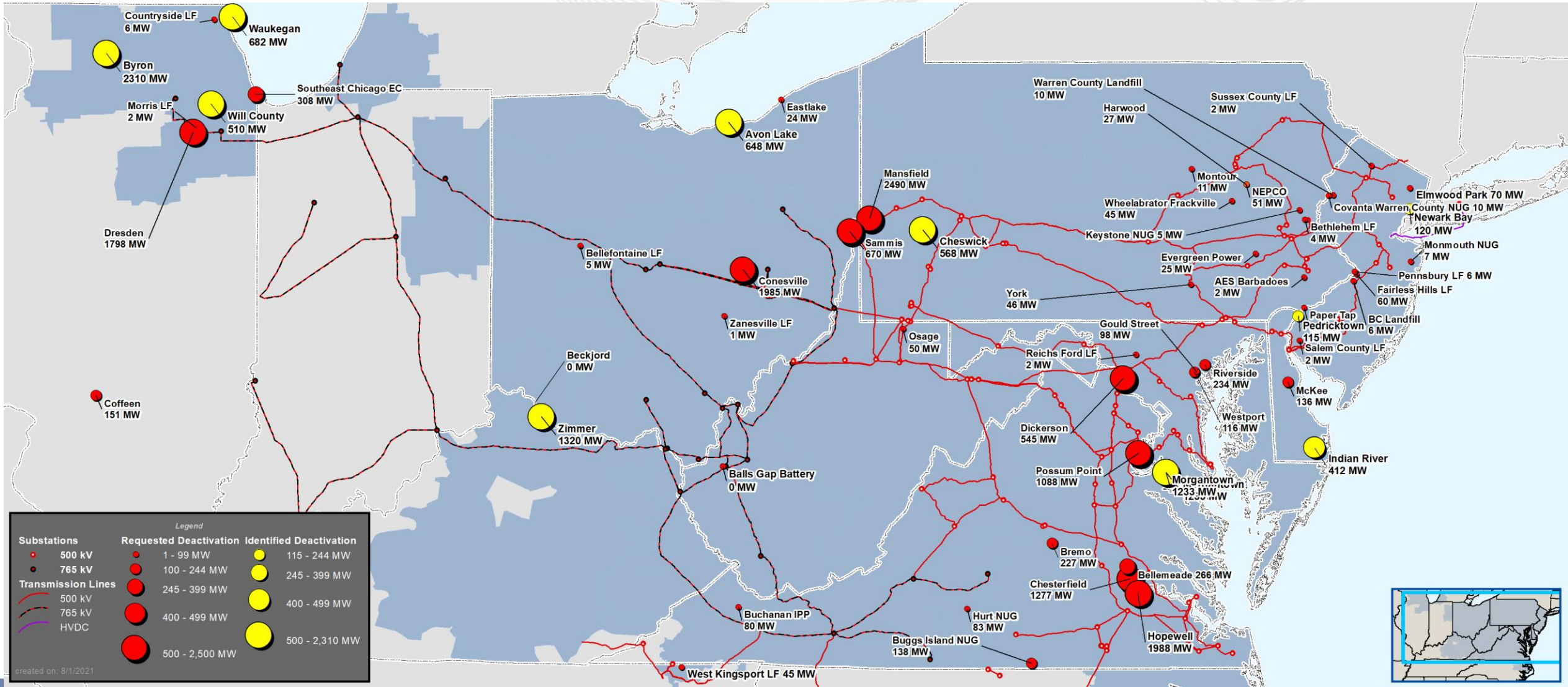




Generation Deactivation Notification Update

Transmission Expansion Advisory Committee
August 31, 2021



Unit(s)	Transmission Zone	Requested Deactivation Date	PJM Reliability Status
Avon Lake 9 -627 MW	ATSI	4/01/2022	Reliability analysis complete. New and existing baselines resolve identified impacts. Units can retire as scheduled.
Avon Lake 10 -21 MW	ATSI	4/01/2022	
Cheswick - 567.5 MW	Duquesne	4/01/2022	
Morgantown 1 -613.3 MW	PEPCO	5/31/2022	
Morgantown 2 -619.4 MW	PEPCO	5/31/2022	
Byron 1 - 1168.5 MW	ComEd	9/14/2021	Reliability analysis complete. New and existing baselines resolve identified impacts. Units can retire as scheduled.
Byron 2 -1141.5 MW	ComEd	9/16/2021	

Unit(s)	Transmission Zone	Requested Deactivation Date	PJM Reliability Status
Indian River 4 - 411.9 MW	DPL	5/31/2022	Reliability analysis complete. New and existing baselines resolve identified impacts.
Waukegan 7 - 328 MW	ComEd	5/31/2022	Reliability analysis complete. New and existing baselines resolve identified impacts. Units can retire as scheduled.
Waukegan 8 - 354.4 MW	ComEd	5/31/2022	
Will County 4 - 510 MW	ComEd	5/31/2022	
Pedricktown - 115.3 MW	AEC	5/31/2022	Reliability analysis complete. New baseline resolves identified impact. Units can retire as scheduled.
Newark Bay - 120.2 MW	PSEG	5/31/2022	Reliability analysis complete. New and existing baselines resolve identified impacts. Unit can retire as scheduled.
Zimmer 1 - 1320 MW	DEOK	5/31/2022	

Problem Statement: Generation Deliverability Violation – Zimmer Deactivation

- Thermal violation: Shepler Hill Jct – Mitchell 138 kV line
- Contingency: N-2

Recommended Solution:

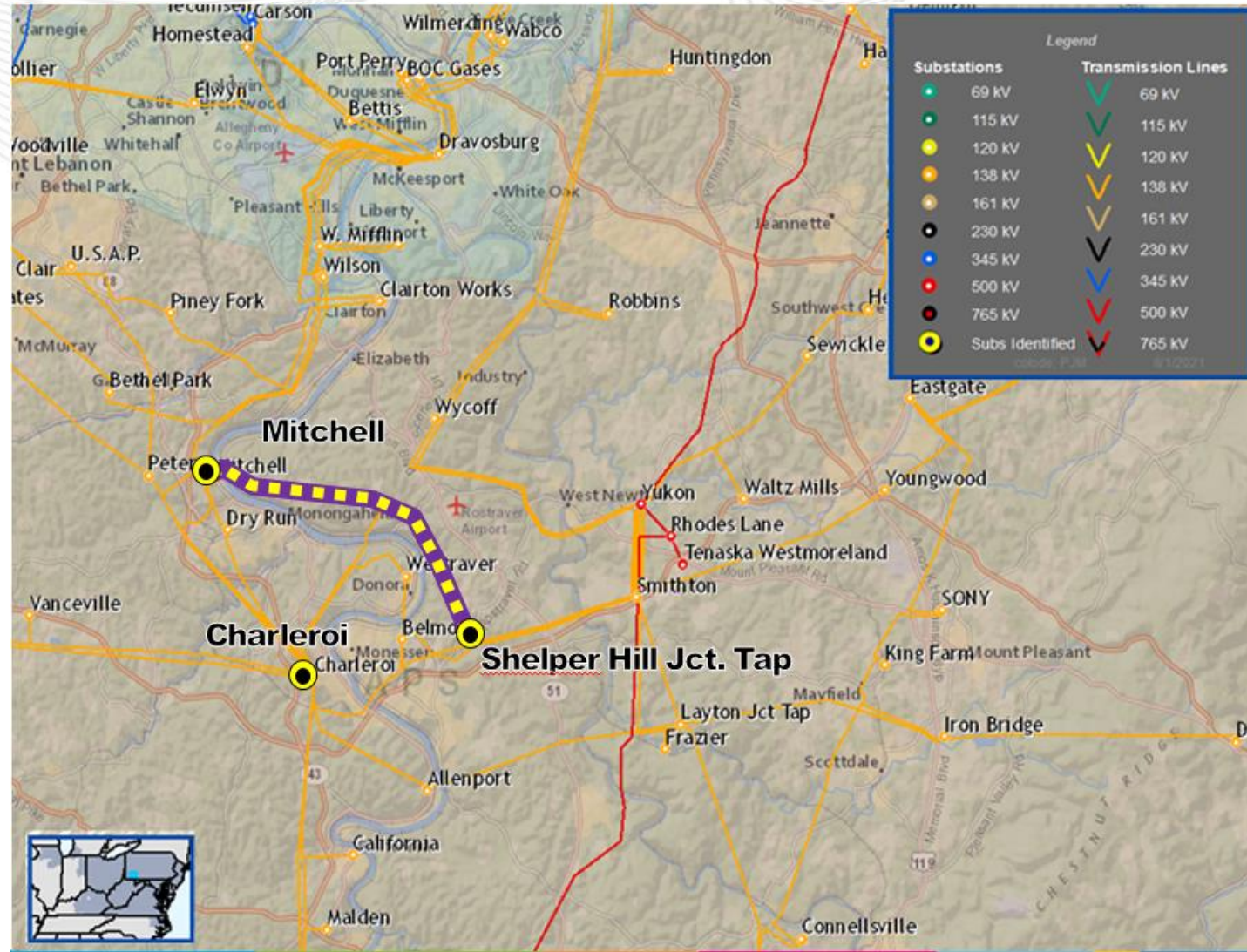
- Existing b3214 - Reconductor the Yukon – Smithton – Shepler Hill Jct 138 kV Line. Upgrade terminal equipment at Yukon and replace line relaying at Mitchell and Charleroi.

