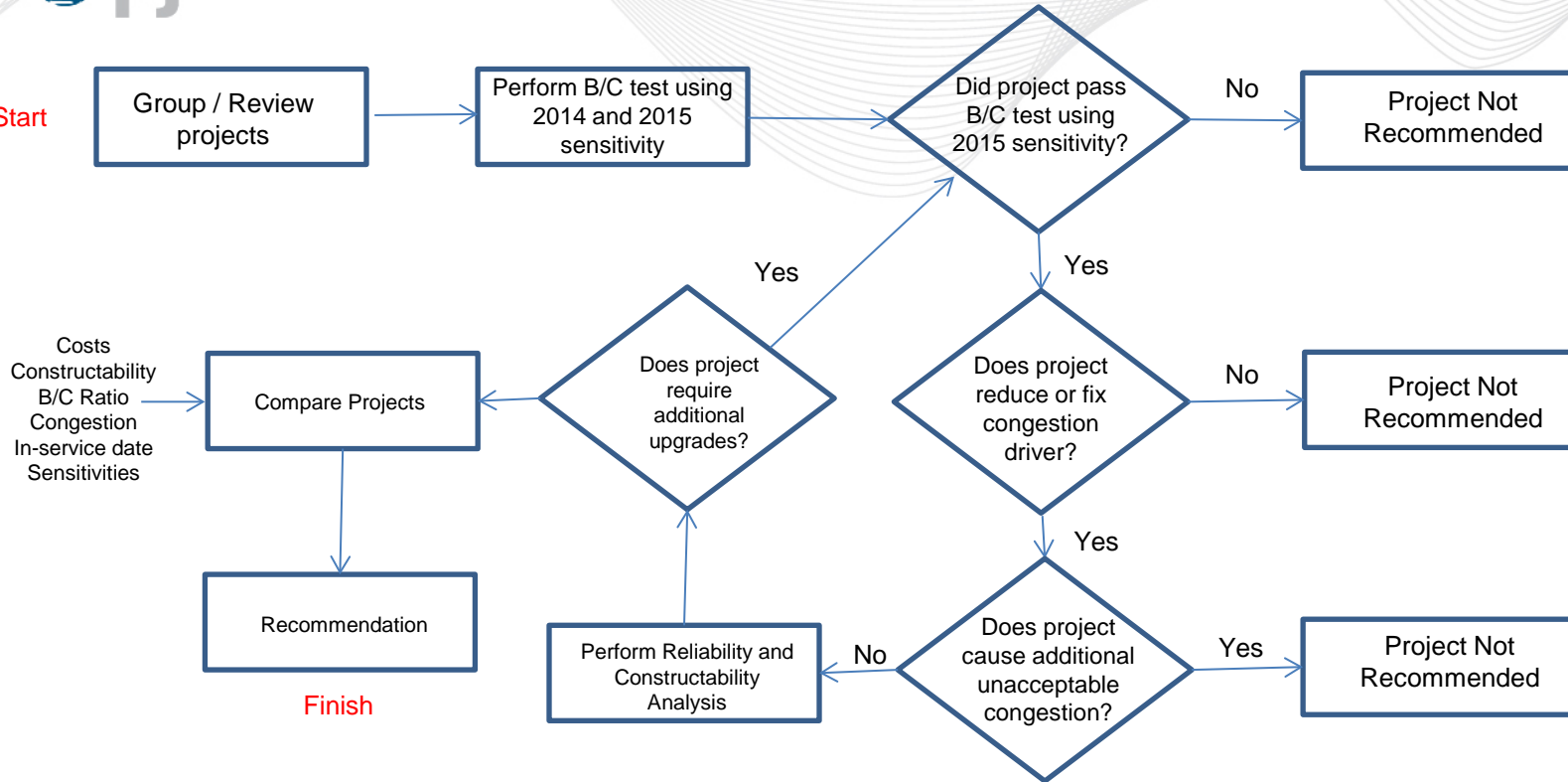
1. Recommendations for projects from Groups 2 thru 19
  - Requires Reliability and Constructability Analysis
2. Reduced list for projects from Group 1 (ApSouth/AEP-DOM)
  - Perform additional sensitivities, Reliability, and Constructability Analysis

- 2015 sensitivity assumptions applied to 2014 base case assumptions
- Projects must pass B/C test using 2015 sensitivity assumptions to be considered for further evaluation.

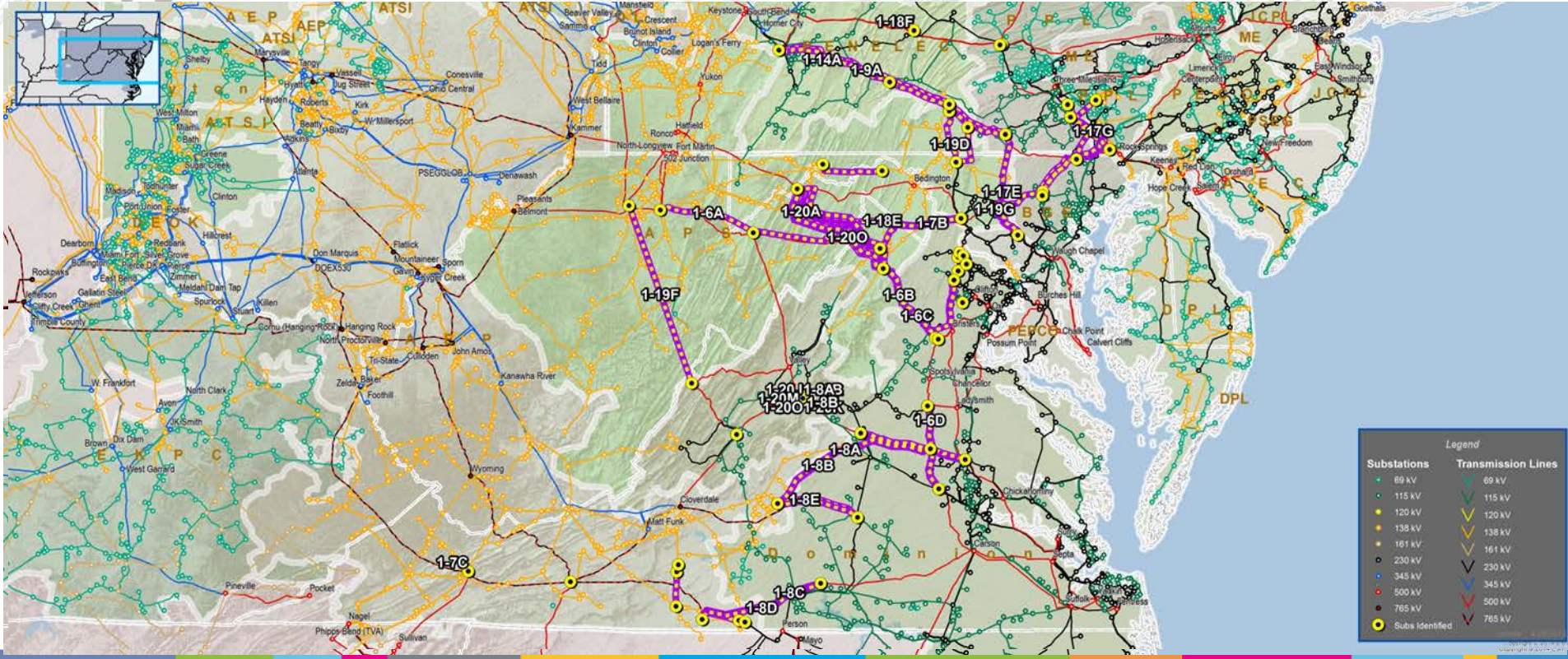
## 2015 sensitivity assumptions includes:

- Generation expansion update:
  - Includes new major ISA units
  - Includes deactivations that impact forecasted congestion
- Updated load forecast.
- Updated gas forecast.
- Significant RTEP upgrades that may impact congestion drivers.

Start







Project ID	Upgrade/ Greenfield	Cost (\$M)	Target Zone	kV Level	ME Constraints Identified	Evaluation Type	B/C Ratio Base	B/C Ratio 2015 Sens.	Status
201415_1-14A	Greenfield	51.53	PECO/Meted/APS	500	AP SOUTH L/O BED-BLA	Regional	4.22	3.73	Further Evaluation Necessary
201415_1-17A	Greenfield	16.50	Dominion	230	AP SOUTH L/O BED-BLA	Lower Voltage	10.33	3.96	Further Evaluation Necessary
201415_1-17B	Greenfield	41.00	Dominion	230	AP SOUTH L/O BED-BLA	Lower Voltage	4.74	1.55	Further Evaluation Necessary
201415_1-17C	Greenfield	15.70	Dominion	230	AP SOUTH L/O BED-BLA	Lower Voltage	7.79	4.83	Further Evaluation Necessary
201415_1-17D	Greenfield	36.40	Dominion	230	AP SOUTH L/O BED-BLA	Lower Voltage	4.56	2.47	Further Evaluation Necessary
201415_1-17E	Greenfield	297.00	PECO	500	AP SOUTH L/O BED-BLA Brunner Island to Yorkana 230 kV Taneytown to Carroll 138 kV Safe Harbor to Graceton 230 kV	Regional	3.38	2.77	Further Evaluation Necessary

Project ID	Upgrade/ Greenfield	Cost (\$M)	Target Zone	kV Level	ME Constraints Identified	Evaluation Type	B/C Ratio Base	B/C Ratio 2015 Sens.	Status
201415_1-17F	Greenfield	76.20	PECO	500	AP SOUTH L/O BED-BLA Brunner Island to Yorkana 230 kV Safe Harbor to Graceton 230 kV	Regional	2.53	0.90	Not Recommended
201415_1-17G	Greenfield	86.30	PECO	500	AP SOUTH L/O BED-BLA Brunner Island to Yorkana 230 kV Safe Harbor to Graceton 230 kV	Regional	2.25	1.11	Not Recommended
201415_1-18E	Greenfield	66.00	Dominion/ APS	500	AP SOUTH L/O BED-BLA	Regional	2.30	2.63	Further Evaluation Necessary
201415_1-18F	Upgrade	68.00	Penelec	500	AP SOUTH L/O BED-BLA Other Interfaces Taneytown to Carroll 138 kV Pruntytown to 8MTSTORM 500 kV	Regional	1.38	2.62	Further Evaluation Necessary
201415_1-19B	Greenfield	38.90	Meted/ Penelec	138	AP SOUTH L/O BED-BLA BED-BLA L/O MTS-DOU Taneytown to Carroll 138 kV Conastone to Northwest 230 kV Peach Bottom 500 kV	Lower Voltage	10.30	11.34	Further Evaluation Necessary
201415_1-19C	Greenfield	41.90	Meted/ Penelec	138	AP SOUTH L/O BED-BLA BED-BLA L/O MTS-DOU Taneytown to Carroll 138 kV Conastone to Northwest 230 kV Peach Bottom 500 kV Jacksons Ferry to Cloverdale 765 KV	Lower Voltage	11.36	13.45	Further Evaluation Necessary

Project ID	Upgrade/ Greenfield	Cost (\$M)	Target Zone	kV Level	ME Constraints Identified	Evaluation Type	B/C Ratio Base	B/C Ratio 2015 Sens.	Status
201415_1-19D	Greenfield	104.50	Meted/ Penelec	230	AP SOUTH L/O BED-BLA BED-BLA L/O MTS-DOU 50045005 L/O RCKSPG-KEENY Taneytown to Carroll 138 kV Conastone to Northwest 230 kV Peach Bottom 500 kV Jacksons Ferry to Cloverdale 765 KV	Lower Voltage	4.73	8.19	Further Evaluation Necessary
201415_1-19E	Greenfield	53.70	Dominion	500	AP SOUTH L/O BED-BLA BED-BLA L/O MTS-DOU Conastone to Northwest 230 kV	Regional	1.57	0.79	Not Recommended
201415_1-19F	Greenfield	432.50	APS/ Dominion	500	AP SOUTH L/O BED-BLA BED-BLA L/O MTS-DOU 50045005 L/O RCKSPG-KEENY Taneytown to Carroll 138 kV Conastone to Northwest 230 kV Peach Bottom 500 kV Jacksons Ferry to Cloverdale 765 KV	Regional	1.47	1.29	Further Evaluation Necessary
201415_1-19G	Greenfield	48.60	Pepco/ BGE	230	AP SOUTH L/O BED-BLA BED-BLA L/O MTS-DOU 50045005 L/O RCKSPG-KEENY Safe Harbor to Graceton 230 kV Conastone to Northwest 230 kV Peach Bottom 500 kV	Lower Voltage	5.47	2.09	Further Evaluation Necessary

Project ID	Upgrade/ Greenfield	Cost (\$M)	Target Zone	kV Level	ME Constraints Identified	Evaluation Type	B/C Ratio Base	B/C Ratio 2015 Sens.	Status
201415_1-20A	Greenfield	209.56	APS/Dominion	500	AP SOUTH L/O BED-BLA BED-BLA L/O MTS-DOU Fieldale to Thornton 138 kV Brunner Island to Yorkana 230 kV Lorreto to Wilton CTR 345 kV Safe Harbor to Graceton 230 kV	Regional	0.33	0.25	Not Recommended
201415_1-20G	Greenfield	174.36	APS/Dominion	500	AP SOUTH L/O BED-BLA AEP-DOM L/O BED-BLA BED-BLA L/O MTS-DOU Fieldale to Thornton 138 kV Conastone to Northwest 230 kV Pleasant View to Ashburn 230 kV	Regional	0.31	0.21	Not Recommended
201415_1-20J	Greenfield	212.58	APS/Dominion	500	AP SOUTH L/O BED-BLA AEP-DOM L/O BED-BLA BED-BLA L/O MTS-DOU Fieldale to Thornton 138 kV Conastone to Northwest 230 kV Pleasant View to Ashburn 230 kV	Regional	1.68	0.32	Not Recommended
201415_1-20K	Greenfield	177.38	APS/Dominion	500	AP SOUTH L/O BED-BLA AEP-DOM L/O BED-BLA BED-BLA L/O MTS-DOU Fieldale to Thornton 138 kV Miami Fort to Willey 138 kV Brunner Island to Yorkana 230 kV	Regional	0.64	0.40	Not Recommended

Project ID	Upgrade/ Greenfield	Cost (\$M)	Target Zone	kV Level	ME Constraints Identified	Evaluation Type	B/C Ratio Base	B/C Ratio 2015 Sens.	Status
201415_1-20L	Greenfield	226.33	APS/Dominion	500	AP SOUTH L/O BED-BLA AEP-DOM L/O BED-BLA BED-BLA L/O MTS-DOU Fieldale to Thornton 138 kV Conastone to Northwest 230 kV Pleasant View to Ashburn 230 kV	Regional	0.27	0.17	Not Recommended
201415_1-20M	Greenfield	229.35	APS/Dominion	500	AP SOUTH L/O BED-BLA AEP-DOM L/O BED-BLA BED-BLA L/O MTS-DOU Fieldale to Thornton 138 kV Conastone to Northwest 230 kV Pleasant View to Ashburn 230 kV	Regional	0.32	0.45	Not Recommended
201415_1-20N	Greenfield	191.12	APS/Dominion	500	AP SOUTH L/O BED-BLA AEP-DOM L/O BED-BLA BED-BLA L/O MTS-DOU Fieldale to Thornton 138 kV Miami Fort to Willey 138 kV Brunner Island to Yorkana 230 kV	Regional	0.64	0.71	Not Recommended
201415_1-20O	Greenfield	194.14	APS/Dominion	500	AP SOUTH L/O BED-BLA AEP-DOM L/O BED-BLA BED-BLA L/O MTS-DOU Fieldale to Thornton 138 kV Miami Fort to Willey 138 kV Brunner Island to Yorkana 230 kV	Regional	0.85	0.66	Not Recommended

Project ID	Upgrade/ Greenfield	Cost (\$M)	Target Zone	kV Level	ME Constraints Identified	Evaluation Type	B/C Ratio Base	B/C Ratio 2015 Sens.	Status
201415_1-22A	Greenfield	46.56	APS/AEP/DOM	500	AP SOUTH L/O BED-BLA AEP-DOM L/O BED-BLA	Regional	0.99	0.75	Not Recommended
201415_1-22B	Greenfield	46.56	APS/AEP/DOM	500	AP SOUTH L/O BED-BLA AEP-DOM L/O BED-BLA	Regional	0.99	0.75	Not Recommended
201415_1-2C	Greenfield	33.95	PPL	500	AP SOUTH L/O BED-BLA	Regional	0.57	0.65	Not Recommended
201415_1-6A	Upgrade	25.00	Dominion	500	AP SOUTH L/O BED-BLA Other Interfaces	Regional	5.64	3.48	Further Evaluation Necessary
201415_1-6B	Upgrade	25.00	Dominion	500	AP SOUTH L/O BED-BLA Other Interfaces	Regional	2.43	2.37	Further Evaluation Necessary
201415_1-6C	Upgrade	39.06	Dominion	500	AP SOUTH L/O BED-BLA Other Interfaces	Regional	4.98	4.07	Further Evaluation Necessary
201415_1-6D	Greenfield	42.70	Dominion	500	AP SOUTH L/O BED-BLA Other Interfaces	Regional	3.48	2.93	Further Evaluation Necessary

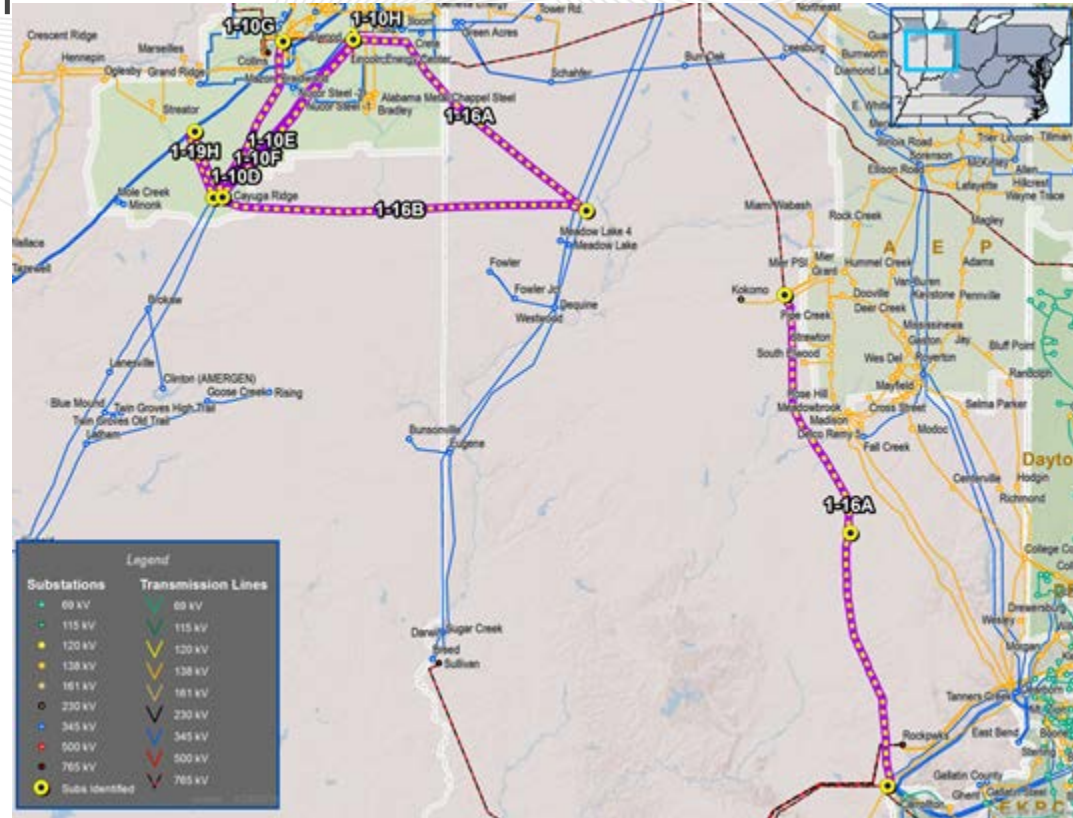
Project ID	Upgrade/ Greenfield	Cost (\$M)	Target Zone	kV Level	ME Constraints Identified	Evaluation Type	B/C Ratio Base	B/C Ratio 2015 Sens.	Status
201415_1-7A	Greenfield	155.36	AEP	765	AP SOUTH L/O BED-BLA Other Interfaces Danville to East Danville 138 kV Fieldale to Thornton 138 kV	Lower Voltage	1.99	1.44	Further Evaluation Necessary
201415_1-7B	Greenfield	270.85	AEP	230	AP SOUTH L/O BED-BLA Other Interfaces Taneytown to Carroll 138 kV	Lower Voltage	1.41	1.37	Further Evaluation Necessary
201415_1-7C	Greenfield	239.99	AEP	500	AP SOUTH L/O BED-BLA Other Interfaces Taneytown to Carroll 138 kV	Regional	1.46	1.40	Further Evaluation Necessary
201415_1-8A	Greenfield	384.00	AEP/Dominion	765	AP SOUTH L/O BED-BLA AEP-DOM L/O BED-BLA Other Interfaces Danville to East Danville 138 kV Fieldale to Thornton 138 kV	Regional	0.69	0.56	Not Recommended
201415_1-8B	Greenfield	293.00	AEP/Dominion	500	AP SOUTH L/O BED-BLA AEP-DOM L/O BED-BLA Other Interfaces Fieldale to Thornton 138 kV	Regional	1.23	0.99	Not Recommended



Project ID	Upgrade/ Greenfield	Cost (\$M)	Target Zone	kV Level	ME Constraints Identified	Evaluation Type	B/C Ratio Base	B/C Ratio 2015 Sens.	Status
201415_1-8C	Greenfield	317.00	AEP/Dominion	765	AP SOUTH L/O BED-BLA AEP-DOM L/O BED-BLA Other Interfaces Danville to East Danville 138 kV Fieldale to Thornton 138 kV	Regional	0.56	0.41	Not Recommended
201415_1-8D	Greenfield	222.00	AEP/Dominion	500	AP SOUTH L/O BED-BLA AEP-DOM L/O BED-BLA Other Interfaces Fieldale to Thornton 138 kV	Regional	0.68	0.78	Not Recommended
201415_1-8E	Greenfield	181.00	Dominion	230	AP SOUTH L/O BED-BLA AEP-DOM L/O BED-BLA Other Interfaces Fieldale to Thornton 138 kV	Lower Voltage	1.61	0.88	Not Recommended
201415_1-8F	Greenfield	193.00	Dominion	230	AP SOUTH L/O BED-BLA Other Interfaces	Lower Voltage	2.20	1.21	Not Recommended
201415_1-9A	Greenfield	300.66	Peco/Dominion/AEP	230	AP SOUTH L/O BED-BLA Other Interfaces Brunner Island to Yorkana 230 kV Taneytown to Carroll 138 kV Safe Harbor to Graceton 230 kV Conastone to Northwest 230 kV	Lower Voltage	6.21	5.07	Further Evaluation Necessary

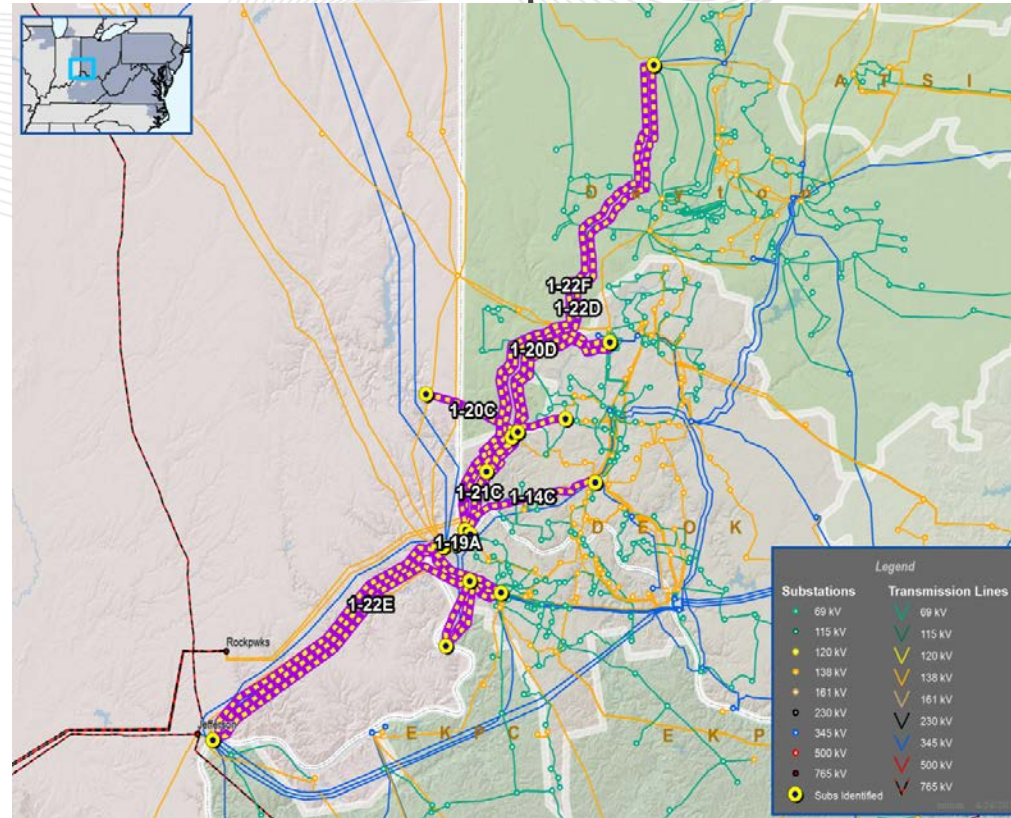
# Group 2: COMED - Loretto to Wilton Center

- 9 Projects:
  - 1-10C, 1-10D, 1-10E, 1-10F, 1-10G, 1-10H, 1-16A, 1-16B, 1-19H
- Cost:
  - From \$11.5M to \$290M
- Constraints:
  - Loretto to Wilton CTR  
345 kV

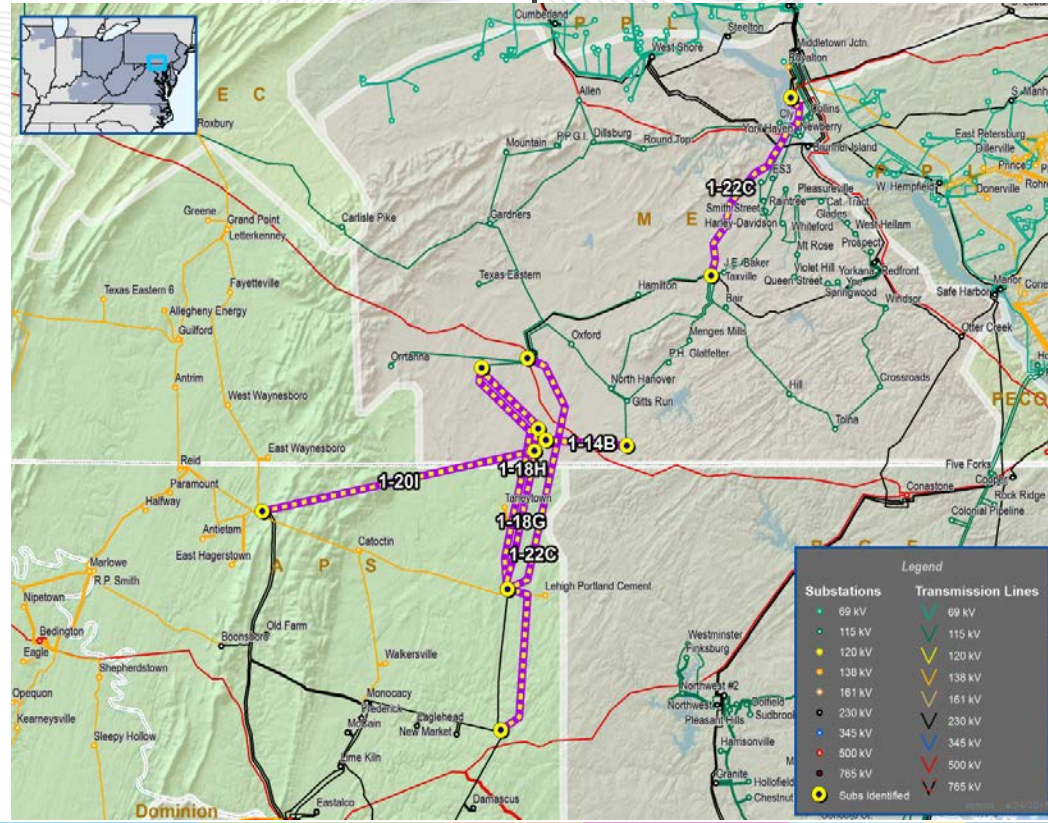


Project ID	Upgrade/ Greenfield	Cost (\$M)	Target Zone	kV Level	ME Constraints Identified	Evaluation Type	B/C Ratio Base	B/C Ratio 2015 Sens.	Status
201415_1-10D	Upgrade	11.50	ComEd	345	Lorreto to Wilton CTR 345 kV	Lower Voltage	1.79	1.14	Not Recommended
201415_1-10F	Upgrade	14.00	ComEd	345	Lorreto to Wilton CTR 345 kV	Lower Voltage	1.38	0.79	Not Recommended
201415_1-16A	Greenfield	240.00	AEP/CE/NIPS	345	None Specified	Lower Voltage	0.04	N/A	Not Recommended
201415_1-16B	Greenfield	290.00	AEP/CE/NIPS	345	Lorreto to Wilton CTR 345 kV	Regional	0.14	N/A	Not Recommended
201415_1-10C	Greenfield	37.80	ComEd	345	Lorreto to Wilton CTR 345 kV	Lower Voltage	1.63	0.73	Not Recommended
201415_1-19H	Greenfield	42.90	ComEd	345	Lorreto to Wilton CTR 345 kV	Lower Voltage	1.16	0.9	Not Recommended
201415_1-10E	Upgrade	17.40	ComEd	345	Lorreto to Wilton CTR 345 kV	Lower Voltage	1.17	0.93	Not Recommended
201415_1-10G	Upgrade	19.90	ComEd	345	Lorreto to Wilton CTR 345 kV	Lower Voltage	1.02	0.81	Not Recommended
201415_1-10H	Upgrade	25.90	ComEd	345	Lorreto to Wilton CTR 345 kV	Lower Voltage	0.78	0.62	Not Recommended

- 8 Projects:
  - 1-14C, 1-19A, 1-20C, 1-20D, 1-21C, 1-22D, 1-22E, 1-22F
- Cost:
  - From \$11.4M to \$91M
- Constraints:
  - Miami Fort to Willey 138 kV
  - Miami Fort to 08HEBTAP 138 kV
- Notes:
  - Congestion removed due to base line upgrades required by retirement of Miami Fort 6.
  - **Proposals submitted will not be evaluated**

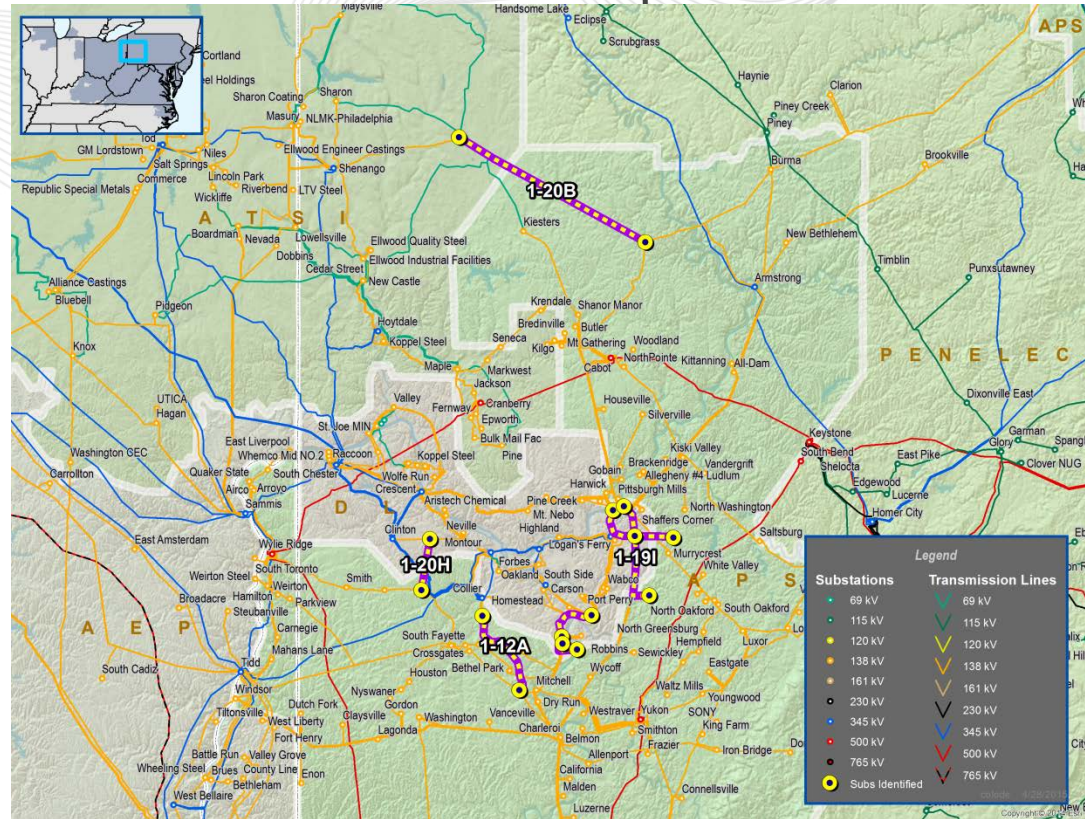


- 5 Projects:
  - 1-14B, 1-18G, 1-18H
  - 1-20I, 1-22C
- Cost:
  - From \$5.2M to \$107M
- Constraints:
  - Brunner Island to Yorkana 230 kV
  - Safe Harbor to Graceton 230 kV
  - Taneytown to Carroll 138 kV
- Impacted by Group 8



Project ID	Upgrade/ Greenfield	Cost (\$M)	Target Zone	kV Level	ME Constraints Identified	Evaluation Type	B/C Ratio Base	B/C Ratio 2015 Sens.	Status	Comments
201415_1-18G	Upgrade	5.20	APS/Meted	138	Taneytown to Carroll 138 kV	Lower Voltage	55.74	90.14	Further Evaluation Necessary	
201415_1-14B	Greenfield	21.11	Meted	115	Taneytown to Carroll 138 kV	Lower Voltage	11.68	23.14	Further Evaluation Necessary	
201415_1-18H	Upgrade	58.00	APS/Meted	138	Taneytown to Carroll 138 kV	Lower Voltage	4.97	5.62	Further Evaluation Necessary	
201415_1-20I	Greenfield	70.80	APS/Dominion	138	Taneytown to Carroll 138 kV Brunner Island to Yorkana 230 kV Safe Harbor to Graceton 230 kV	Lower Voltage	2.63	5.36	Further Evaluation Necessary	
201415_1-22C	Greenfield	107.20	APS/Meted	230	Taneytown to Carroll 138 kV	Lower Voltage	34.66	34.21	Further Evaluation Necessary	Increases Congestion

- 4 Projects:
  - 1-12A, 1-19I, 1-20B
  - 1-20H
- Cost:
  - From \$1M to \$64M
- Constraints:
  - Dravosburg to West Mifflin  
138 kV
  - Krendale to Shanor Manor  
138 kV
  - Woodville to 15USAP 138 kV



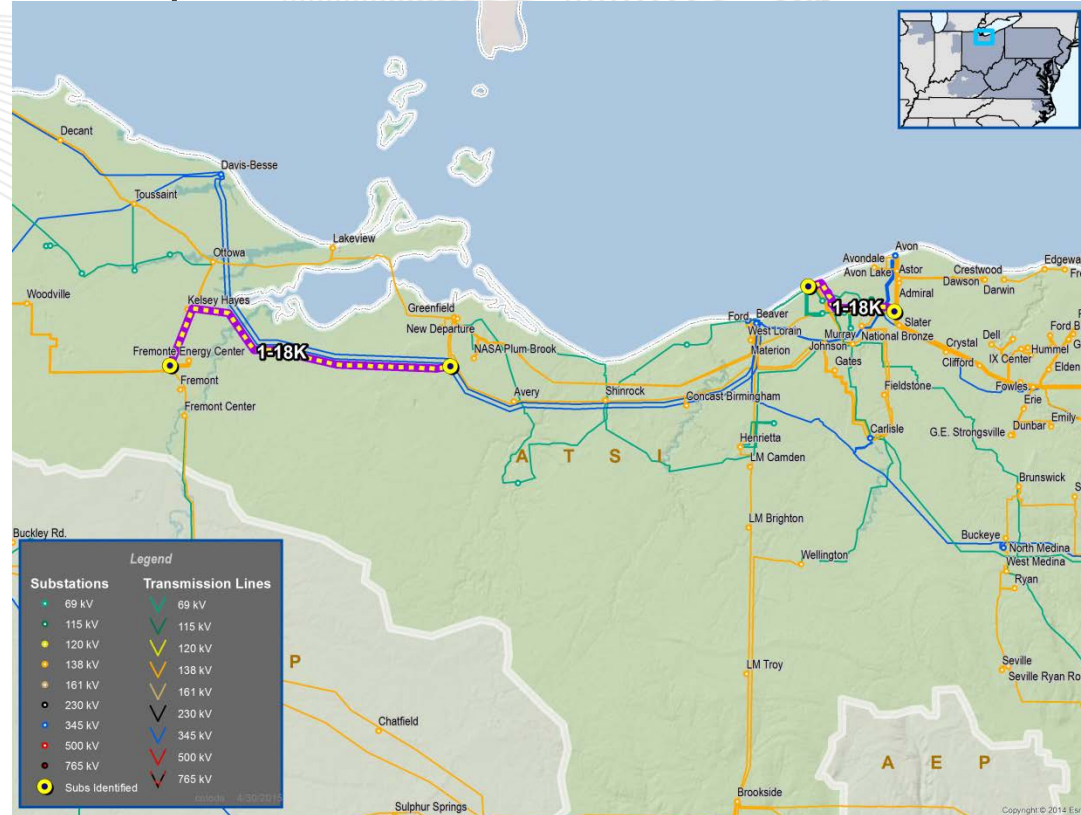
Project ID	Upgrade/ Greenfield	Cost (\$M)	Target Zone	kV Level	ME Constraints Identified	Evaluation Type	B/C Ratio Base	B/C Ratio 2015 Sens.	Status	Comments
201415_1-19I	Greenfield	9.20	APS/DUQ	138	Dravosburg to West Mifflin 138 kV Woodville to 15USAP 138 kV Krendale to Shanor Manor 138 kV	Lower Voltage	8.08	2.71	Further Evaluation Necessary	Increases Congestion
201415_1-12A	Upgrade	11.18	DUQ	138	Dravosburg to West Mifflin 138 kV Woodville to 15USAP 138 kV	Lower Voltage	5.76	1.98	Further Evaluation Necessary	
201415_1-20H	Greenfield	14.40	APS/DUQ	138	Dravosburg to West Mifflin 138 kV Woodville to 15USAP 138 kV Taneytown to Carroll 138 kV	Lower Voltage	5.08	0.93	Not Recommended	
201415_1-20B	Greenfield	64.30	APS/DUQ	138	Dravosburg to West Mifflin 138 kV Woodville to 15USAP 138 kV	Lower Voltage	3.22	3.33	Further Evaluation Necessary	





- 1 Project:
  - 1-18K
- Cost:
  - \$9.6M
- Constraints:
  - 02Blkrvr to Lorain 138 kV
- Duplicate of Baseline Reliability Upgrade (B2559)
- **Proposal will not be evaluated.**

## Group 6: ATSI – Black River to Lorain

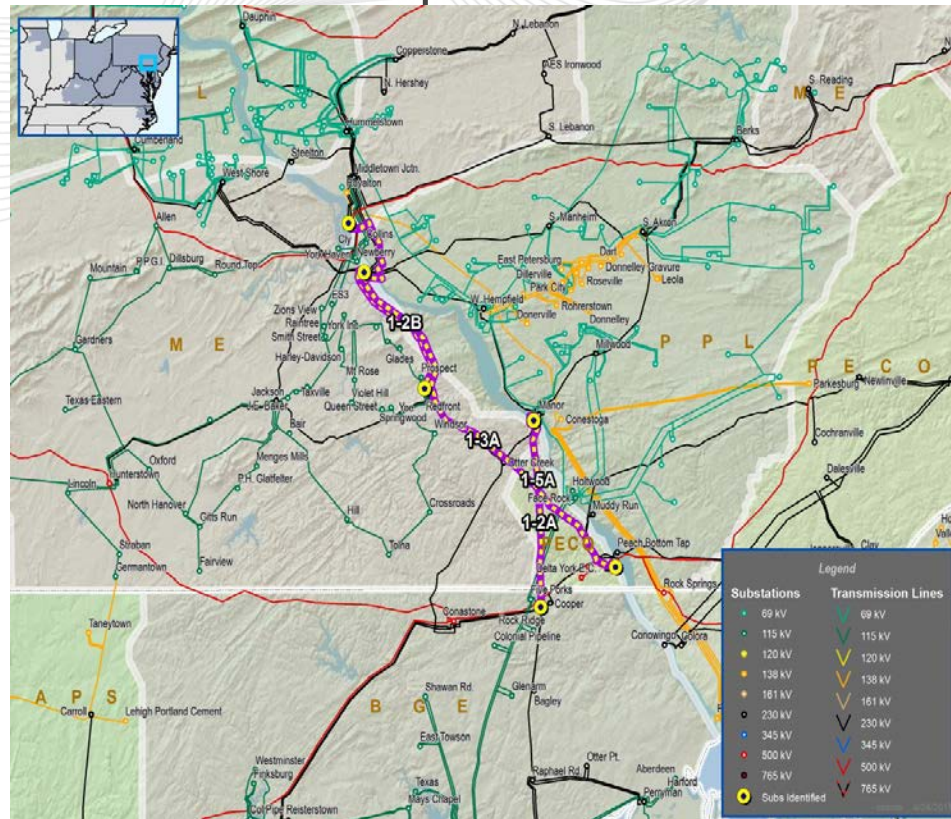




## Group 7: ATSI - Crestwood to Astor

- 1 Project:
  - 1-18L – no upgrade required
- Cost:
  - No cost information
- Constraints:
  - Crestwood to Astor 138 kV
- Notes:
  - Transmission owner rating update removes congestion.
  - **Proposal will not be evaluated.**

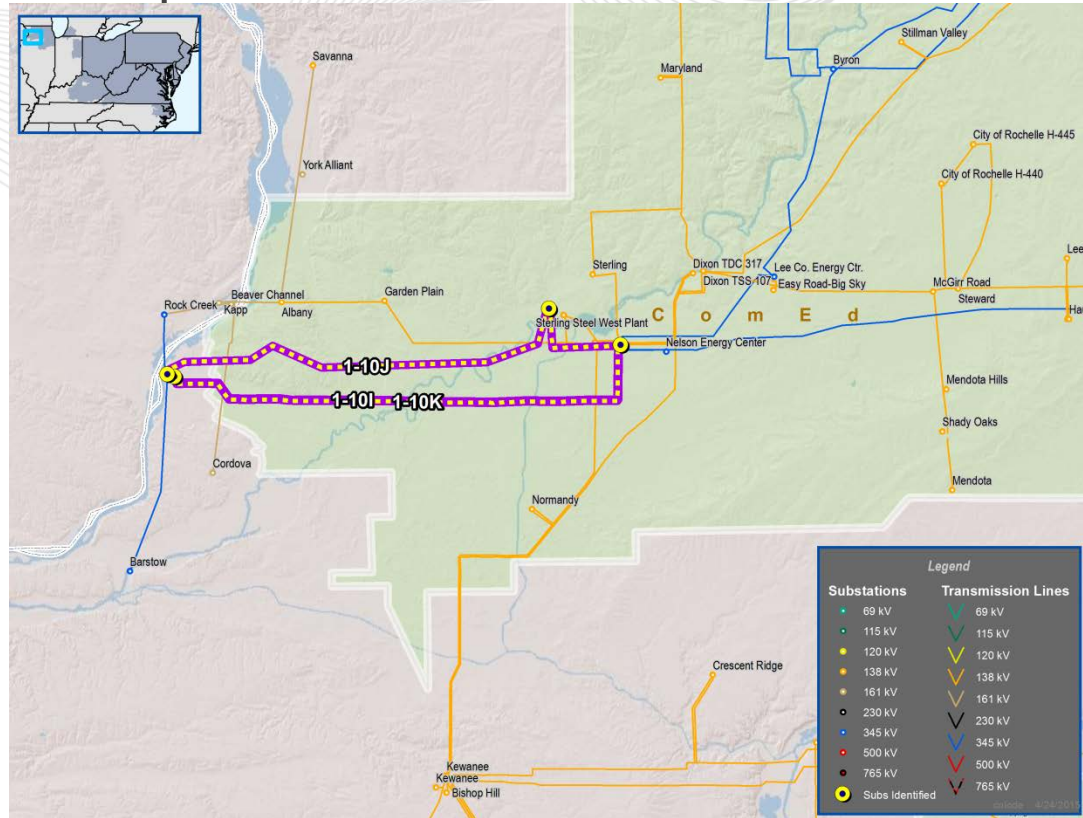
- 4 Projects:
  - 1-2A, 1-2B, 1-3A, 1-5A
- Cost:
  - \$1.1M to \$40M
- Constraints:
  - Brunner Island to Yorkana 230 kV
  - Safe Harbor to Graceton 230 kV
- Impacted by Group 4