Required IS Date: 06/01/2022

Projected IS Date: 06/01/2023

Previous TEAC Date: 06/02/2020

* Operating measures identified to mitigate reliability impacts in interim.



Problem Statement: Generation Deliverability Violation – Zimmer Deactivation

- Thermal violation: Benton – Riverside 138 kV line
- Contingency: N-2

Recommended Solution:

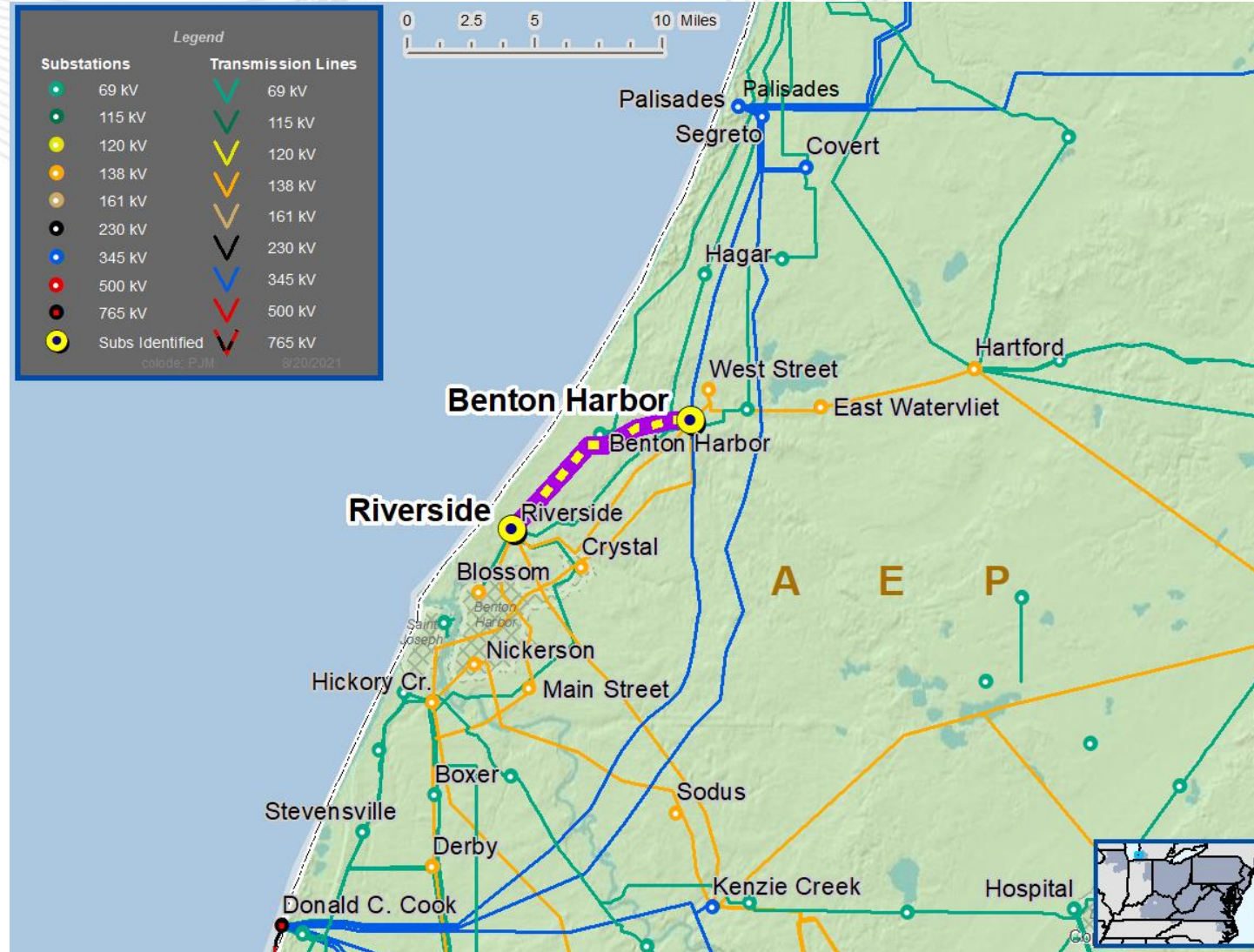
- New baseline b3336 – previously known as S1622.2: Rebuild Benton Harbor-Riverside 138kV double circuit extension (6 miles).
- Current Rating: 136 MVA SN/ 167 MVA SE
- New Rating: 187 MVA SN/ 240 MVA SE

Estimated Cost: \$14.9M

Required IS Date: 06/01/2022

Projected IS Date: 11/01/2021

Previous TEAC Date: 05/21/2018



Problem Statement: Generation Deliverability Violation – Zimmer Deactivation

- Thermal violation: Miami Fort – Hebron Tap 138 kV line
- Contingency: N-2

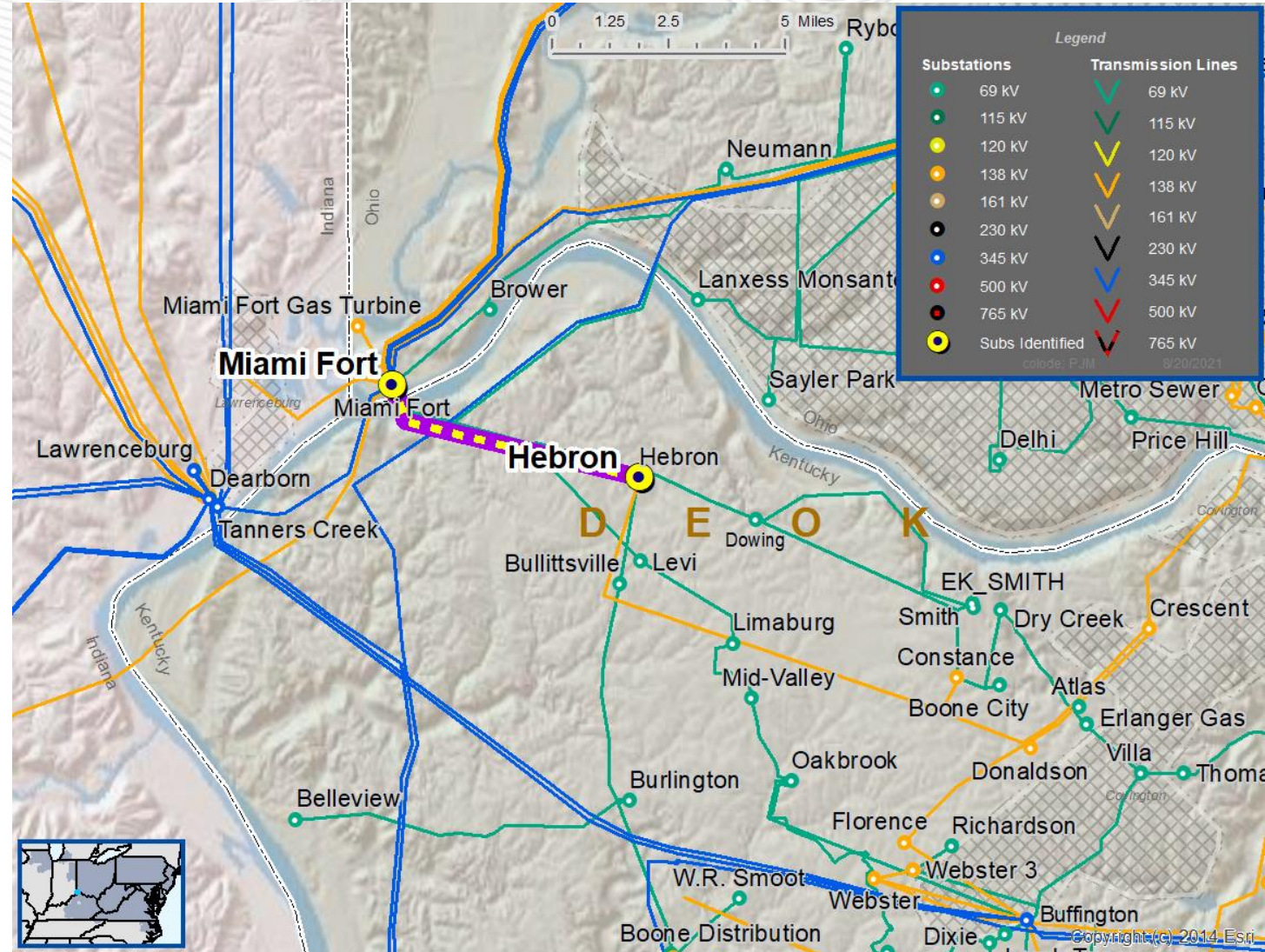
Recommended Solution:

- New baseline b3334 – Rebuild the section of Miami Fort – Hebron Tap 138 kV
- Current Rating: 238 MVA SN/ 238 MVA SE
- New Rating: 301 MVA SN/ 301 MVA SE

Required IS Date: 06/01/2022

Projected IS Date: 11/30/2026

Operating measures identified to mitigate reliability impacts in interim.



Problem Statement: Generation Deliverability Violation – Pedriktown and Newark Deactivations

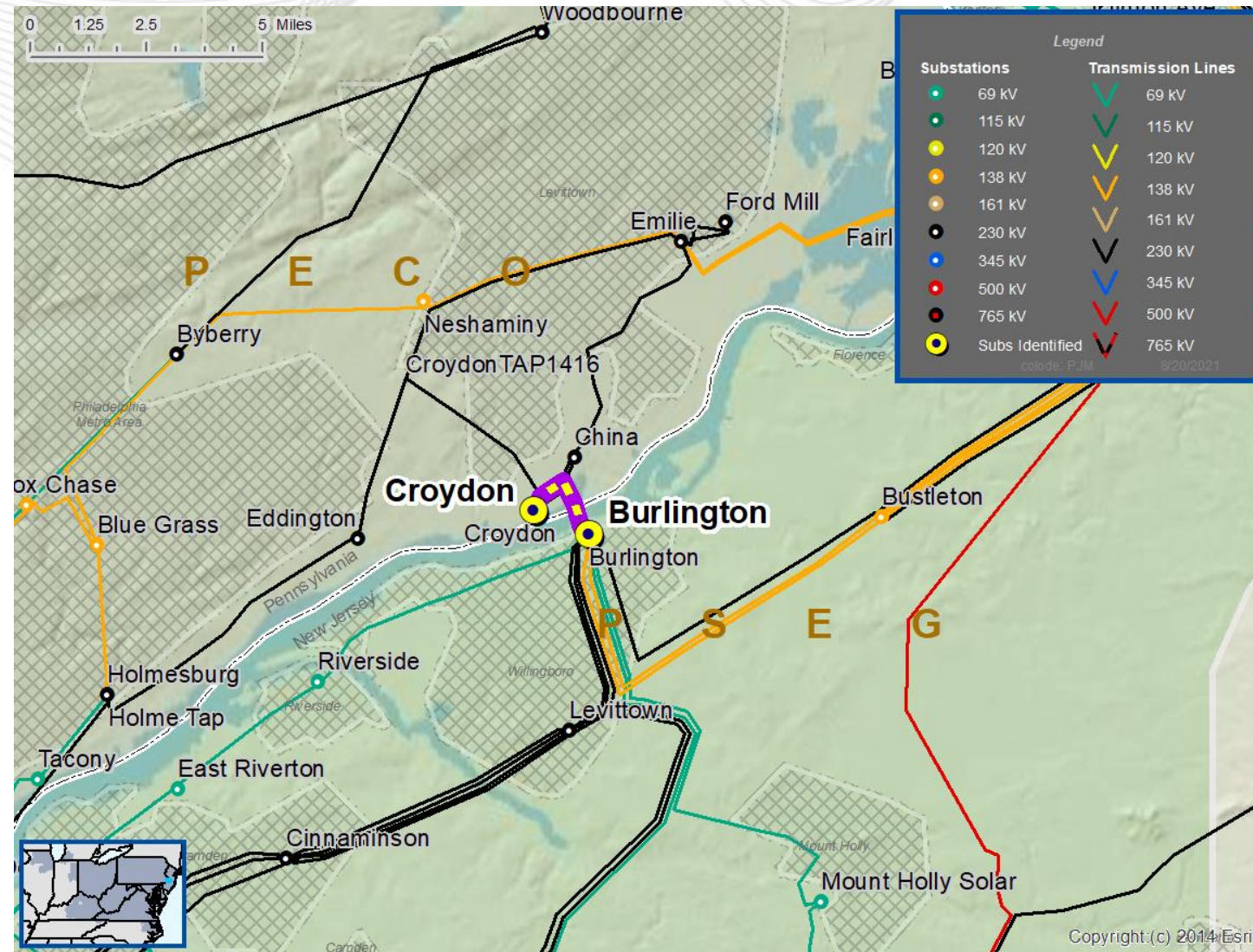
- Thermal violation: Croydon – Burlington 230 kV line
- Contingency: N-2

Recommended Solution:

- New baseline b3335 – PJM is evaluating the proposed mitigation.

Required IS Date: 06/01/2022

* Operating measures identified to mitigate reliability impacts in interim.



SECOND READ

Problem Statement: Generation Deliverability – Cheswick Deactivation

- Thermal violation: Shanor Manor - Butler 138 kV line.
- Contingency: N-1

Recommended Solution:

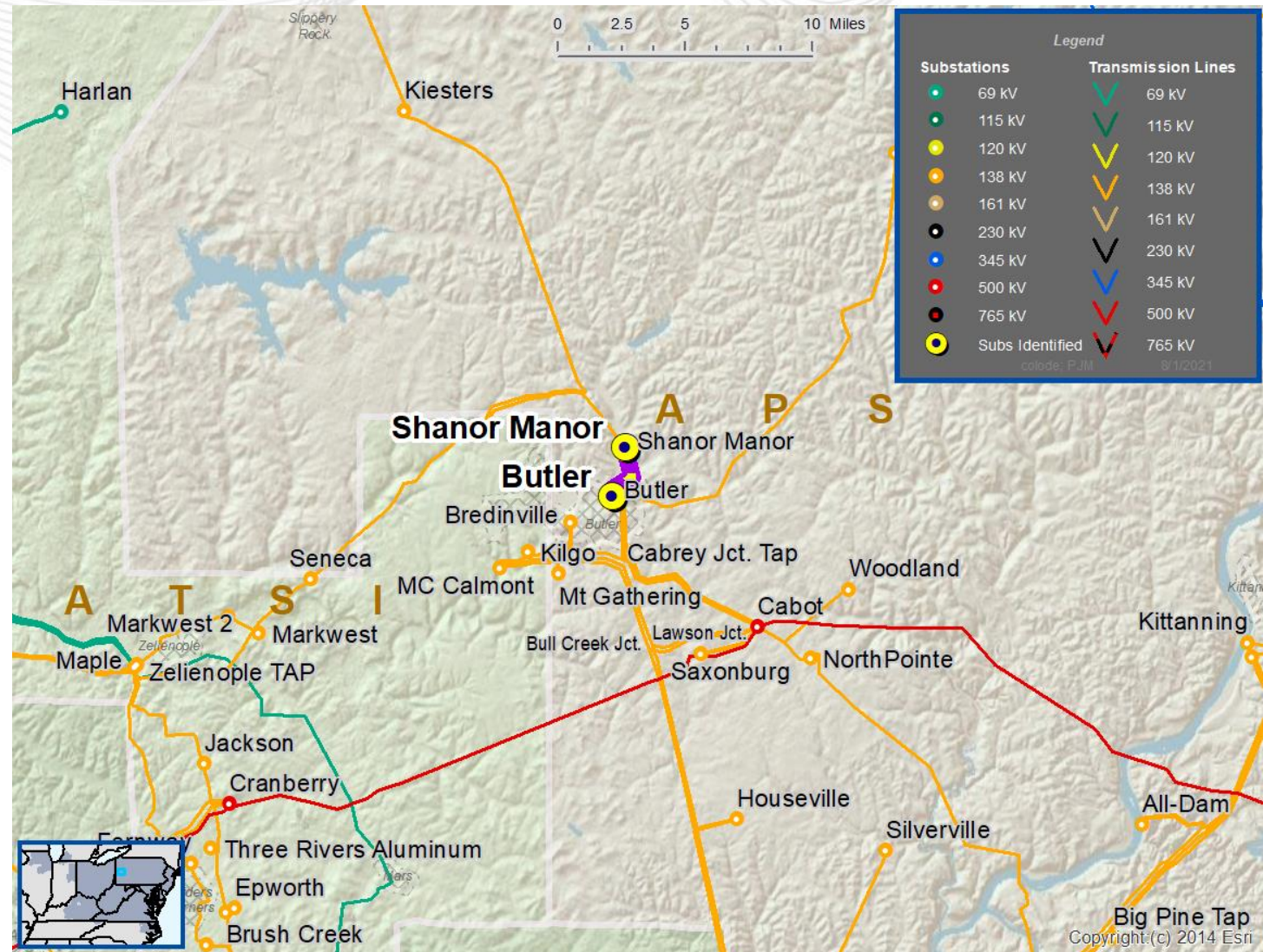
- New baseline b3318 – Reconductor the small section of Shanor Manor – Butler 138 kV line with replacement of circuit breaker at Butler 138 kV.
- Current Rating: 370 MVA SN/ 452 MVA SE
- New Rating: 425 MVA SN/ 522 MVA SE

Estimated Cost: \$ 1.5M

Required IS Date: 06/01/2022

Projected IS Date: 12/31/2022

* Operating measures identified to mitigate reliability impacts in interim.