Project ID	Upgrade/ Greenfield	Cost (\$M)	Target Zone	kV Level	ME Constraints Identified	Evaluation Type	B/C Ratio Base	B/C Ratio 2015 Sens.	Status
201415_1-2A	Upgrade	1.10	PPL/BGE	230	Safe Harbor to Graceton 230 kV	Lower Voltage	4.27	14.42	Further Evaluation Necessary
201415_1-2B	Upgrade	3.10	PPL/Meted	230	Brunner Island to Yorkana 230 kV	Lower Voltage	73.28	22.16	Further Evaluation Necessary
201415_1-3A	Upgrade	40.20	PPL/Meted	500	Brunner Island to Yorkana 230 kV	Lower Voltage	4.12	1.85	Further Evaluation Necessary
201415_1-5A	Upgrade	5.60	BGE/PPL	230	Safe Harbor to Graceton 230 kV	Lower Voltage	1.45	0.63	Not Recommended

# Group 9: COMED - Cordova to Nelson

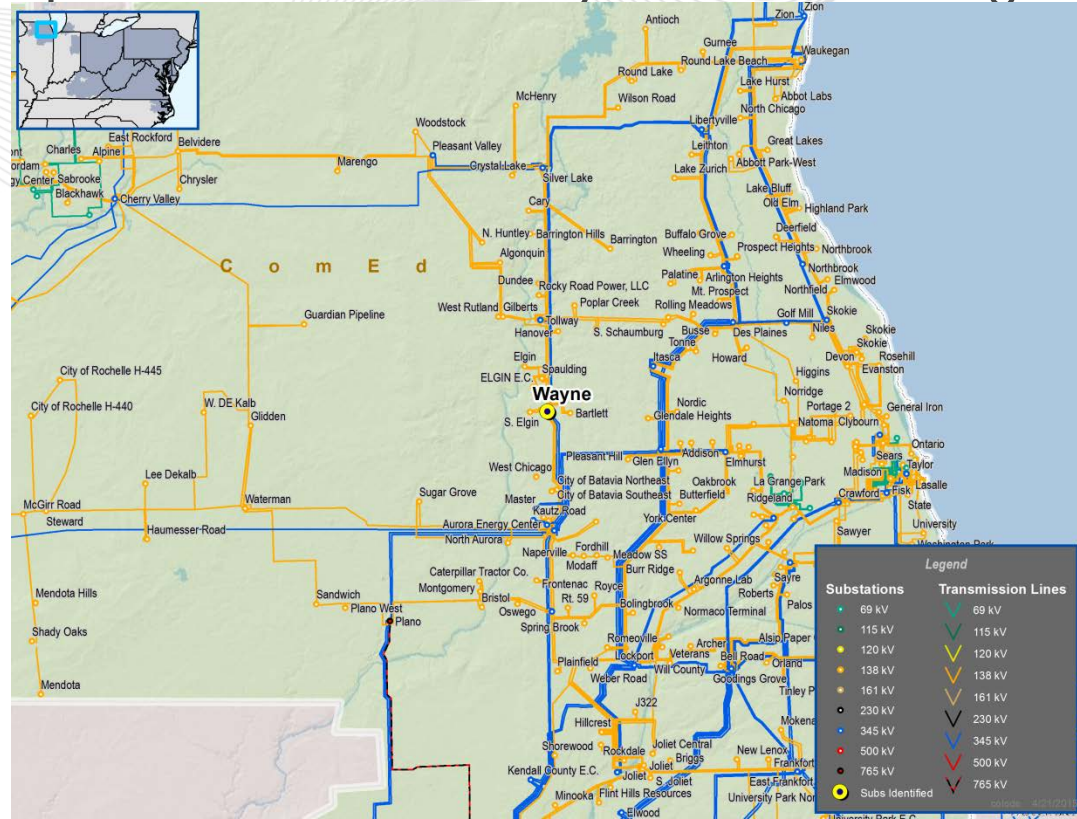
- 3 Projects:
  - 1-10I, 1-10J, 1-10K
- Cost:
  - \$2M to \$25M
- Constraints:
  - Cordova to Nelson  
345 kV



Project ID	Upgrade/ Greenfield	Cost (\$M)	Target Zone	kV Level	ME Constraints Identified	Evaluation Type	B/C Ratio Base	B/C Ratio 2015 Sens.	Status	Comments
201415_1-10I	Upgrade	2.00	ComEd	345	Cordova to Nelson 345 kV	Lower Voltage				Already in service
201415_1-10K	Upgrade	15.50	ComEd	345	Cordova to Nelson 345 kV	Lower Voltage	1.87	1.18	Further Evaluation Necessary	
201415_1-10J	Upgrade	24.60	ComEd	345	Cordova to Nelson 345 kV	Lower Voltage	1.73	1.94	Further Evaluation Necessary	

# Group 10: COMED - Wayne to South Elgin

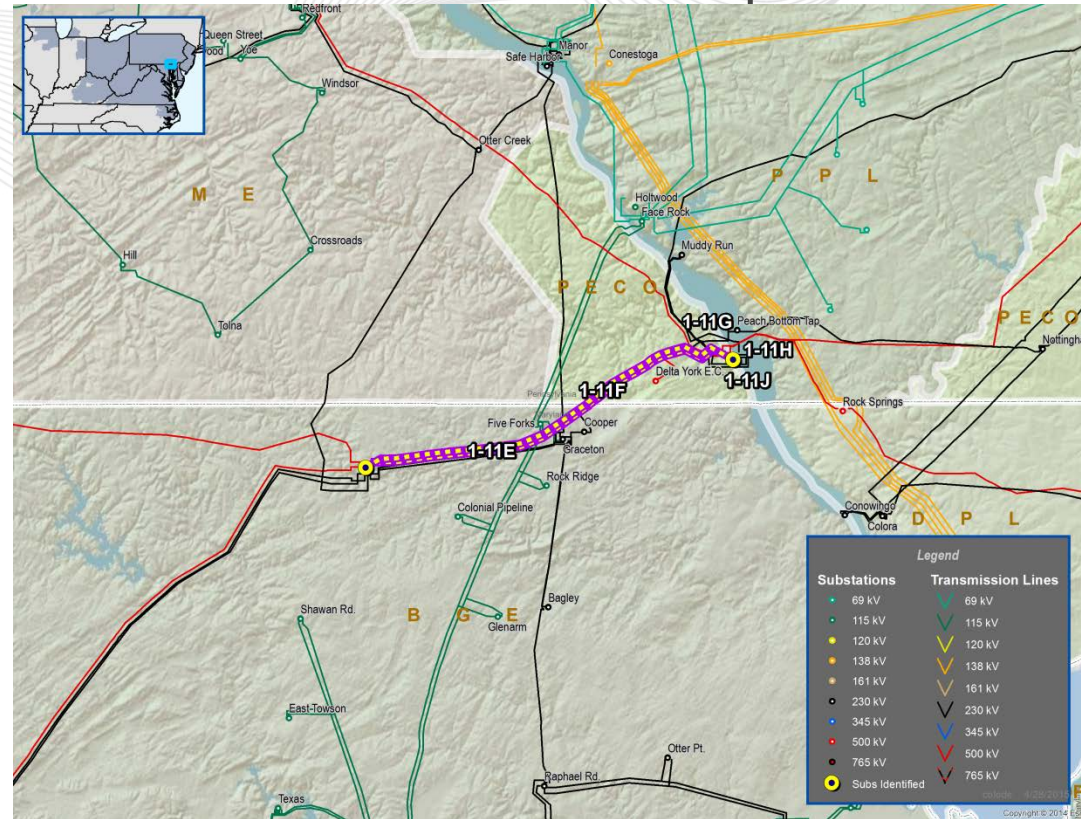
- 1 Project:
  - 1-10B
- Cost:
  - \$0.1M
- Constraints:
  - Wayne to South Elgin
  - 138 kV



Project ID	Upgrade/ Greenfield	Cost (\$M)	Target Zone	kV Level	ME Constraints Identified	Evaluation Type	B/C Ratio Base	B/C Ratio 2015 Sens.	Status
201415_1-10B	Upgrade	0.10	ComEd	138	Wayne to South Elgin 138 kV	Lower Voltage	7.23	6.43	Further Evaluation Necessary

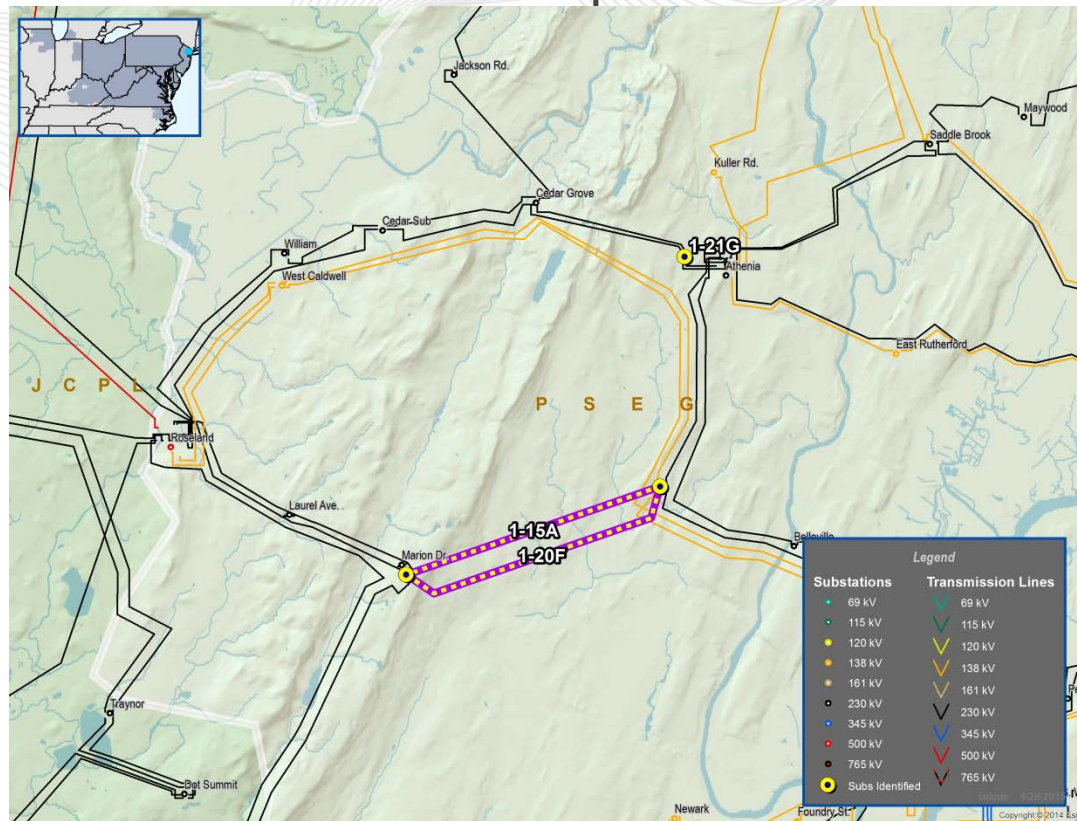


- 5 Projects:
  - 1-11E, 1-11F, 1-11G, 1-11H, 1-11I
- Cost:
  - From \$0.2M to \$21M
- Constraints:
  - Peach Bottom 500 kV
  - Peach Bottom to Conastone 500 kV



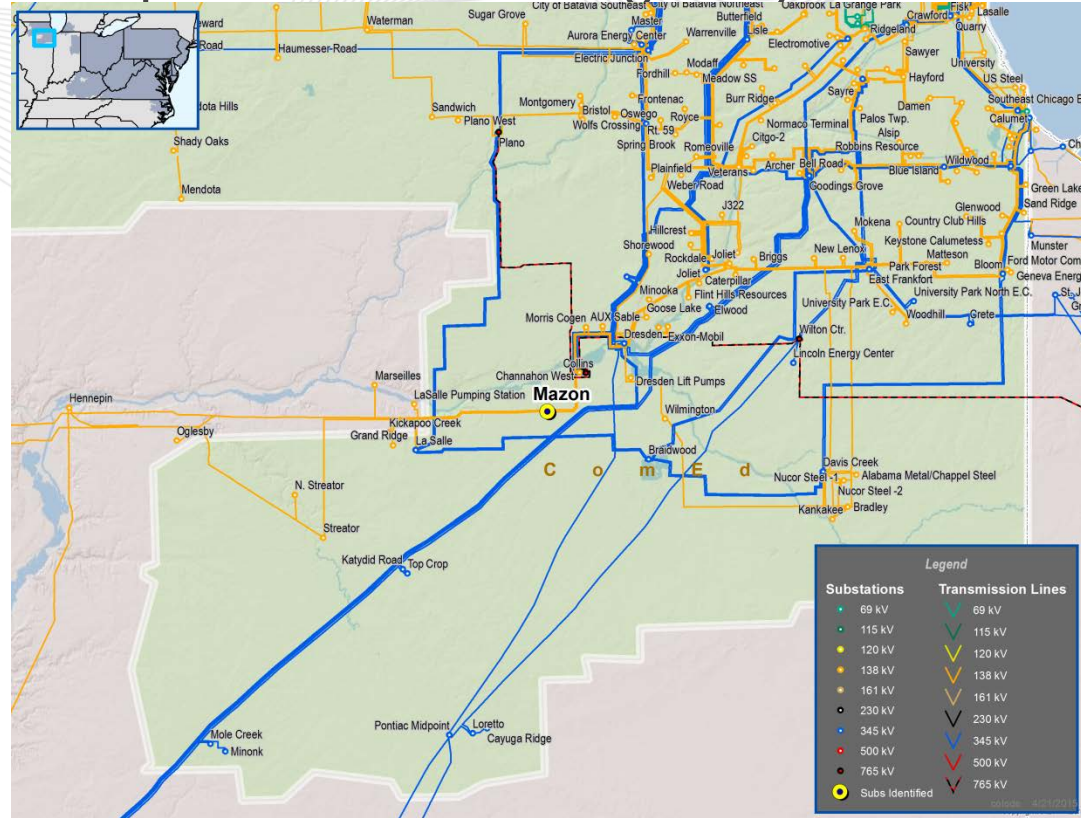
Project ID	Upgrade/ Greenfield	Cost (\$M)	Target Zone	kV Level	ME Constraints Identified	Evaluation Type	B/C Ratio Base	B/C Ratio 2015 Sens.	Status
201415_1-11G	Upgrade	0.20	PECO	230	Peach Bottom 500 kV	Lower Voltage	23.74	72.97	Further Evaluation Necessary
201415_1-11E	Upgrade	1.80	PECO	500	Peach Bottom to Conastone 500 kV	Regional	0.09	0.24	Not Recommended
201415_1-11F	Upgrade	8.70	PECO	500	Peach Bottom to Conastone 500 kV	Regional	0.08	0.18	Not Recommended
201415_1-11H	Upgrade	9.70	PECO	230	Peach Bottom 500 kV	Lower Voltage	2.63	3.03	Further Evaluation Necessary
201415_1-11I	Upgrade	21.10	PECO	230	Peach Bottom 500 kV	Lower Voltage	0.96	3.07	Further Evaluation Necessary

- 3 Projects:
  - 1-15A, 1-20F, 1-21G
- Cost:
  - From \$2.8M to \$125M
- Constraints:
  - Roseland-Cedar Grove-Clifton 230 kV corridor
- Note:
  - RPM project pending BRA results.



# Group 13: COMED - Oglesby to Mazon

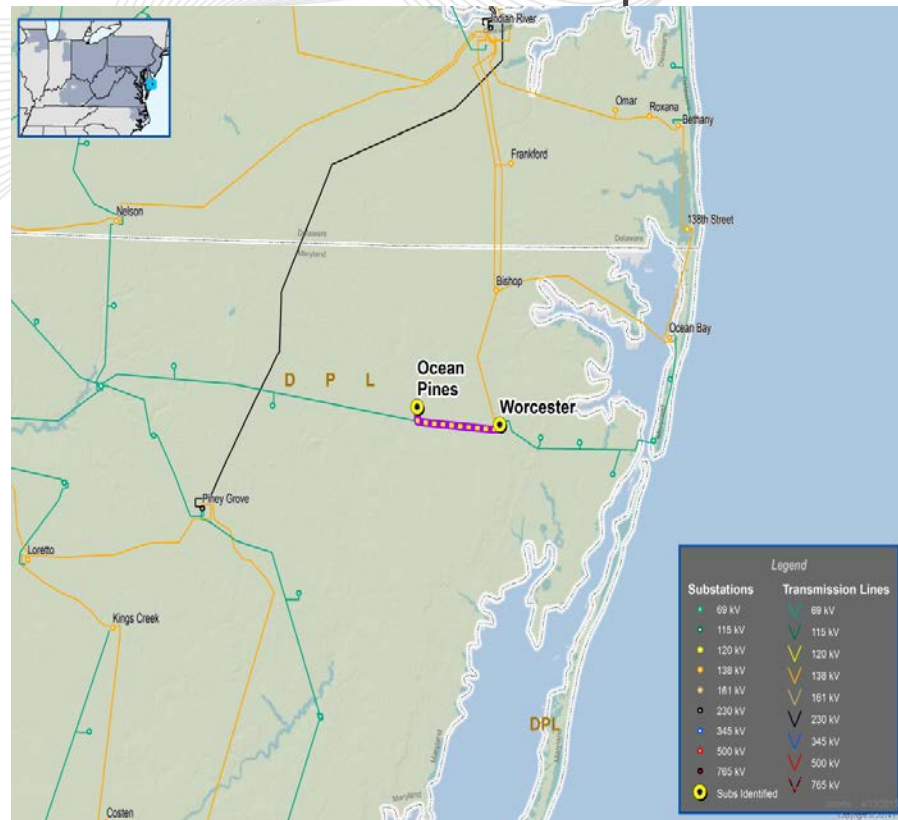
- 1 Project:
  - 1-10A
- Cost:
  - From \$0.7M to \$1M
- Constraints:
  - Oglesby to Mazon 138 kV
- Duplicate of B2613 baseline upgrade.
- **Proposal will not be evaluated.**





- 1 Project:
  - 1-13E
- Cost:
  - \$2.4M
- Constraints:
  - Worcester to Ocean Pines 69 kV

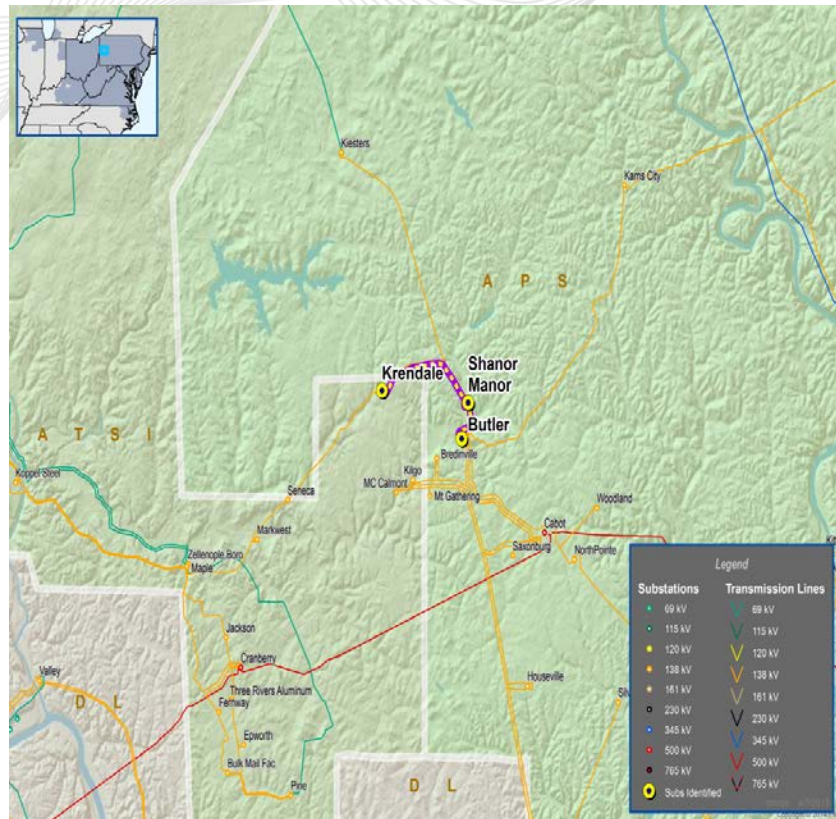
# Group 14: DPL



Project ID	Upgrade/ Greenfield	Cost (\$M)	Target Zone	kV Level	ME Constraints Identified	Evaluation Type	B/C Ratio Base	B/C Ratio 2015 Sens.	Status
201415_1-13E	Upgrade	2.40	DPL	69	Worcester to Ocean Pines (I) 69 kV	Lower Voltage	82.68	65.30	Further Evaluation Necessary

# Group 15: ATS/ATSI - Krendale to Shanor Manor

- 1 Project:
  - 1-18I
- Cost:
  - \$0.6M
- Constraints:
  - Krendale to Shanor Manor 138 kV

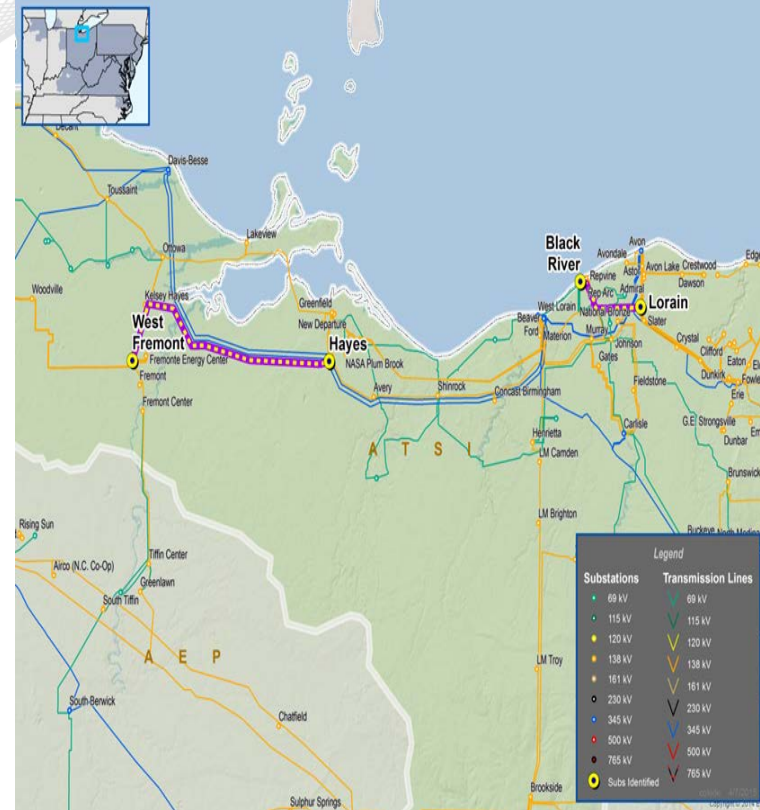


Project ID	Upgrade/ Greenfield	Cost (\$M)	Target Zone	kV Level	ME Constraints Identified	Evaluation Type	B/C Ratio Base	B/C Ratio 2015 Sens.	Status
201415_1-18I	Upgrade	0.60		138	Krendale to Shanor Manor 138 kV	Lower Voltage	35.81	123.39	Further Evaluation Necessary

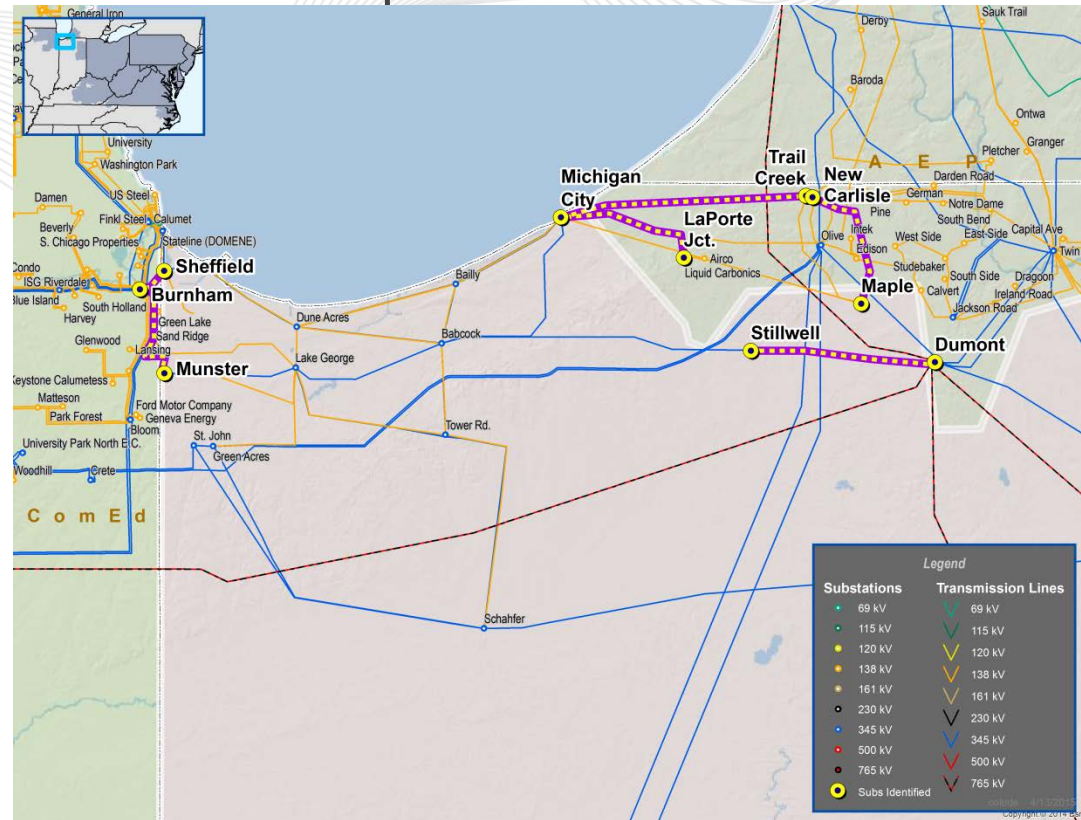


# Group 16: ATSI - CLEVELAND INTERFACE

- 1 Project:
  - 1-18J
- Cost:
  - \$22.4M
- Constraints:
  - CLEVELAND Interface
- **Baseline projects b2557, b2559, and b2560 may remove driver**
  - B2557: At Avon substation, replace the existing 345/138kV #92 transformer
  - B2559: Re-conductor the Black River-Lorain 138kV line
  - B2560: Second 138kV line between West Fremont and Hayes substation



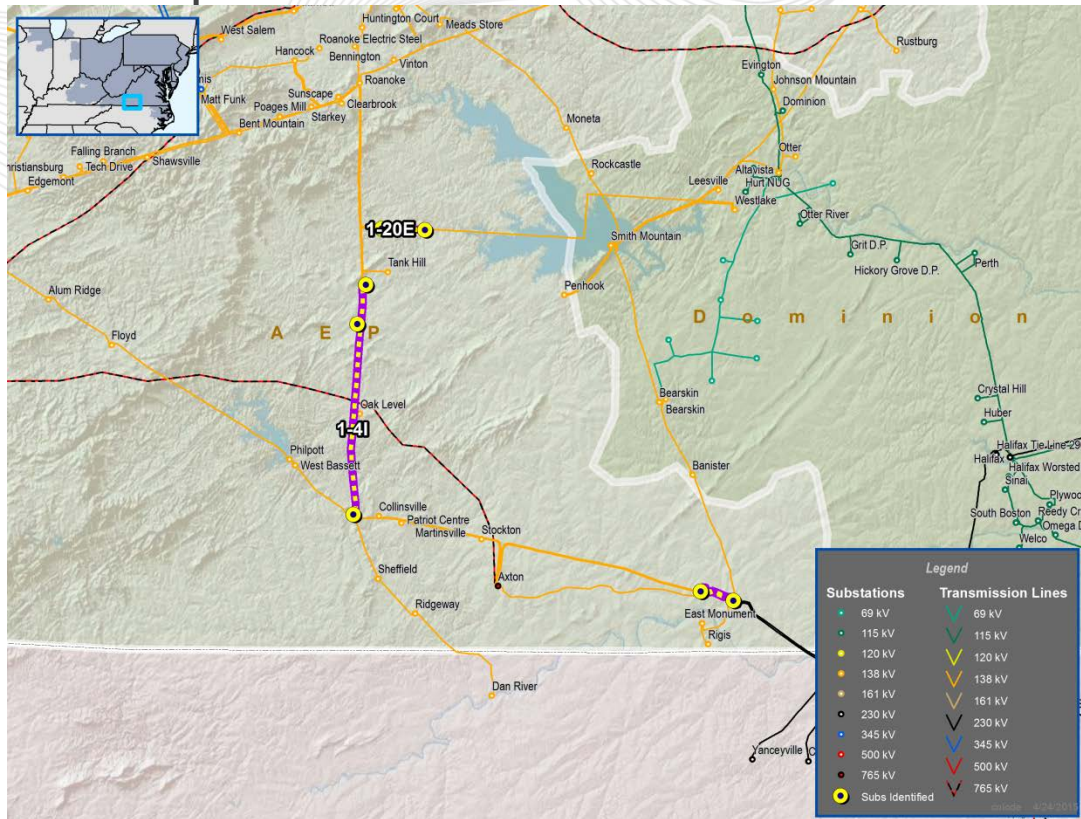
- 1 Project:
  - 1-16C
- Cost:
  - \$81.2M
- Constraints:
  - Various M2M Facilities



Project ID	Upgrade/ Greenfield	Cost (\$M)	Target Zone	kV Level	ME Constraints Identified	Evaluation Type	B/C Ratio Base	B/C Ratio 2015 Sens.	Status
201415_1-16C	Upgrade	81.16	AEP/CE/NIPS	345	None Specified	Lower Voltage	0.11	0.47	Not Recommended

# Group 18: AEP - Fieldale to Thornton

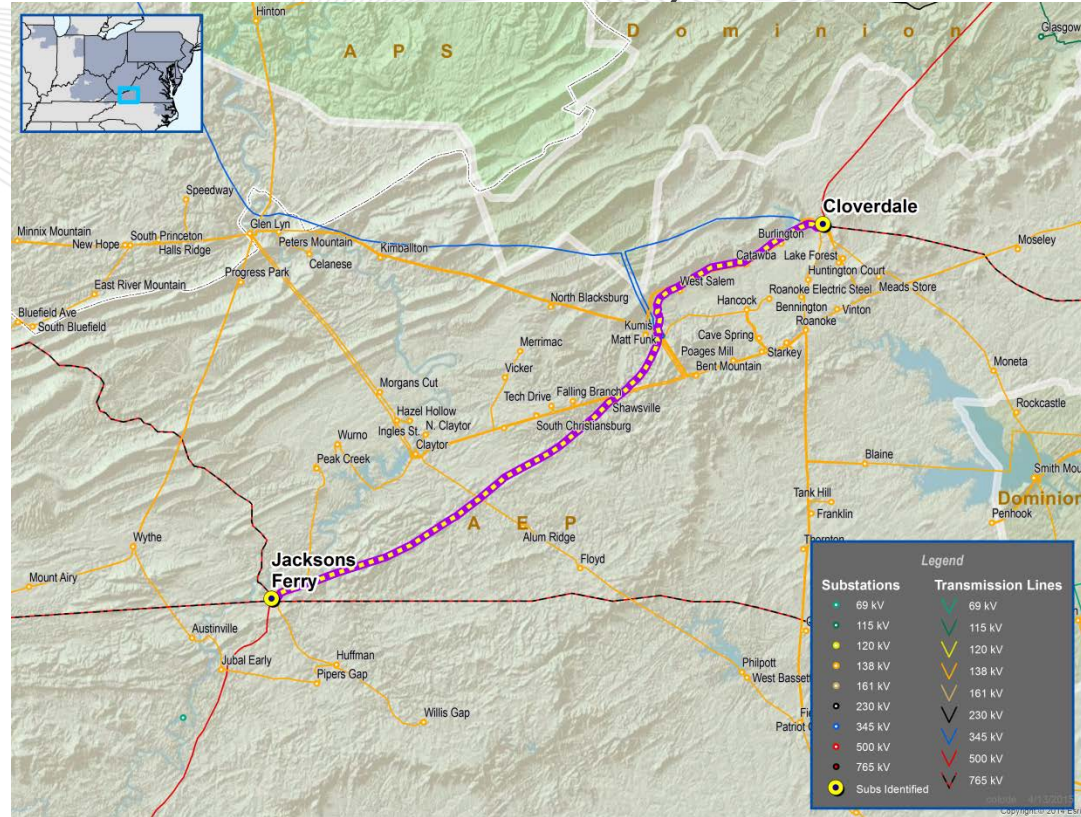
- 2 Projects:
  - 1-4I, 1-20E
- Cost:
  - From \$0.8M to \$19M
- Constraints:
  - Danville to East Danville  
138 kV
  - Fieldale to Thornton 138 kV



Project ID	Upgrade/ Greenfield	Cost (\$M)	Target Zone	kV Level	ME Constraints Identified	Evaluation Type	B/C Ratio Base	B/C Ratio 2015 Sens.	Status
201415_1-4I	Upgrade	0.75	AEP	138	Fieldale to Thornton 138 kV Danville to East Danville 138 kV	Lower Voltage	114.18	101.19	Further Evaluation Necessary
201415_1-20E	Greenfield	19.00	AEP	138	Fieldale to Thornton 138 kV	Lower Voltage	2.41	2.67	Further Evaluation Necessary

# Group 19: AEP – Jackson’s Ferry to Cloverdale

- 1 Project:
  - 1-4J
- Cost:
  - \$0.5M
- Constraints:
  - Jackson’s Ferry to Cloverdale 765 KV



Project ID	Upgrade/ Greenfield	Cost (\$M)	Target Zone	kV Level	ME Constraints Identified	Evaluation Type	B/C Ratio Base	B/C Ratio 2015 Sens.	Status	Comments
201415_1-4J	Upgrade	0.50	AEP	765	Jacksons Ferry to Cloverdale 765 KV	Regional	15.81	61.98	Further Evaluation Necessary	

- Long Term proposal window: November 2014 - February 2015
  
- Analysis of proposed solutions: March 2015 - November 2015
  - ✓ Determination of major assumptions (i.e. Load forecast, Fuel prices, Generators) that are significantly different in 2015 and can be used in sensitivity analysis for proposed projects: March 2015
  - Independent consultant review of cost and ability to build
  - Review of analysis with TEAC: June 2015-November 2015
  
- Determination of Final projects: December 2015
  - Final review with TEAC and Board approval
    - Projects may be approved earlier if analysis and review complete





# Appendix A

## Individual Projects

# Project ID: 201415\_1-2A

Proposed by: PPL

Proposed Solution: Reconductor two spans of the the Graceton-Safe Harbor 230kV transmission line.

Includes termination point upgrades

kV Level: 230

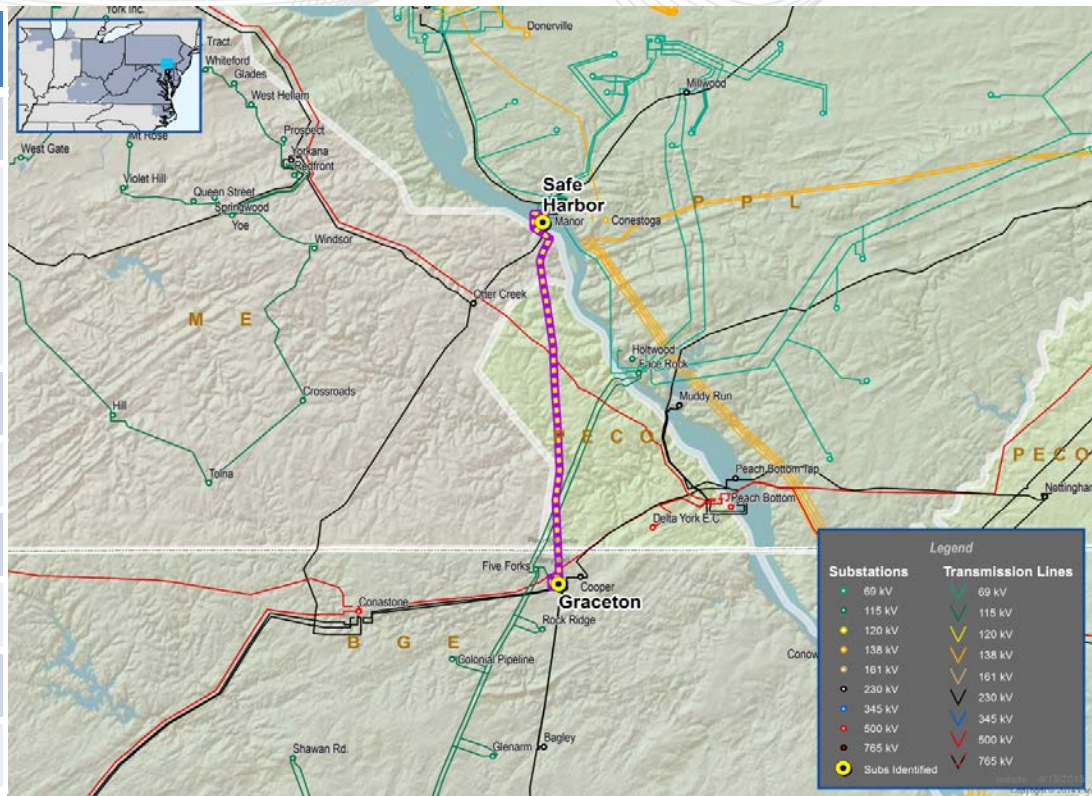
Cost (\$M): 1.1

IS Date: 2019

Target Zone: PPL/BGE

ME Constraints: Safe Harbor to Graceton 230 kV

Notes:



## Project ID: 201415\_1-2B

Proposed by: PPL

Proposed Solution: Reconductor three spans limiting the Brunner Island - Yorkana 230kV line, add 2 breakers to Brunner Island Switchyard, upgrade associated terminal equipment

kV Level: 230

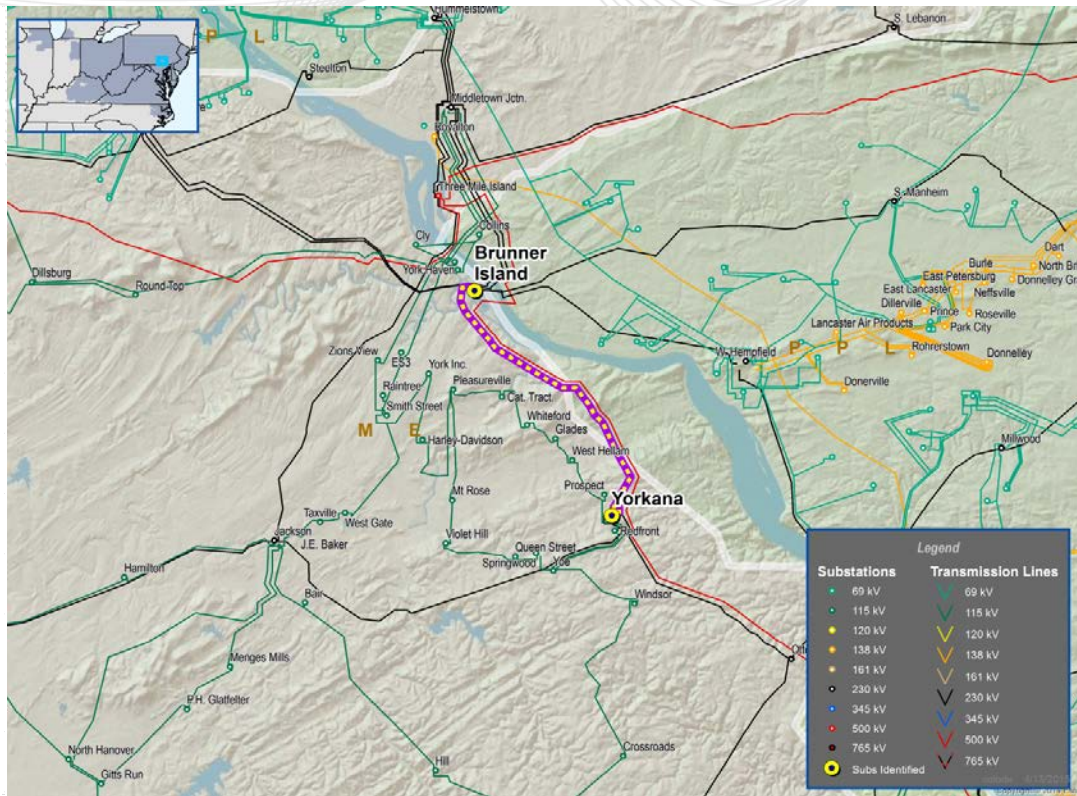
Cost (\$M): 3.1

IS Date: 2019

Target Zone: PPL/Meted

ME Constraints: Brunner Island to Yorkana 230 kV

Notes:



**Project ID: 201415\_1-2C**

Proposed by: PPL

Proposed Solution: Install 500kV -100/+500 MVAR SVC addition and associated terminal hardware at New Juniata SVC Substation Yard with Approx. 300ft of 500kV transmission linking the existing Juniata Substation to the new SVC yard

kV Level: 500

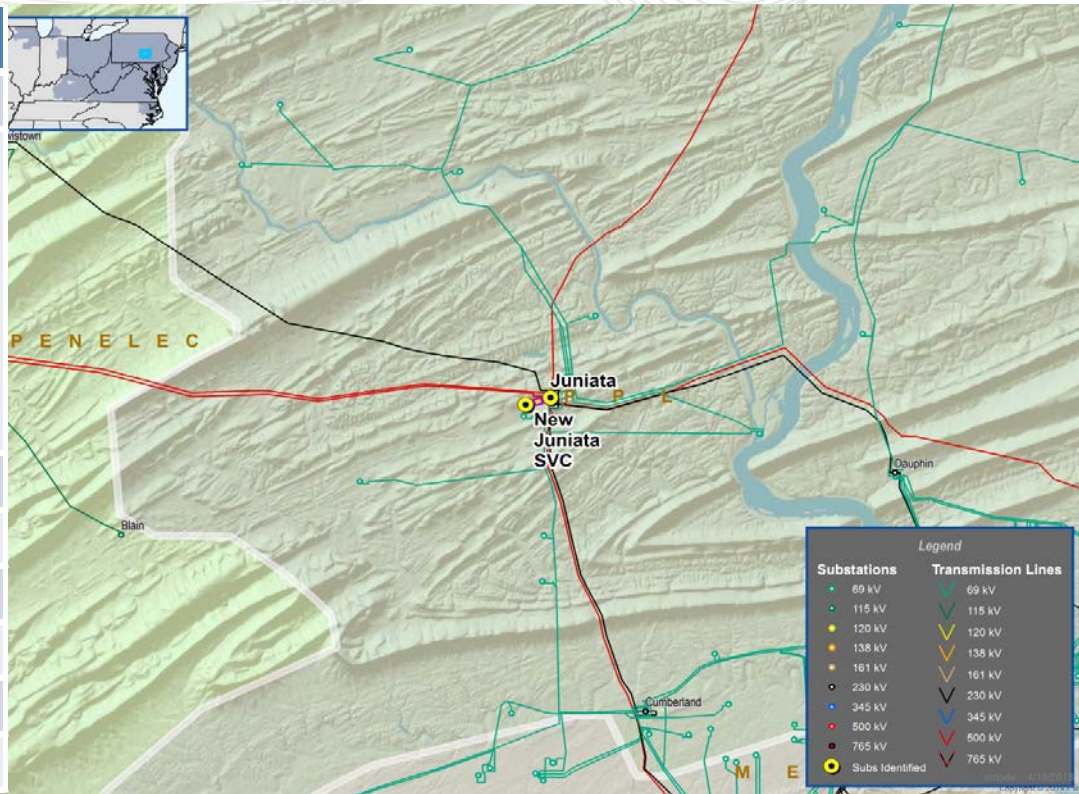
Cost (\$M): 33.95

IS Date: 2018

Target Zone: PPL

ME Constraints: AP SOUTH L/O BED-BLA

Notes:



## Project ID: 201415\_1-3A

Proposed by: PPL/FE

Proposed Solution: Expand existing Yorkana substation in Met-Ed. Install 500/230 kV transformer, construct a 500 kV ring bus, install two 230 kV breakers and loop TMI-Peach Bottom 500 kV line into new 500 kV ring bus.

kV Level: 500

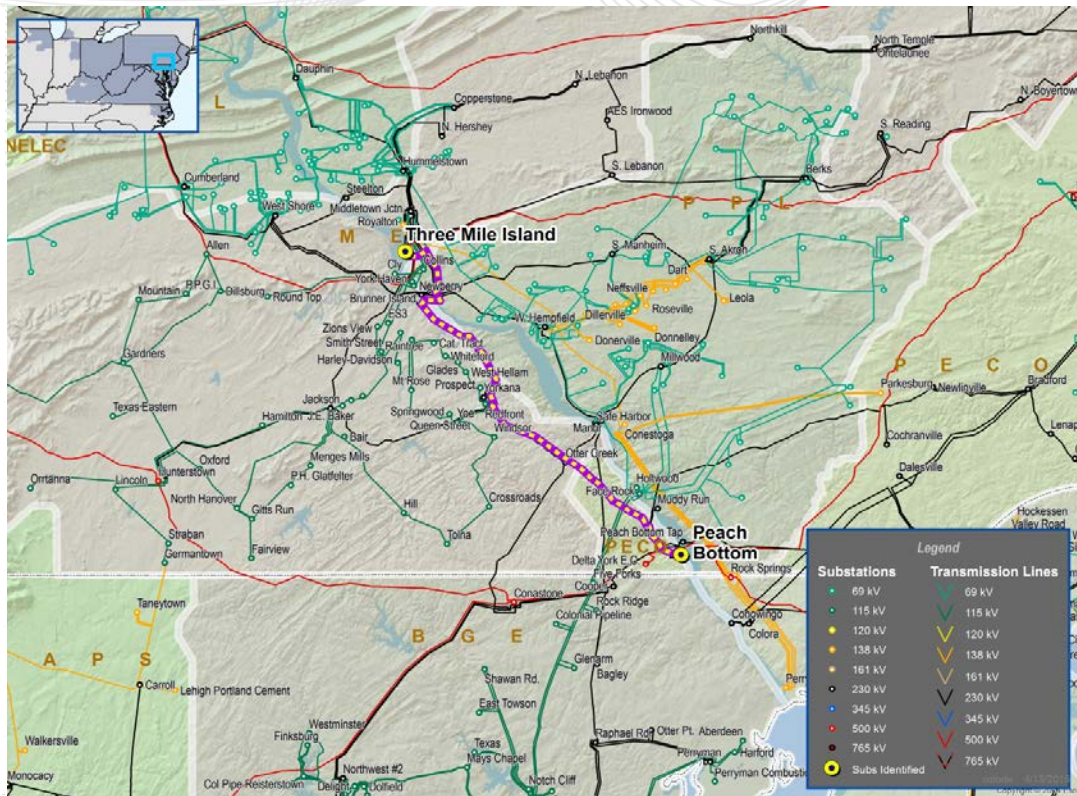
Cost (\$M): 40.2

IS Date: 2019

Target Zone: PPL/Meted

ME Constraints: Brunner Island to Yorkana 230 kV

Notes:



**Project ID: 201415\_1-41**

**Proposed by: AEP**

**Proposed Solution: Operate the Fieldale - Thornton - Franklin overhead at maximum operating temperature. Replace terminal equipment at Danville and East Danville substations.**

**kV Level: 138**

**Cost (\$M): 0.75**

**IS Date: 2019**

**Target Zone: AEP**

**ME Constraints: Fieldale to Thornton 138 kV**

**Danville to East Danville 138 kV**

**Notes:**



**Project ID: 201415\_1-4J**

**Proposed by: AEP**

**Proposed Solution: Replace relays at AEP's Cloverdale and Jackson's Ferry substation to improve the thermal capacity of Cloverdale - Jackson's Ferry 765 kV line**

**kV Level: 765**

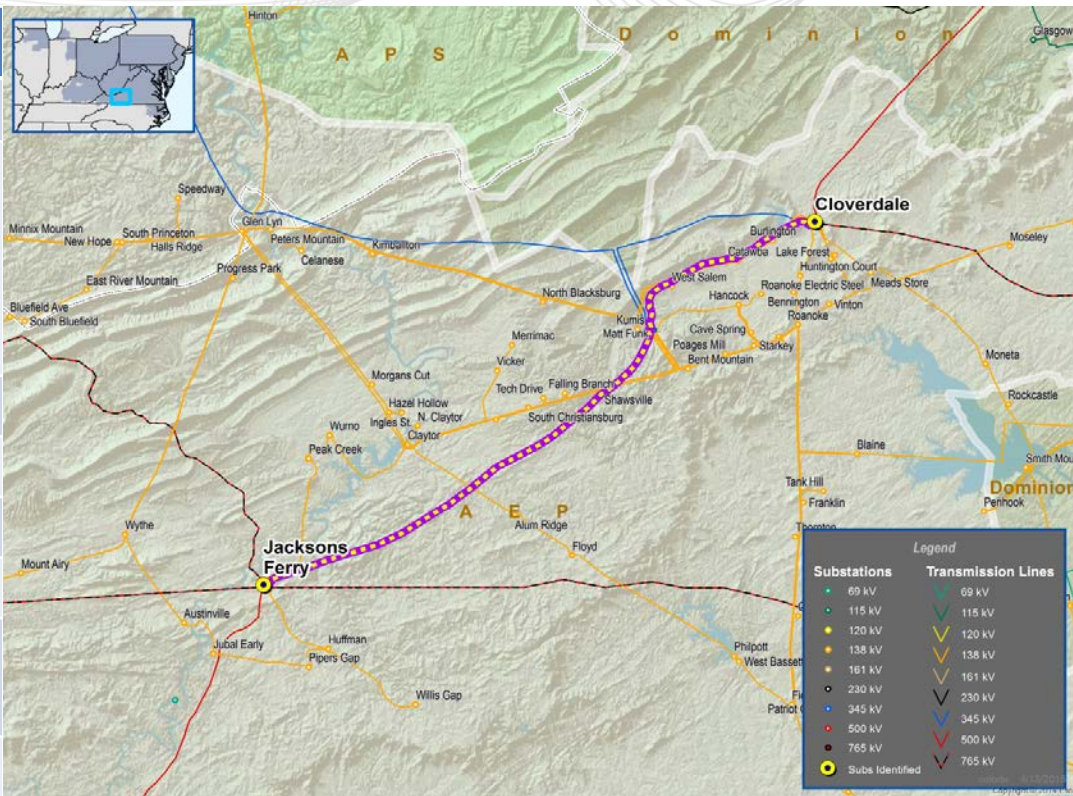
**Cost (\$M): 0.5**

**IS Date: 2019**

**Target Zone: AEP**

**ME Constraints: Jackson's Ferry to Cloverdale 765 KV**

**Notes:**



**Project ID: 201415\_1-5A**

**Proposed by: BGE**

**Proposed Solution: Rebuild 1.4 miles of the Graceton-Safe Harbor 230kV line. BGE and PPL projects together will achieve a combined tie line facility ratings of 648/802 MVA SN/SE and 746/903 MVA WN/WE**

**kV Level: 230**

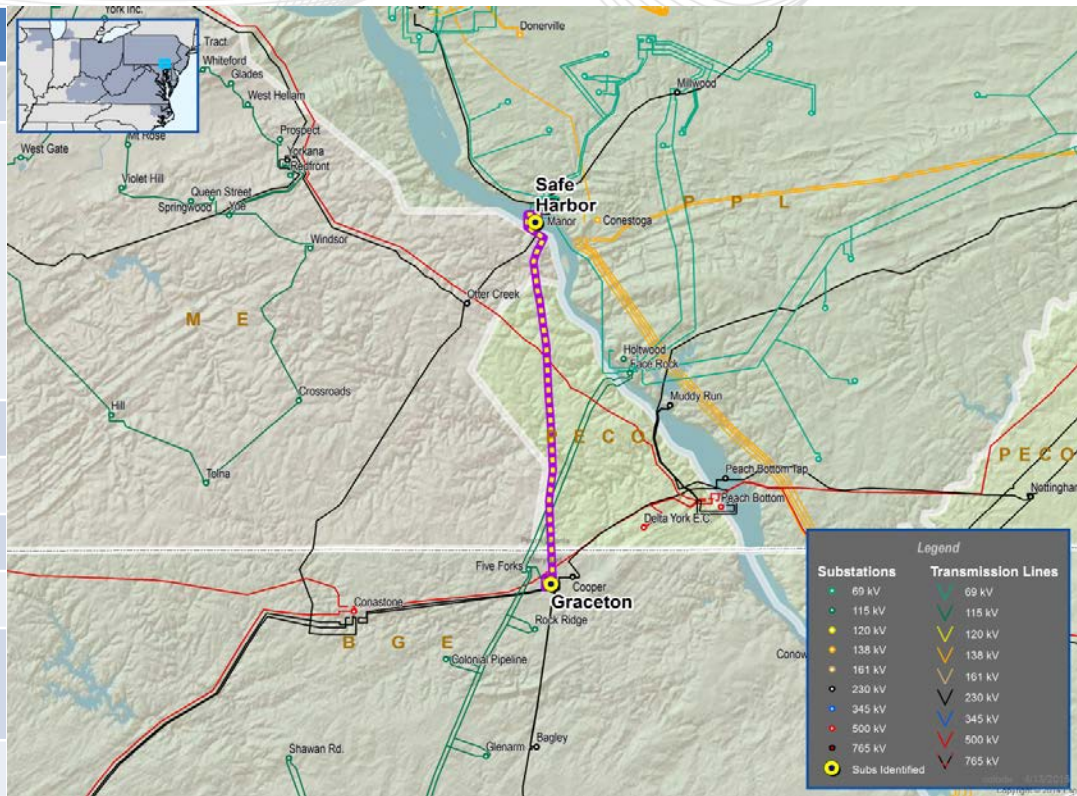
**Cost (\$M): 5.6**

**IS Date: 2019**

**Target Zone: BGE/PPL**

**ME Constraints: Safe Harbor to Graceton 230 kV**

**Notes:**





## Project ID: 201415\_1-6A

Proposed by: Dominion

Proposed Solution: Build one 500kV Thyristor Controlled Series Capacitors (TCSC) at Mt Storm substation on the Mt Storm - Pruntytown (554) transmission line to reduce congestion on AP South and other PJM interfaces

kV Level: 500

Cost (\$M): 25

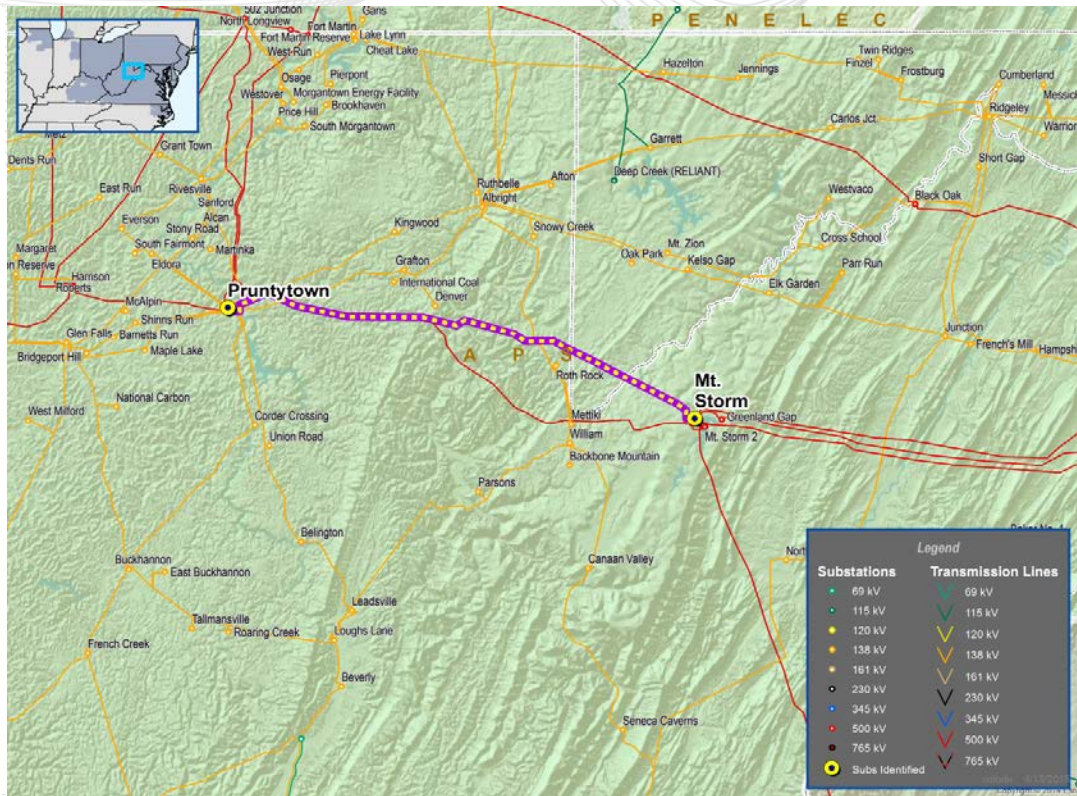
IS Date: 2019

Target Zone: Dominion

ME Constraints: AP SOUTH L/O BED-BLA

Other Interfaces

Notes:



**Project ID: 201415\_1-6B**

Proposed by: Dominion

Proposed Solution: Build one 500kV Thyristor Controlled Series Capacitors (TCSC) at Loudoun substation on the Loudoun - Meadowbrook line to reduce congestion on AP South and other PJM interfaces

kV Level: 500

Cost (\$M): 25

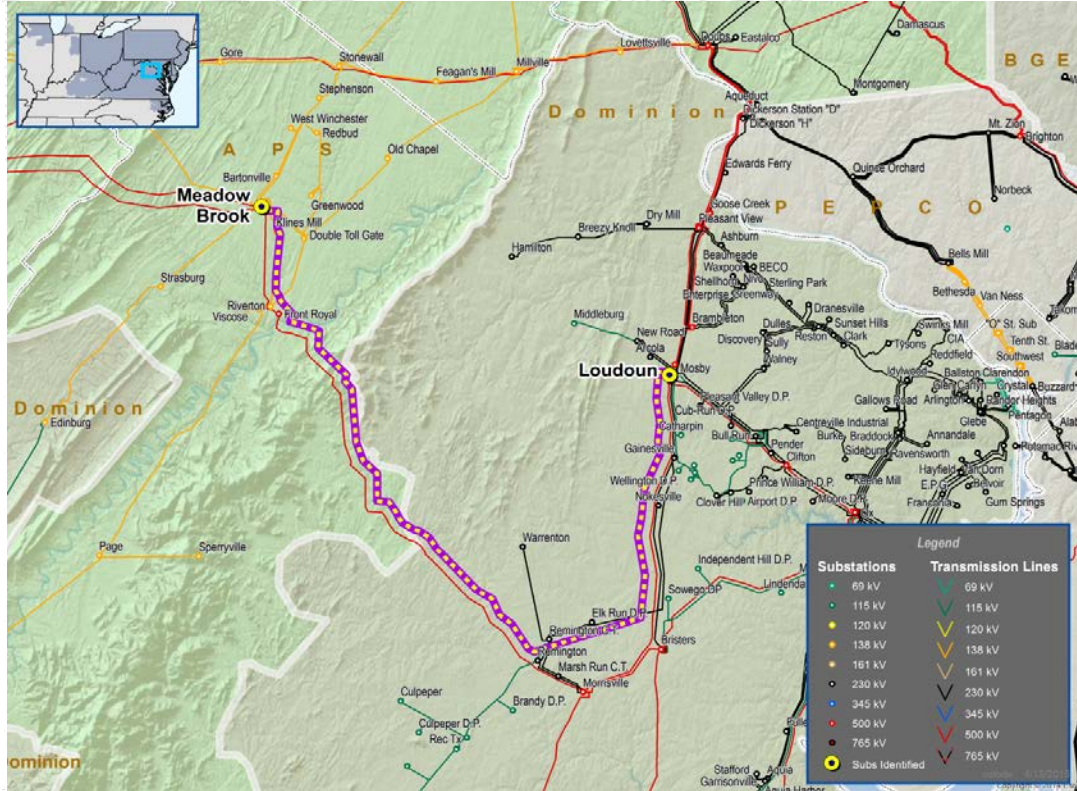
IS Date: 2019

Target Zone: Dominion

ME Constraints: AP SOUTH L/O BED-BLA

Other Interfaces

Notes:



**Project ID: 201415\_1-6C**

Proposed by: Dominion

Proposed Solution: Build one 500kV Thyristor Controlled Series Capacitor (TCSC) at Loudoun substation on the Loudoun - Meadowbrook (535) line and build five (5) 230 kV capacitor banks at five (5) DVP substations to alleviate congestion on AP South and other PJM interfaces

kV Level: 500

Cost (\$M): 39.06

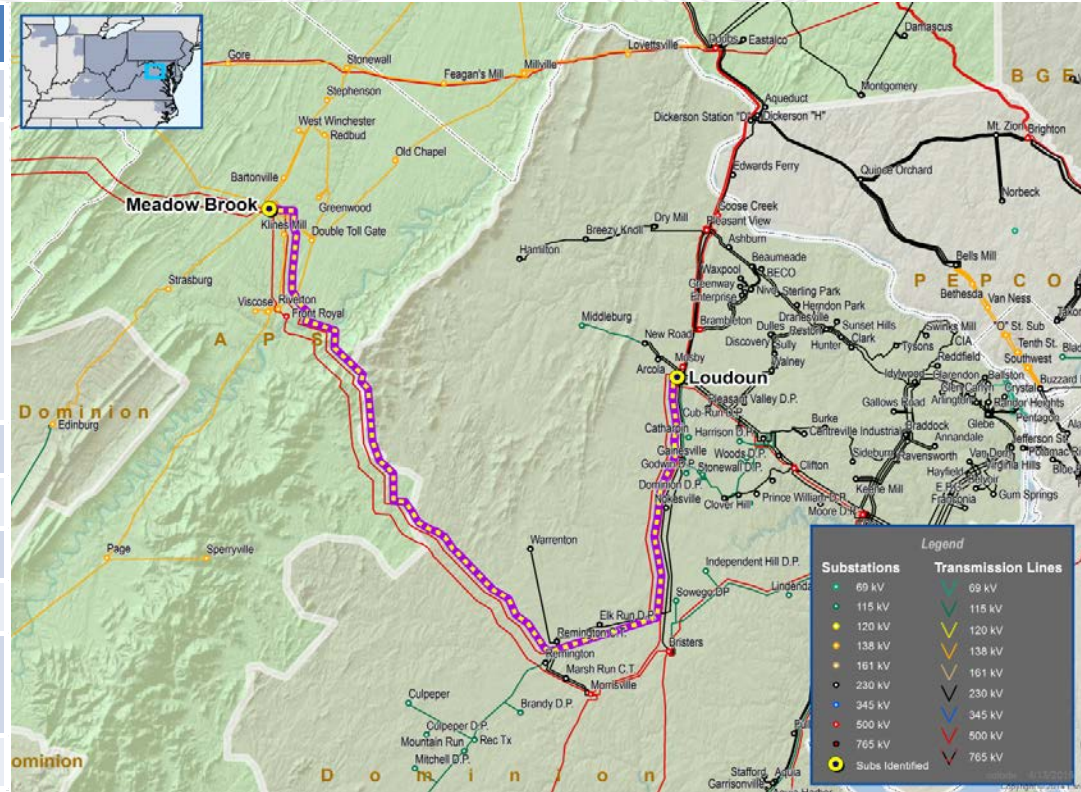
IS Date: 2019

Target Zone: Dominion

ME Constraints: AP SOUTH L/O BED-BLA

Other Interfaces

Notes:



## Project ID: 201415\_1-6D

Proposed by: Dominion

Proposed Solution: Build a new 500kV station (Palmyra) by connecting at the intersection of two (2) 500kV lines of North Anna - Midlothian 500kV line and Cunningham - Elmont 500kV line and build five (5) capacitor banks in DVP zone to alleviate AP South and AEP-DOM congestions

kV Level: 500

Cost (\$M): 42.7

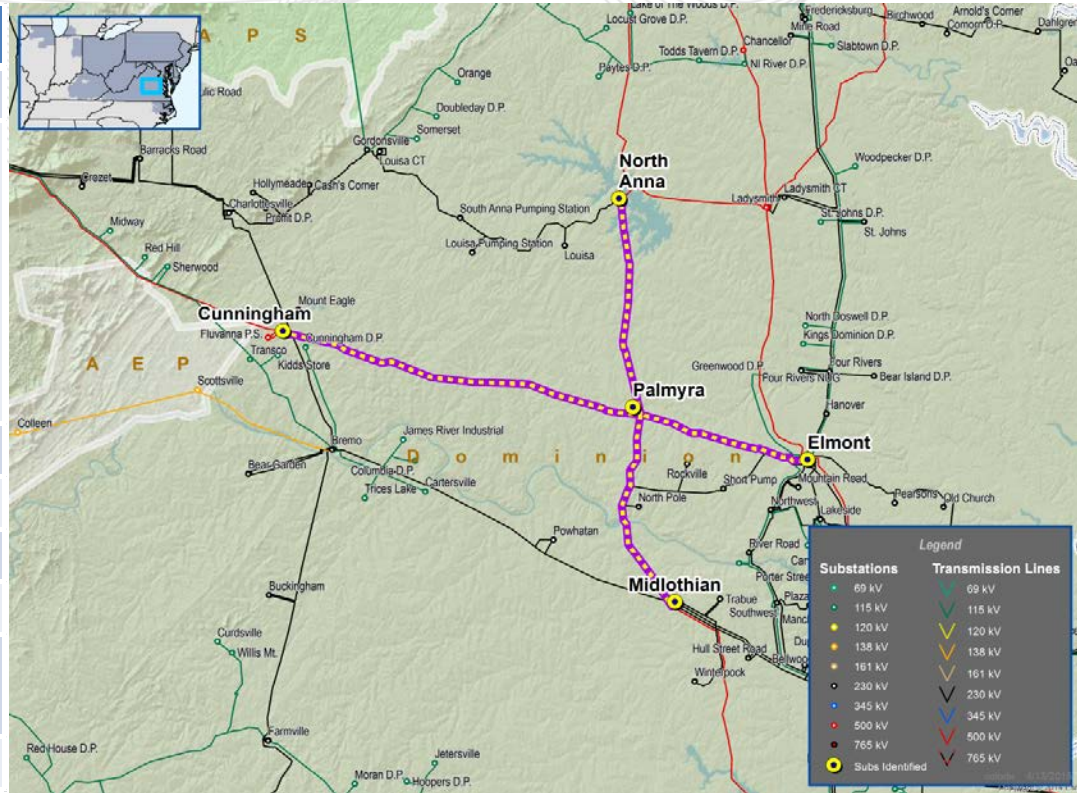
IS Date: 2019

Target Zone: Dominion

ME Constraints: AP SOUTH L/O BED-BLA

Other Interfaces

Notes:



**Project ID: 201415\_1-7A**

**Proposed by: Transource**

**Proposed Solution: Construct a double circuit 230 kV line between AEP's Axton Station to AEP's East Danville Station. Install breakers and a transformer at Axton and East Danville Station. A total of 1,550 MVARs of new capacitance will also be installed at Brambleton, Ashburn, Lexington, Doods, Jackson's Ferry and Bradford substations.**

**kV Level: 765**

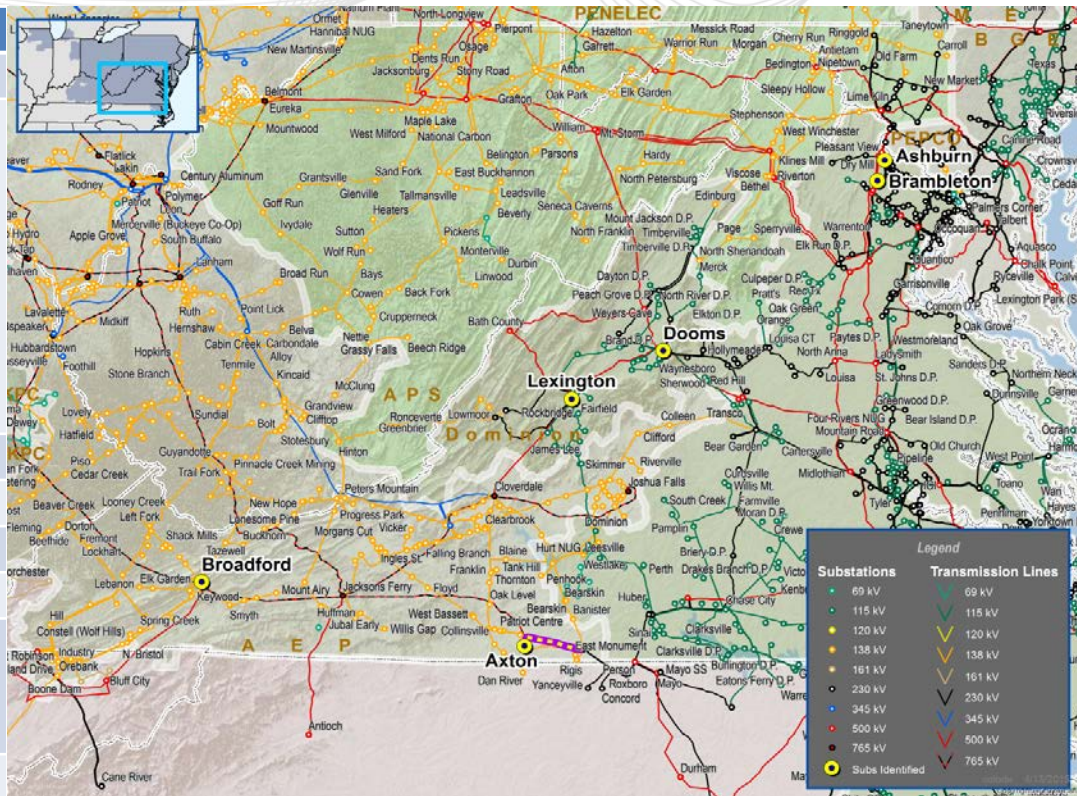
**Cost (\$M): 139**

**IS Date: 2020**

**Target Zone: AEP**

**ME Constraints: AP SOUTH L/O BED-BLA, Other Interfaces, Danville to East Danville 138 kV, Fieldale to Thornton 138 kV**

**Notes:**



## Project ID: 201415\_1-7B

Proposed by: Transource

Proposed Solution: Construct a double circuit 230 kV line between Meadow Brook Station and Doubs Station. Additional upgrades in AEP will also be included in this proposal. A total of 1,550 MVARs of new capacitance will also be installed at Brambleton, Ashburn, Lexington, Dooms, Jackson's Ferry and Broadford substations.

kV Level: 230

Cost (\$M): 237

IS Date: 2021

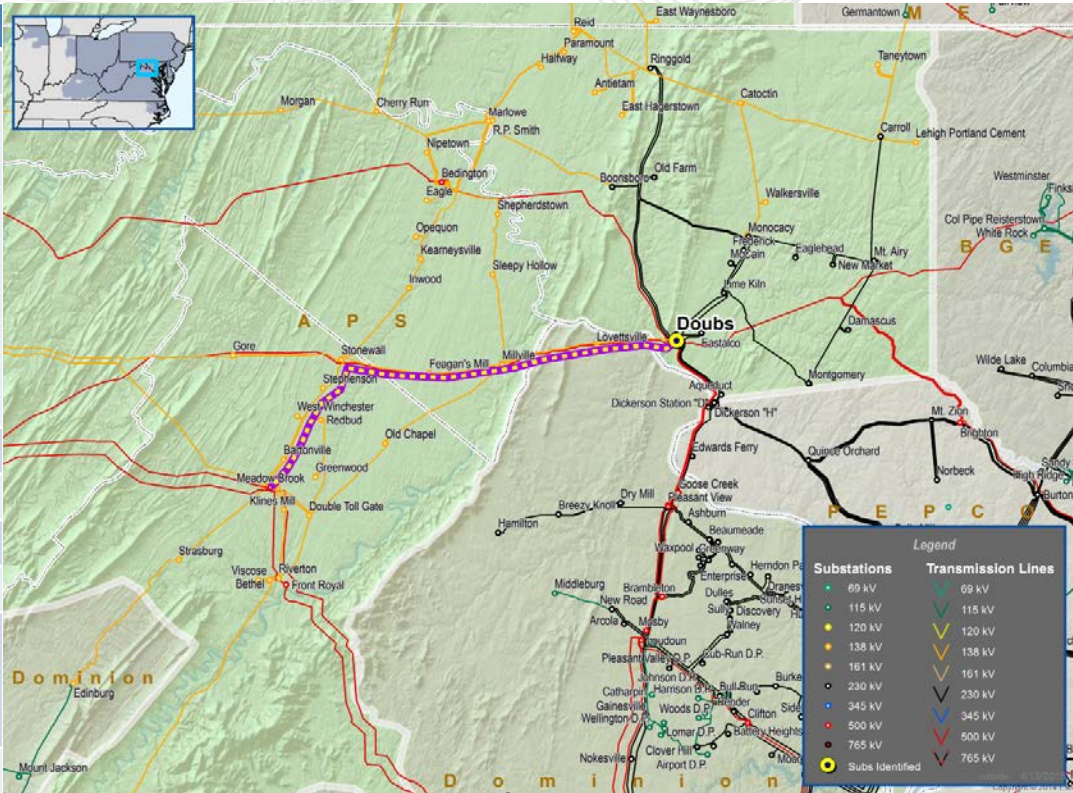
Target Zone: AEP

ME Constraints: AP SOUTH L/O BED-BLA

Other Interfaces

Taneytown to Carroll 138 kV

Notes:



## Project ID: 201415\_1-7C

Proposed by: Transource

Proposed Solution: Construct a new 500 kV line from Meadow Brook to Doubs. Install a single 500 kV breaker in the existing ring arrangement at Meadow Brook Station. Additional upgrades in AEP will also be included in this proposal. 1,750 MVARs of new capacitance will also be installed with 350 MVAR of capacitor banks each at Brambleton, Loudoun, Lexington, Jackson's Ferry and Broadford substations.

kV Level: 500

Cost (\$M): 210

IS Date: 2021

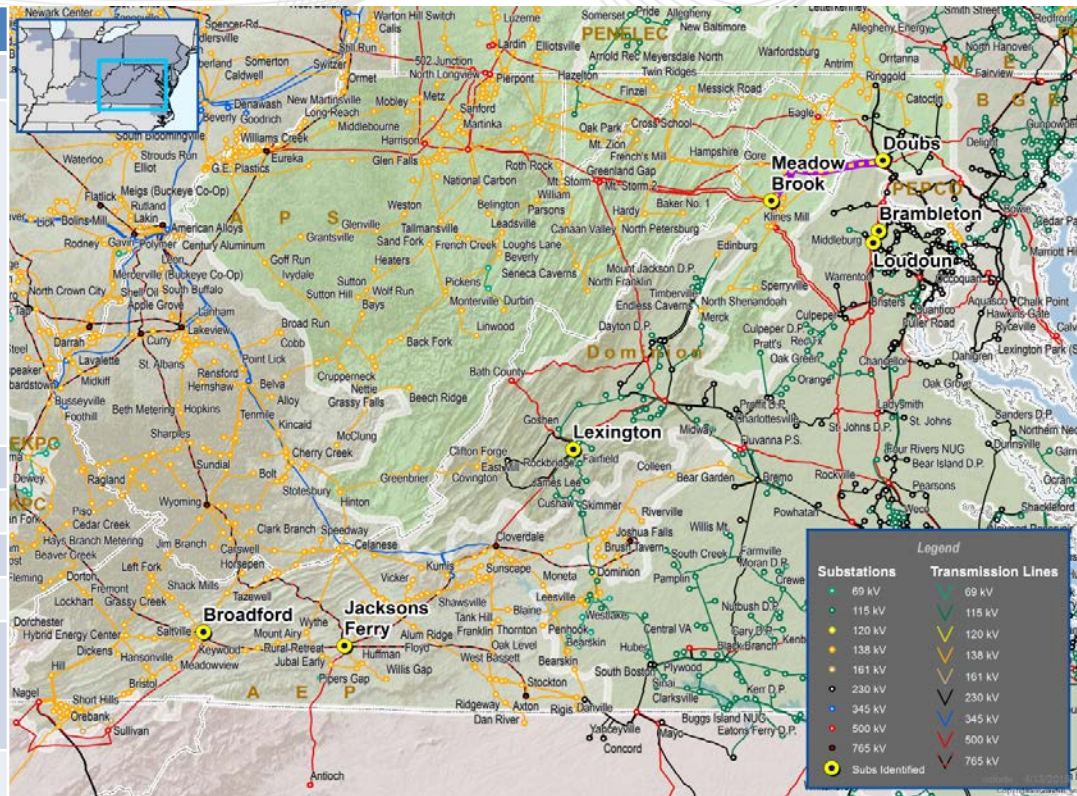
Target Zone: AEP

ME Constraints: AP SOUTH L/O BED-BLA

Other Interfaces

Taneytown to Carroll 138 kV

Notes:



**Project ID: 201415\_1-8A**

**Proposed by: Dominion/Transource**

**Proposed Solution: Construct a 500 kV station between North Anna - Midlothian and Cunningham - Elmont line. Construct a 75 mile circuit 765 kV line between Palmyra -Joshua Falls 765 kV station. Install 350 MVAR cap bank at Jackson's Ferry -Broadford 765 kV stations.**

**kV Level: 765**

**Cost (\$M): 384**

**IS Date: 2020**

**Target Zone: AEP/Dominion**

**ME Constraints: AP SOUTH L/O BED-BLA**

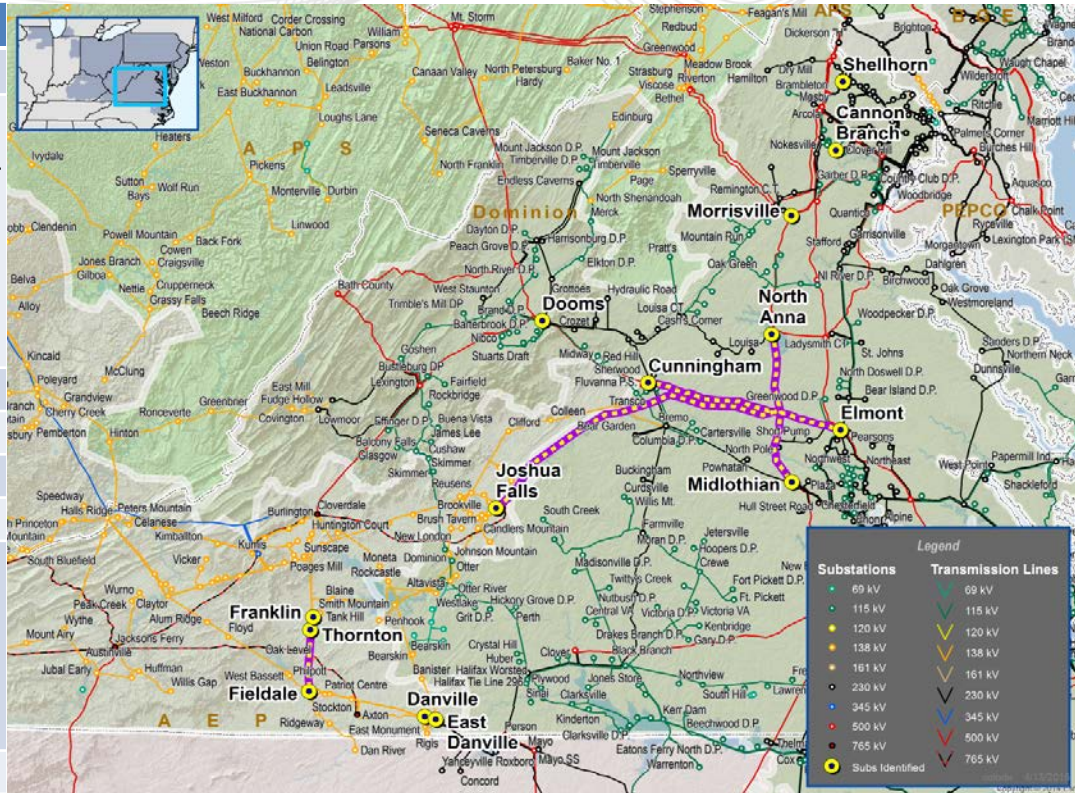
**AEP-DOM L/O BED-BLA**

**Other Interfaces**

**Danville to East Danville 138 kV**

**Fieldale to Thornton 138 kV**

**Notes:**





## Project ID: 201415\_1-8B

Proposed by: Dominion/Transource

Proposed Solution: Construct a 500 kV station between North Anna - Midlothian and Cunningham - Elmont lines. Construct a 75 mile 500 kV line between Palmyra and Joshua Falls 765 kV station. Install cap banks at Liberty, Cannon Branch, Shellhorn, Dooms, and Morrisville stations.

kV Level: 500

Cost (\$M): 293

IS Date: 2020

Target Zone: AEP/Dominion

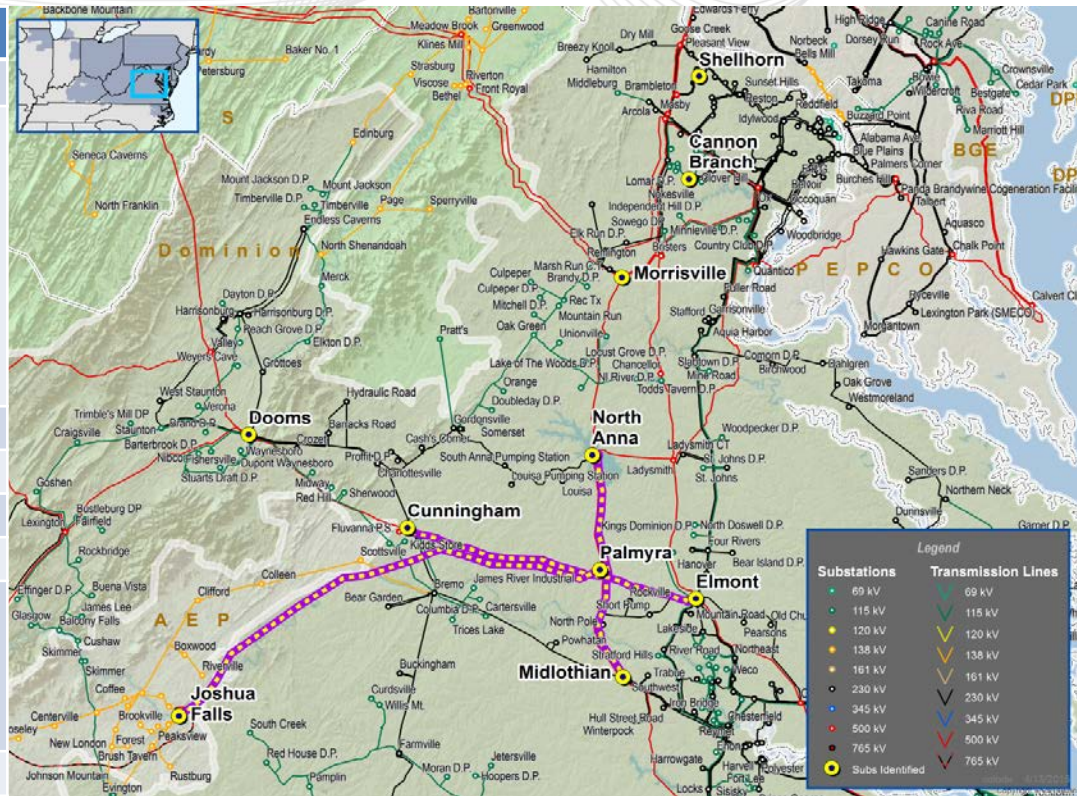
ME Constraints: AP SOUTH L/O BED-BLA

AEP-DOM L/O BED-BLA

Other Interfaces

Fieldale to Thornton 138 kV

Notes:



## Project ID: 201415\_1-8C

Proposed by: Dominion/Transource

Proposed Solution: Construct a 765kV line between Axton and Dominion's Clover Station. Install 765kV breakers and shunt reactor at Axton Station. Install 765/500 kV transformer at Clover Station. Complete sag remediation on the Fieldale - Thornton - Franklin 138 kV line. Install cap banks at Liberty, Cannon Branch, Shellhorn, Doms, and Morrisville stations.

kV Level: 765

Cost (\$M): 317

IS Date: 2020

Target Zone: AEP/Dominion

ME Constraints: AP SOUTH L/O BED-BLA

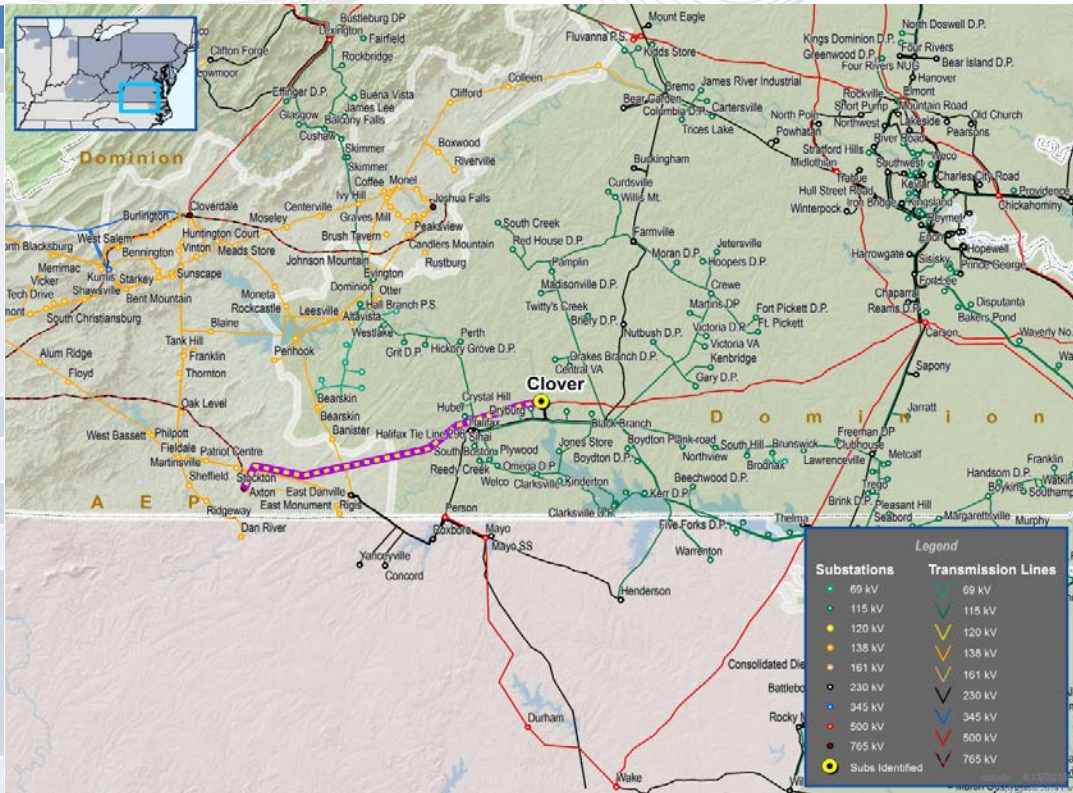
AEP-DOM L/O BED-BLA

Other Interfaces

Danville to East Danville 138 kV

Fieldale to Thornton 138 kV

Notes:



## Project ID: 201415\_1-8D

Proposed by: Dominion/Transource

Proposed Solution: Build a single circuit 500kV AC overhead line from Axton - Clover substations, build a 765/500kV TX at Axton, and build five (5) capacitor banks in DVP zone to alleviate AP South and AEP-DOM congestions

kV Level: 500

Cost (\$M): 222

IS Date: 2019

Target Zone: AEP/Dominion

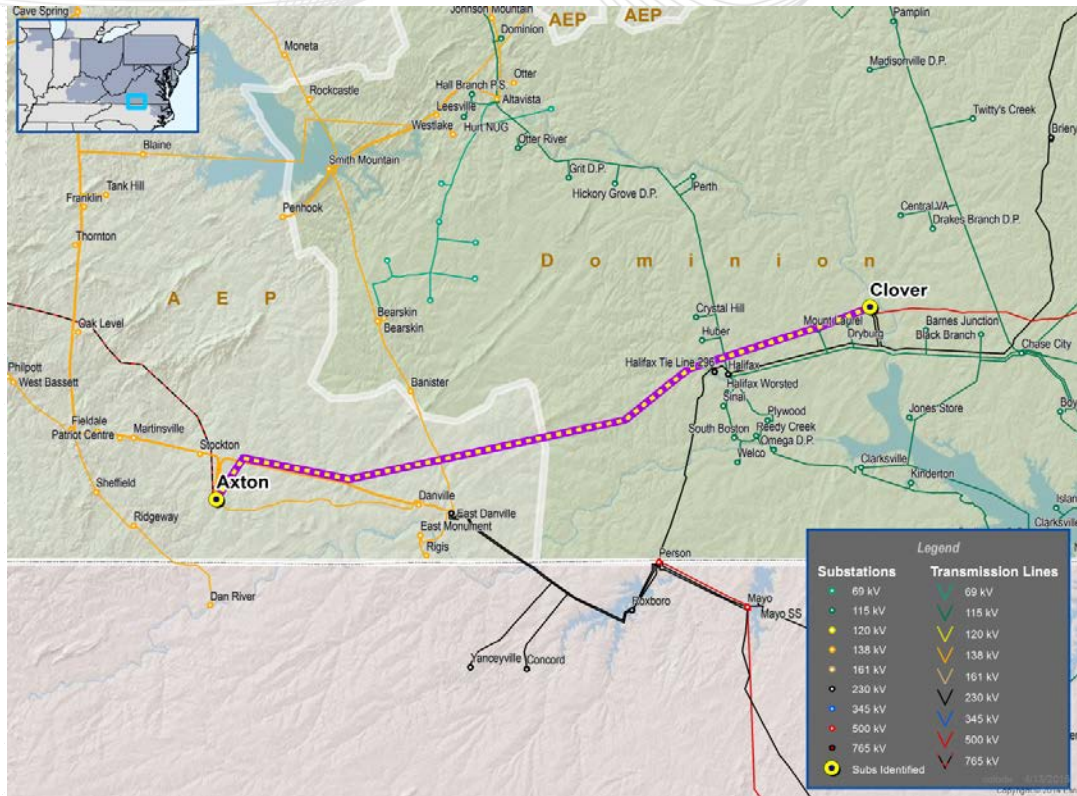
ME Constraints: AP SOUTH L/O BED-BLA

AEP-DOM L/O BED-BLA

Other Interfaces

Fieldale to Thornton 138 kV

Notes:



**Project ID: 201415\_1-8E**

**Proposed by: Dominion/Transource**

**Proposed Solution: Build a double circuit 230kV AC overhead line from Joshua Falls - Farmville substations, build a 765/230kV TX at Joshua Falls, and build five (5) capacitor banks in DVP zone to alleviate AP South and AEP-DOM congestions**

**kV Level: 230**

**Cost (\$M): 181**

**IS Date: 2019**

**Target Zone: Dominion**

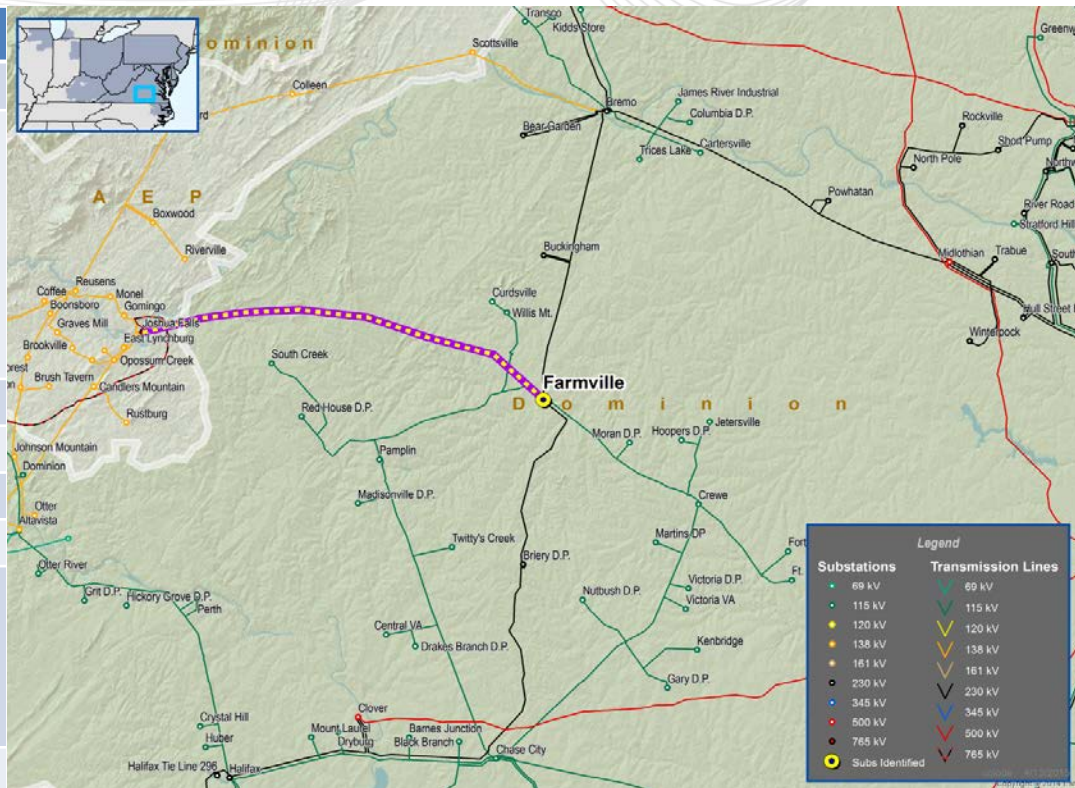
**ME Constraints: AP SOUTH L/O BED-BLA**

**AEP-DOM L/O BED-BLA**

**Other Interfaces**

**Fieldale to Thornton 138 kV**

**Notes:**



**Project ID: 201415\_1-8F**

**Proposed by: Dominion/Transource**

**Proposed Solution: Build a single circuit 230kV AC overhead line from Joshua Falls - Farmville substations, build a 765/230kV TX at Joshua Falls, upgrade portions of the 84 line, and build five (5) capacitor banks in DVP zone to alleviate AP South and AEP-DOM congestions**

**kV Level: 230**

**Cost (\$M): 193**

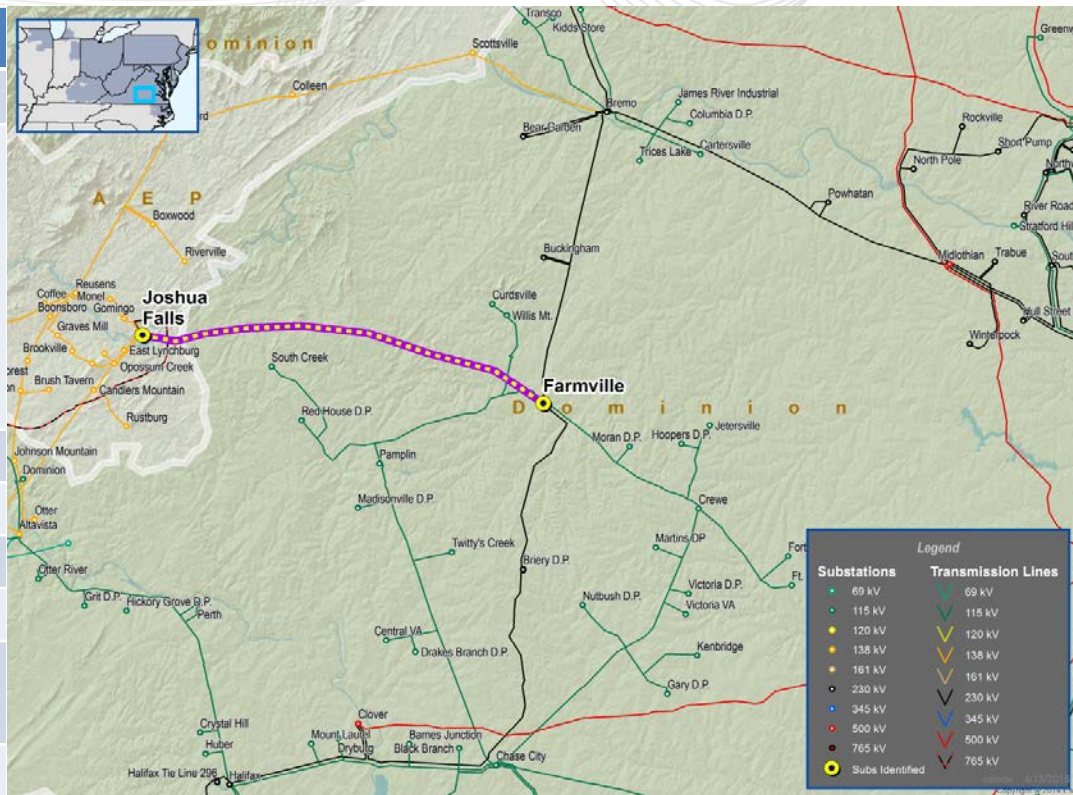
**IS Date: 2019**

**Target Zone: Dominion**

**ME Constraints: AP SOUTH L/O BED-BLA**

**Other Interfaces**

**Notes:**



## Project ID: 1-9A

Proposed by: Dominion / Transource

Proposed Solution: Tap the Conemaugh - Hunterstown 500 kV line and build new 230 kV double circuit line between Rice and Ringgold. Build new 230 kV double circuit line between Furnace Run and Conastone. Add cap banks to Jackson's Ferry, Bradford, Lexington, Doms, Ashburn and Brambleton stations. Rebuild the Conastone - Northwest 230 kV line.

kV Level: 230

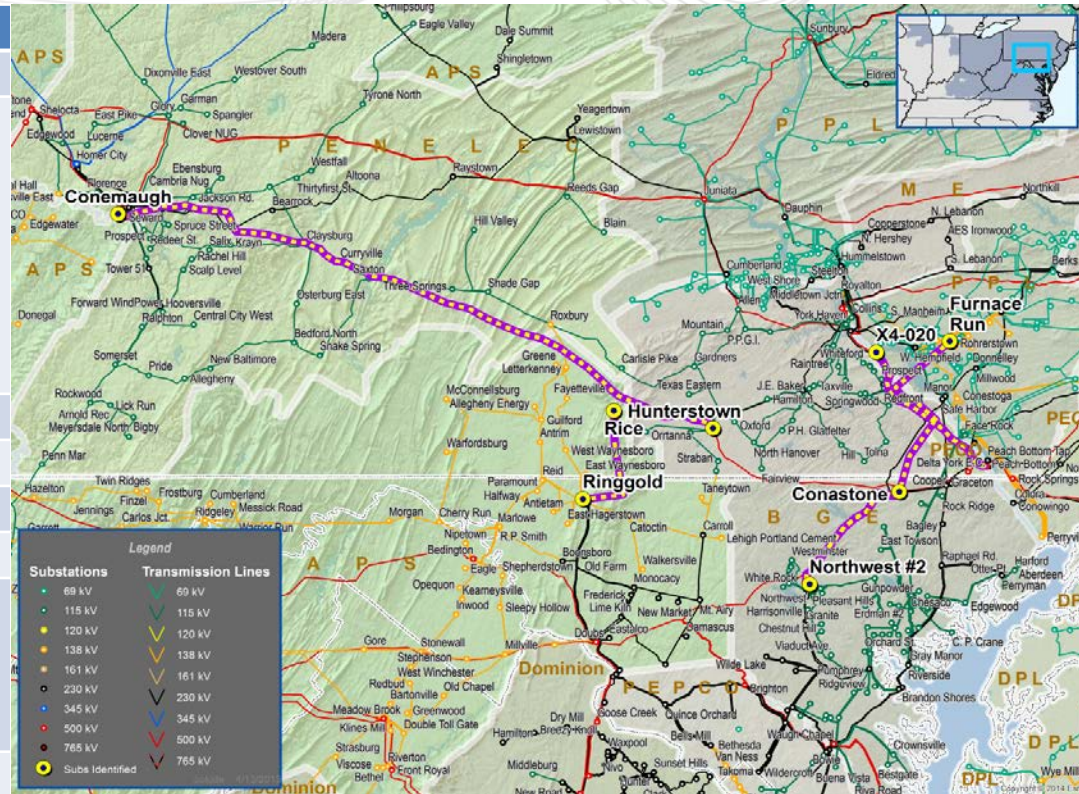
Cost (\$M): 269

IS Date: 2020

Target Zone: PECO/Dominion/AEP

ME Constraints: AP SOUTH L/O BED-BLA, Brunner Island to Yorkana 230 kV, Taneytown to Carroll 138 kV, Safe Harbor to Graceton 230 kV, Conastone to Northwest 230 kV

Notes:



**Project ID: 201415\_1-10A**

Proposed by: ComEd

Proposed Solution: Replace relays at Mazon substation

kV Level: 138

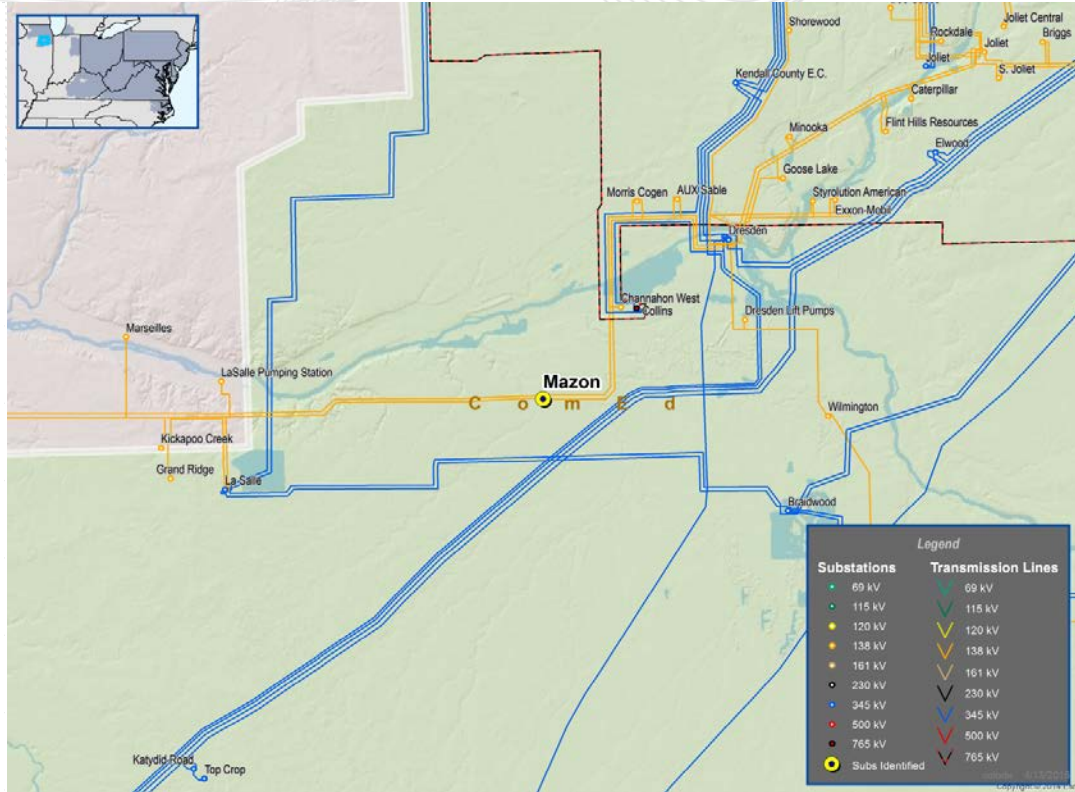
Cost (\$M): 0.7

IS Date: 2019

Target Zone: ComEd

ME Constraints: Oglesby to Mazon 138 kV

Notes: B2613 removes driver



**Proposal will not be evaluated.**

# Project ID: 201415\_1-10B

Proposed by: ComEd

Proposed Solution: Replace L7815 B phase line trap at Wayne substation

kV Level: 138

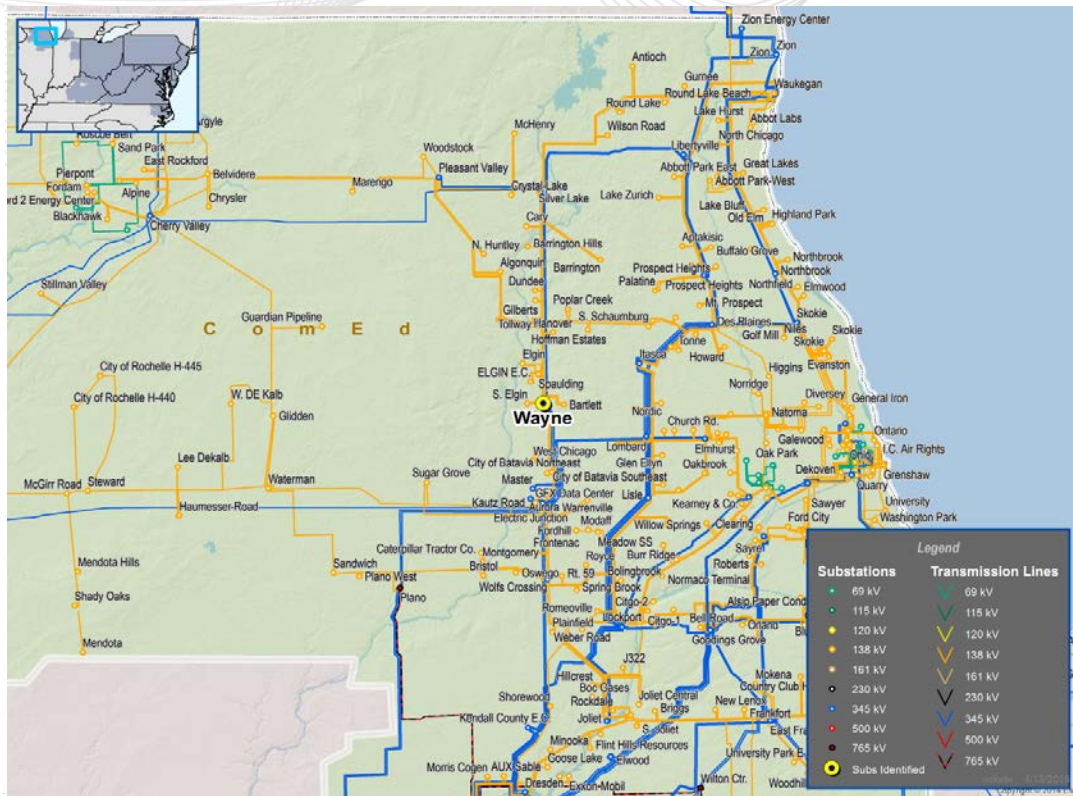
Cost (\$M): 0.1

IS Date: 2019

Target Zone: ComEd

ME Constraints: Wayne to South Elgin 138 kV

Notes:





## Project ID: 201415\_1-10C

Proposed by: ComEd

**Proposed Solution:** The solution consists of the installation of a new ~14.5 mile 345 kV single circuit overhead transmission line from ComEd's existing Loretto 345kV substation to ComEd's existing Katydid 345kV substation. Additionally, 345 kV L0303 from ComEd's Powerton to Goodings Grove 345 kV substations would be brought into and split at Katydid.

kV Level: 345

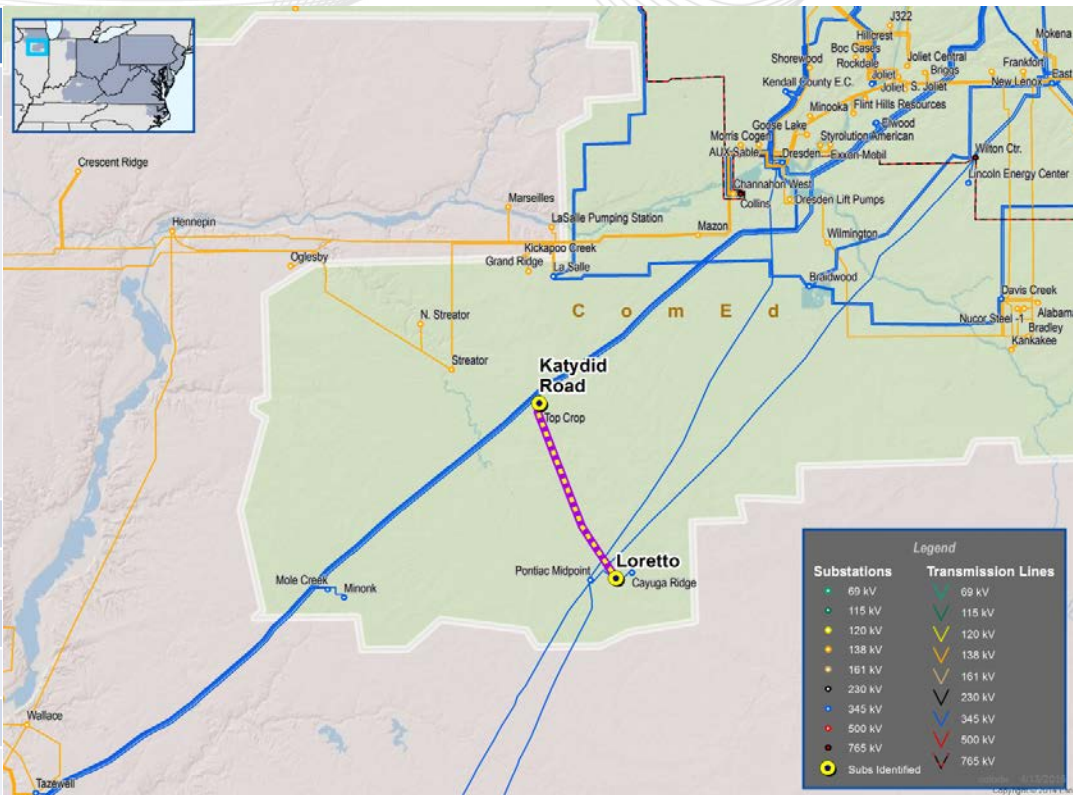
Cost (\$M): 37.8

IS Date: 2019

Target Zone: ComEd

ME Constraints: Loretto to Wilton CTR 345 kV

Notes:



**Project ID: 201415\_1-10D**

**Proposed by: ComEd**

**Proposed Solution: Mitigate sag limitations on Loretto-Wilton Center Line, and replace station conductor at Wilton Center.**

**kV Level: 345**

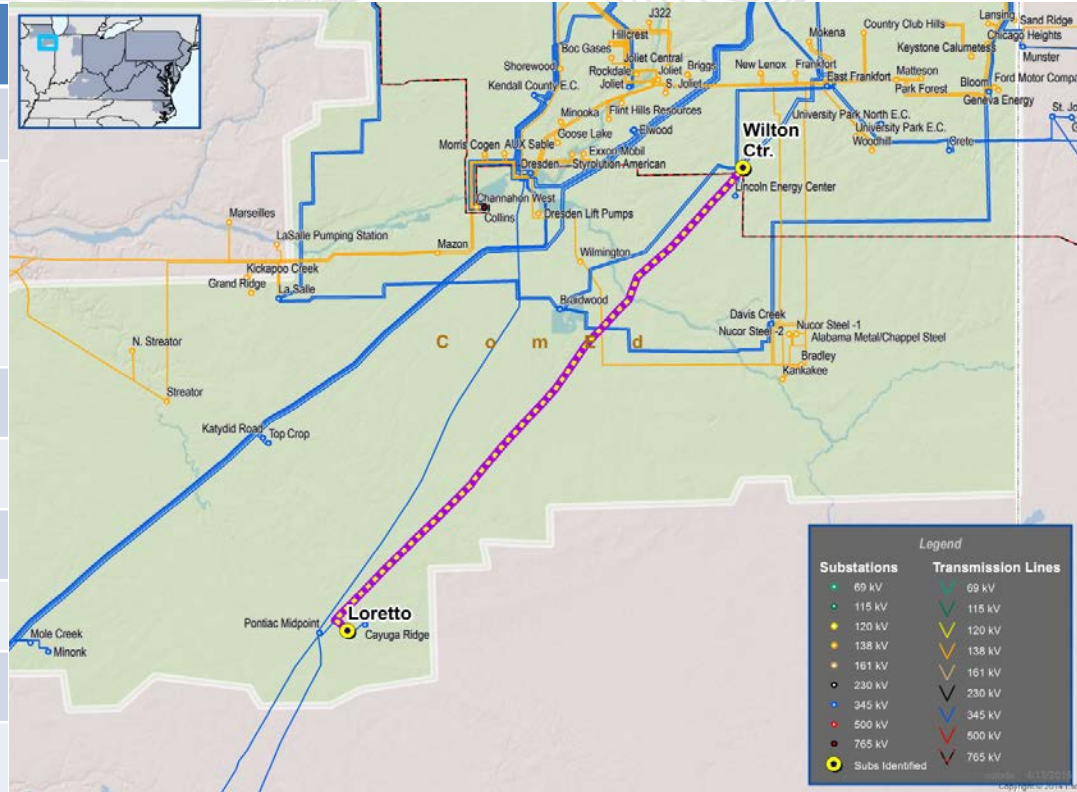
**Cost (\$M): 11.5**

**IS Date: 2019**

**Target Zone: ComEd**

**ME Constraints: Loretto to Wilton CTR 345 kV**

**Notes:**



**Project ID: 201415\_1-10E**

**Proposed by: ComEd**

**Proposed Solution: Mitigate sag limitations on Loretto-Wilton Center Line and replace station conductor and circuit breakers at Wilton Center.**

**kV Level: 345**

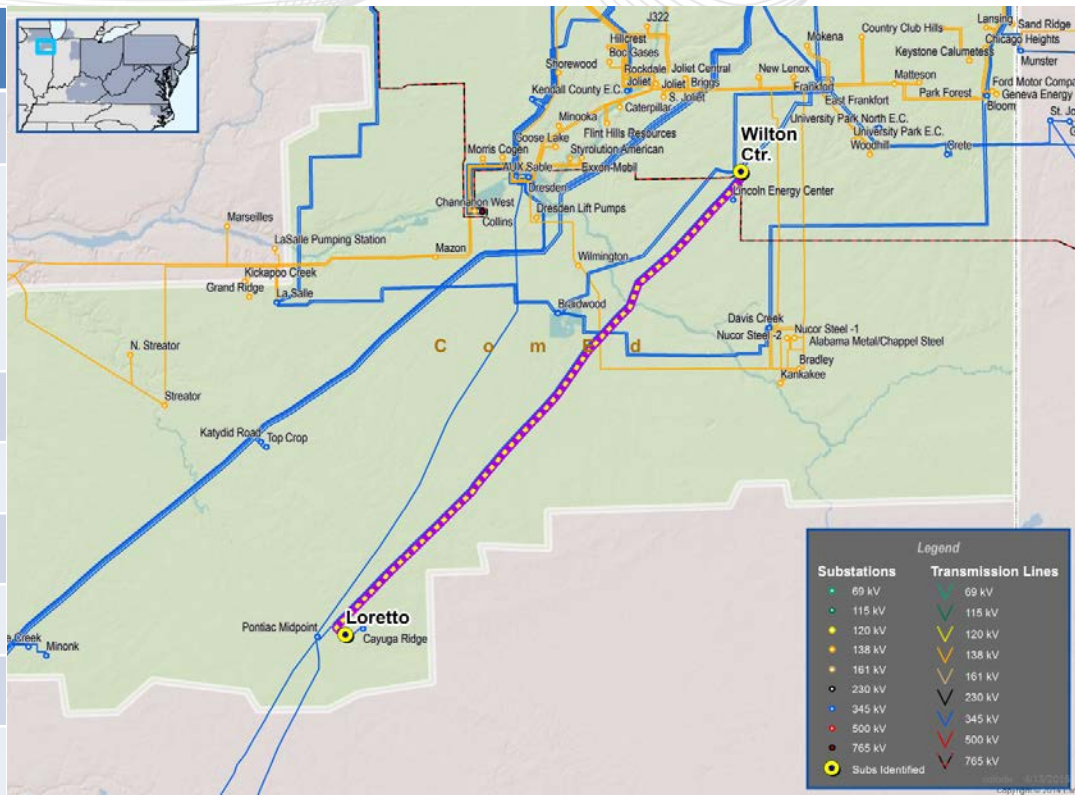
**Cost (\$M): 17.4**

**IS Date: 2019**

**Target Zone: ComEd**

**ME Constraints: Loretto to Wilton CTR 345 kV**

**Notes:**



**Project ID: 201415\_1-10F**

**Proposed by: ComEd**

**Proposed Solution: Loretto to Wilton Center Sag Mitigation and Station Conductor Replacement; Pontiac Midpoint to Dresden Station Conductor Replacement**

**kV Level: 345**

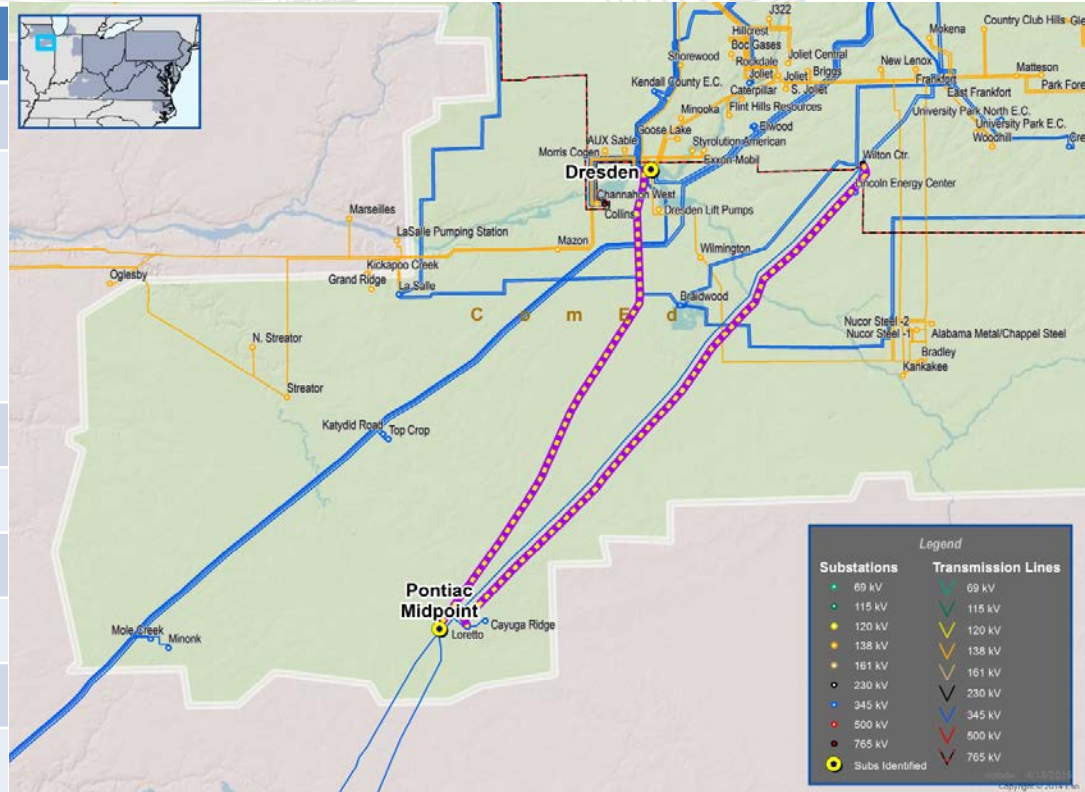
**Cost (\$M): 14**

**IS Date: 2019**

**Target Zone: ComEd**

**ME Constraints: Loretto to Wilton CTR 345 kV**

**Notes:**



**Project ID: 201415\_1-10G**

**Proposed by: ComEd**

**Proposed Solution: Loretto to Wilton Center Sag Mitigation, Station Conductor Replacement, Circuit breaker replacements at Wilton Center and Replace station conductor at Pontiac Midpoint and Dresden**

**kV Level: 345**

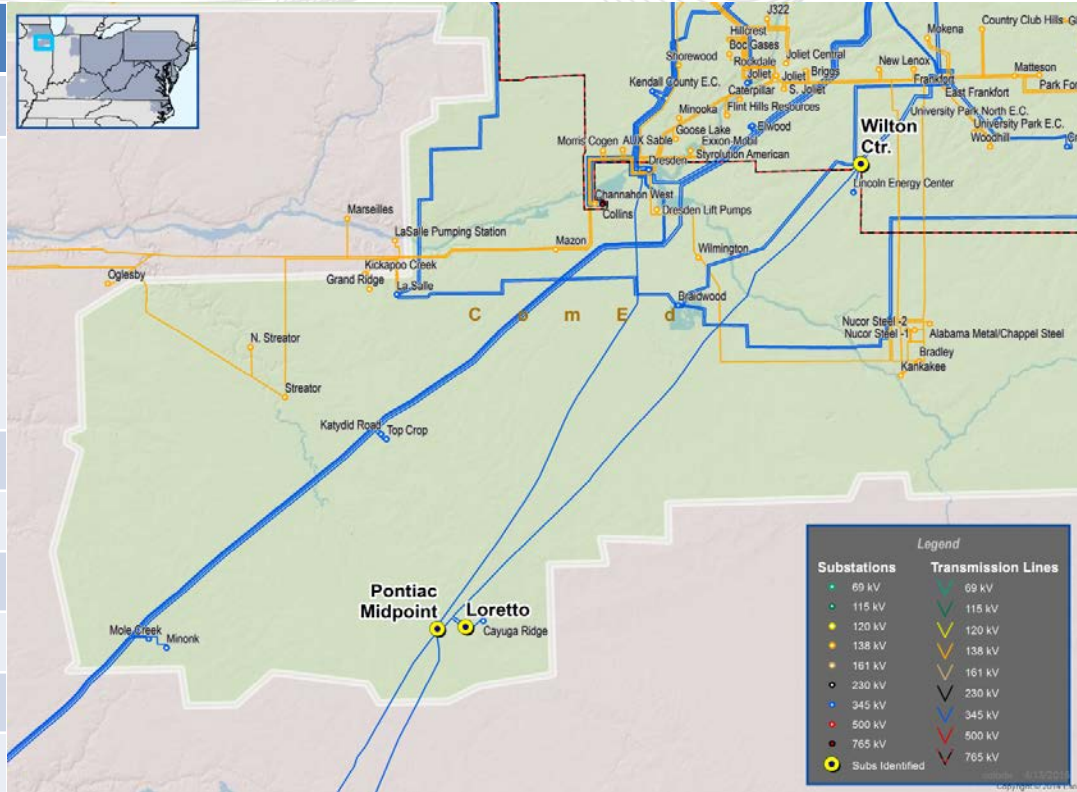
**Cost (\$M): 19.9**

**IS Date: 2019**

**Target Zone: ComEd**

**ME Constraints: Loretto to Wilton CTR 345 kV**

**Notes:**



**Project ID: 201415\_1-10H**

**Proposed by: ComEd**

**Proposed Solution: Loretto to Wilton Center Sag Mitigation, Station Conductor Replacement at Wilton Center, Circuit breaker replacements at Wilton Center and Pontiac Midpoint, and Replace station conductor at Pontiac Midpoint and Dresden.**

**kV Level: 345**

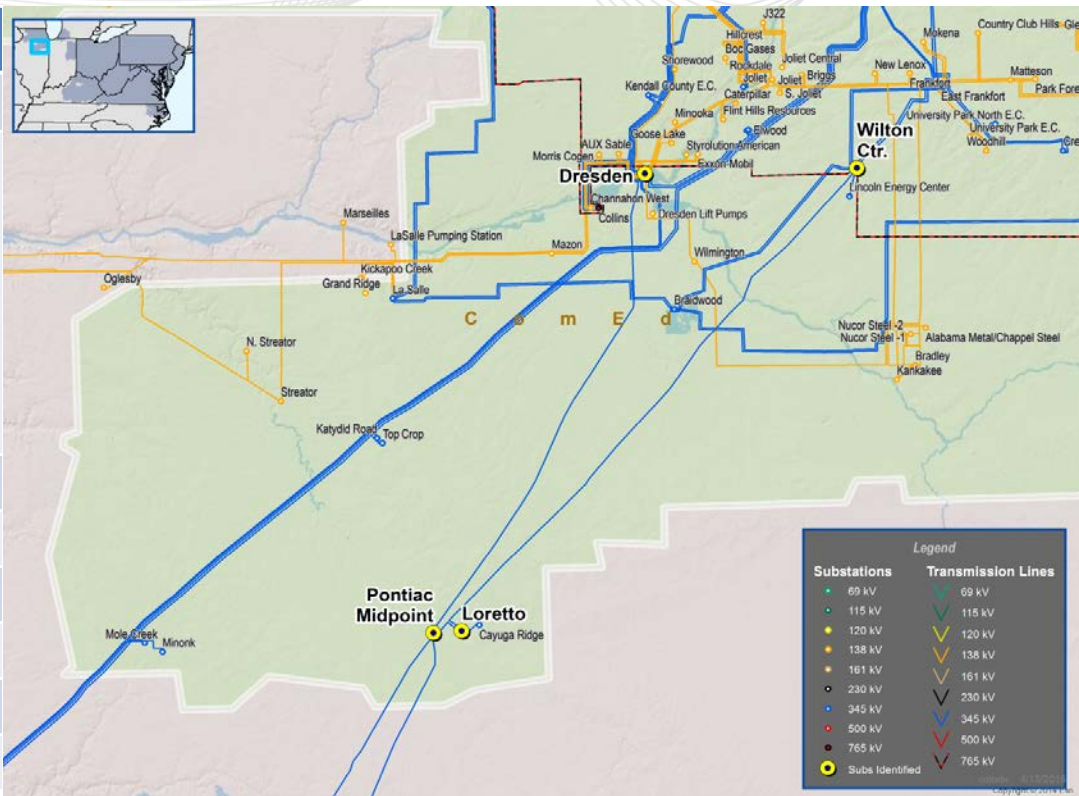
**Cost (\$M): 25.9**

**IS Date: 2019**

**Target Zone: ComEd**

**ME Constraints: Loretto to Wilton CTR 345 kV**

**Notes:**



**Project ID: 201415\_1-101**

**Proposed by: ComEd**

**Proposed Solution: Reconductor Cordova to Nelson 345kV line and replace station conductor. NOTE: This project (s0704) is scheduled to complete on March 13, 2015**

**kV Level: 345**

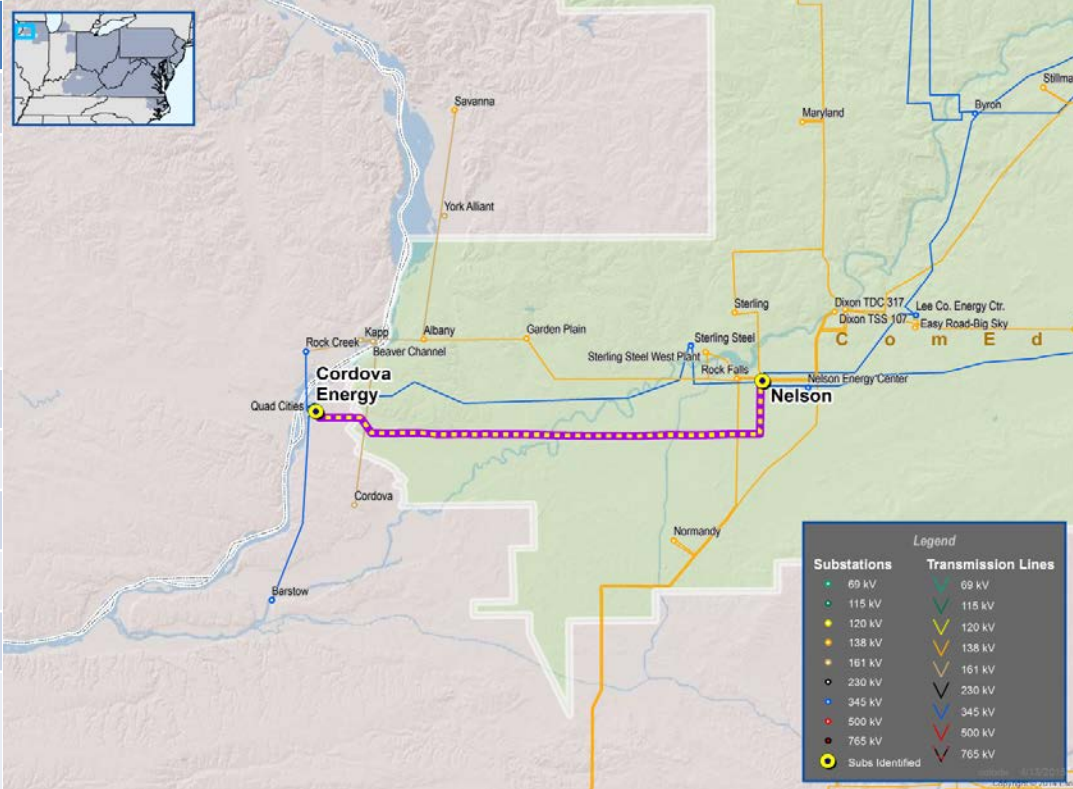
**Cost (\$M): 2**

**IS Date: 2019**

**Target Zone: ComEd**

**ME Constraints: Cordova to Nelson 345 kV**

**Notes:**



**Project ID: 201415\_1-10J**

**Proposed by: ComEd**

**Proposed Solution:** Replace station equipment at three stations and upgrade conductor rating of three lines by re-conductoring and mitigating sag limitations. **NOTE:** Component 1 of this project (s0704) is scheduled to complete on March 13, 2015

**kV Level:** 345

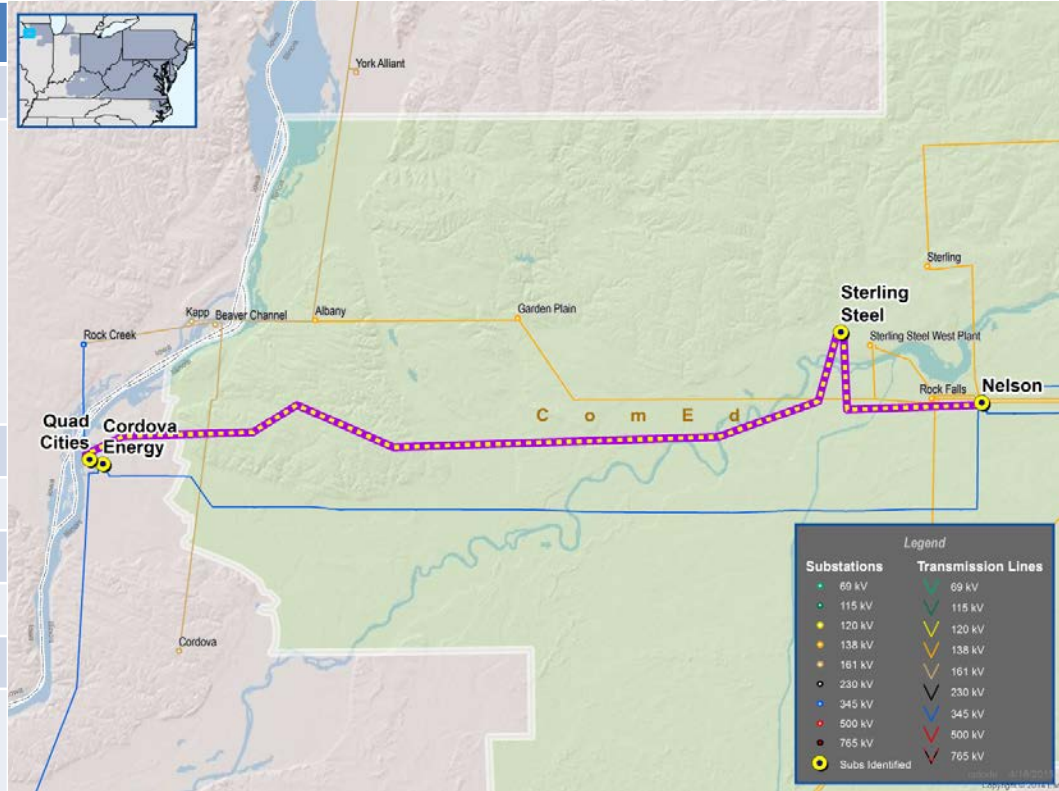
**Cost (\$M):** 24.6

**IS Date:** 2019

**Target Zone:** ComEd

**ME Constraints:** Cordova to Nelson 345 kV

**Notes:**





**Project ID: 201415\_1-10K**

**Proposed by: COMED**

**Proposed Solution: Replace station equipment at three stations and reconductor Cordova to Nelson 345kV line.**

**kV Level: 345**

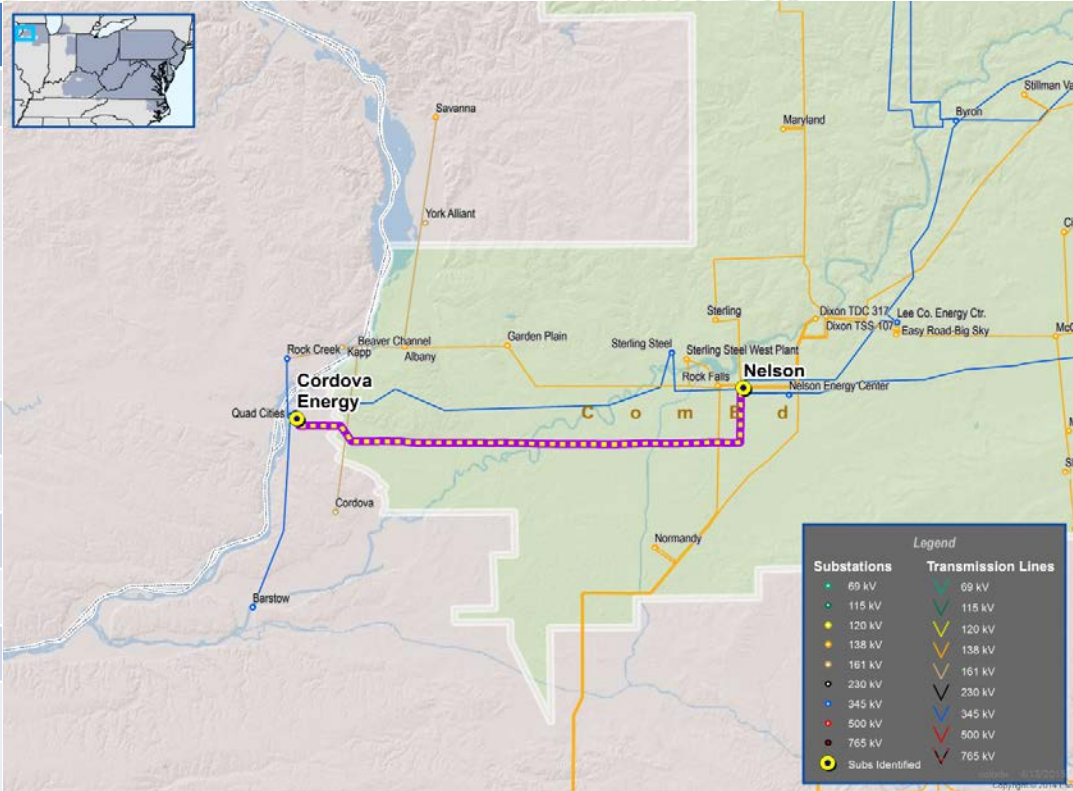
**Cost (\$M): 15.5**

**IS Date: 2019**

**Target Zone: COMED**

**ME Constraints: Cordova to Nelson 345 kV**

**Notes:**



**Project ID: 201415\_1-11E**

Proposed by: PECO

Proposed Solution: Increase ratings of 5012 Peach Bottom-Conastone 500 kV line to 2490 MVA normal / 2815 MVA emergency

kV Level: 500

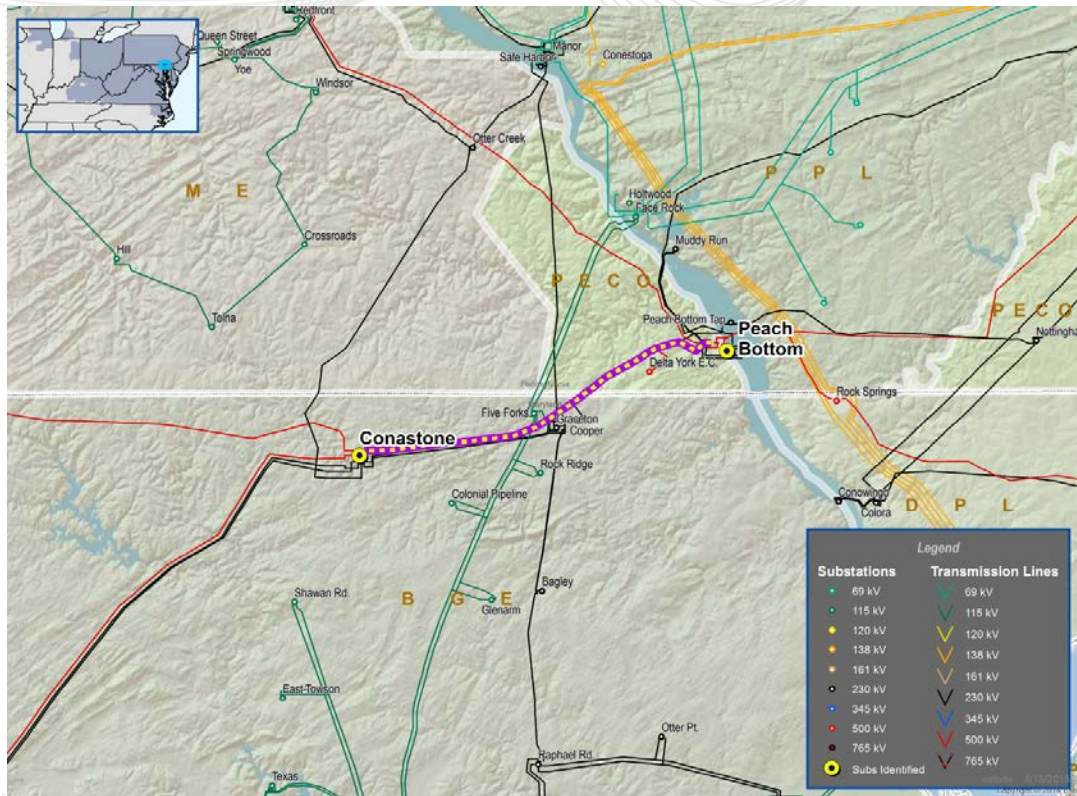
Cost (\$M): 1.8

IS Date: 2019

Target Zone: PECO

ME Constraints: Peach Bottom to Conastone 500 kV

Notes:



**Project ID: 201415\_1-11F**

Proposed by: PECO

Proposed Solution: Increase ratings of 5012 Peach Bottom-Conastone 500 kV line to 2826 MVA normal / 3525 MVA emergency

kV Level: 500

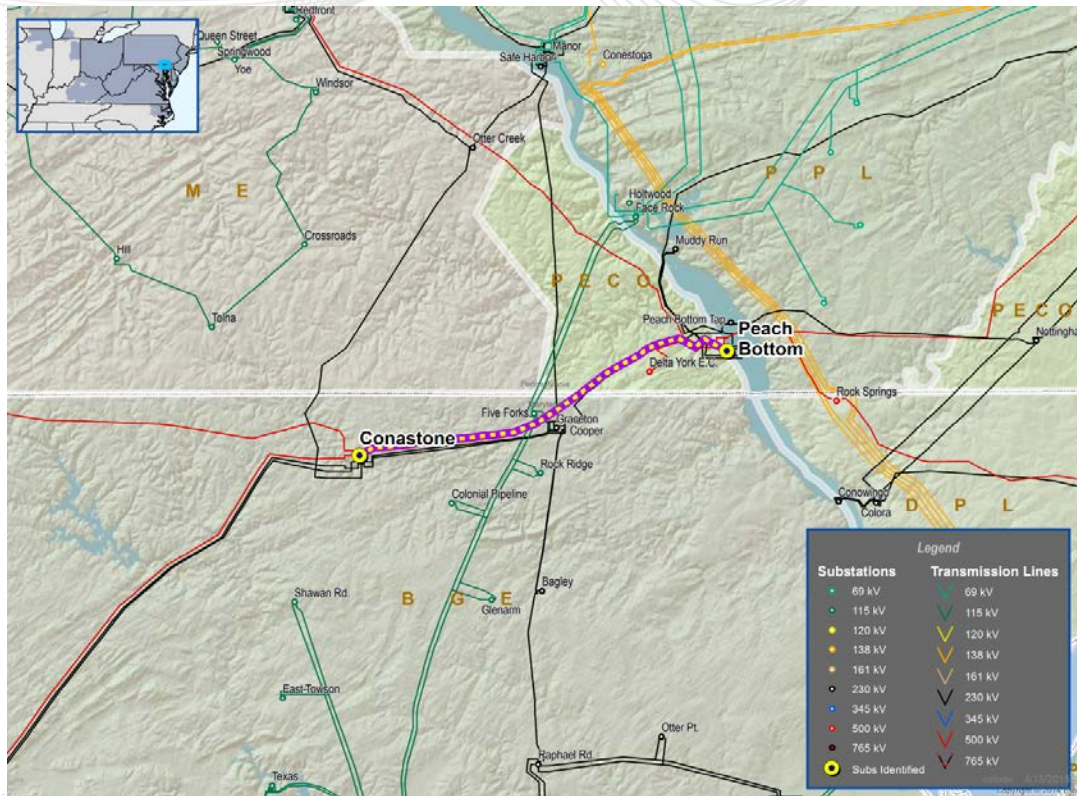
Cost (\$M): 8.7

IS Date: 2019

Target Zone: PECO

ME Constraints: Peach Bottom to Conastone 500 kV

Notes:



## Project ID: 201415\_1-11G

Proposed by: PECO

Proposed Solution: Increase ratings of Peach Bottom 500-230 kV transformer to 1245 MVA normal / 1387 MVA emergency

kV Level: 230

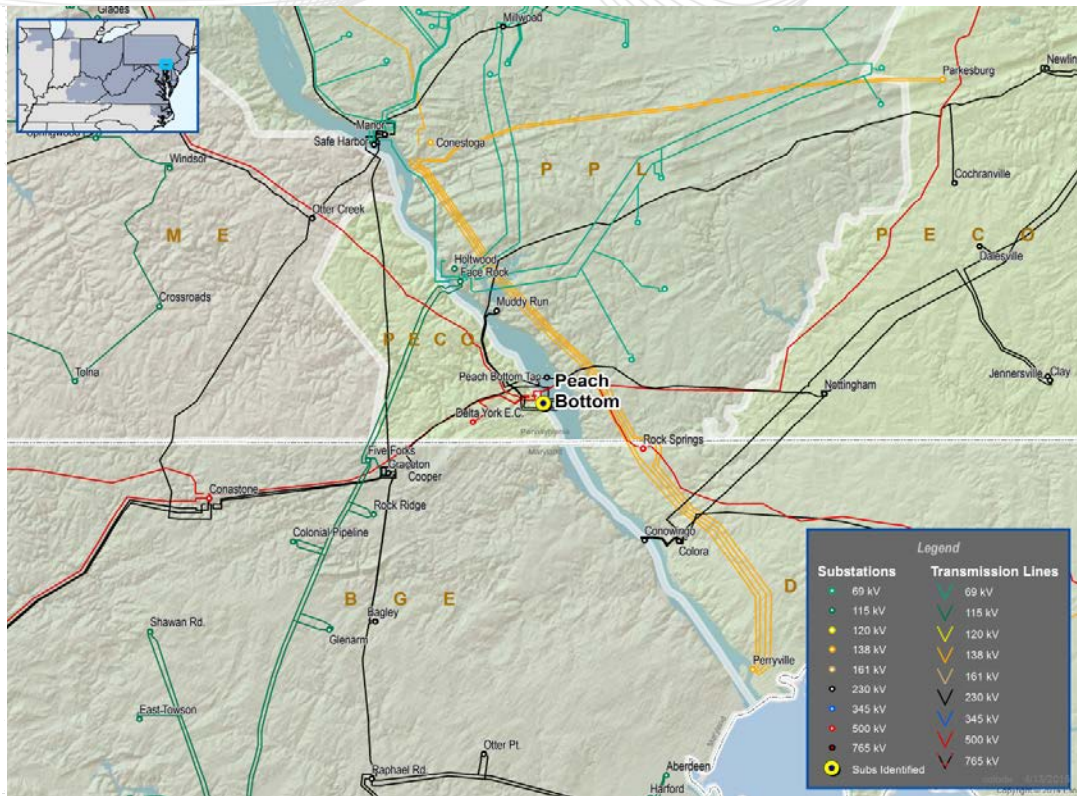
Cost (\$M): 0.2

IS Date: 2019

Target Zone: PECO

ME Constraints: Peach Bottom 500 kV

Notes:



**Project ID: 201415\_1-11H**

Proposed by: PECO

Proposed Solution: Increase ratings of Peach Bottom 500-230 kV transformer to 1479 MVA normal / 1839 MVA emergency

kV Level: 230

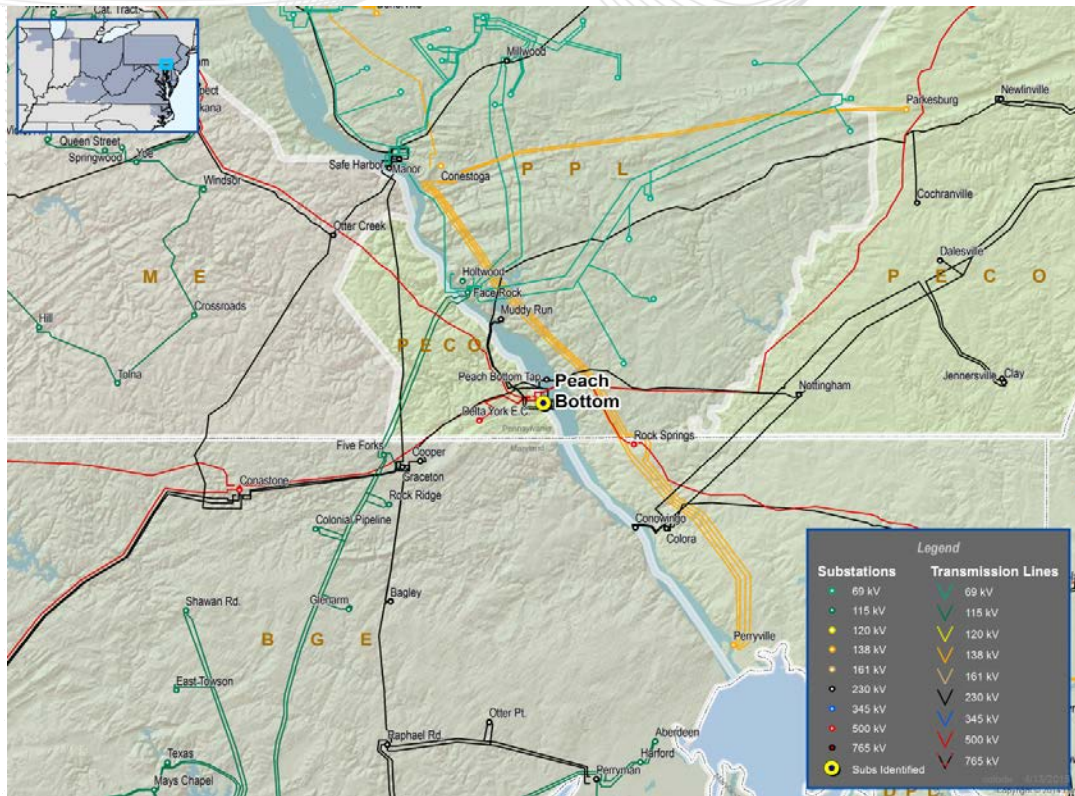
Cost (\$M): 9.7

IS Date: 2019

Target Zone: PECO

ME Constraints: Peach Bottom 500 kV

Notes:



# Project ID: 201415\_1-111

Proposed by: PECO

Proposed Solution: Install a 2nd 500-230 kV transformer at Peach Bottom substation

kV Level: 230

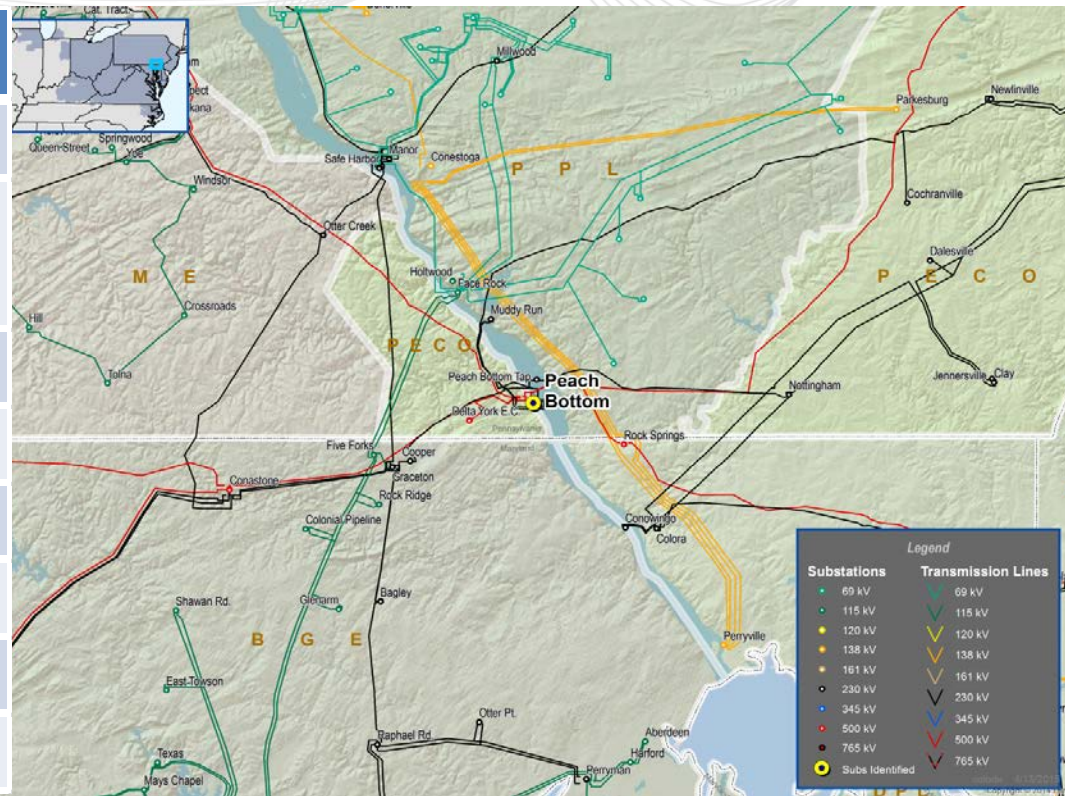
Cost (\$M): 21.1

IS Date: 2020

Target Zone: PECO

ME Constraints: Peach Bottom 500 kV

Notes:



## Project ID: 201415\_1-12A

Proposed by: Duquesne Light

Proposed Solution: Reconductor approximately 7 miles of the Woodville-Peters (Z-117) 138kV circuit, reconfigure the West Mifflin-USS Clairton (Z-15) 138kV circuit to establish the Dravosburg-USS Clairton (Z-14) 138kV circuit and the West Mifflin-Wilson (Z-15) 138kV circuit

kV Level: 138

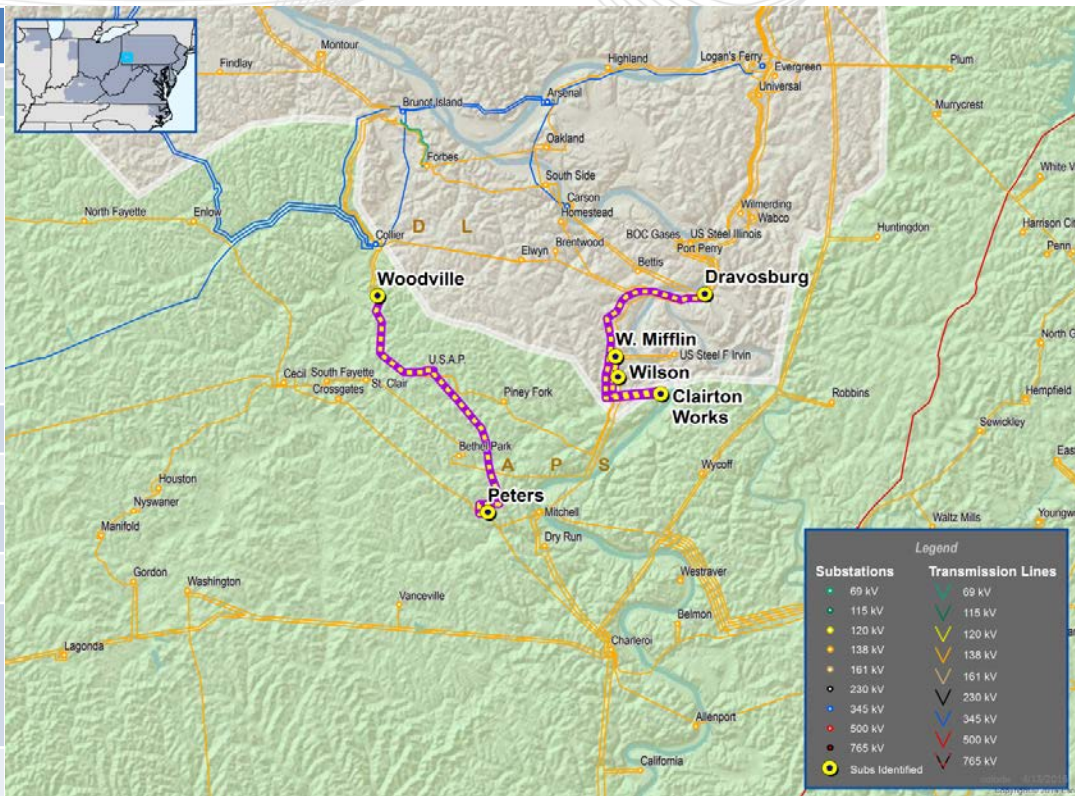
Cost (\$M): 11.184

IS Date: 2018

Target Zone: DUQ

ME Constraints: Dravosburg to West Mifflin 138 kV  
Woodville to 15USAP 138 kV

Notes:



**Project ID: 201415\_1-13E**

Proposed by: PHI

Proposed Solution: Rebuild Worcester - Ocean Pine 60 kV ckt 1 to 1400A capability summer emergency

kV Level: 69

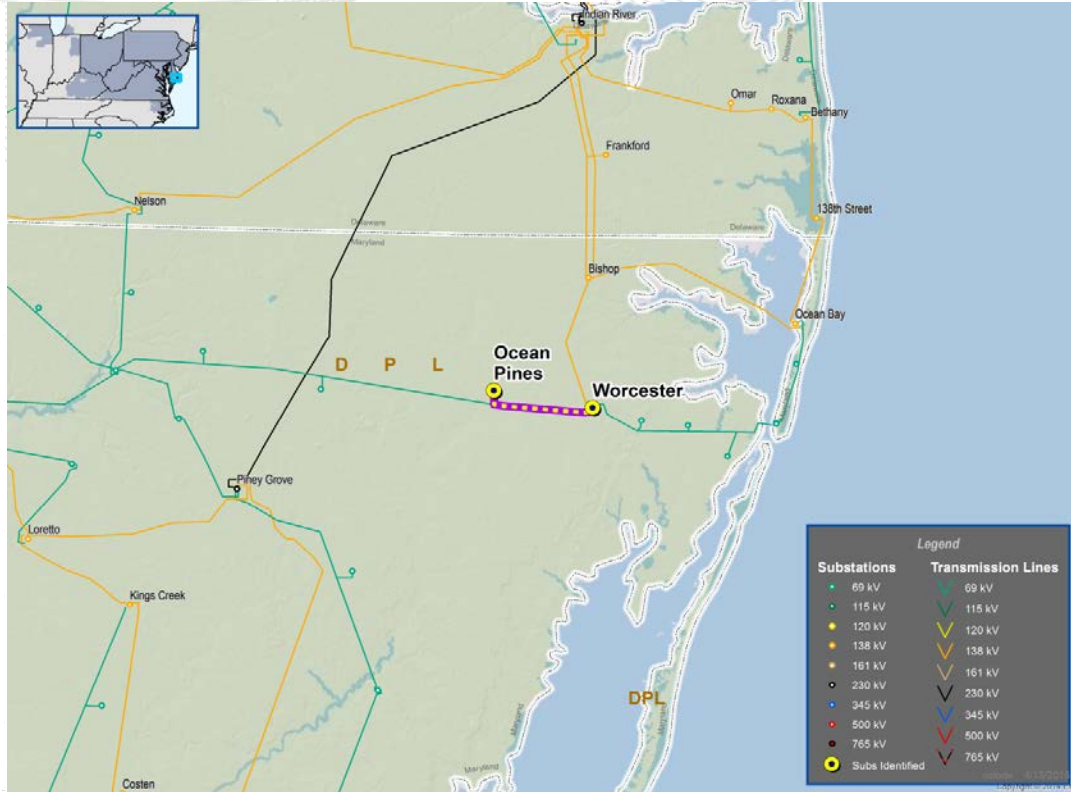
Cost (\$M): 2.4

IS Date: 2016

Target Zone: DPL

ME Constraints: Worcester to Ocean Pines (I) 69 kV

Notes:





**Project ID: 201415\_1-14A**

**Proposed by: DATC**

**Proposed Solution:** A hybrid series capacitor and thyristor controlled series capacitor near the midpoint of Conemaugh to Hunterstown 500 kV line in southern Pennsylvania. Add a phase angle regulator on the Messick to Morgan 138 kV line and close the circuit in Maryland.

**kV Level: 500**

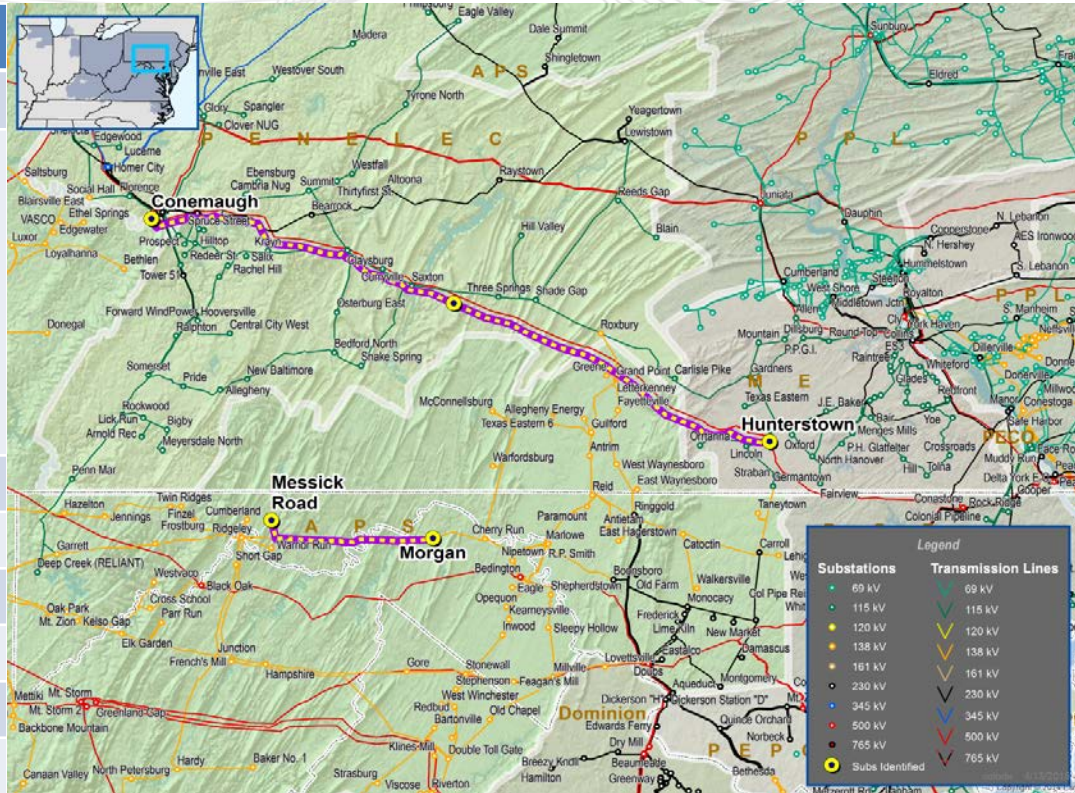
**Cost (\$M): 47.14**

**IS Date: 2019**

**Target Zone: PECO/Meted/APS**

**ME Constraints: AP SOUTH L/O BED-BLA**

**Notes:**



## Project ID: 201415\_1-14B

Proposed by: DATC

Proposed Solution: The project cuts into the Germantown - Straban 115 kV line near Germantown. It loops 11 miles of double circuit 115 kV from the cut-in section to Fairview substation and back, tying in to the 115 kV line up to Straban (using the existing circuit).

kV Level: 115

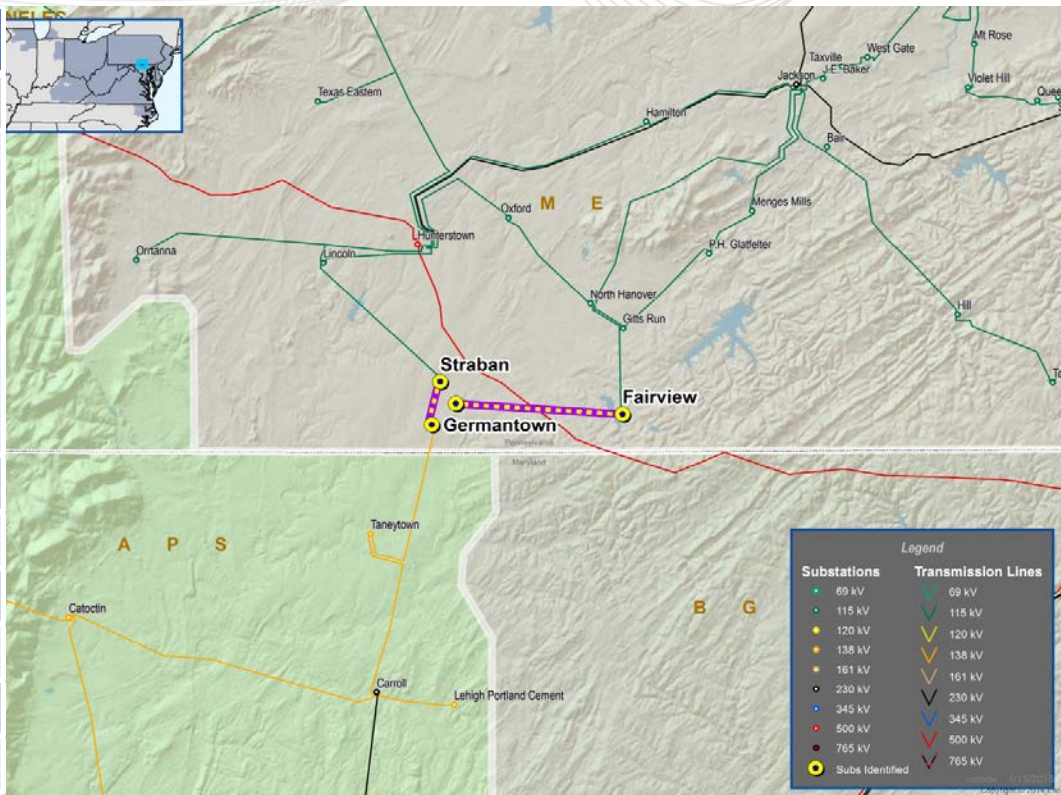
Cost (\$M): 21.11

IS Date: 2020

Target Zone: Meted

ME Constraints: Taneytown to Carroll 138 kV

Notes:



**Project ID: 201415\_1-14C**

Proposed by: DATC

Proposed Solution: Build a new 345 kV substation in Northern Kentucky to tie together the Miami Fort – Tanners Creek 345 kV line and the Miami Fort – Terminal 345 kV line

kV Level: 138

Cost (\$M): 11.35

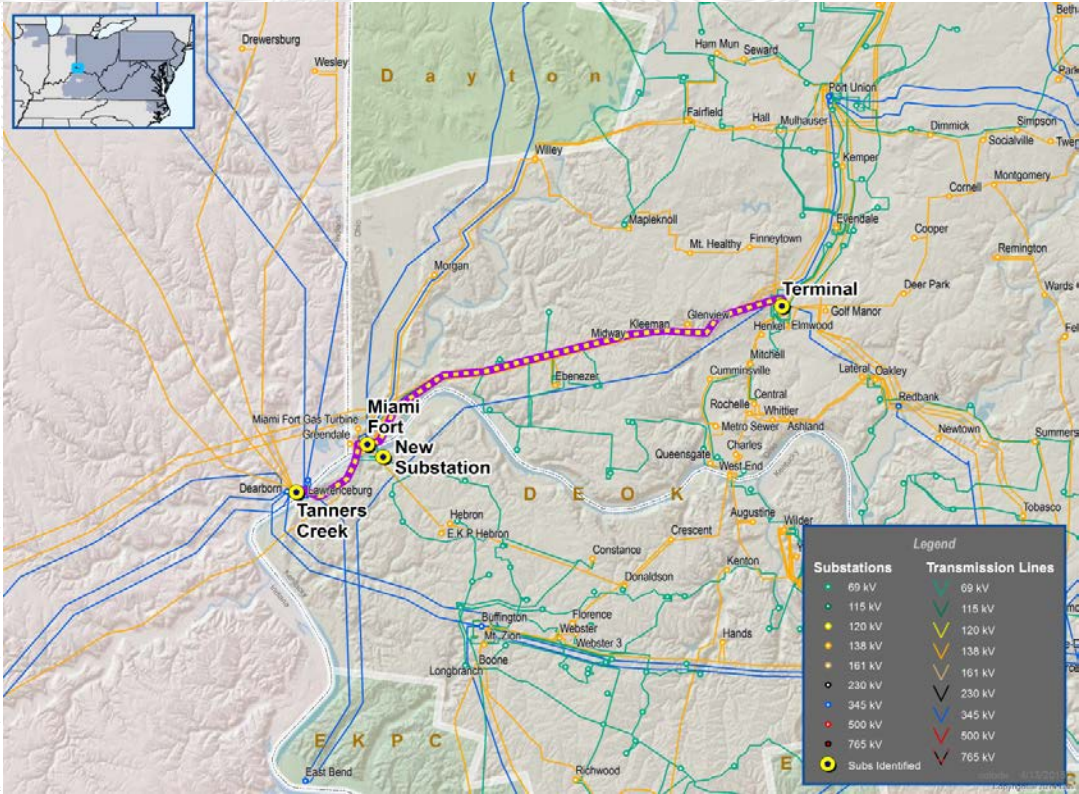
IS Date: 2019

Target Zone: DEOK

ME Constraints: Miami Fort to Willey 138 kV

Notes: Deactivation project removes driver

**Proposal will not be evaluated.**



**Project ID: 201415\_1-15A**

**Proposed by: Grid America**

**Proposed Solution:** Create a six-mile underground 230 kV 5000 kcmil transmission line between the West Orange 230 kV Substation to Cook Road 230 kV Substation. The underground 230 kV line will be connected to the Cook Road 230 kV bus “C”.

**kV Level:** 230

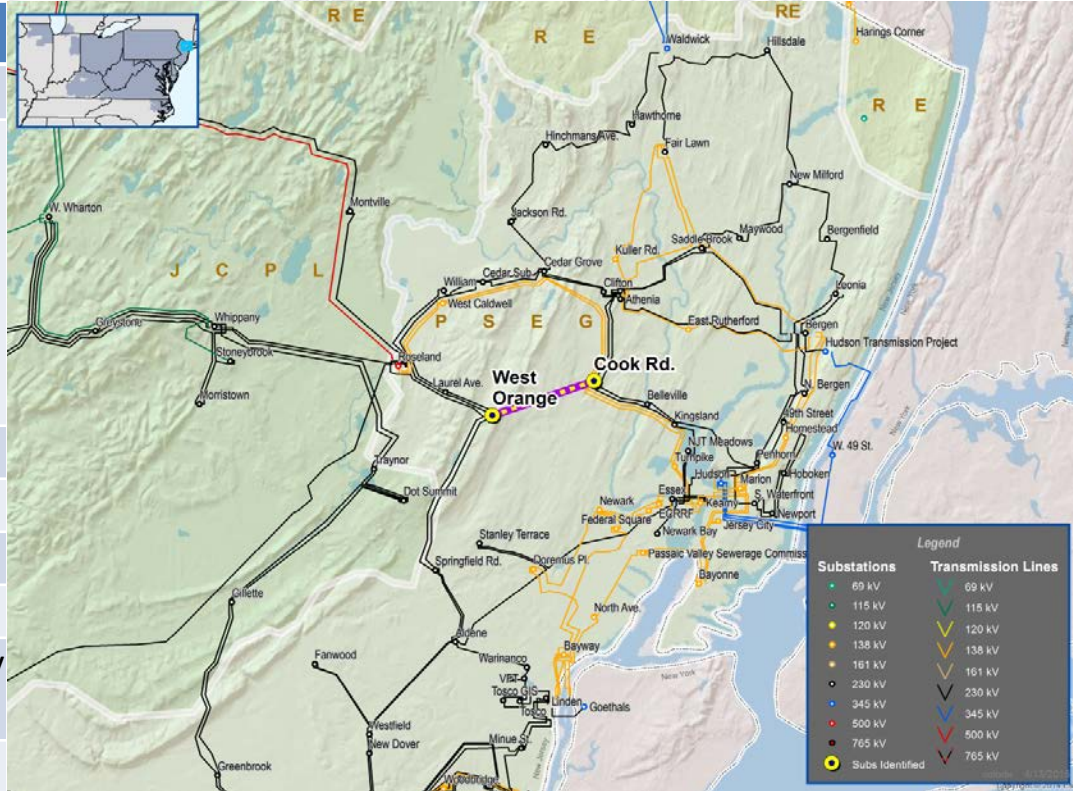
**Cost (\$M):** 125

**IS Date:** 2019

**Target Zone:** PSEG

**ME Constraints:** Roseland-Cedar Grove-Clifton 230 kV corridor

**Notes:**



**Project ID: 201415\_1-16A**

**Proposed by: Nipsco**

**Proposed Solution: Wilton Center to Reynolds Single Circuit 345 kV and a 765/345 kV Xfmr at Gwynneville by Splitting Greentown to Jefferson 765 kV line at Gwynneville to form a new 765 kV Substation with 765/345 kV Xfmr**

**kV Level: 345**

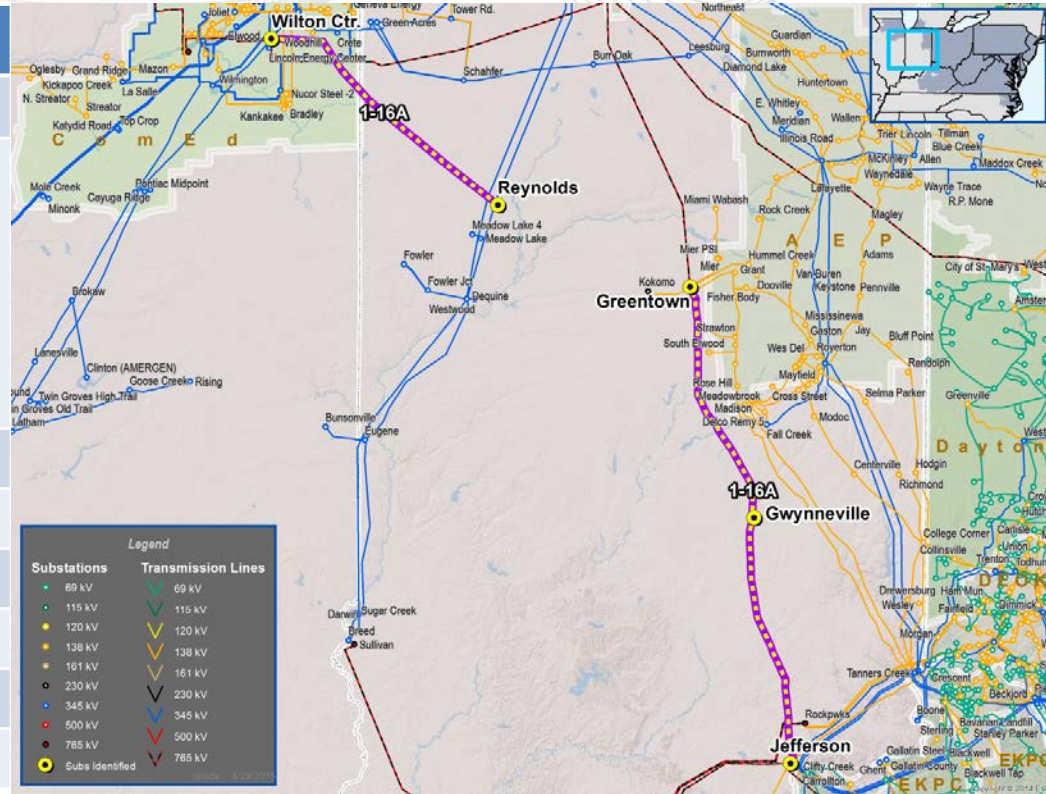
**Cost (\$M): 240**

**IS Date: 2022**

**Target Zone: AEP/CE/NIPS**

**ME Constraints: None Specified**

**Notes:**



**Project ID: 201415\_1-16B**

**Proposed by: Nipsco**

**Proposed Solution: Double Circuit 345 kV line section from Pontiac to Reynolds (~100 miles)**

**kV Level: 345**

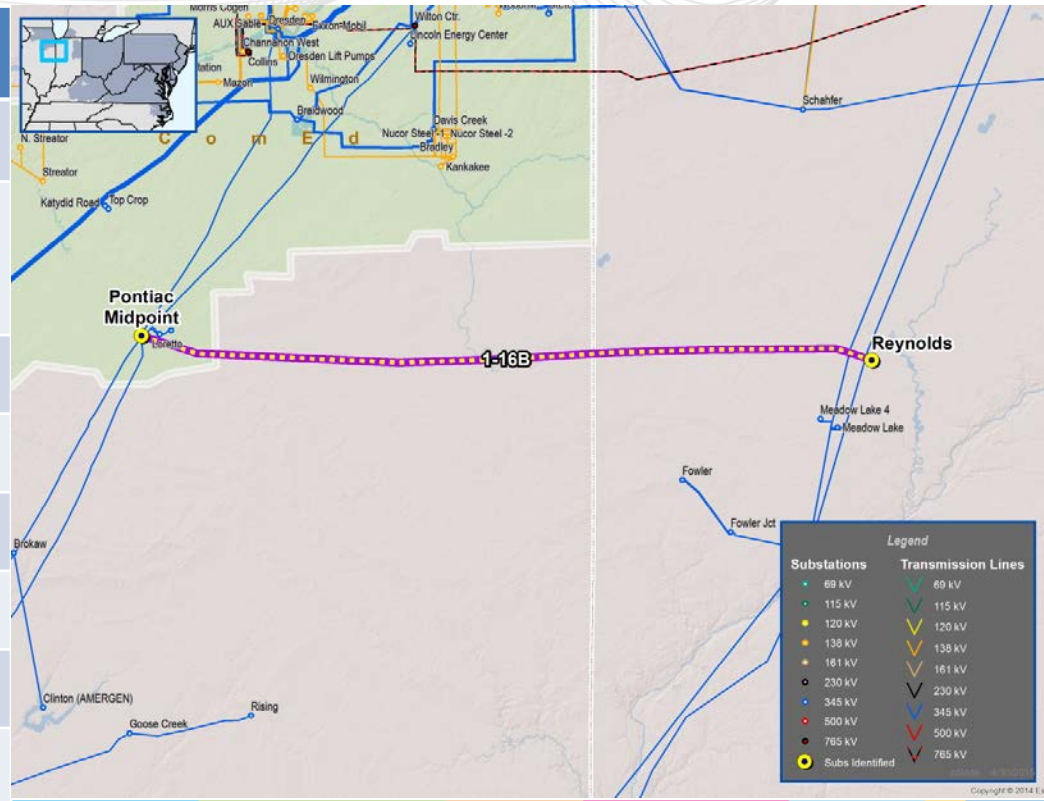
**Cost (\$M): 290**

**IS Date: 2022**

**Target Zone: AEP/CE/NIPS**

**ME Constraints: Loretto to Wilton CTR 345 kV**

**Notes:**



**Project ID: 201415\_1-16C**

Proposed by: Nipsco

Proposed Solution: Several upgrades and rebuilds to the NIPSCO system: Burnham-Munster 345 kV, Burnham-Sheffield 345kV, Dumont-Stillwell 345kV, Michigan City-LA Porte 138 kV; Rebuild Michigan City – Trail Creek 138 kV. Rebuild Trail Creek – New Carlisle 138 kV. Rebuild Maple-New Carlisle 138 kV.

kV Level: 345

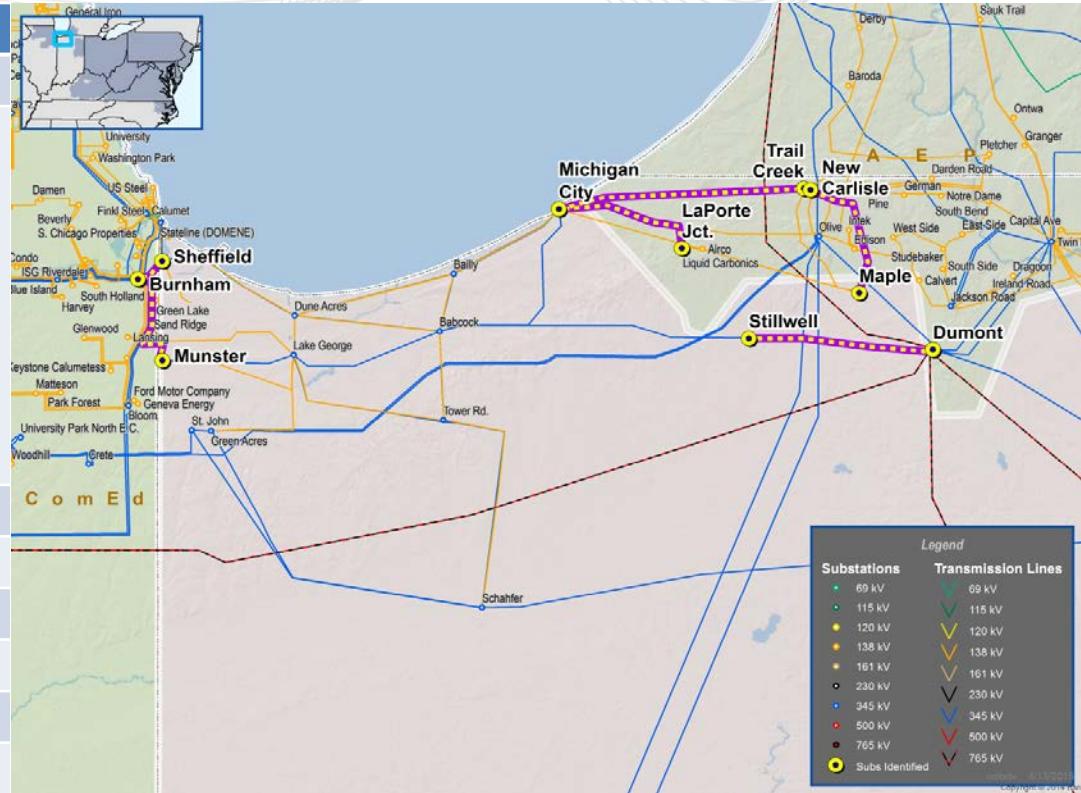
Cost (\$M): 81.164

IS Date: 2019

Target Zone: AEP/CE/NIPS

ME Constraints: Various M2M facilities

Notes:



**Project ID: 201415\_1-17A**

Proposed by: Nextera

Proposed Solution: Build new Cochran Mill 230 kV switchyard with 600 MVAR Capacitors, and a new 230 kV line from Cochran Mill - Pleasant View 230 kV

kV Level: 230

Cost (\$M): 16.5

IS Date: 2019

Target Zone: Dominion

ME Constraints: AP SOUTH L/O BED-BLA

Notes:





Project ID: 201415\_1-17B

Proposed by: Nextera

Proposed Solution: Build new Cochran Mill 230 kV switchyard with 300MVAR SVC, 300 MVAR Capacitors, and a new 230 kV line from Cochran Mill - Pleasant View 230 kV

kV Level: 230

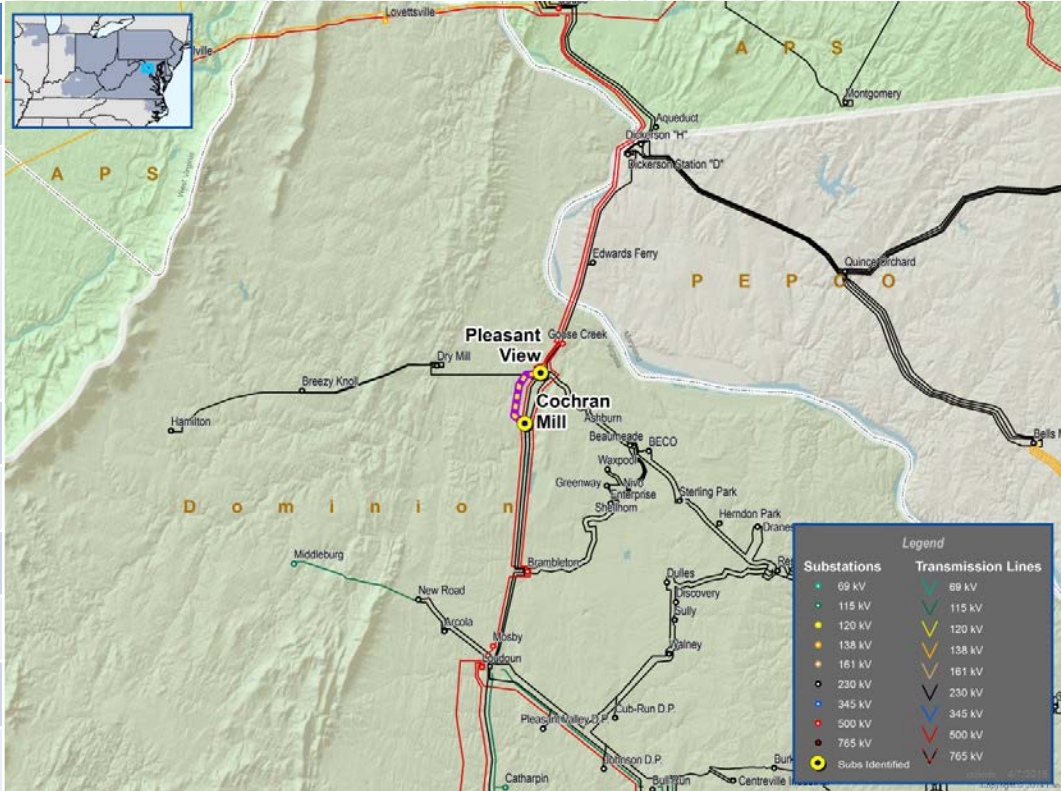
Cost (\$M): 41

IS Date: 2019

Target Zone: Dominion

ME Constraints: AP SOUTH L/O BED-BLA

Notes:



Project ID: 201415\_1-17C

Proposed by: Nextera

Proposed Solution: Build new Cochran Mill 230 kV switchyard with 400 MVAR Capacitors, and a new 230 kV line from Cochran Mill - Pleasant View 230 kV

kV Level: 230

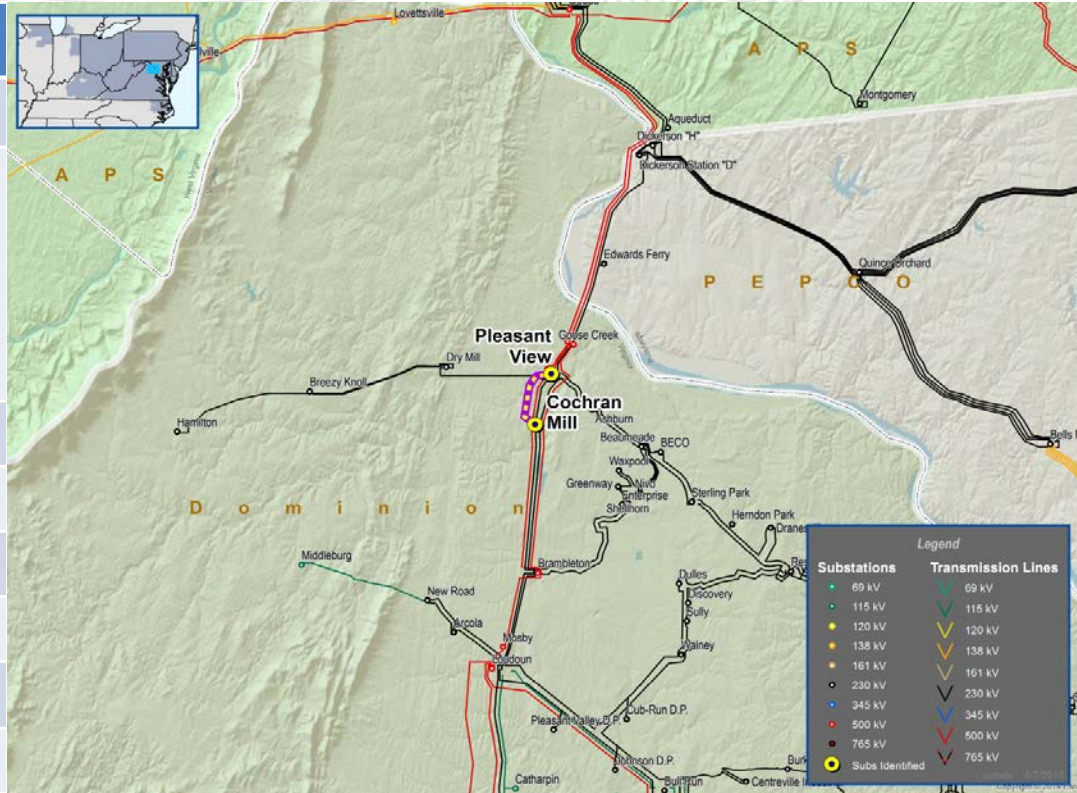
Cost (\$M): 15.7

IS Date: 2019

Target Zone: Dominion

ME Constraints: AP SOUTH L/O BED-BLA

Notes:



Project ID: 201415\_1-17D

Proposed by: Nextera

Proposed Solution: Build new Cochran Mill 230 kV switchyard with 200MVAR SVC, 200 MVAR Capacitors, and a new 230 kV line from Cochran Mill - Pleasant View 230 kV

kV Level: 230

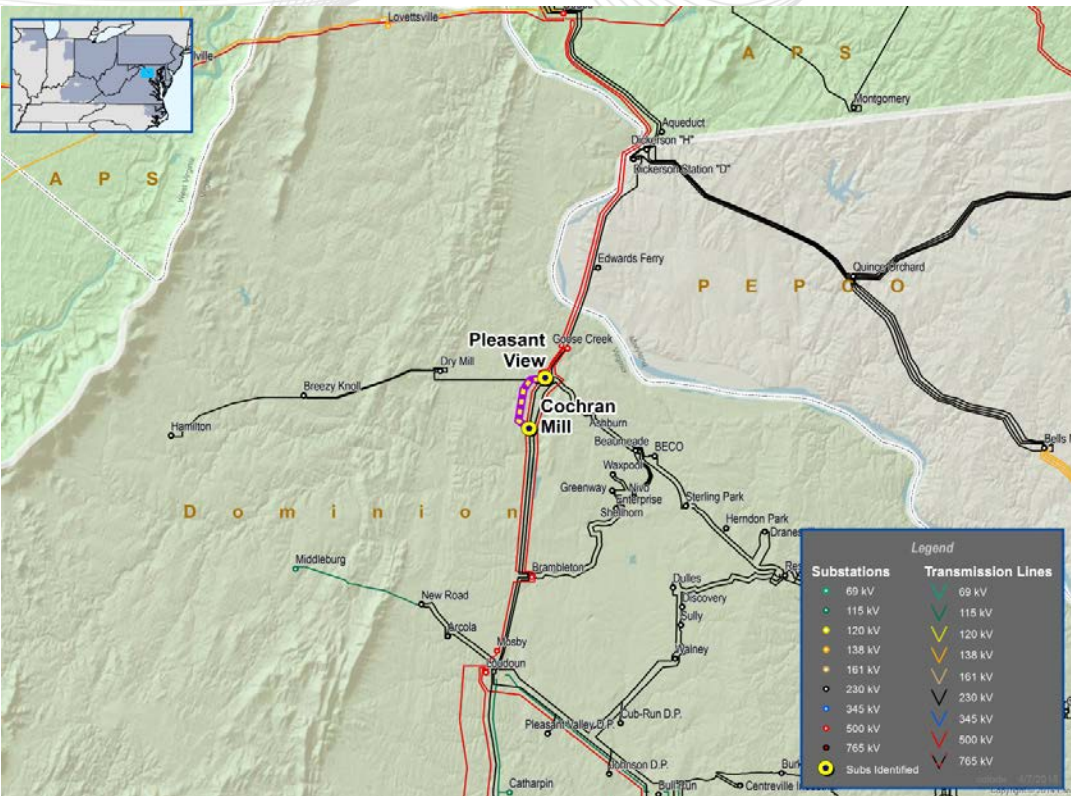
Cost (\$M): 36.4

IS Date: 2019

Target Zone: Dominion

ME Constraints: AP SOUTH L/O BED-BLA

Notes:



Project ID: 201415\_1-17E

Proposed by: Nextera

Proposed Solution: Build new Hunterstown - Brighton  
500 kV line, Build new Conastone - Peach Bottom  
500 kV line

kV Level: 500

Cost (\$M): 297

IS Date: 2019

Target Zone: PECO

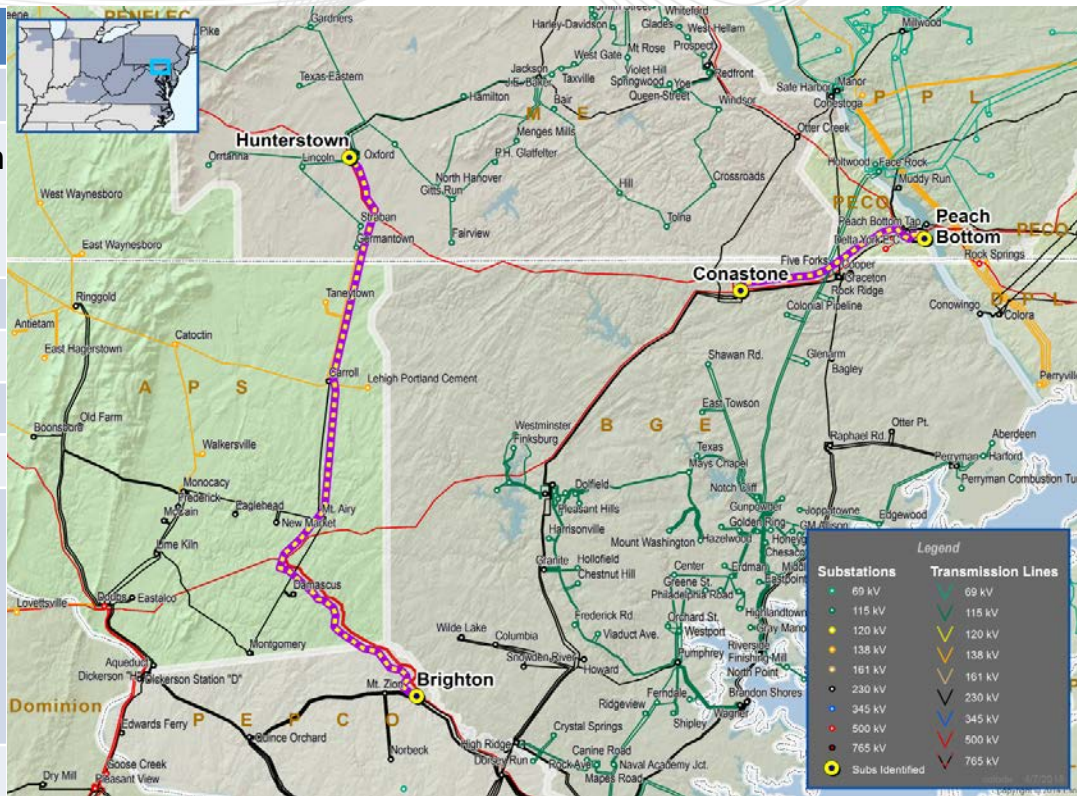
ME Constraints: AP SOUTH L/O BED-BLA

Brunner Island to Yorkana 230 kV

Taneytown to Carroll 138 kV

Safe Harbor to Graceton 230 kV

Notes:



Project ID: 201415\_1-17F

Proposed by: Nextera

Proposed Solution: Build new Conastone - Peach Bottom 500 kV line

kV Level: 500

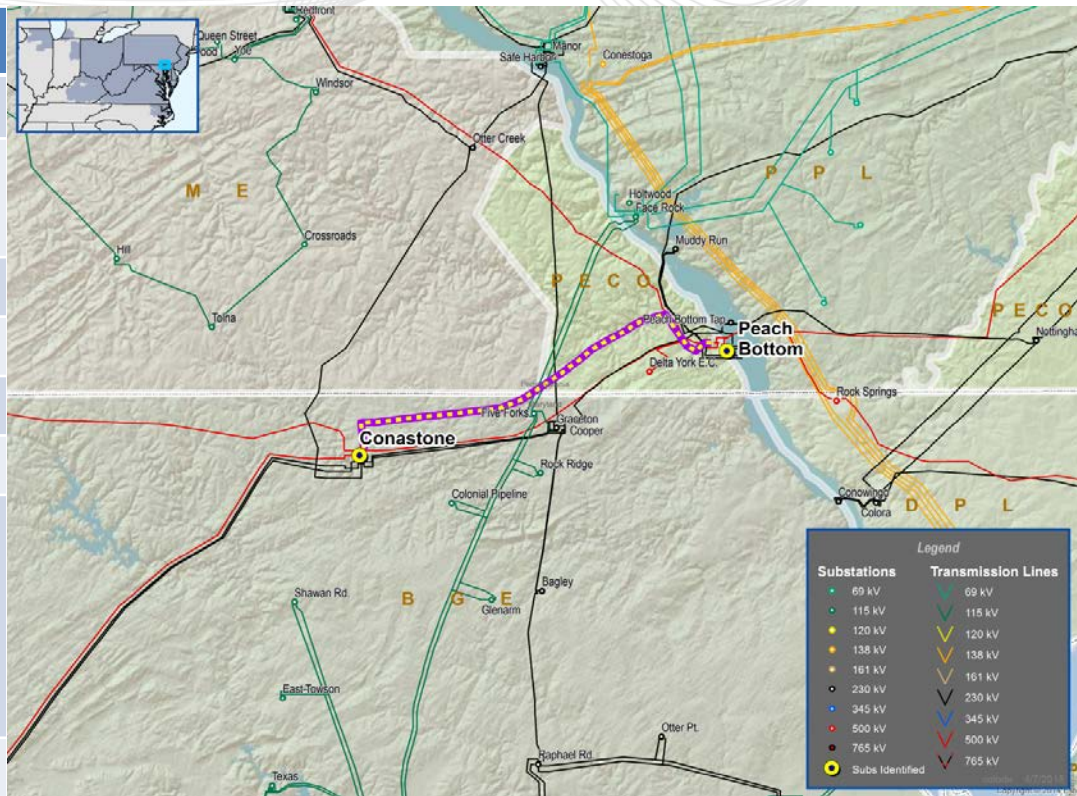
Cost (\$M): 76.2

IS Date: 2019

Target Zone: PECO

ME Constraints: AP SOUTH L/O BED-BLA  
 Brunner Island to Yorkana 230 kV  
 Safe Harbor to Graceton 230 kV

Notes:



**Project ID: 201415\_1-17G**

Proposed by: Nextera

Proposed Solution: Build new Atom 500 kV substation, Build new Conastone - Peach Bottom 500 kV line, Loop York - Peach Bottom 500 kV line into Atom

kV Level: 500

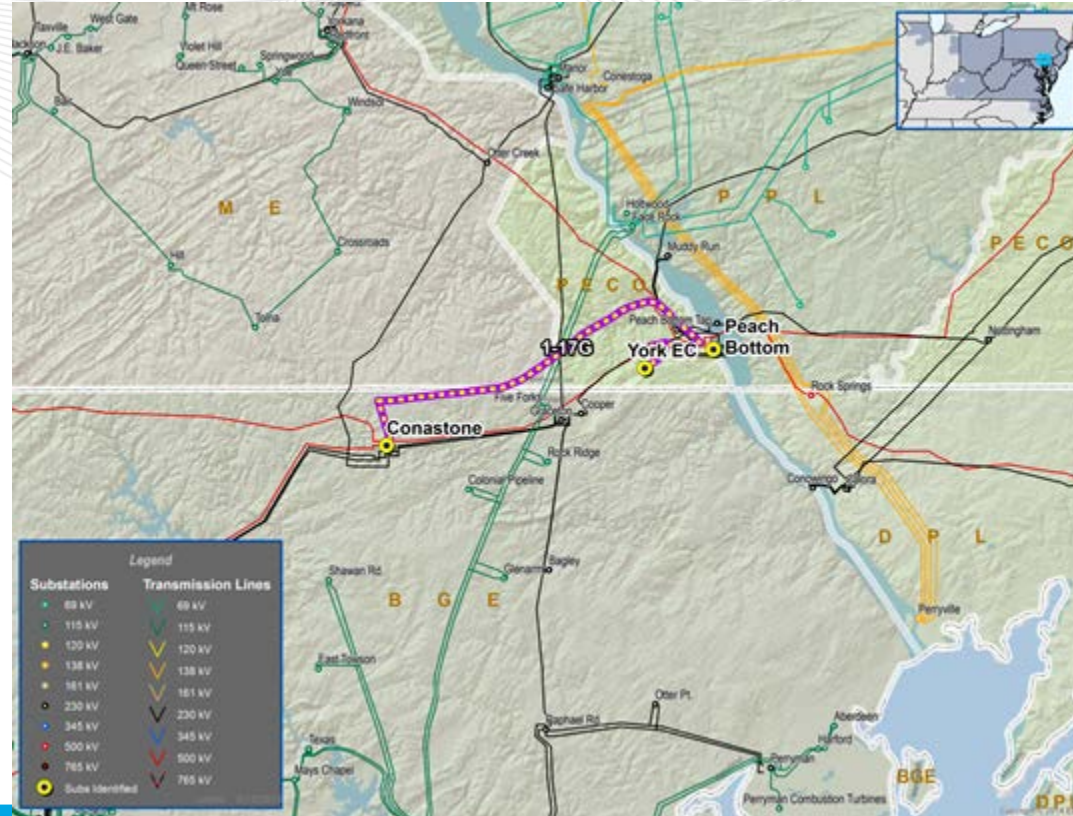
Cost (\$M): 86.3

IS Date: 2019

Target Zone: PECO

ME Constraints: AP SOUTH L/O BED-BLA  
 Brunner Island to Yorkana 230 kV  
 Safe Harbor to Graceton 230 kV

Notes:



Project ID: 201415\_1-18E

Proposed by: FirstEnergy

Proposed Solution: Install series capacitors on the Doubs-Mt. Storm 500 kV line

kV Level: 500

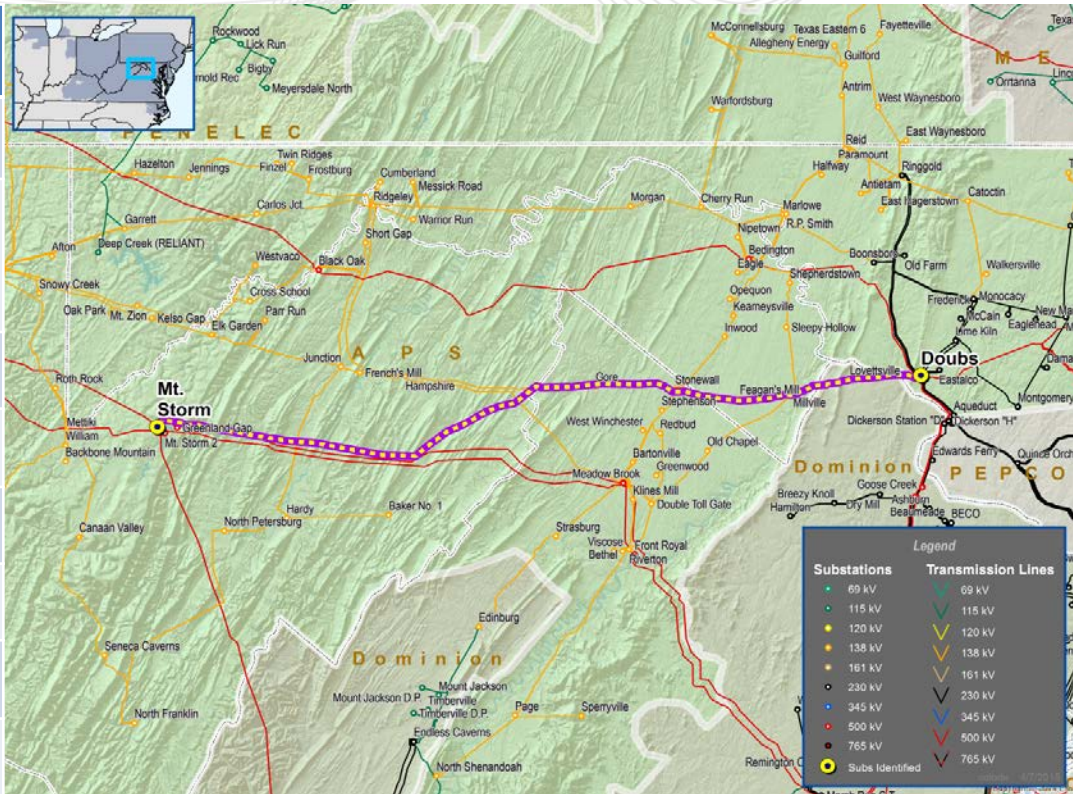
Cost (\$M): 66

IS Date: 2019

Target Zone: Dominion/APS

ME Constraints: AP SOUTH L/O BED-BLA

Notes:



**Project ID: 201415\_1-18F**

**Proposed by: FirstEnergy**

**Proposed Solution: Complete the existing Jacks Mountain baseline RTEP project (b0284.1, b0284.3, b0285.1, and b0285.2), Install 500 kV Series Capacitors at Jacks Mountain.**

**kV Level: 500**

**Cost (\$M): 68**

**IS Date: 2019**

**Target Zone: Penelec**

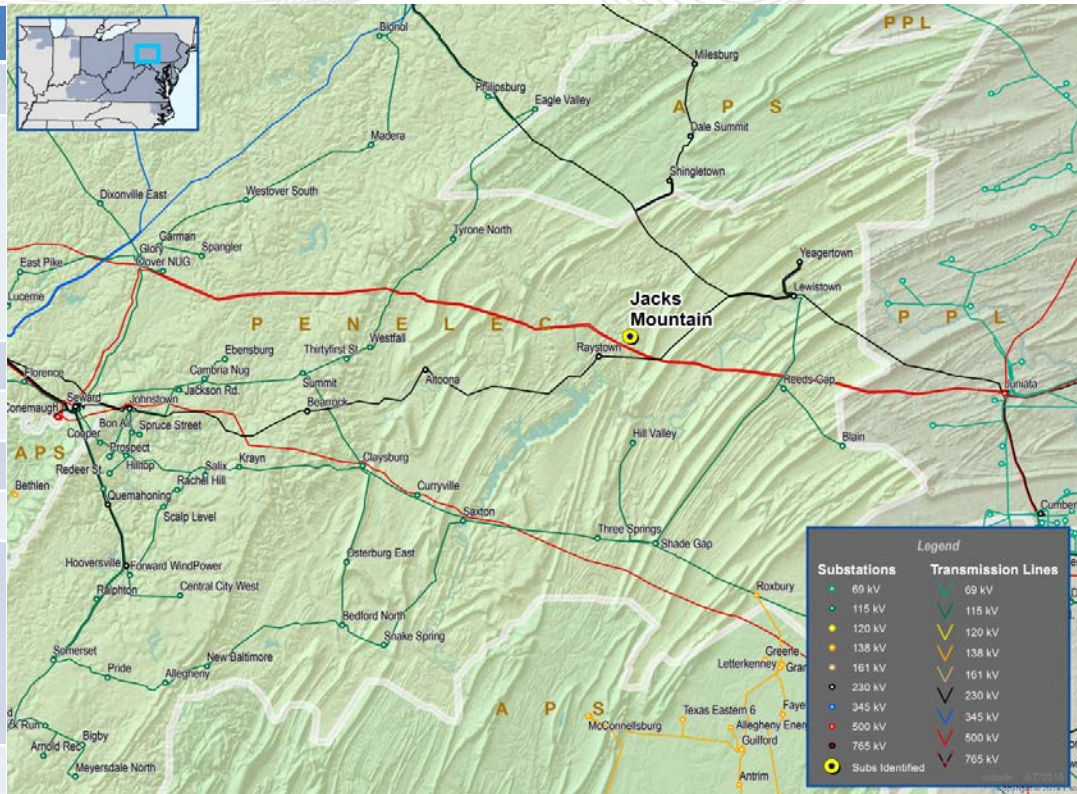
**ME Constraints: AP SOUTH L/O BED-BLA**

**Other Interfaces**

**Taneytown to Carroll 138 kV**

**Pruntytown to 8MTSTORM 500 kV**

**Notes:**





**Project ID: 201415\_1-18G**

**Proposed by: FirstEnergy**

**Proposed Solution: Upgrade terminal equipment on the Lincoln - Carroll 115/138kV path.**

**kV Level: 138**

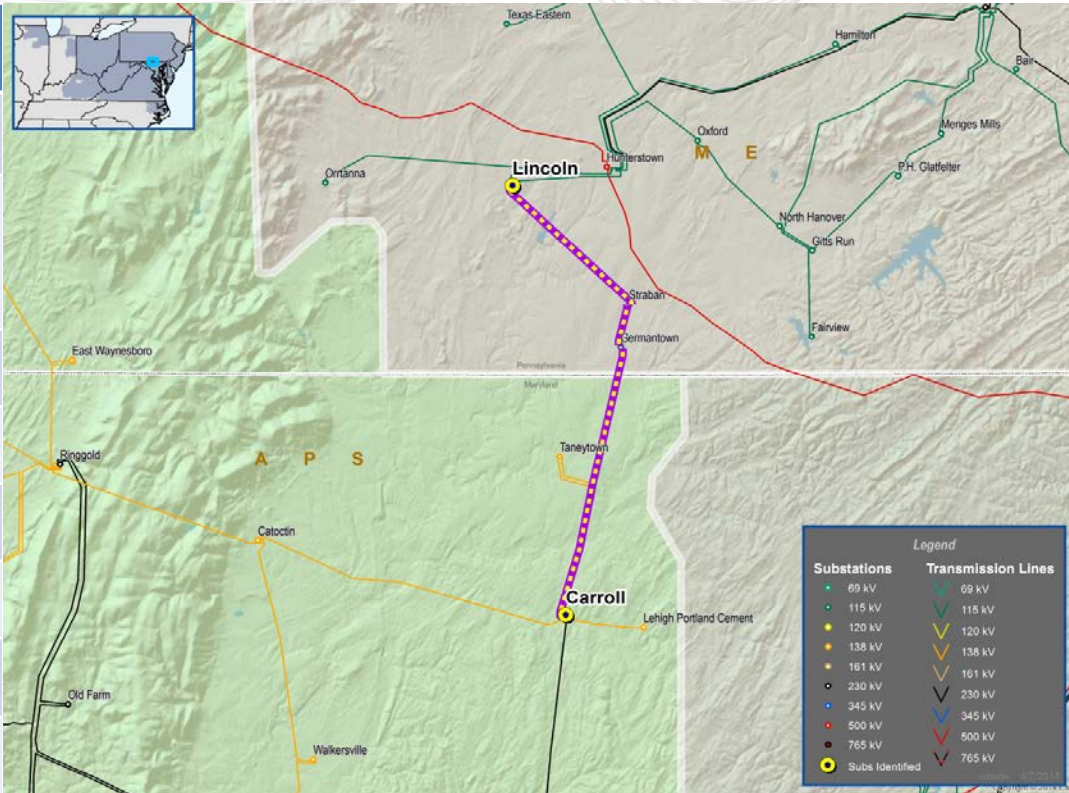
**Cost (\$M): 5.2**

**IS Date: 2019**

**Target Zone: APS/Meted**

**ME Constraints: Taneytown to Carroll 138 kV**

**Notes:**



**Project ID: 201415\_1-18H**

**Proposed by: FirstEnergy**

**Proposed Solution: Rebuild and Reconductor the Lincoln - Carroll 115/138kV path. Line will be constructed for future 230kV operation.**

**kV Level: 138**

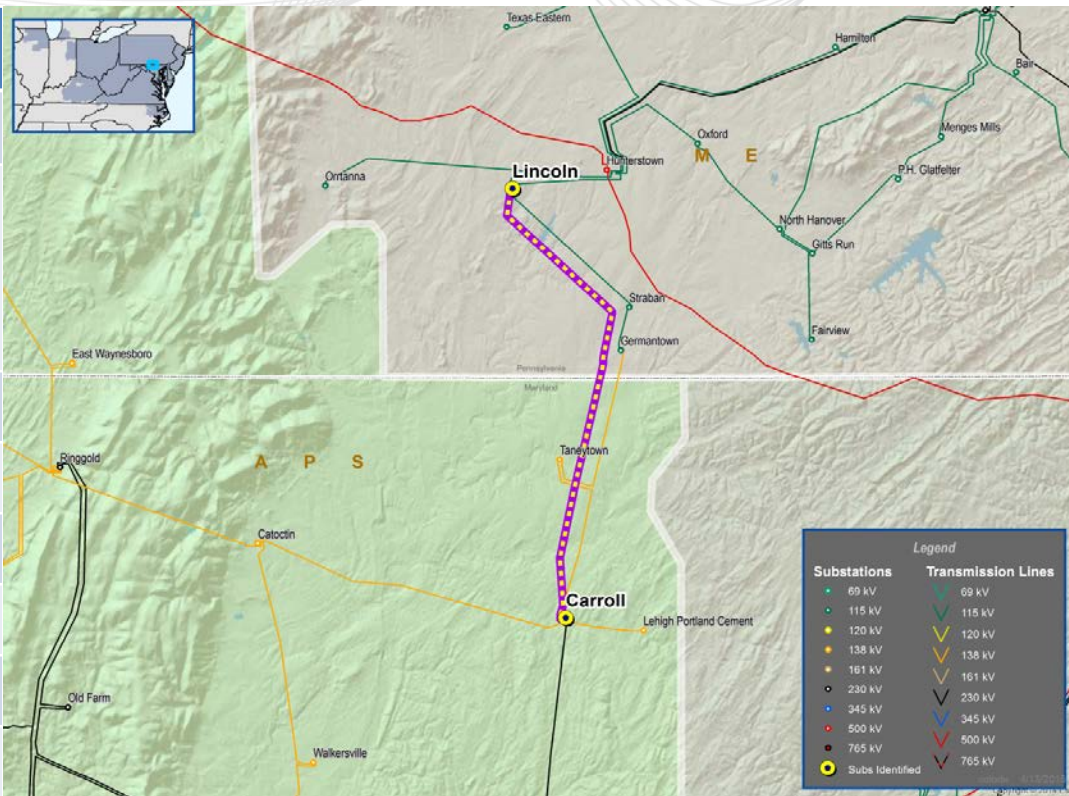
**Cost (\$M): 58**

**IS Date: 2019**

**Target Zone: APS/Meted**

**ME Constraints: Taneytown to Carroll 138 kV**

**Notes:**



Project ID: 201415\_1-181

Proposed by: FirstEnergy

Proposed Solution: Upgrade 138 kV substation equipment at Butler, Shanor Manor, and Krendale substations. New rating of the line will be 353 MVA summer normal and 422 MVA summer emergency

kV Level: 138

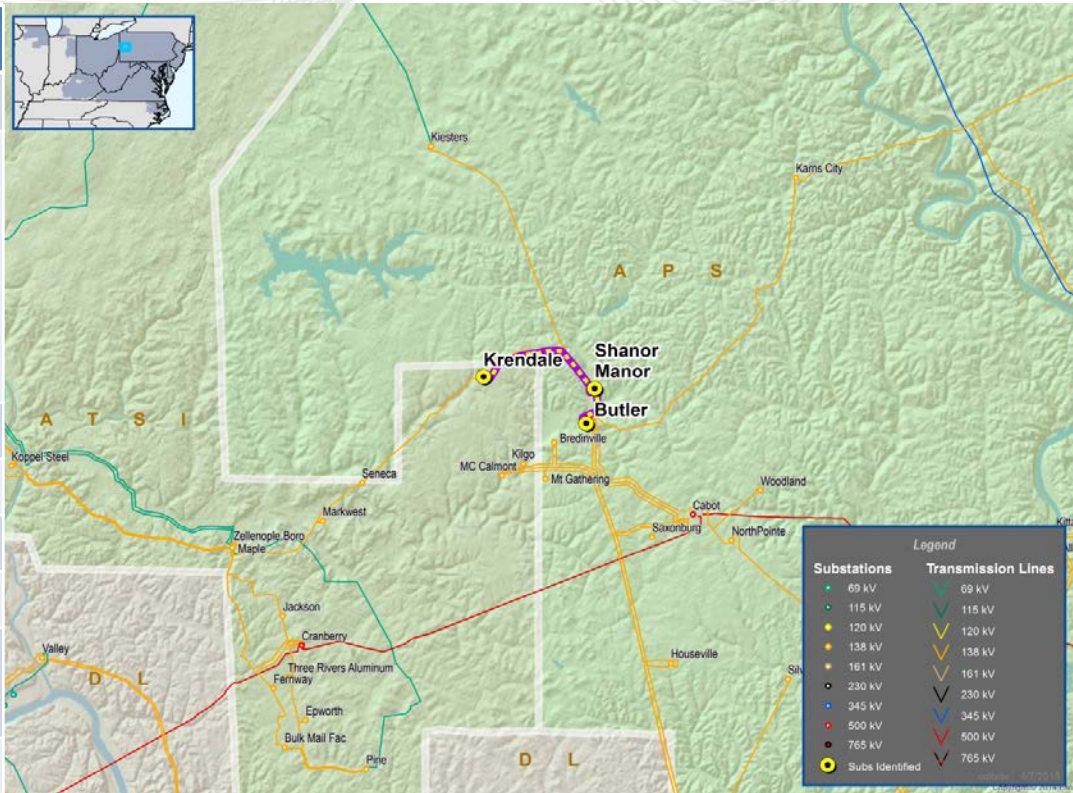
Cost (\$M): 0.6

IS Date: 2019

Target Zone: APS/Meted

ME Constraints: Krendale to Shanor Manor 138 kV

Notes:



**Project ID: 201415\_1-18J**

**Proposed by: FirstEnergy**

**Proposed Solution:** Replace the existing 345/138kV 448MVA transformer at Avon substation.  
 Reconductor the Black River-Lorain 138kV line.  
 Upgrade terminal end equipment. Construct second 138kV line between West Fremont and Hayes substations.

**kV Level:** 345

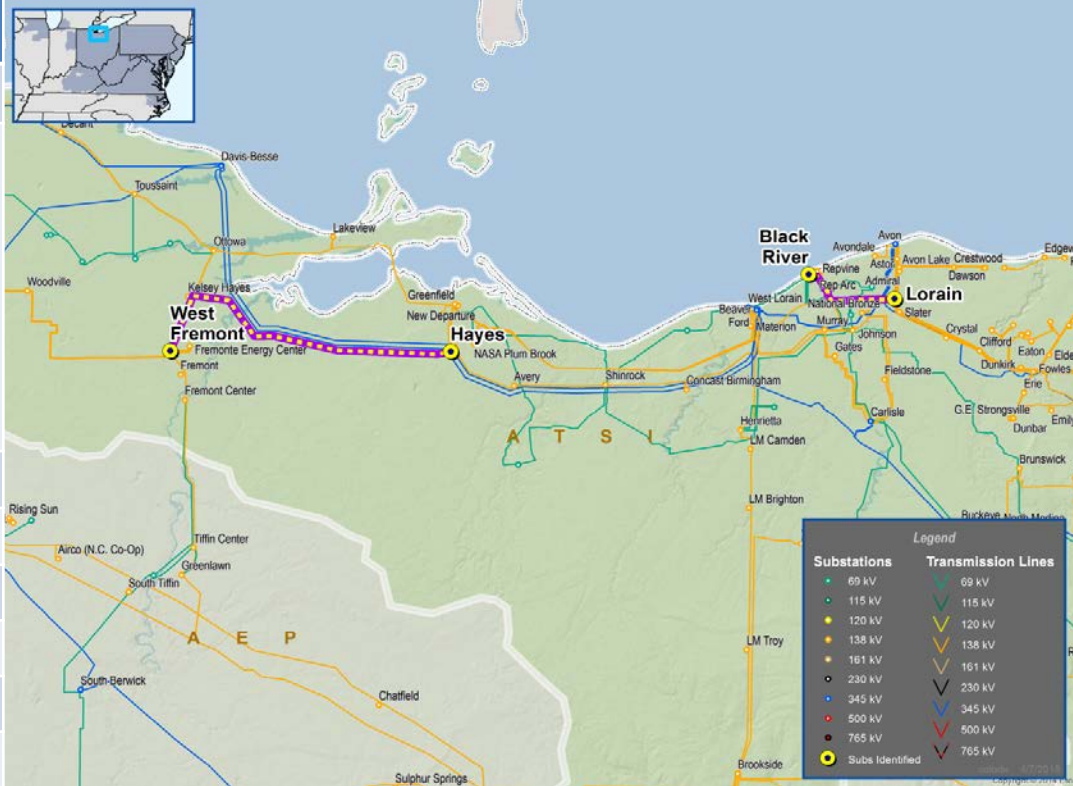
**Cost (\$M):** 22.4

**IS Date:** 2019

**Target Zone:** ATSI

**ME Constraints:** CLEVELAND INTERFACE

**Notes:**



**Project ID: 201415\_1-18K**



Proposed by: FirstEnergy

Proposed Solution: b2559 Reconductor the Black River-Lorain 138kV line and upgrade Black River and Lorain substation terminal end equipment. (once the Baseline RTEP projects are completed. No additional Upgrades are required.)

kV Level: 138

Cost (\$M): 9.6

IS Date: 2019

Target Zone: ATSI

ME Constraints: 02BLKRVR to Lorain 138 kV

Notes: B2559 removes driver



**Proposal will not be evaluated.**

**Project ID: 201415\_1-18L**

Proposed by: FirstEnergy

Proposed Solution: No upgrade required. The rating utilized in the model was incorrect. (once the Baseline RTEP projects are completed. No additional Upgrades are required.)

kV Level: 138

Cost (\$M): N/A

IS Date: 2019

Target Zone: ATSI

ME Constraints: Crestwood to Astor 138 kV

Notes: Increased base ratings removes driver

**Proposal will not be evaluated.**



Project ID: 201415\_1-19B

Proposed by: Northeast Transmission Development

Proposed Solution: Approximately 6-mile 138 kV Line from Grand Point to a new 500/138 kV substation on the Conemaugh-Hunterstown 500 kV Line ("Green Ridge")

kV Level: 138

Cost (\$M): 38.9

IS Date: 2020

Target Zone: Meted/Penelec

ME Constraints: AP SOUTH L/O BED-BLA

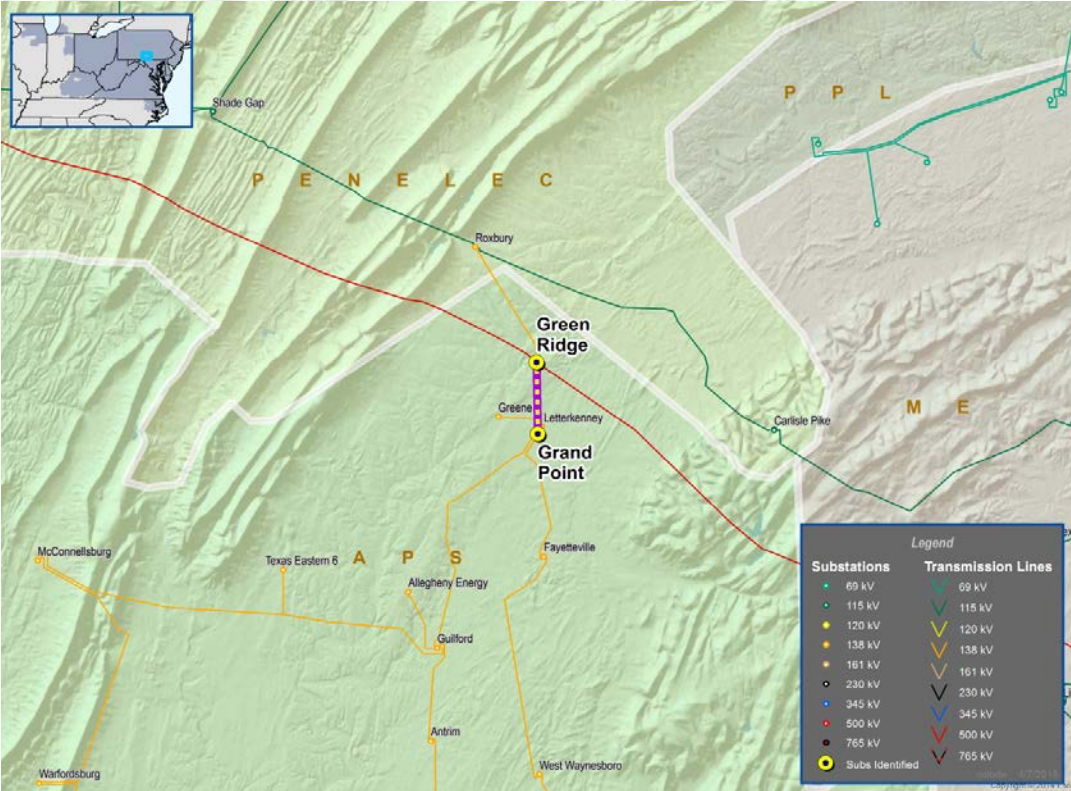
BED-BLA L/O MTS-DOU

Taneytown to Carroll 138 kV

Conastone to Northwest 230 kV

Peach Bottom 500 kV

Notes:





**Project ID: 201415\_1-19C**

Proposed by: Northeast Transmission Development

Proposed Solution: Approximately 6-mile 138 kV Line from Grand Point to a new 500/138 kV substation on the Conemaugh-Hunterstown 500 kV Line ("Green Ridge") with a series reactor at Green Ridge.

kV Level: 138

Cost (\$M): 41.9

IS Date: 2020

Target Zone: Meted/Penelec

ME Constraints: AP SOUTH L/O BED-BLA  
L/O MTS-DOU

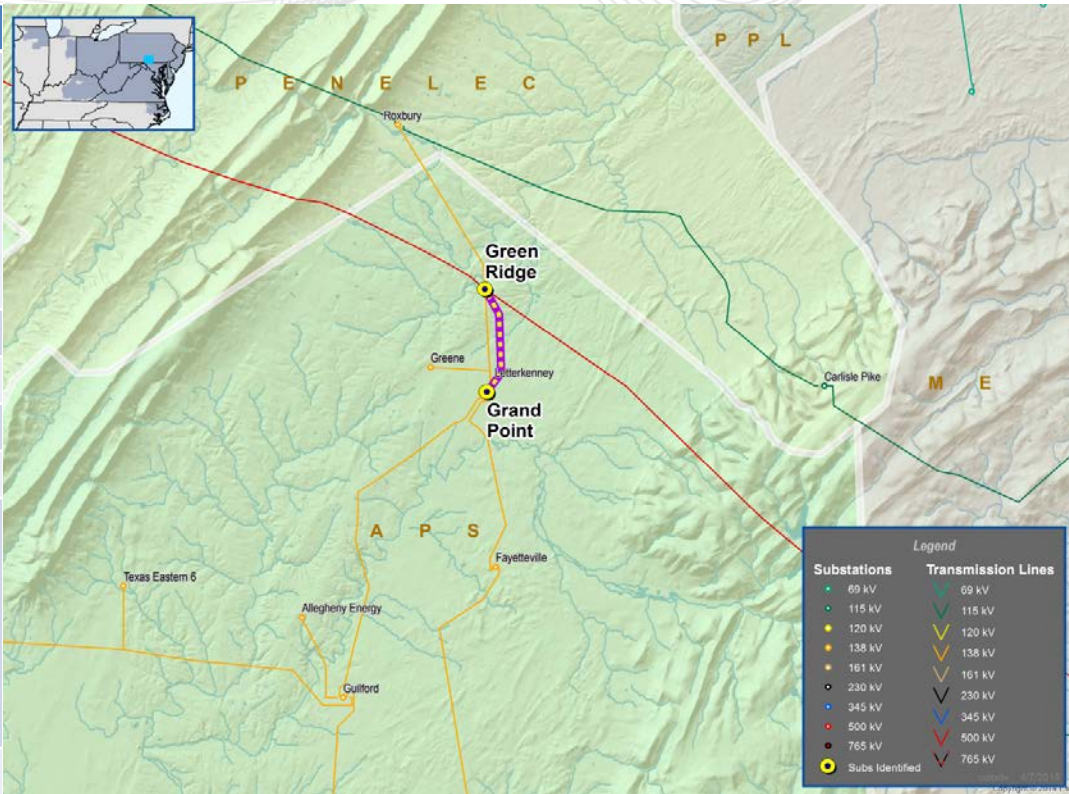
Taneytown to Carroll 138 kV

Conastone to Northwest 230 kV

Peach Bottom 500 kV

Jacksons Ferry to Cloverdale 765 KV 765 kV

Notes:



**Project ID: 201415\_1-19D**

**Proposed by: Northeast Transmission Development**

**Proposed Solution: Approximately 26-mile 230 kV Line from Ringgold to a new 500/230 kV substation on the Conemaugh-Hunterstown 500 kV Line ("Green Ridge").**

**kV Level: 230**

**Cost (\$M): 104.5**

**IS Date: 2020**

**Target Zone: Meted/Penelec**

**ME Constraints: AP SOUTH L/O BED-BLA  
L/O MTS-DOU**

**50045005 L/O RCKSPG-KEENY**

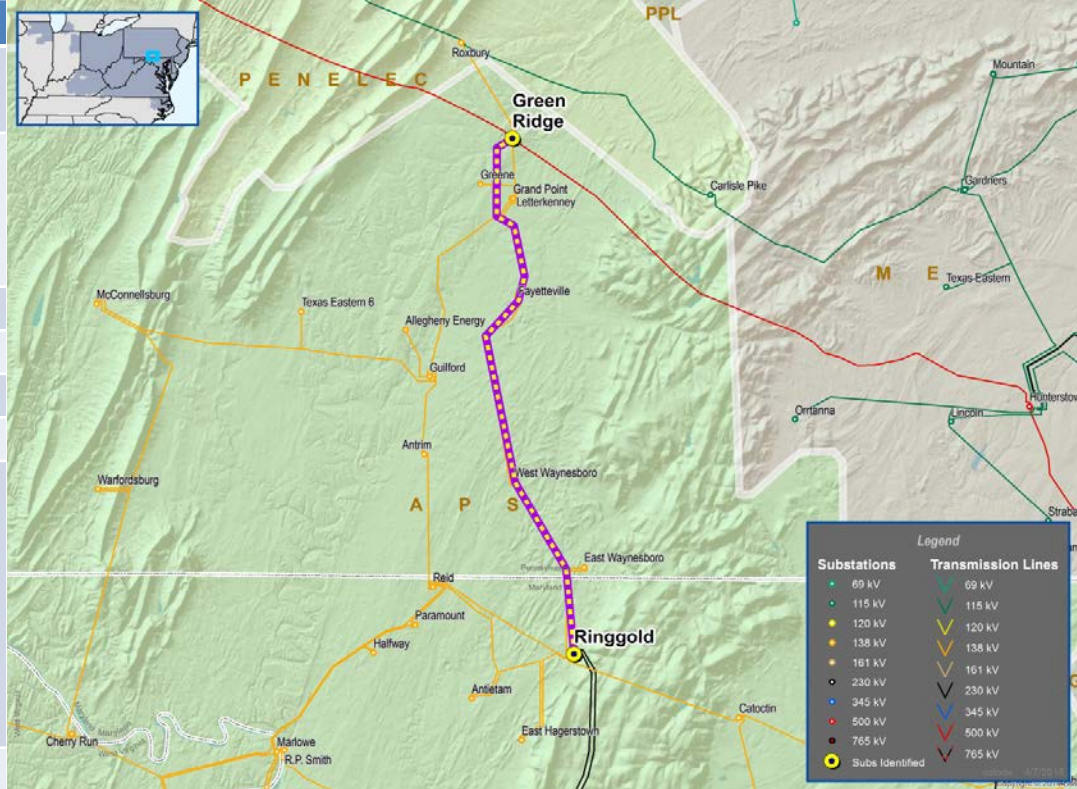
**Taneytown to Carroll 138 kV**

**Conastone to Northwest 230 kV**

**Peach Bottom 500 kV**

**Jacksons Ferry to Cloverdale 765 KV 765 kV**

**Notes:**



Project ID: 201415\_1-19E

Proposed by: Northeast Transmission Development

Proposed Solution: Build 750 MVAR Static VAR Compensation (Harpers Run) Interconnected to Morrisville 500 kV Substation.

kV Level: 500

Cost (\$M): 53.7

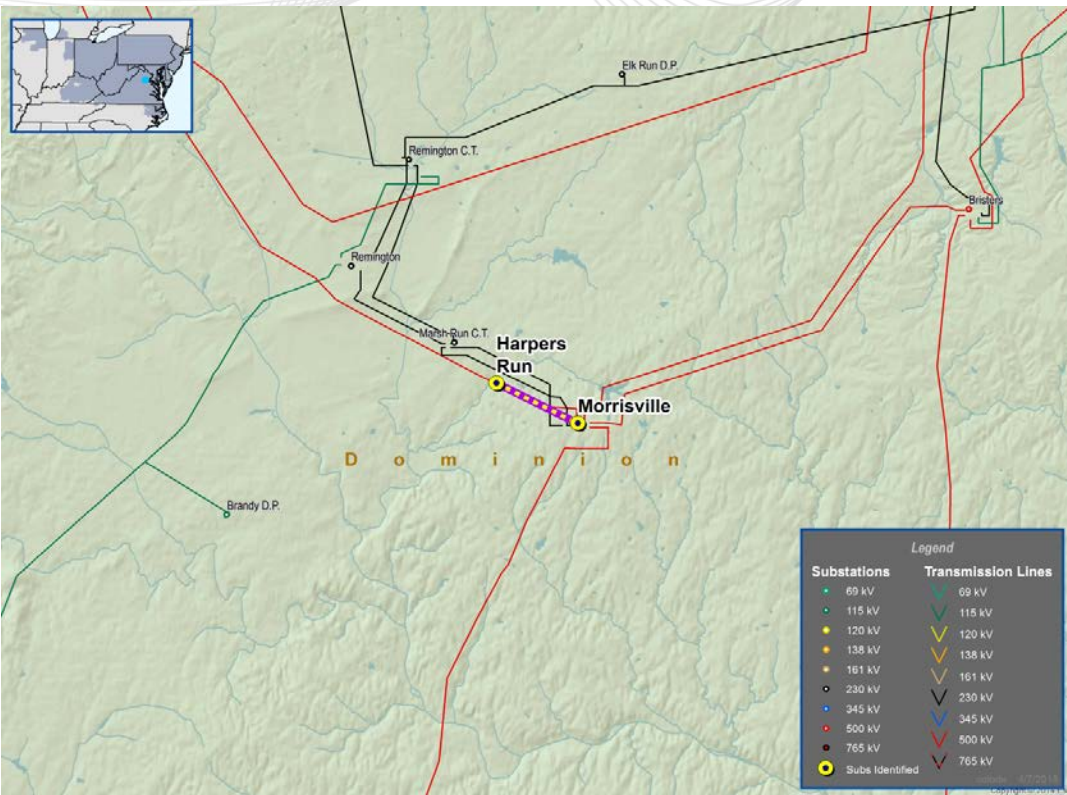
IS Date: 2020

Target Zone: Dominion

ME Constraints: AP SOUTH L/O BED-BLA  
L/O MTS-DOU

Conastone to Northwest 230 kV

Notes:



## Project ID: 201415\_1-19F

Proposed by: Northeast Transmission Development

Proposed Solution: Approximately 99-mile 500 kV Line from Harrison to Bath County.

kV Level: 500

Cost (\$M): 432.5

IS Date: 2019

Target Zone: APS/Dominion

ME Constraints: AP SOUTH L/O BED-BLA

L/O MTS-DOU

50045005 L/O RCKSPG-KEENY

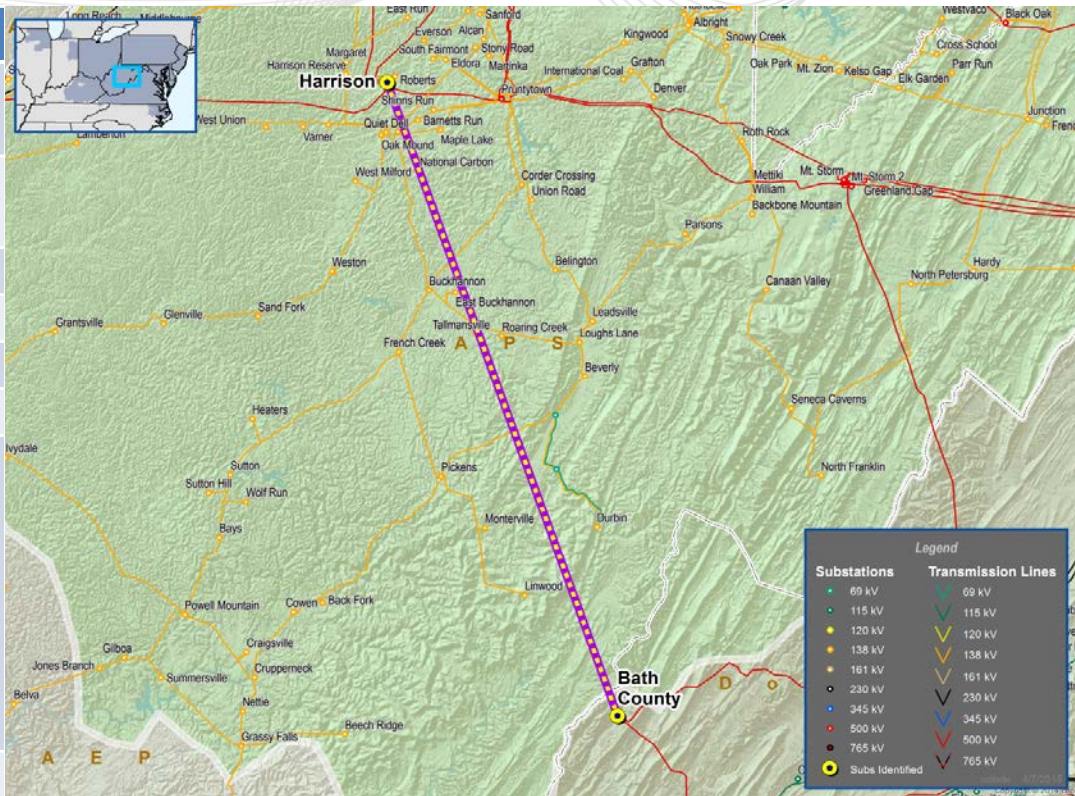
Taneytown to Carroll 138 kV

Conastone to Northwest 230 kV

Peach Bottom 500 kV

Jacksons Ferry to Cloverdale 765 KV 765 kV

Notes:



**Project ID: 201415\_1-19G**

**Proposed by: Northeast Transmission Development**

**Proposed Solution: Build 500/230 kV Substation (Keyers Run) Interconnecting Conastone-Brighton 500 kV Line to Northwest 230 kV Substation.**

**kV Level: 230**

**Cost (\$M): 48.6**

**IS Date: 2020**

**Target Zone: Pepco/BGE**

**ME Constraints: AP SOUTH L/O BED-BLA  
L/O MTS-DOU**

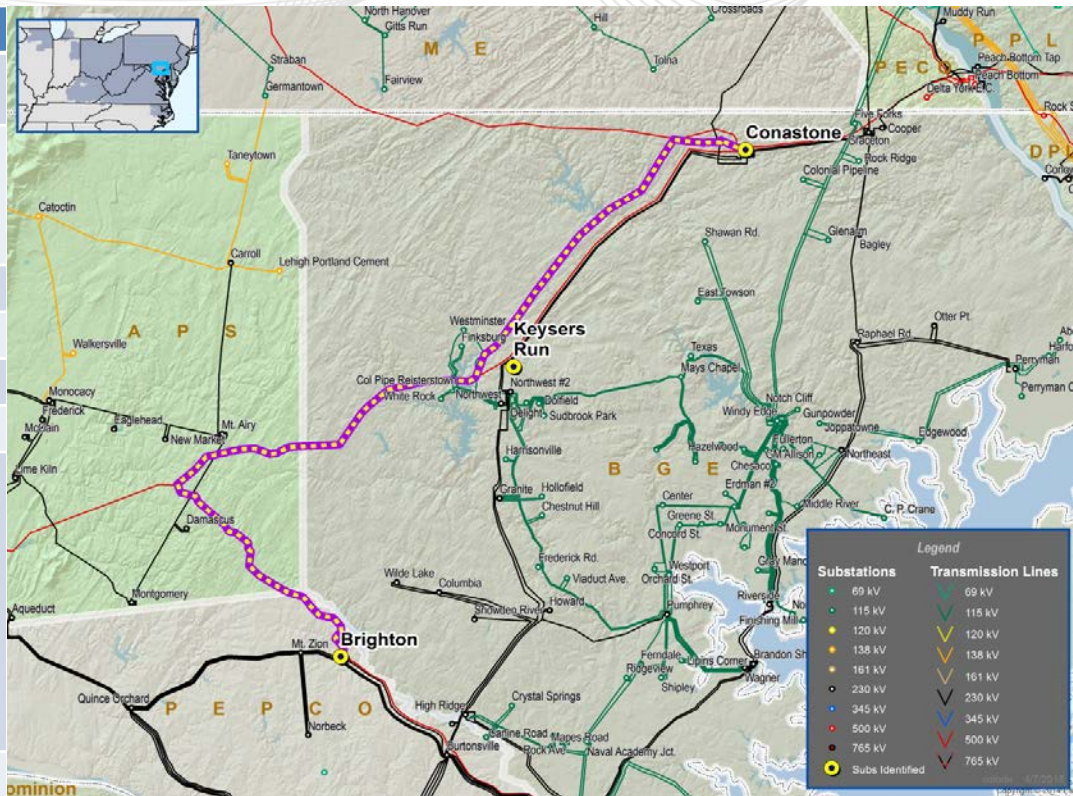
**50045005 L/O RCKSPG-KEENY**

**Safe Harbor to Graceton 230 kV**

**Conastone to Northwest 230 kV**

**Peach Bottom 500 kV**

**Notes:**



Project ID: 201415\_1-19H

Proposed by: Northeast Transmission Development

Proposed Solution: Approximately 22-mile 345 kV Line from Pontiac Midpoint to Katydid Road.

kV Level: 345

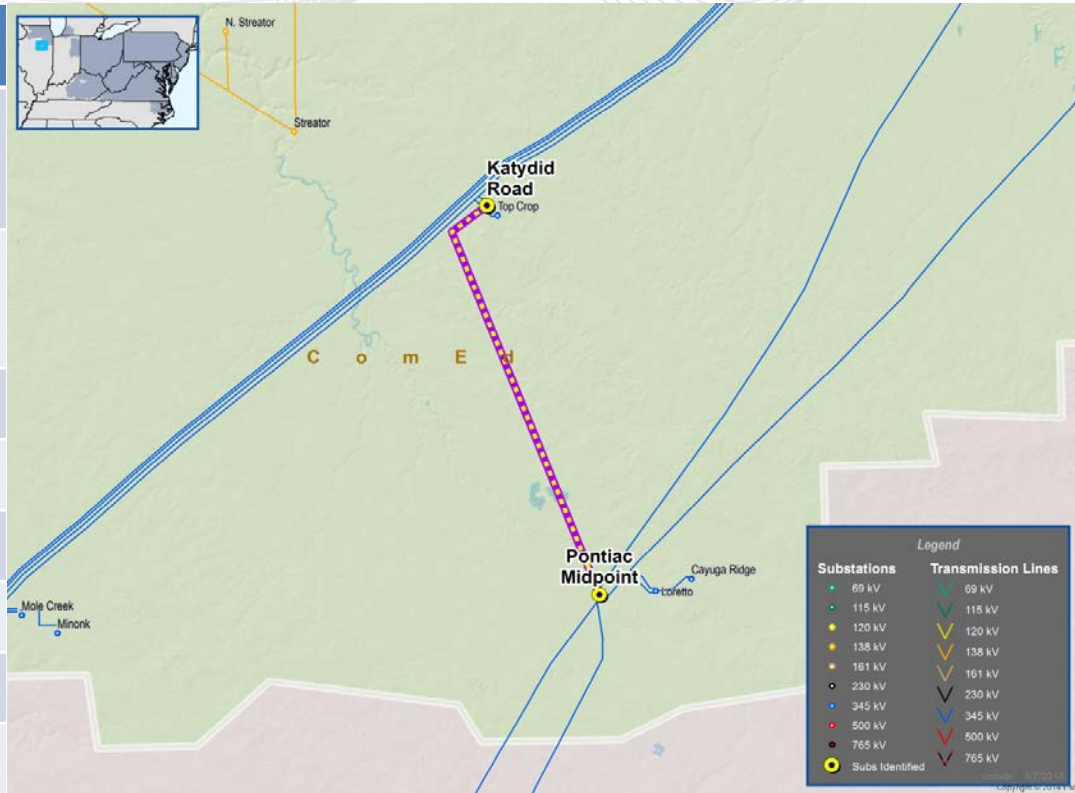
Cost (\$M): 42.9

IS Date: 2019

Target Zone: COMED

ME Constraints: Loretto to Wilton CTR 345 kV

Notes:



Project ID: 201415\_1-191

Proposed by: Northeast Transmission Development

Proposed Solution: Build 138 kV Switching Station (Renton)  
Interconnecting Plum-Cheswick 138 kV Line and Springdale-Huntingdon 138 kV Line.

kV Level: 138

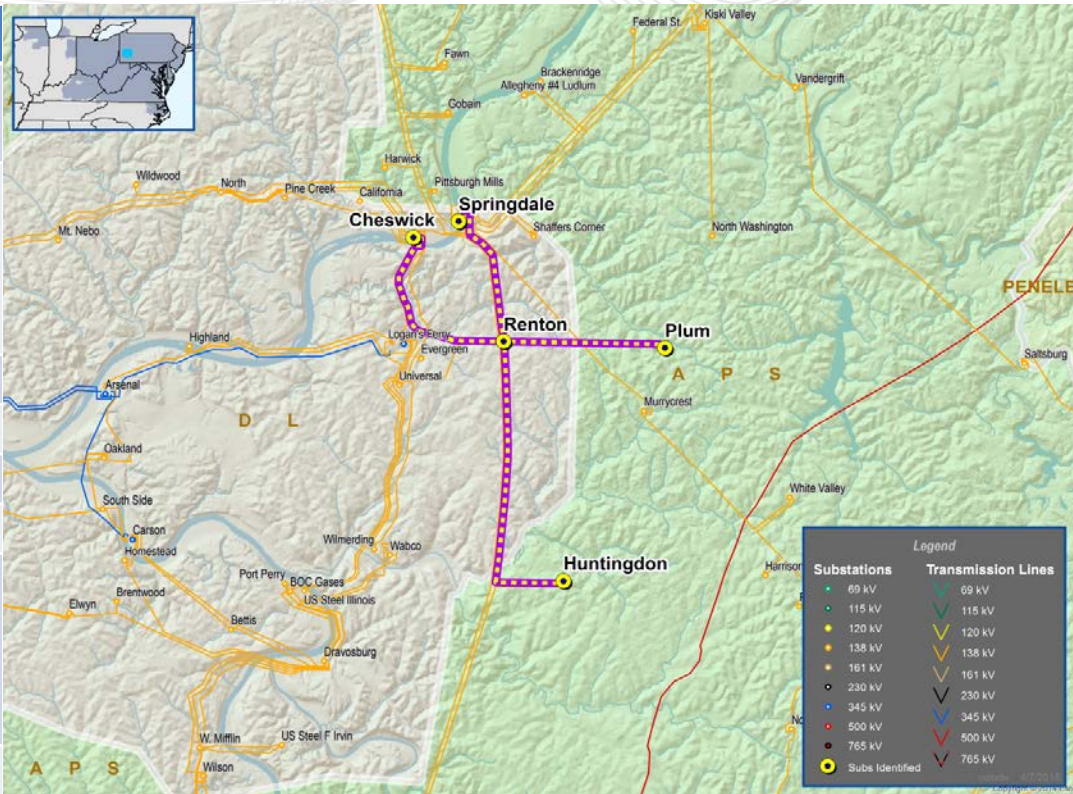
Cost (\$M): 9.2

IS Date: 2020

Target Zone: APS/DUQ

ME Constraints: Dravosburg to West Mifflin 138 kV  
Woodville to 15USAP 138 kV  
Krendale to Shanor Manor 138 kV

Notes:



## Project ID: 201415\_1-20A

Proposed by: ITC

Proposed Solution: New 58-mile 500 kV line from the existing Black Oak substation to existing Front Royal substation.

kV Level: 500

Cost (\$M): 187.5

IS Date: 2020

Target Zone: APS/Dominion

ME Constraints: AP SOUTH L/O BED-BLA

BED-BLA L/O MTS-DOU

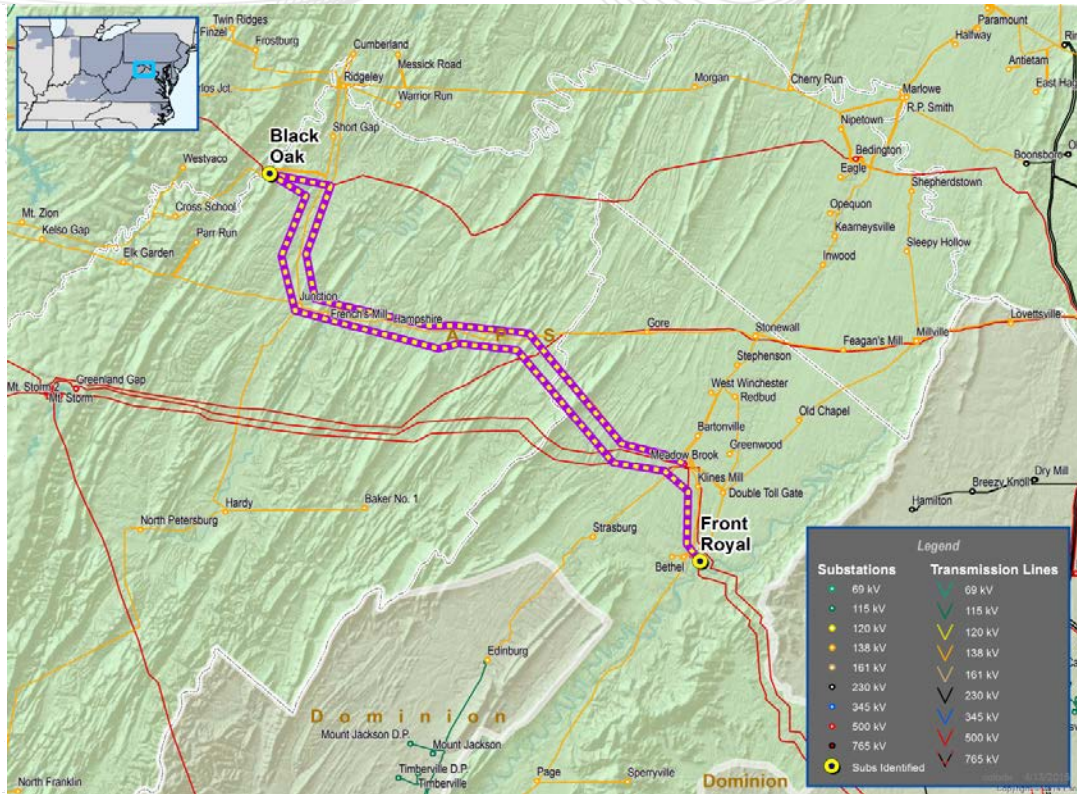
Fieldale to Thornton 138 kV

Brunner Island to Yorkana 230 kV

Lorreto to Wilton CTR 345 kV

Safe Harbor to Graceton 230 kV

Notes:





**Project ID: 201415\_1-20B**

Proposed by: ITC

Proposed Solution: Construct approximately 29 miles of new 138kV single-circuit overhead line from the existing Karns City substation in Pennsylvania to the existing McDowell substation in Pennsylvania.

kV Level: 138

Cost (\$M): 64.3

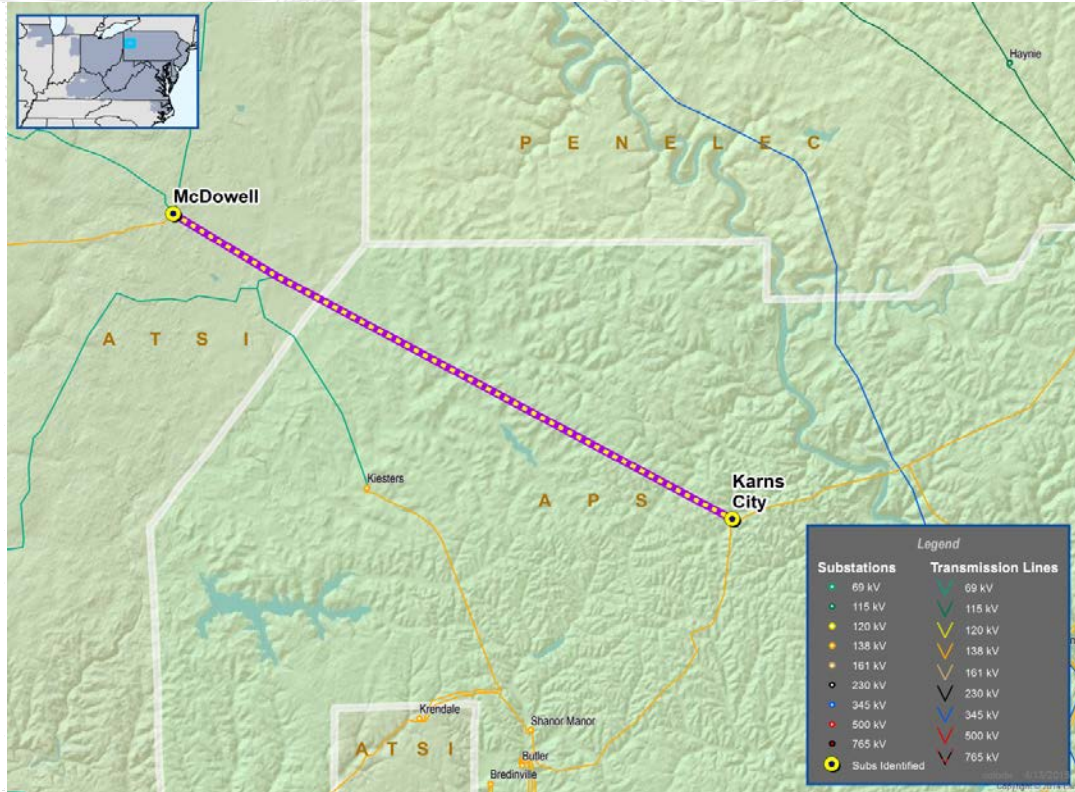
IS Date: 2020

Target Zone: APS/DUQ

ME Constraints: Dravosburg to West Mifflin 138 kV

Woodville to 15USAP 138 kV

Notes:



Project ID: 201415\_1-20C

Proposed by: ITC

Proposed Solution: Build approximately 11 miles of new 138kV single-circuit overhead line from a new substation near the existing Drewersburg substation in Indiana (AEP) to the existing Willey substation in Ohio (DEO&K).

kV Level: 138

Cost (\$M): 25

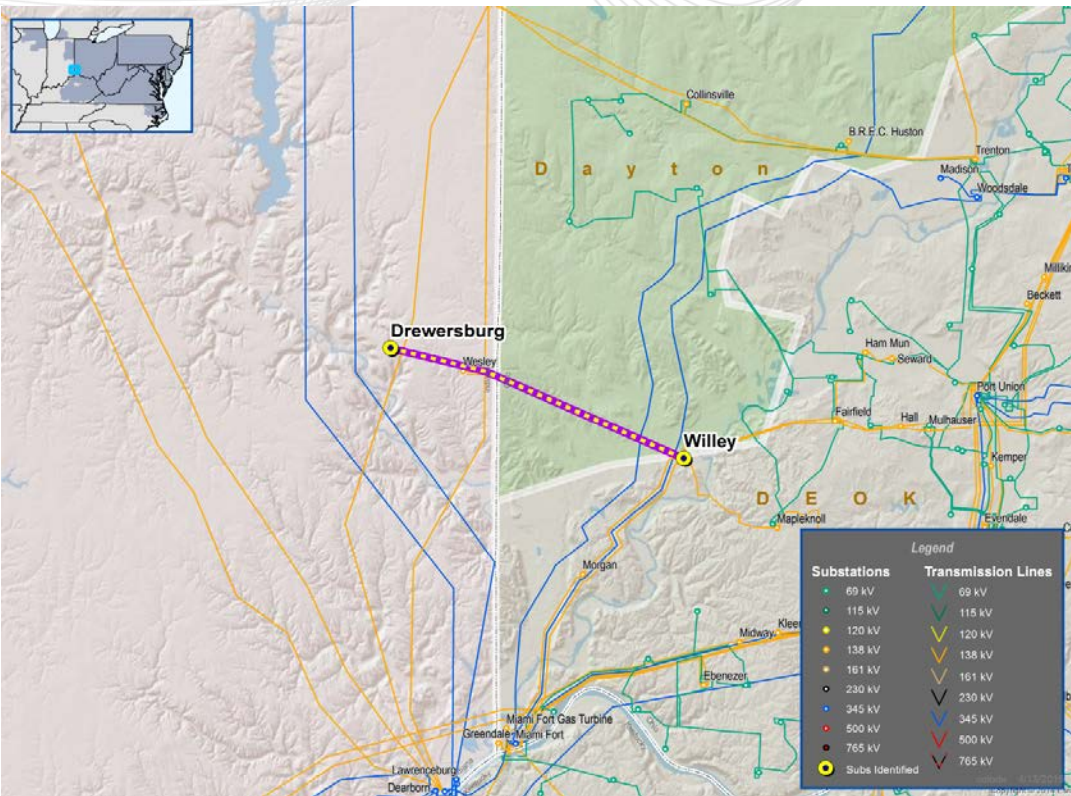
IS Date: 2020

Target Zone: AEP/DEOK

ME Constraints: Miami Fort to Willey 138 kV

Notes: Deactivation project removes driver

**Proposal will not be evaluated.**



**Project ID: 201415\_1-20D**

Proposed by: ITC

Proposed Solution: Construct the new 345kV/138kV “Hamilton” substation near the existing Willey substation (Duke) in Hamilton County, Ohio. Cut the adjacent Woodsdale – Miami Fort 345kV line (Duke) into the new Hamilton substation. Connect the new Hamilton substation 138kV bus to the existing Willey 138kV switchyard.

kV Level: 345

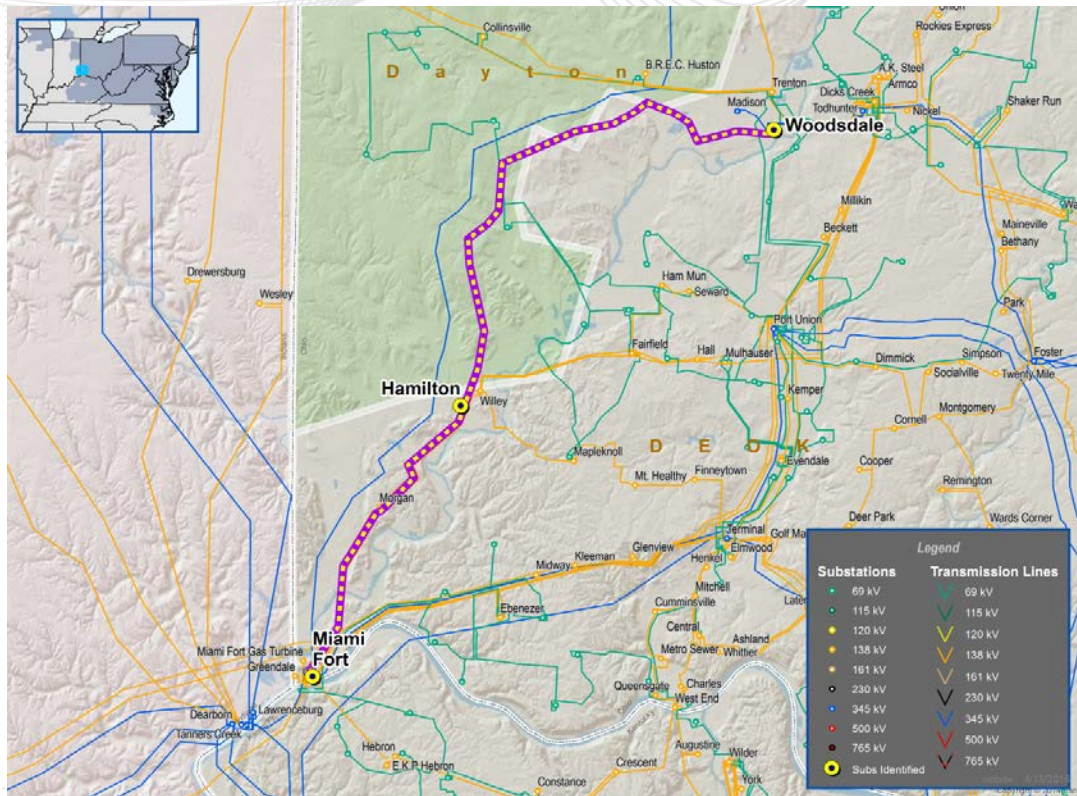
Cost (\$M): 16.9

IS Date: 2020

Target Zone: DEOK

ME Constraints: Miami Fort to Willey 138 kV

Notes: Deactivation project removes driver



**Proposal will not be evaluated.**

**Project ID: 201415\_1-20E**

Proposed by: ITC

Proposed Solution: Construct approximately 5 miles of new 138kV single-circuit overhead line from the proposed Diamond Ave. substation in Virginia (ITC) to the existing Blaine substation in Virginia (AEP).

kV Level: 138

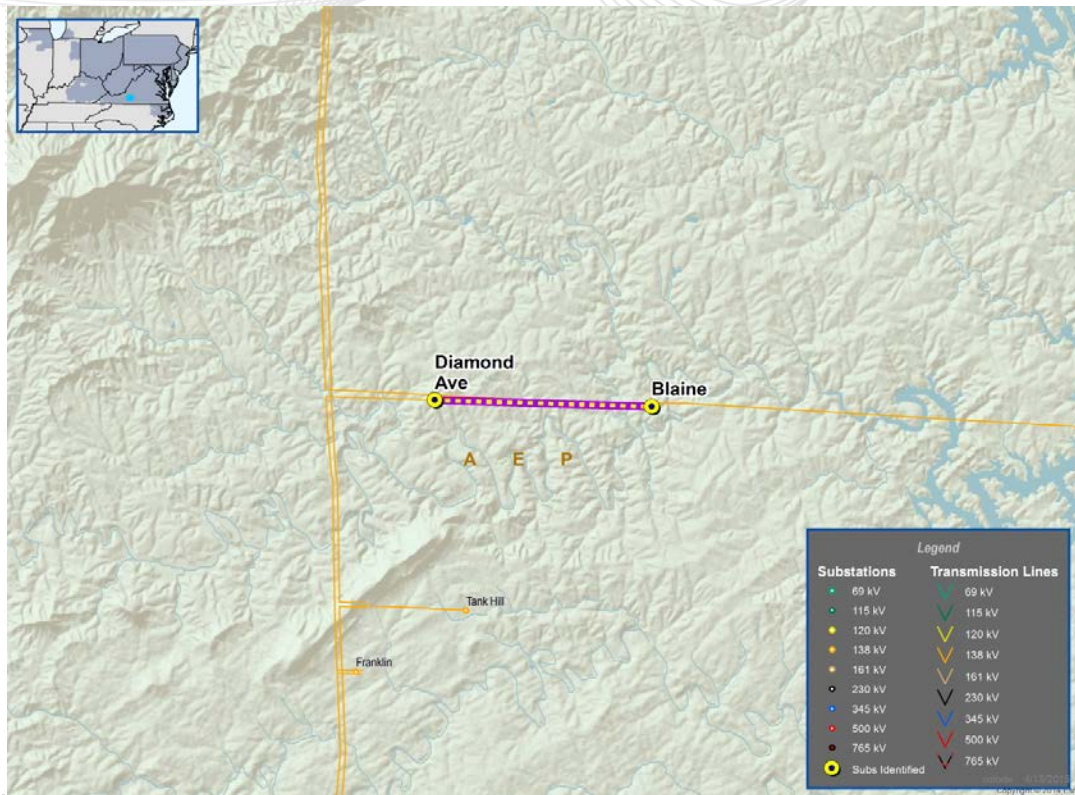
Cost (\$M): 19

IS Date: 2020

Target Zone: AEP

ME Constraints: Fieldale to Thornton 138 kV

Notes:



## Project ID: 201415\_1-20F

Proposed by: ITC

Proposed Solution: Construct approximately 6 miles of underground transmission line from the existing West Orange substation in New Jersey to the existing Cook Road substation in New Jersey.

kV Level: 230

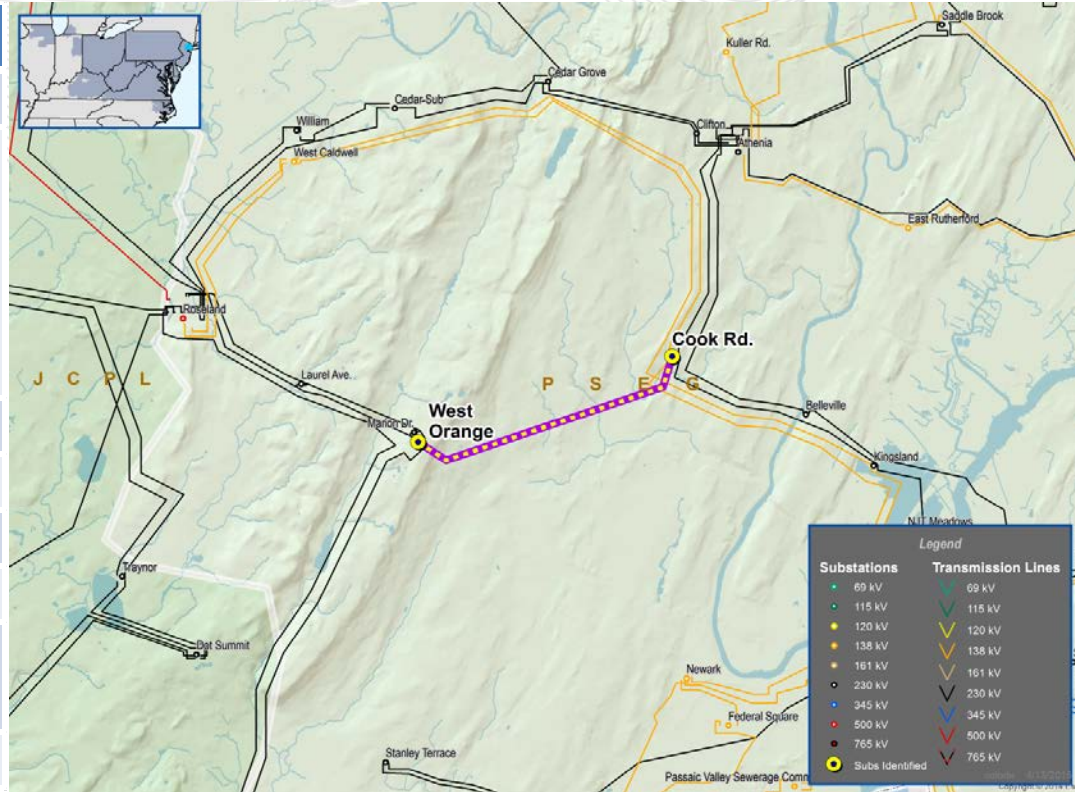
Cost (\$M): 102.7

IS Date: 2020

Target Zone: PSEG

ME Constraints: Roseland-Cedar Grove-Clifton  
230 kV corridor

Notes:



## Project ID: 201415\_1-20G

Proposed by: ITC

Proposed Solution: Construct approximately 50 miles of new 500kV single-circuit overhead line from the existing Black Oak substation (First Energy) to the existing Meadow Brook substation (First Energy).

kV Level: 500

Cost (\$M): 156

IS Date: 2020

Target Zone: APS/Dominion

ME Constraints: AP SOUTH L/O BED-BLA

AEP-DOM L/O BED-BLA

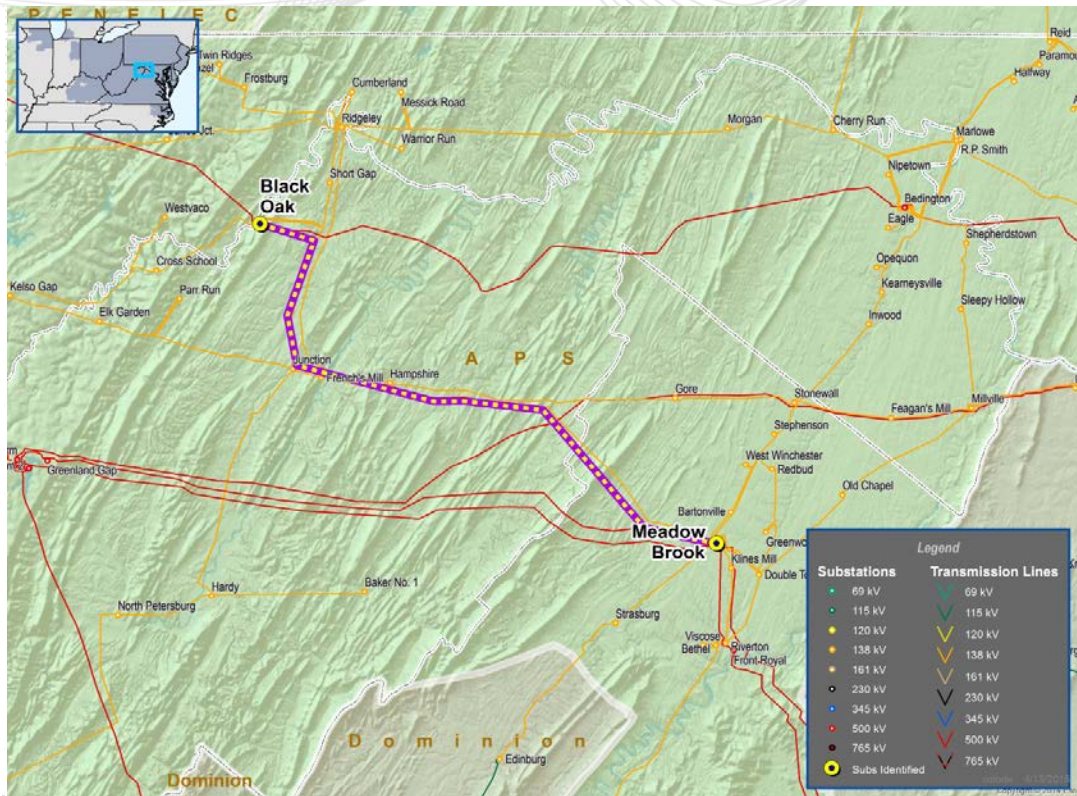
BED-BLA L/O MTS-DOU

Fieldale to Thornton 138 kV

Conastone to Northwest 230 kV

Pleasant View to Ashburn 230 kV

Notes:



## Project ID: 201415\_1-20H

Proposed by: ITC

Proposed Solution: Construct approximately 3.6 miles of new 138kV single-circuit overhead line from the existing Enlow substation in Pennsylvania (First Energy) to the existing Findlay substation in Pennsylvania (DQE).