Problem Statement: Generation Deliverability – Cheswick Deactivation

- Thermal violation: Yukon - Smithton #62 - Shepler Hill Jct 138 kV lines
- Contingency: N-2

Recommended Solution:

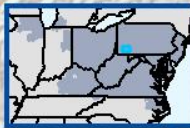
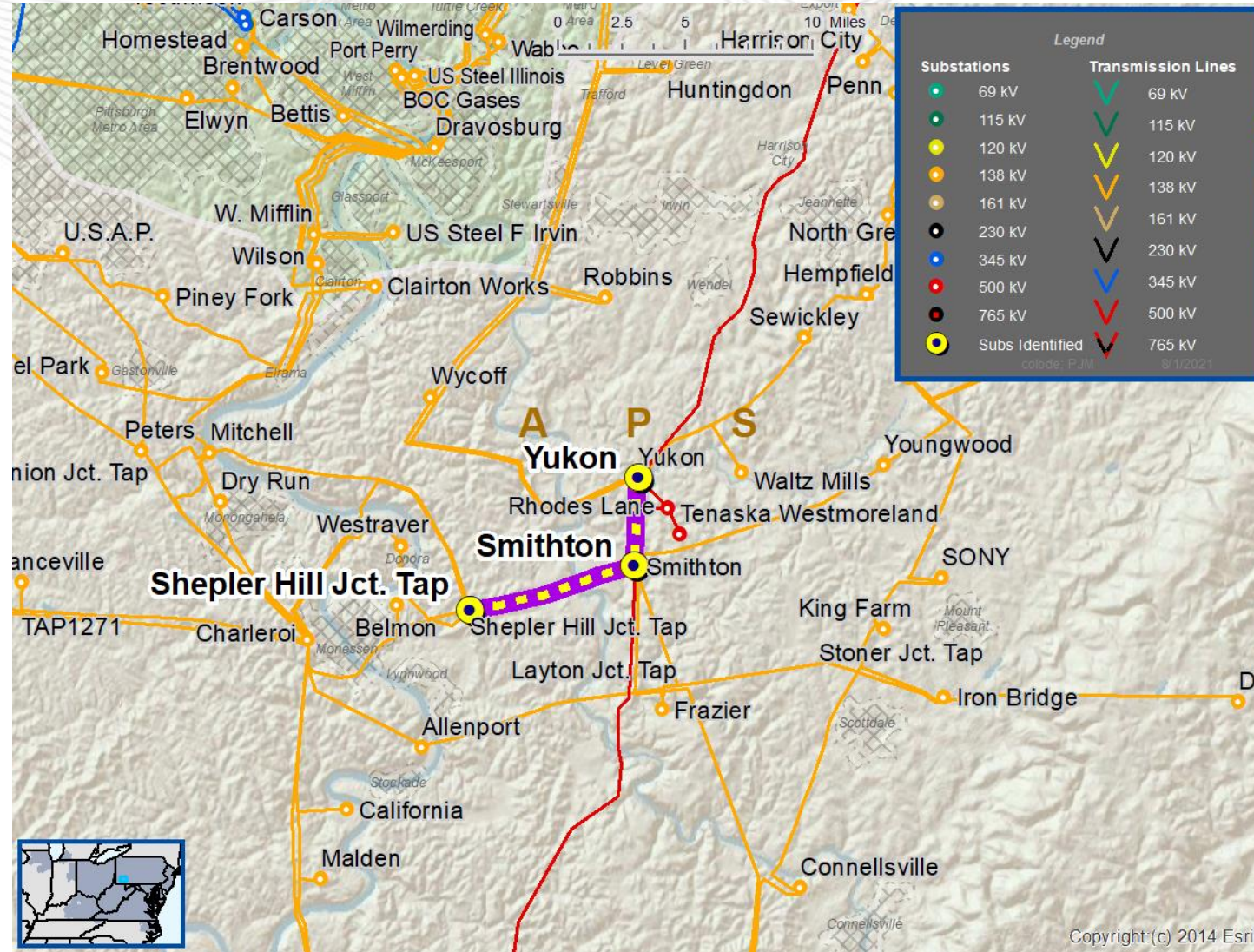
- Existing baseline **b3214** - Reconductor the Yukon – Smithton – Shepler Hill Jct 138 kV Line. Upgrade terminal equipment at Yukon and replace line relaying at Mitchell and Charleroi.

Required IS Date: 06/01/2022

Projected IS Date: 06/01/2023

Previous TEAC Date: 06/02/2020

* Operating measures identified to mitigate reliability impacts in interim.



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Problem Statement: Generation Deliverability and N-1-1 thermal – Cheswick deactivation

- Thermal violation: Wylie Ridge – Smith 138 kV
- Contingency: N-2, and various N-1 combinations

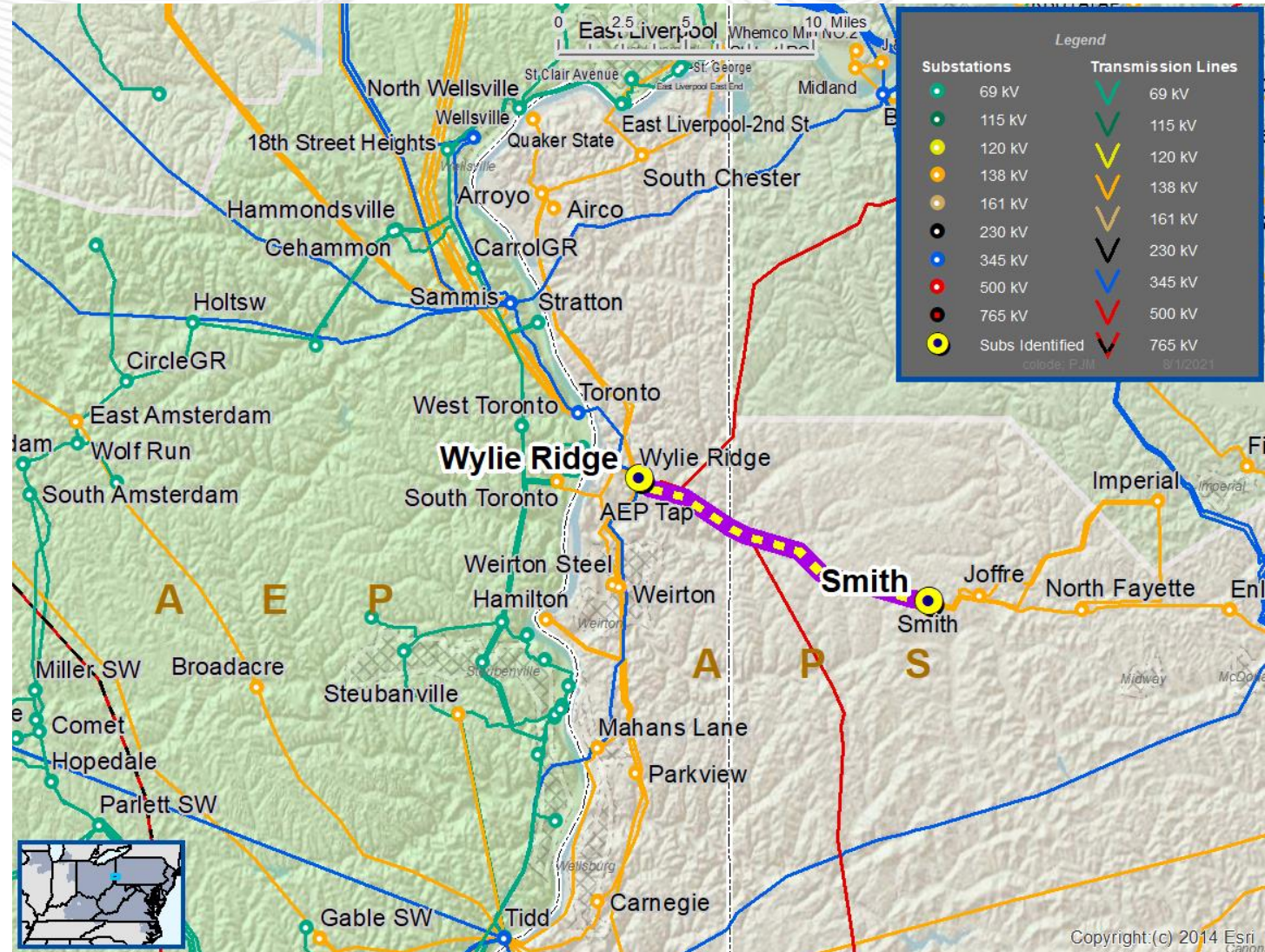
Recommended Solution:

- Existing baseline **b3156** - Replace line relaying and fault detector on the Wylie Ridge terminal at Smith 138 kV Substation

Required IS Date: 06/01/2022

Projected IS Date: from 06/01/2024 to 06/01/2022

Previous TEAC Date: 01/17/2020



Problem Statement: FERC 715 –Cheswick deactivation

- Thermal Violation: Brunot Island – Carson 345 KV
- Contingency: N-2 – underground common trench failure (FERC 715)

Recommended Solution:

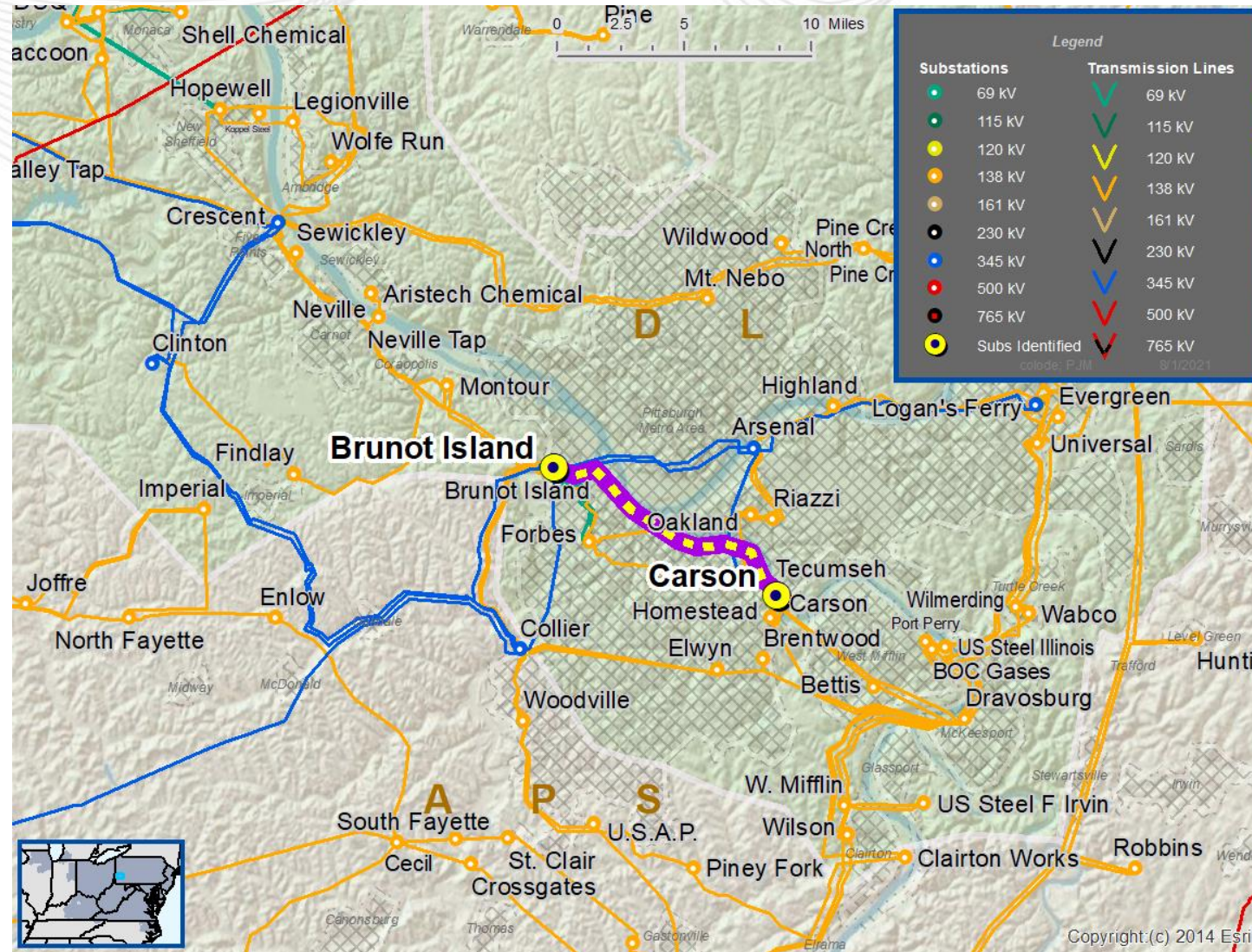
- New baseline b3319 – Add forced cooling to increase the normal rating of the Brunot Island-Carson (302) 345kV High Pressure Fluid Filled (HPFF) underground cable circuit.
- Current Rating: 492 MVA SN/ 696 MVA SE
- New Rating: 675 MVA SN/ 718 MVA SE

Estimated Cost: \$22M

Required IS Date: 06/01/2022

Projected IS Date: 12/31/2024

* Operating measures identified to mitigate reliability impacts in interim.



Problem Statement: Generation Deliverability – Avon Lake 9 and 10

- Thermal violation: Marquis 345/138 kV #3 transformer
- Contingency: N-2

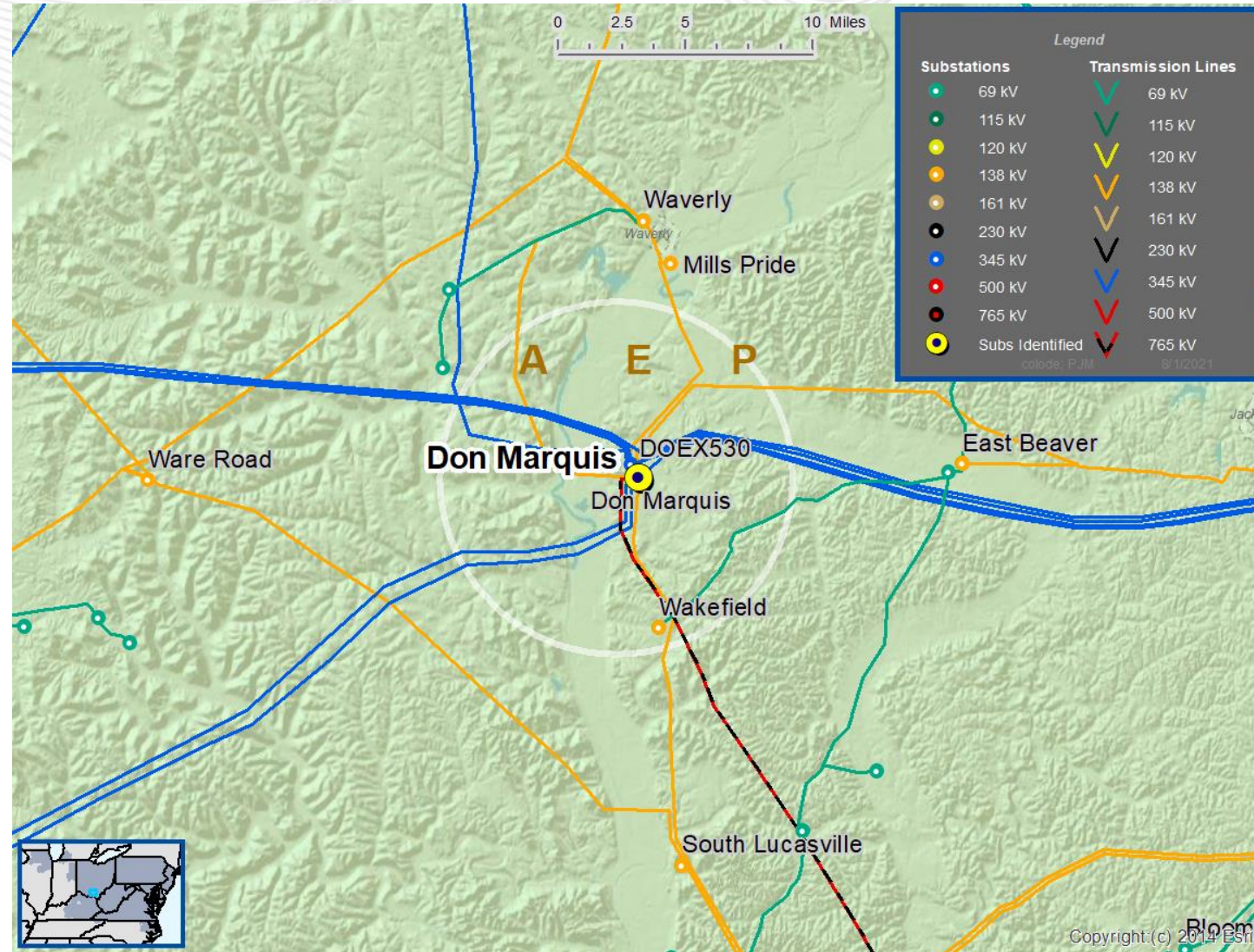
Recommended Solution:

- New baseline b3320 – **Replacing CT at Don Marquis 345 kV**
- Current Rating: 463 MVA SN/ 463 MVA SE
- New Rating: 501 MVA SN/ 564 MVA SE

Estimated Cost: \$ 80K

Required IS Date: 06/01/2022

Projected IS Date: 06/01/2022



Problem Statement: Generation Deliverability – Morgantown 1&2

- Thermal violation: Cranes Corner – Stafford 230 kV
- Contingency: N-1

Recommended Solution:

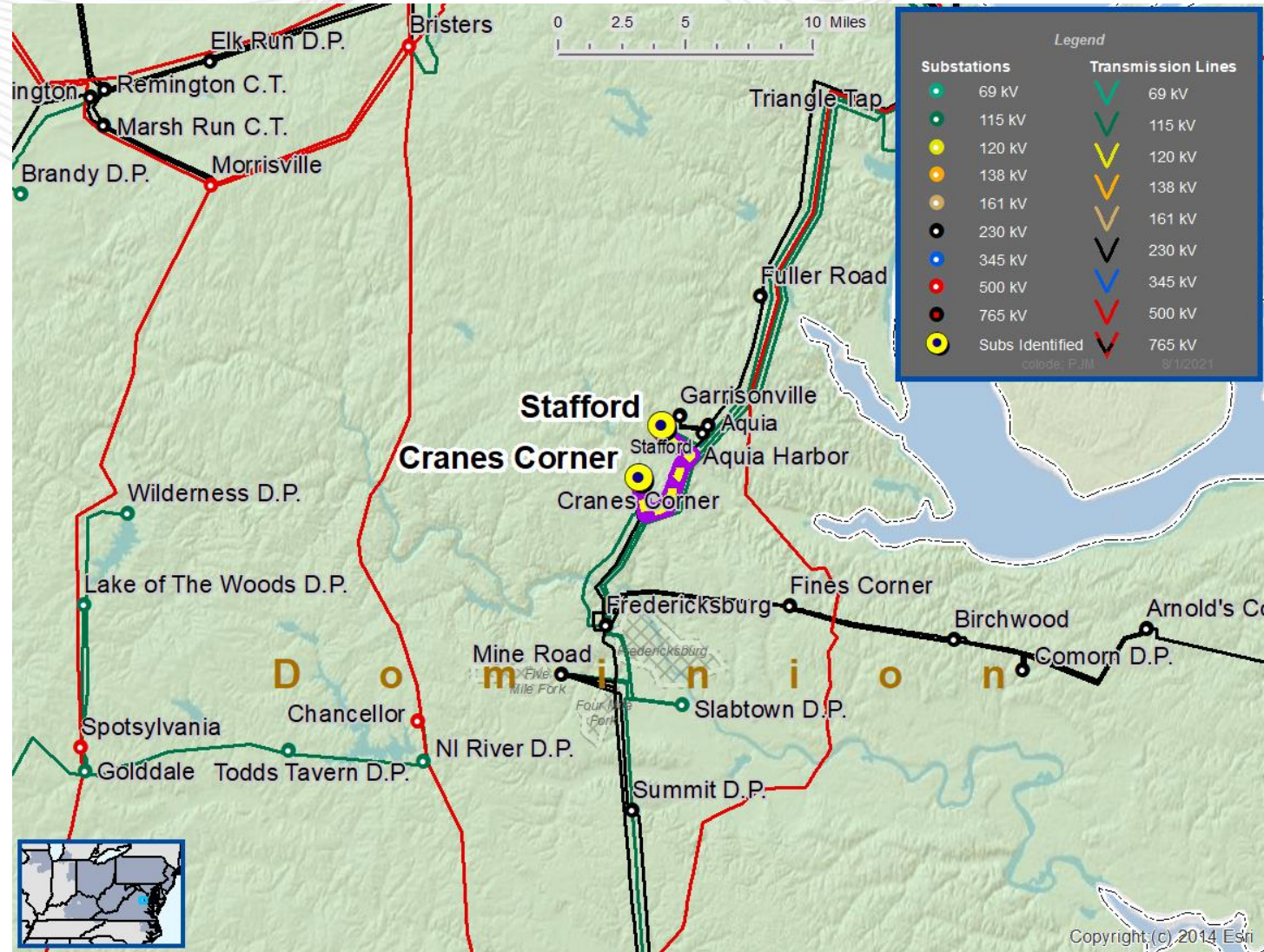
- New baseline b3321 – Rebuild Cranes Corner – Stafford 230 kV
- Current Rating: 722 MVA SN/ 722 MVA SE
- New Rating: 1047 MVA SN/ 1047 MVA SE

Estimated Cost: \$ 19.6M

Required IS Date: 06/01/2022

Projected IS Date: 12/31/2023

* Operating measures identified to mitigate reliability impacts in interim.



Problem Statement: Generation Deliverability – Byron Deactivation

- Thermal violation: Shanor Manor - Krendale 138 kV line.
- Contingency: N-1

Recommended Solution:

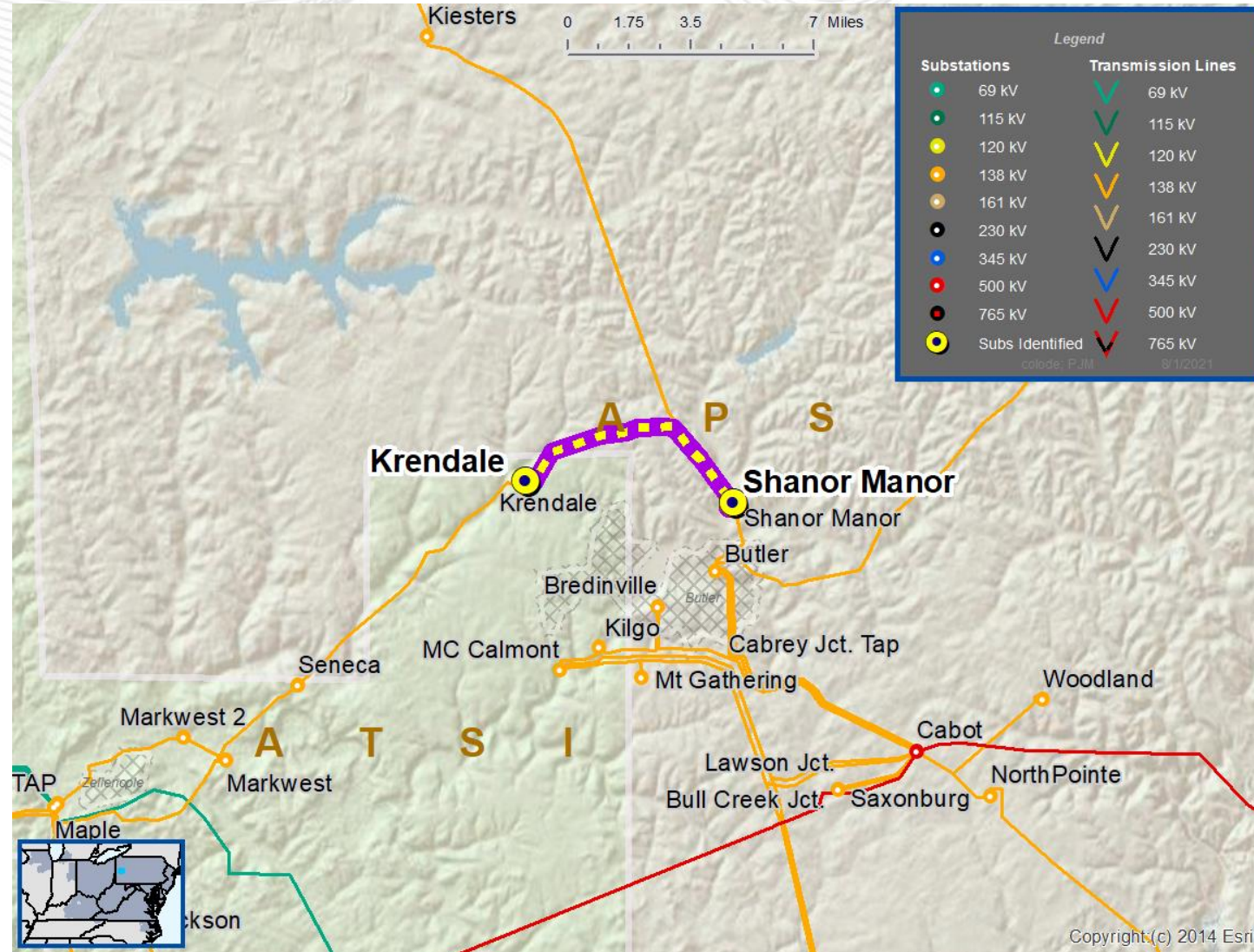
- New baseline b3322 – Reconductor the small section of Shanor Manor – Krendale 138 kV line with relay replacement at Butler and Krendale.
- Current Rating: 370 MVA SN/ 452 MVA SE
- New Rating: 425 MVA SN/ 522 MVA SE

Estimated Cost: \$1.75M

Required IS Date: 06/01/2022

Projected IS Date: 06/01/2024

* Operating measures identified to mitigate reliability impacts in interim.