kV Level: 138

Cost (\$M): 14.4

IS Date: 2020

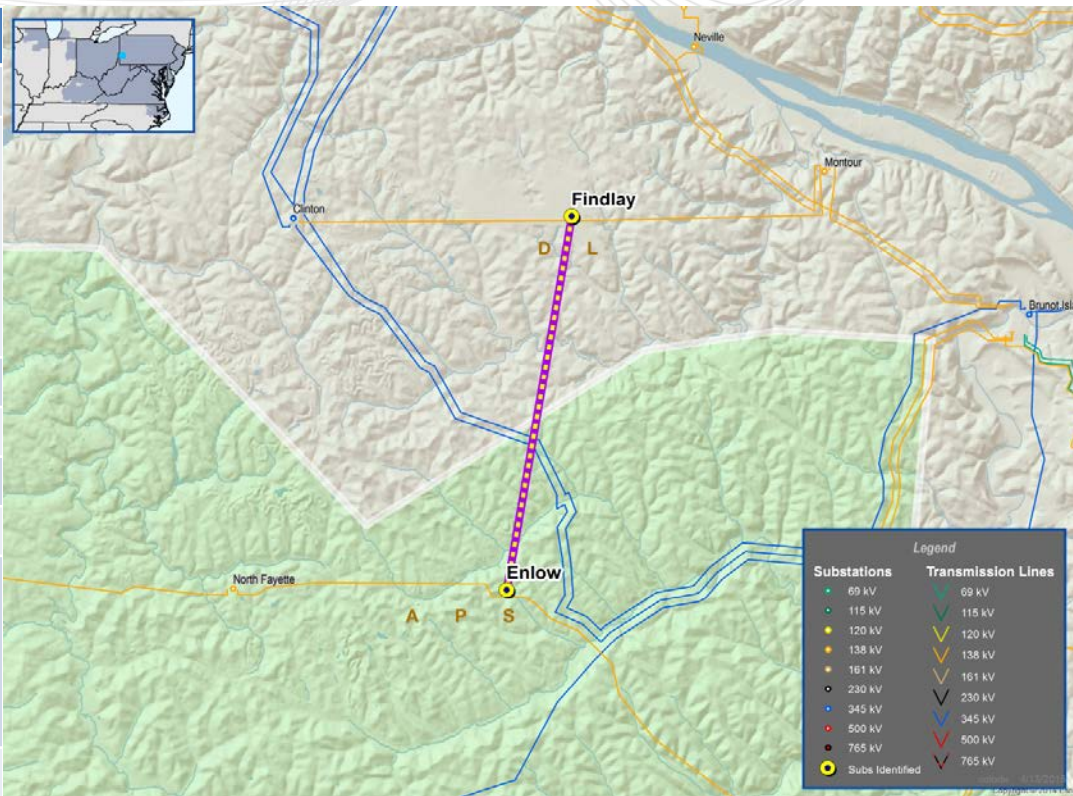
Target Zone: APS/DUQ

ME Constraints: Dravosburg to West Mifflin 138 kV

Woodville to 15USAP 138 kV

Taneytown to Carroll 138 kV

Notes:



**Project ID: 201415\_1-201**

Proposed by: ITC

Proposed Solution: Construct approximately 26.5 miles of new 138kV single-circuit overhead line from the existing Germantown substation to the existing Ringgold substation.

kV Level: 138

Cost (\$M): 70.8

IS Date: 2020

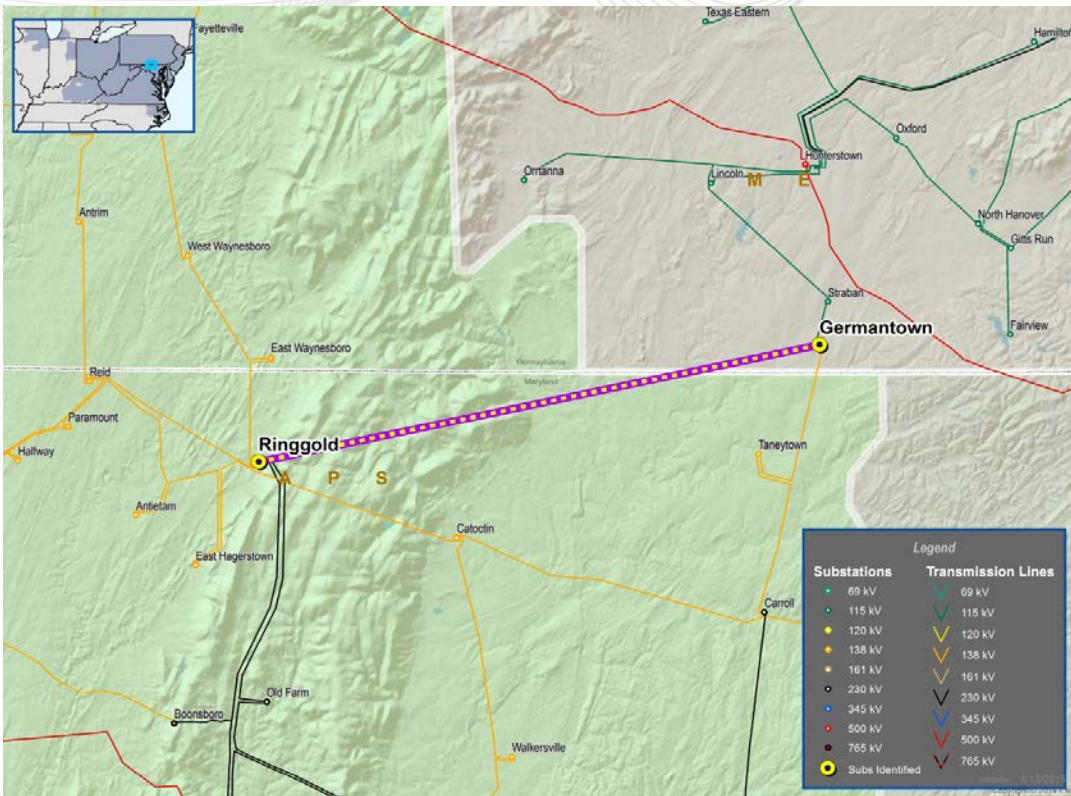
Target Zone: APS/Dominion

ME Constraints: Taneytown to Carroll 138 kV

Brunner Island to Yorkana 230 kV

Safe Harbor to Graceton 230 kV

Notes:





## Project ID: 201415\_1-20J

Proposed by: ITC

Proposed Solution: New 58-mile 500 kV line from the existing Black Oak substation to existing Front Royal substation. Add Dooks Cap.

kV Level: 500

Cost (\$M): 190.2

IS Date: 2020

Target Zone: APS/Dominion

ME Constraints: AP SOUTH L/O BED-BLA

AEP-DOM L/O BED-BLA

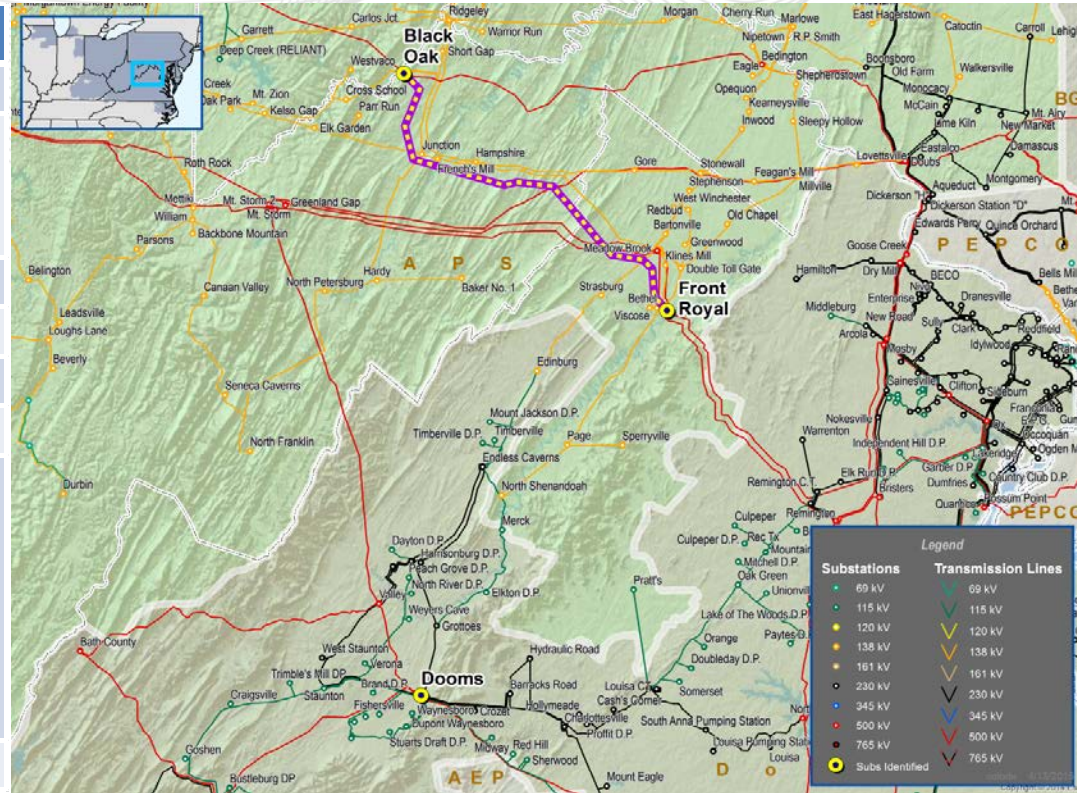
BED-BLA L/O MTS-DOU

Fieldale to Thornton 138 kV

Conastone to Northwest 230 kV

Pleasant View to Ashburn 230 kV

Notes:



## Project ID: 201415\_1-20K

Proposed by: ITC

Proposed Solution: Construct approximately 50 miles of new 500kV single-circuit overhead line from the existing Black Oak substation (First Energy) to the existing Meadow Brook substation (First Energy). Add

Dooms Cap

kV Level: 500

Cost (\$M): 158.7

IS Date: 2020

Target Zone: APS/Dominion

ME Constraints: AP SOUTH L/O BED-BLA

AEP-DOM L/O BED-BLA

L/O MTS-DOU

Fieldale to Thornton 138 kV

Miami Fort to Willey 138 kV

Brunner Island to Yorkana 230 kV

Notes:



## Project ID: 201415\_1-20L

Proposed by: ITC

Proposed Solution: New 58-mile 500 kV line from the existing Black Oak substation to existing Front Royal substation. Add New Station

kV Level: 500

Cost (\$M): 202.5

IS Date: 2020

Target Zone: APS/Dominion

ME Constraints: AP SOUTH L/O BED-BLA

AEP-DOM L/O BED-BLA

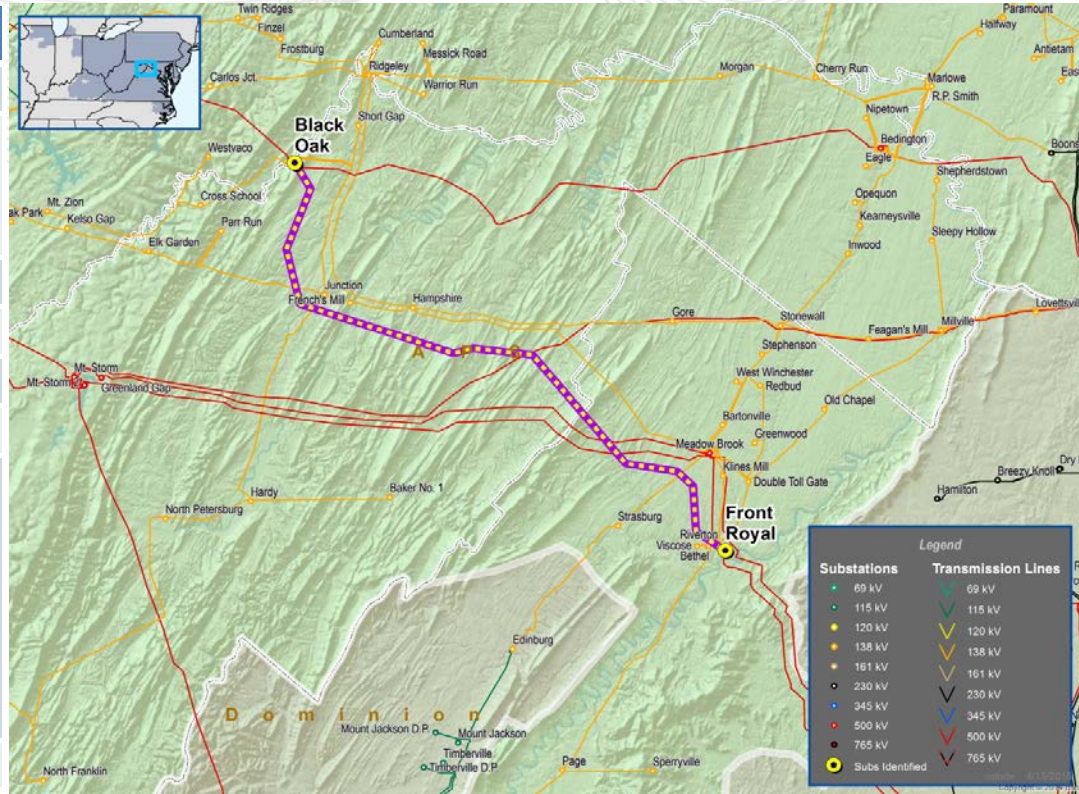
BED-BLA L/O MTS-DOU

Fieldale to Thornton 138 kV

Conastone to Northwest 230 kV

Pleasant View to Ashburn 230 kV

Notes:



## Project ID: 201415\_1-20M

Proposed by: ITC

Proposed Solution: New 58-mile 500 kV line from the existing Black Oak substation to existing Front Royal substation. Install a new 240 MVAR capacitor bank at Dooms 500kV Substation. Add Dooms Cap and New Station

kV Level: 500

Cost (\$M): 205.2

IS Date: 2020

Target Zone: APS/Dominion

ME Constraints: AP SOUTH L/O BED-BLA

AEP-DOM L/O BED-BLA

BED-BLA L/O MTS-DOU

Fieldale to Thornton 138 kV

Conastone to Northwest 230 kV

Pleasant View to Ashburn 230 kV

Notes:



**Project ID: 201415\_1-20N**

Proposed by: ITC

Proposed Solution: Construct approximately 50 miles of new 500kV single-circuit overhead line from the existing Black Oak substation (First Energy) to the existing Meadow Brook substation (First Energy). Add New Station

kV Level: 500

Cost (\$M): 171

IS Date: 2020

Target Zone: APS/Dominion

ME Constraints: AP SOUTH L/O BED-BLA

AEP-DOM L/O BED-BLA

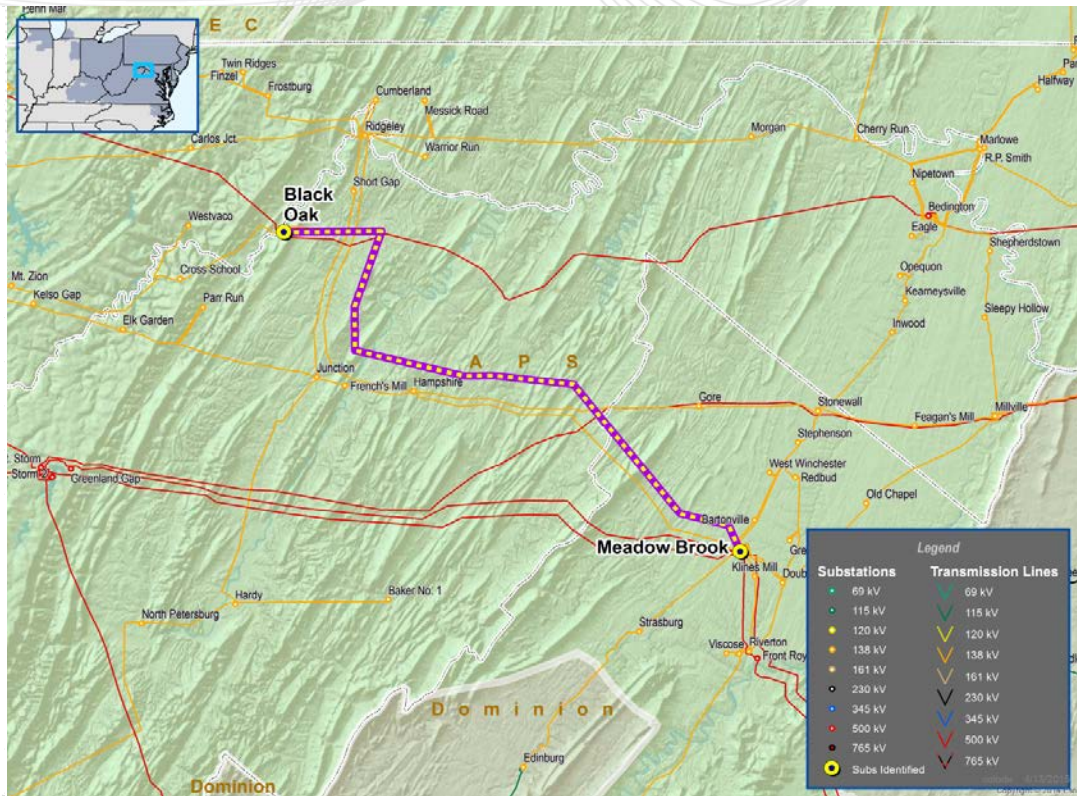
BED-BLA L/O MTS-DOU

Fieldale to Thornton 138 kV

Miami Fort to Willey 138 kV

Brunner Island to Yorkana 230 kV

Notes:



## Project ID: 201415\_1-200

Proposed by: ITC

Proposed Solution: Construct approximately 50 miles of new 500kV single-circuit overhead line from the existing Black Oak substation (First Energy) to the existing Meadow Brook substation (First Energy). Add Dooks Cap and New Station.

kV Level: 500

Cost (\$M): 173.7

IS Date: 2020

Target Zone: APS/Dominion

ME Constraints: AP SOUTH L/O BED-BLA

AEP-DOM L/O BED-BLA

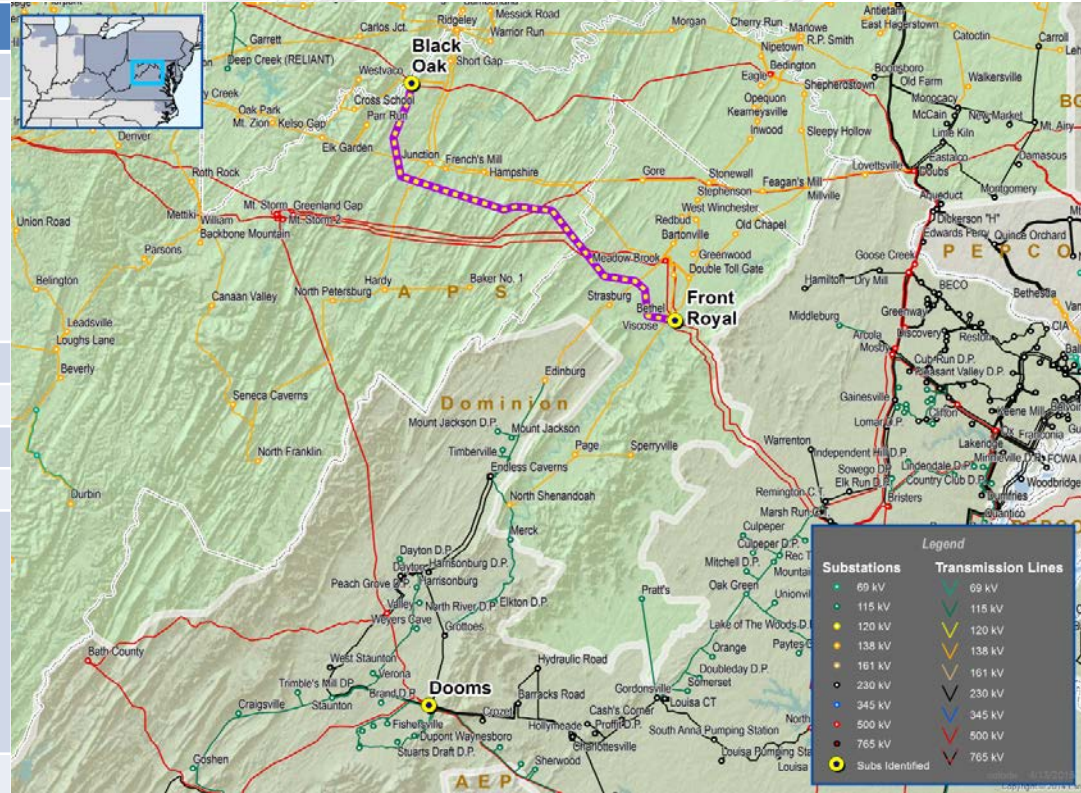
BED-BLA L/O MTS-DOU

Fieldale to Thornton 138 kV

Miami Fort to Willey 138 kV

Brunner Island to Yorkana 230 kV

Notes:



**Project ID: 201415\_1-21C**

Proposed by: PSEG

Proposed Solution: Build new 138kV line from Miami Fort to Willey

kV Level: 138

Cost (\$M): 47.8

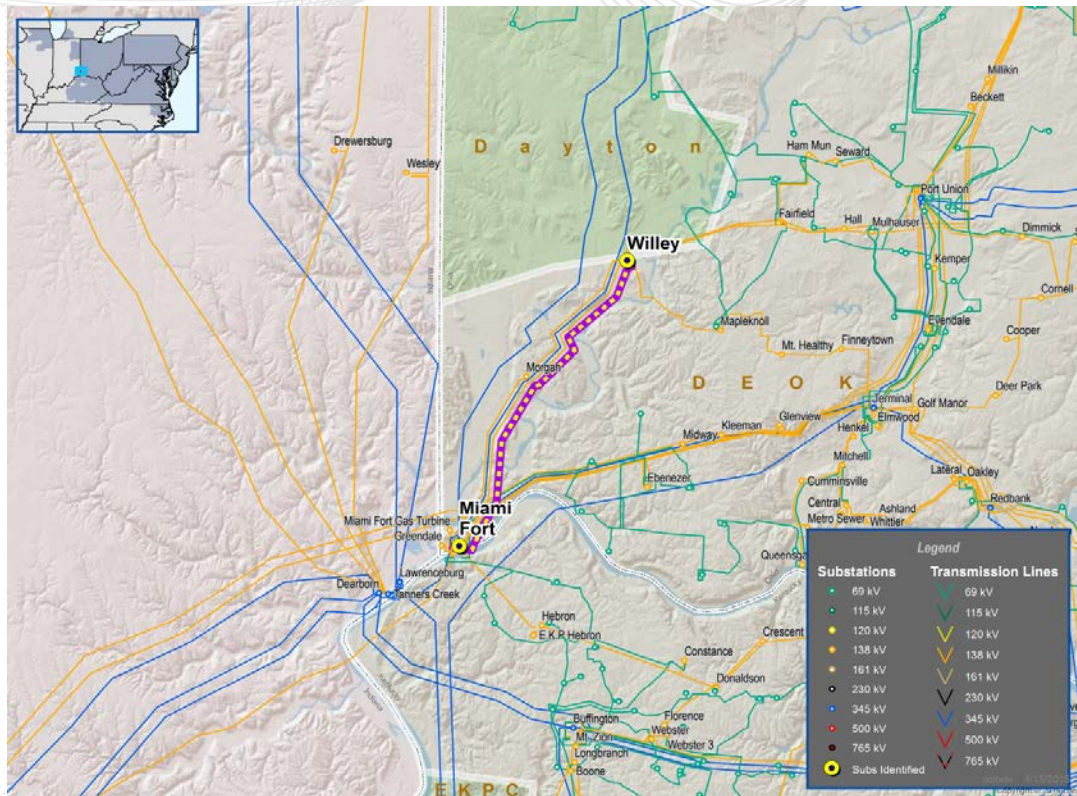
IS Date: 2018

Target Zone: DEOK

ME Constraints: Miami Fort to Willey 138 kV

Notes: Deactivation project removes driver

**Proposal will not be evaluated.**



**Project ID: 201415\_1-21G**

Proposed by: PSEG

Proposed Solution: Reconfigure Clifton Source

kV Level: 230

Cost (\$M): 2.8

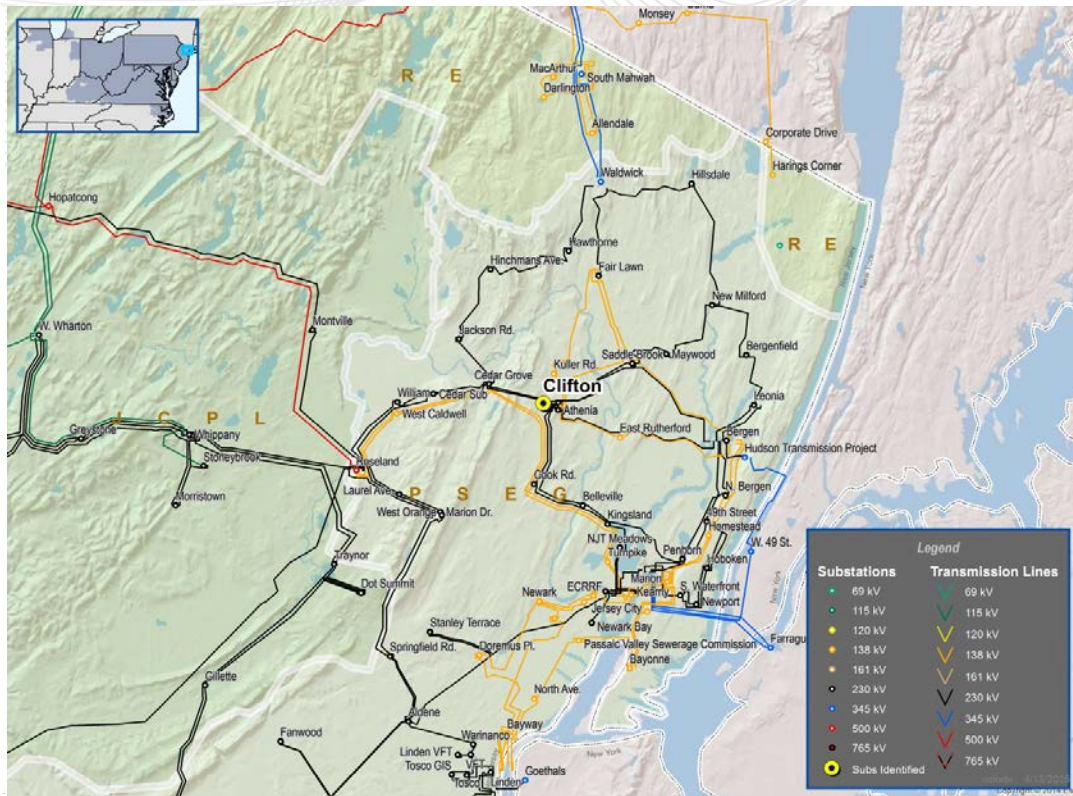
IS Date: 2016

Target Zone: PSEG

ME Constraints: Roseland-Cedar Grove-Clifton

230 kV corridor

Notes:





**Project ID: 201415\_1-22A**

**Proposed by: Ameren**

**Proposed Solution: Construct a +400MVAR/-250 MVAR Static VAR Compensator (SVC) adjacent to the 500 kV Dooms Substation.**

**kV Level: 500**

**Cost (\$M): 46.56**

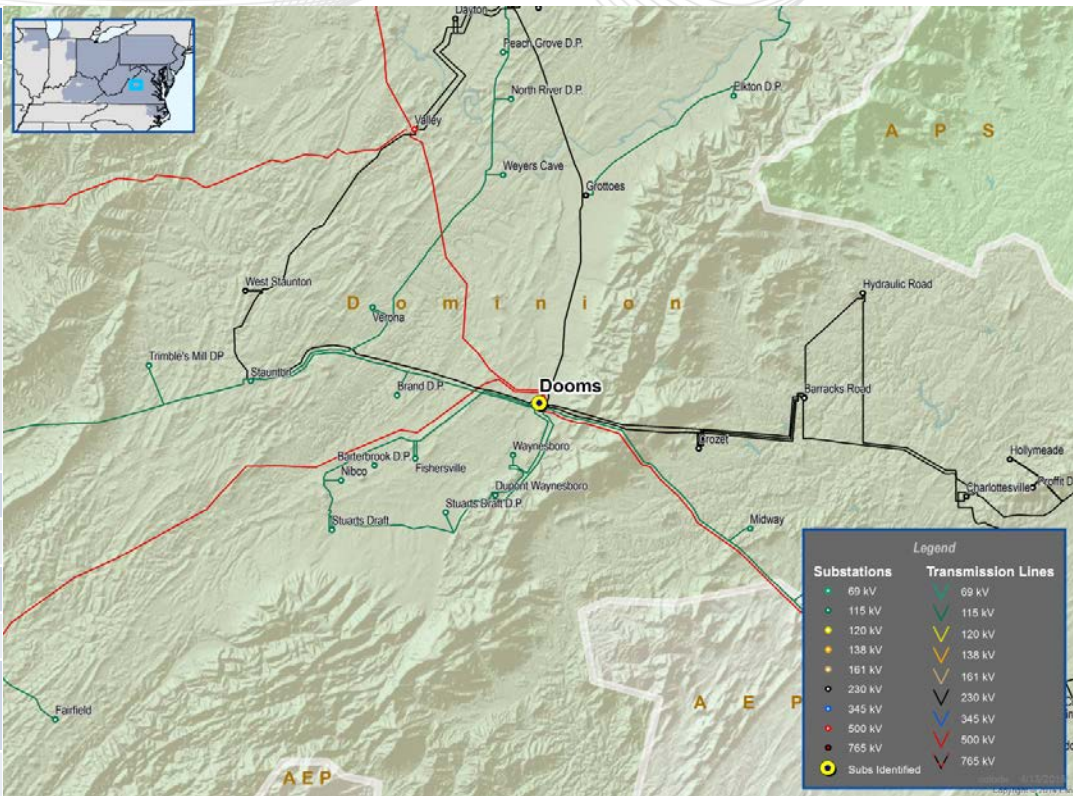
**IS Date: 2019**

**Target Zone: APS/AEP/DOM**

**ME Constraints: AP SOUTH L/O BED-BLA**

**AEP-DOM L/O BED-BLA**

**Notes:**



Project ID: 201415\_1-22B

Proposed by: Ameren

Proposed Solution: Construct a +400MVAR/-250 MVAR Static VAR Compensator (SVC) adjacent to the 500 kV Dooms Substation.

kV Level: 500

Cost (\$M): 46.56

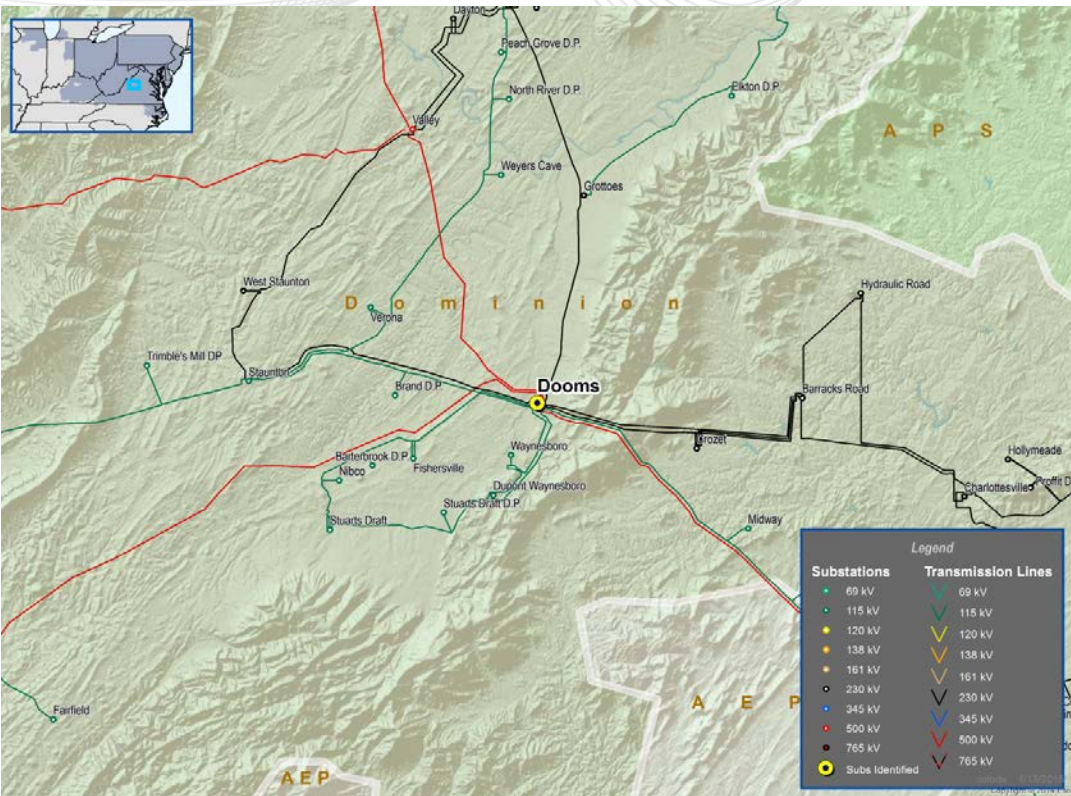
IS Date: 2020

Target Zone: APS/AEP/DOM

ME Constraints: AP SOUTH L/O BED-BLA

AEP-DOM L/O BED-BLA

Notes:



## Project ID: 201415\_1-22C

Proposed by: Ameren

Proposed Solution: Construct approximately 25 miles of new 230 kV line between Hunterstown and Carroll substations. Upgrade 12 miles of 230 kV line between Carroll and Mt. Airy substations. Upgrade 18 miles of 230 kV line between Jackson and Three Mile Island substations.

kV Level: 230

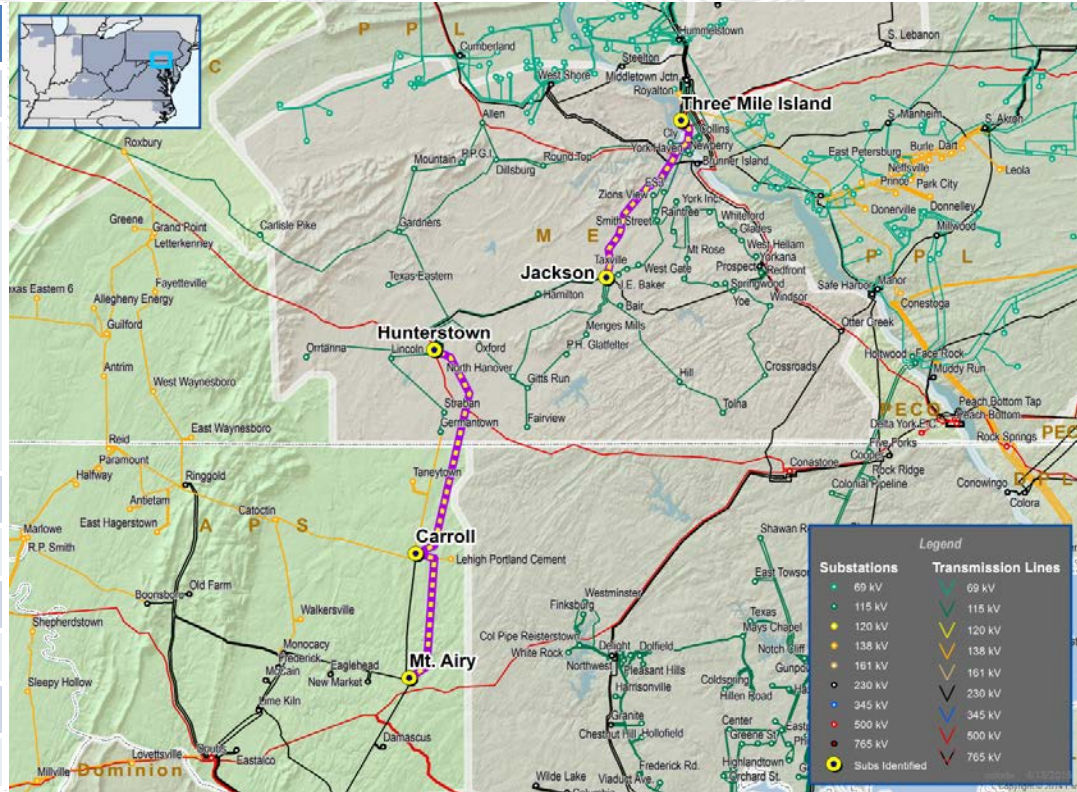
Cost (\$M): 107.2

IS Date: 2020

Target Zone: APS/Meted

ME Constraints: Taneytown to Carroll 138 kV

Notes:



Project ID: 201415\_1-22D

Proposed by: Ameren

Proposed Solution: Construct a 345 kV substation adjacent to the Willey 138 kV substation. Loop the Miami Fort – Woodsdale and Miami Fort West Milton 345 kV lines into the new substation and install a 345/138 kV transformer. Build a 345 kV switching station and a new 345 kV line from East Bend to the West Buffington station.

kV Level: 345

Cost (\$M): 91.26

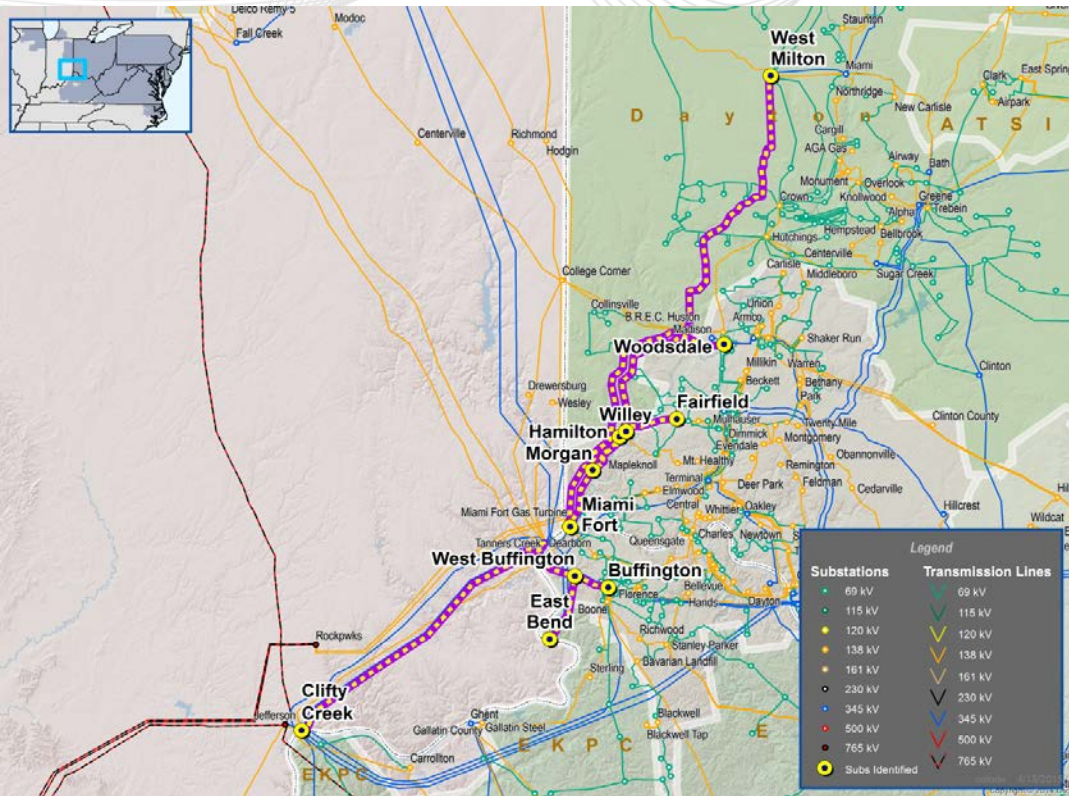
IS Date: 2020

Target Zone: DEOK

ME Constraints: Miami Fort to Willey 138 kV

Notes: Deactivation project removes driver

**Proposal will not be evaluated.**



Project ID: 201415\_1-22E

Proposed by: Ameren

Proposed Solution: Build a 345 kV switching station. Loop in the existing Clifty Creek – Buffington 345 kV line. Build a new 345 kV line from East Bend to the new West Buffington switching station. Upgrade existing circuit fro West Buffington to Buffington.

kV Level: 345

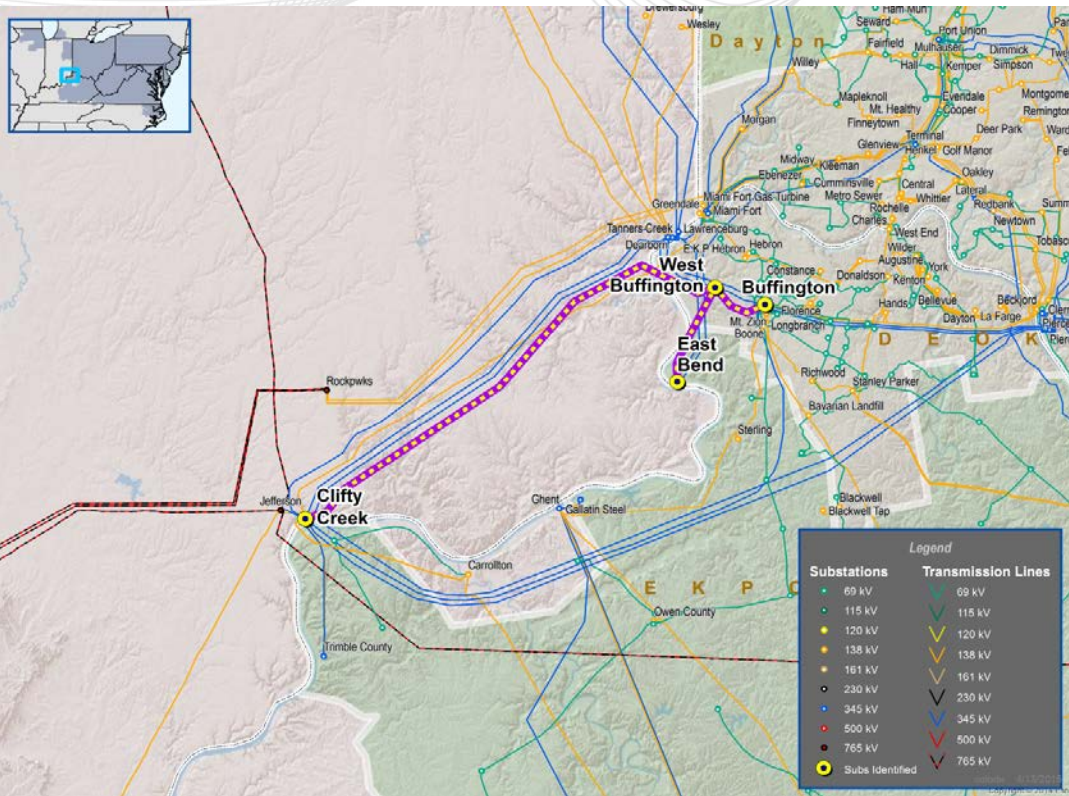
Cost (\$M): 56.04

IS Date: 2020

Target Zone: DEOK

ME Constraints: Miami Fort to Willey 138 kV

Notes: Deactivation project removes driver



**Proposal will not be evaluated.**

Project ID: 201415\_1-22F

Proposed by: Ameren

Proposed Solution: Expand Willey 138 kV substation. Create a 5 position 345 kV ring bus. Build a new 345 kV switching station (West Buffington) and loop in the existing Clifty Creek – Buffington 345 kV line. Upgrade existing double circuit line from Willey to Fairfield. Build a 345 kV line from East Bend to the West Buffington switching station.

kV Level: 345

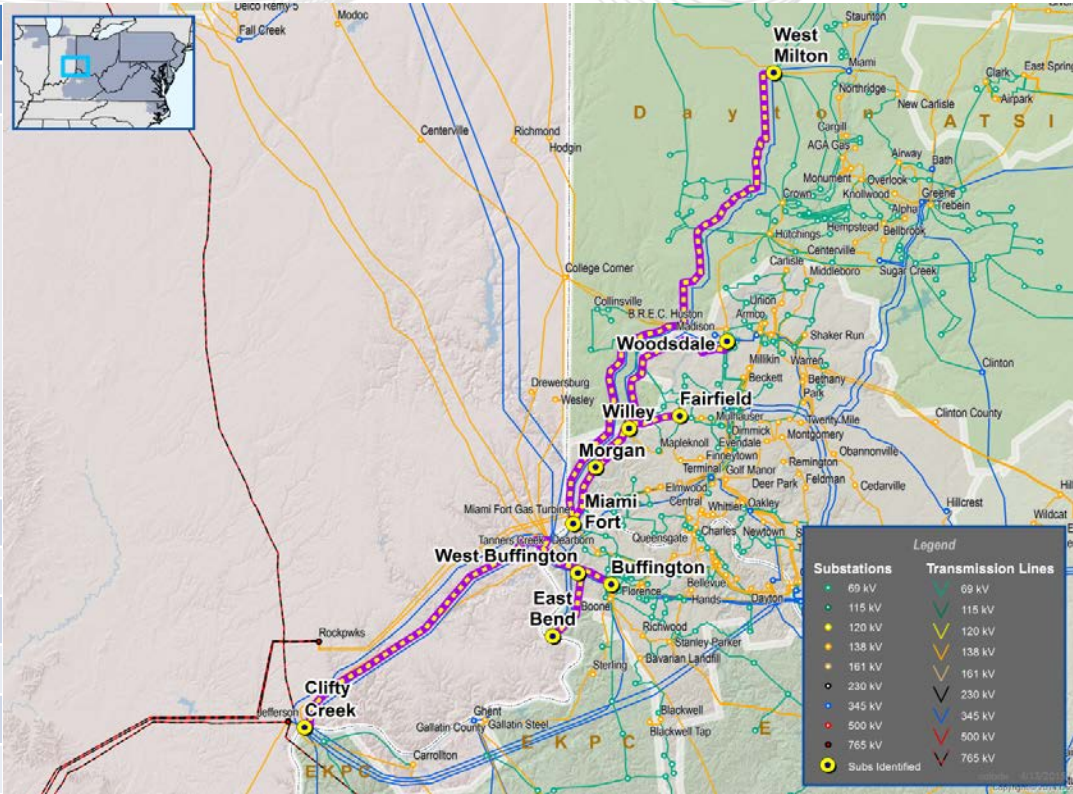
Cost (\$M): 91.26

IS Date: 2020

Target Zone: DEOK

ME Constraints: Miami Fort to Willey 138 kV

Notes: Deactivation project removes driver



**Proposal will not be evaluated.**

Questions?

Email: [RTEP@pjm.com](mailto:RTEP@pjm.com)