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Problem Statement: Generation Deliverability – Byron Deactivation

- Thermal violation: Leroy Center - Pinegrove 138 kV line.
- Contingency: N-2

Recommended Solution:

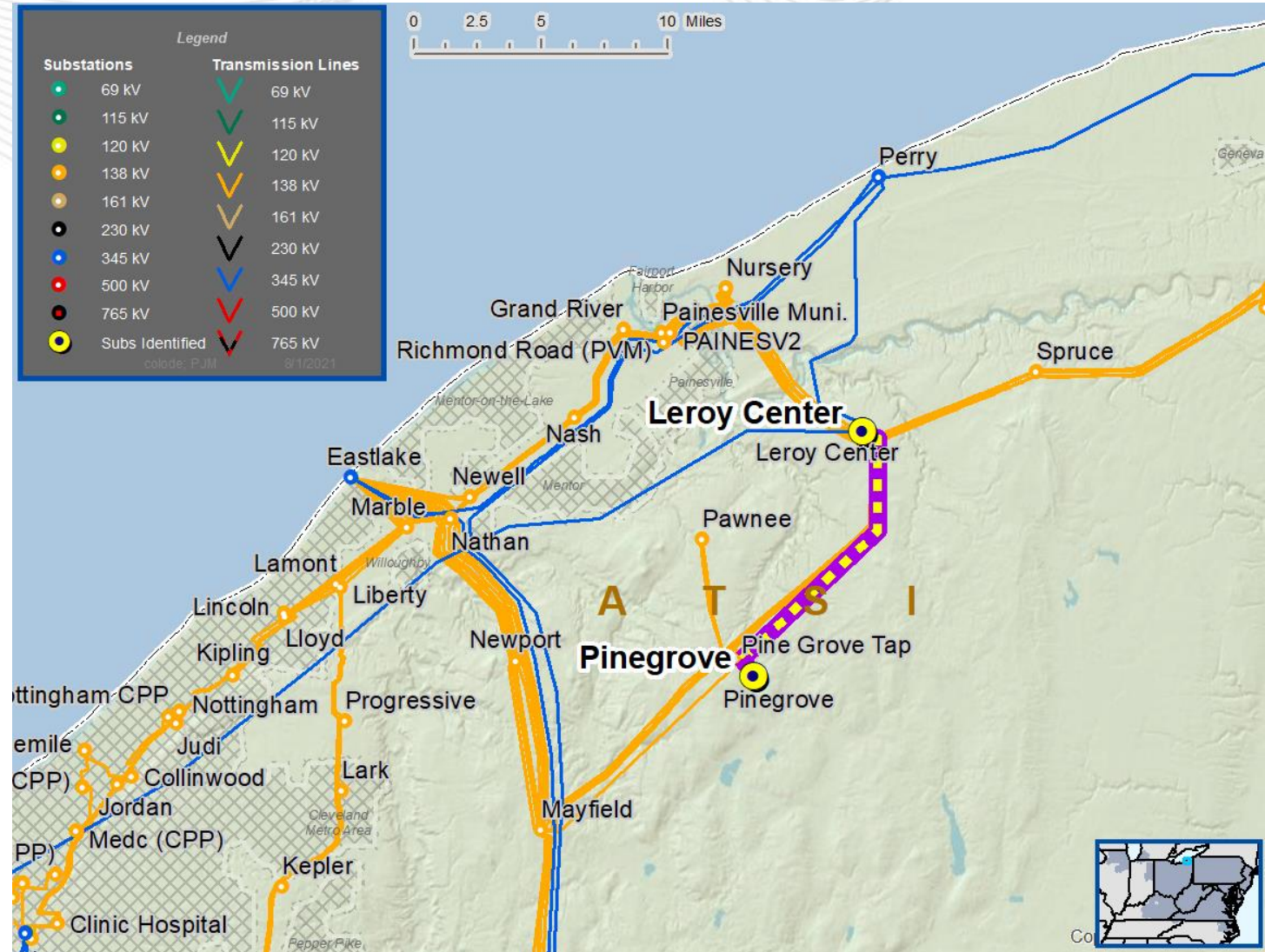
- New baseline b3323 – Reconductor Leroy Center - Pinegrove 138 kV line.
- Current Rating: 148 MVA SN/ 151 MVA SE
- New Rating: 252 MVA SN/ 291 MVA SE

Estimated Cost: \$16M

Required IS Date: 06/01/2022

Projected IS Date: 06/01/2024

* Operating measures identified to mitigate reliability impacts in interim.



Problem Statement: Generation Deliverability – Byron Deactivation

- Thermal violation: Leroy Center - Pawnee 138 kV line.
- Contingency: N-2

Recommended Solution:

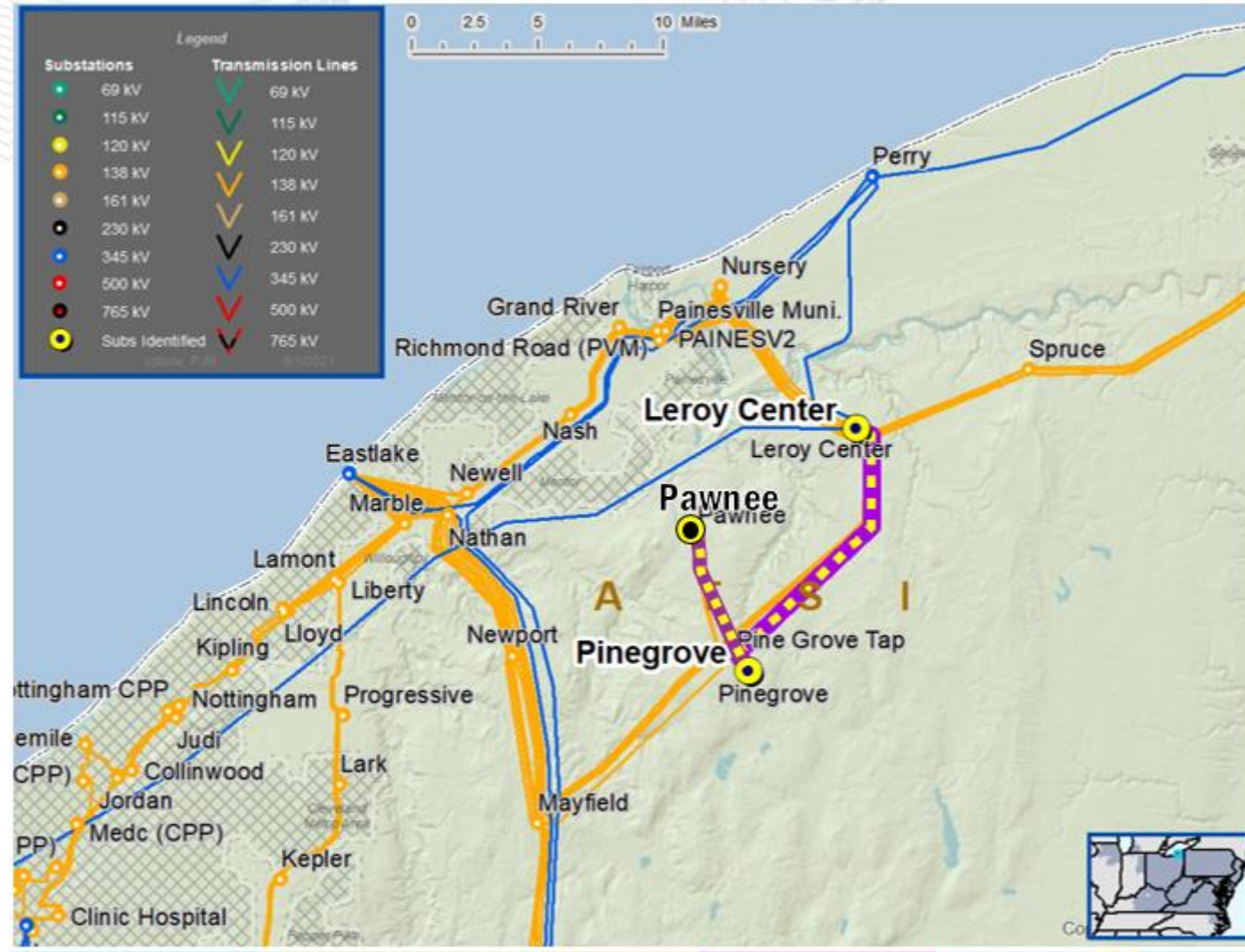
- Existing baseline b3152 – Reconductor the 8.4 mile section of the Leroy Center - Mayfield Q1 line between Leroy Center and Pawnee

Required IS Date: 06/01/2022

Projected IS Date: 06/01/2023

Previous TEAC Date: 12/12/2019

* Operating measures identified to mitigate reliability impacts in interim.



Problem Statement: Generation Deliverability – Byron Deactivation

- Thermal violation: Peach Bottom – Conastone 500kV, Lincoln – Straban 115 kV, and Conastone - North West 230 kV
- Contingency: Various N-1 and N-0

Recommended Solution:

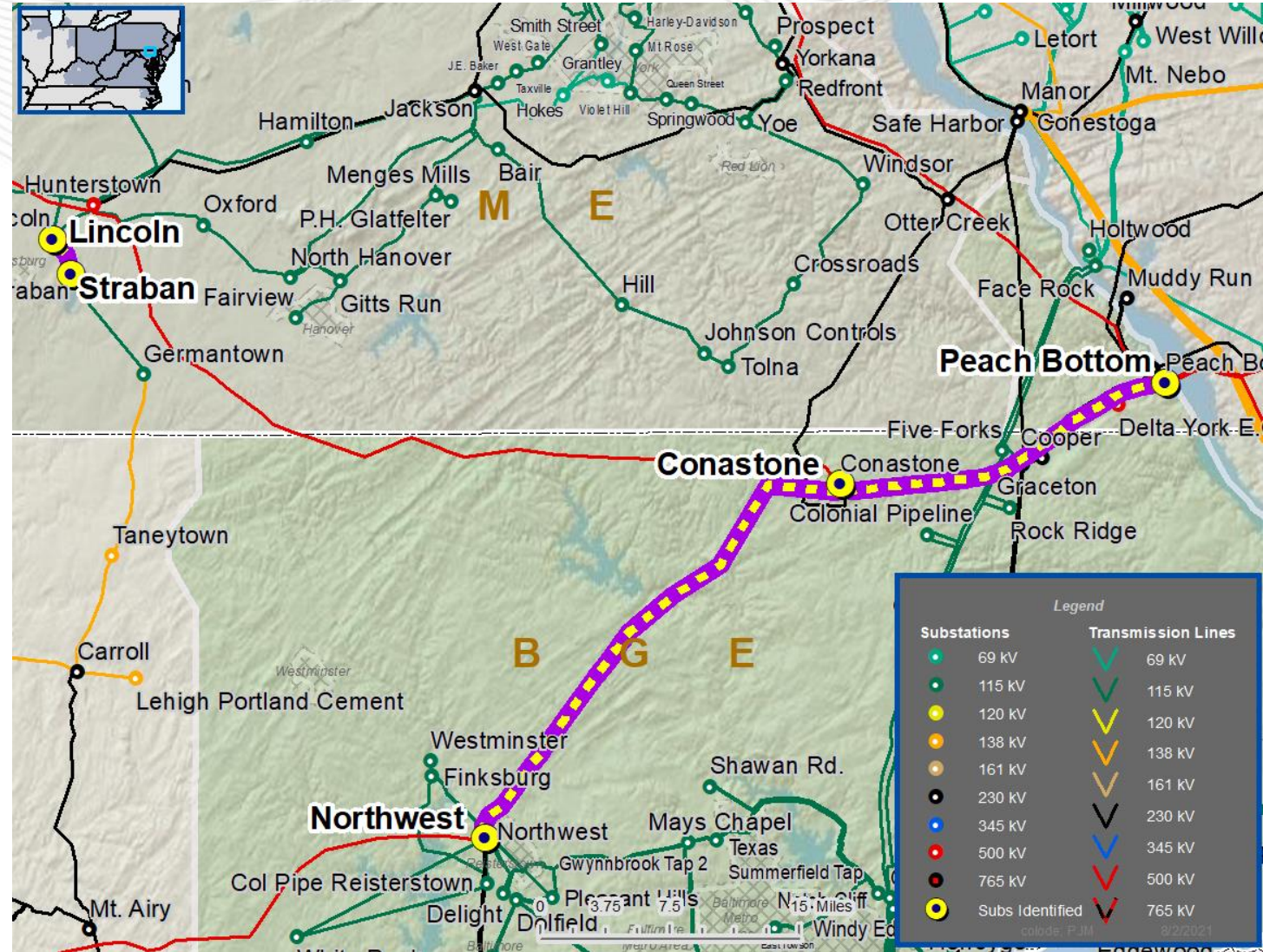
- Existing baseline b2752 - 9A project

Required IS Date: 06/01/2022

Projected IS Date: 06/01/2023

Previous TEAC Date: 12/12/2019

* Operating measures identified to mitigate reliability impacts in interim.



Problem Statement: Generation Deliverability –Waukegan and Will County deactivations

- Thermal violation: Olive – New Carisle 138 kV line.
- Contingency: Various N-2

Recommended Solution:

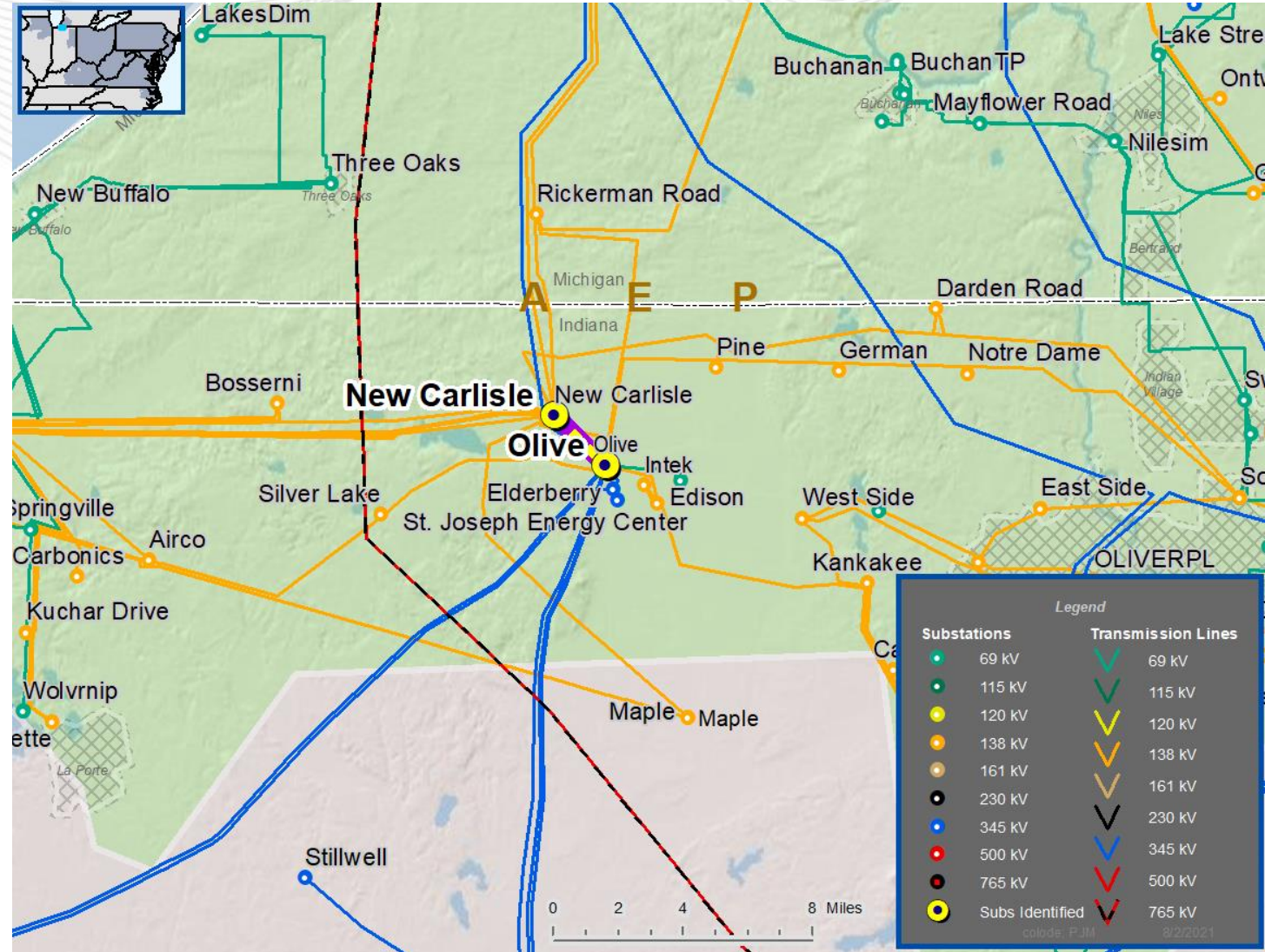
- New baseline b3324 – Replace the bus section at Olive.
- Current Rating: 287 MVA SN/ 337 MVA SE
- New Rating: 335 MVA SN/ 392 MVA SE

Estimated Cost: \$ 0.1M

Required IS Date: 06/01/2022

Projected IS Date: 12/31/2022

* Operating measures identified to mitigate reliability impacts in interim.



Problem Statement: Generation Deliverability –Waukegan and Will County deactivations

- Thermal violation: Charleroi – Union 138 kV line.
- Contingency: N-2

Recommended Solution:

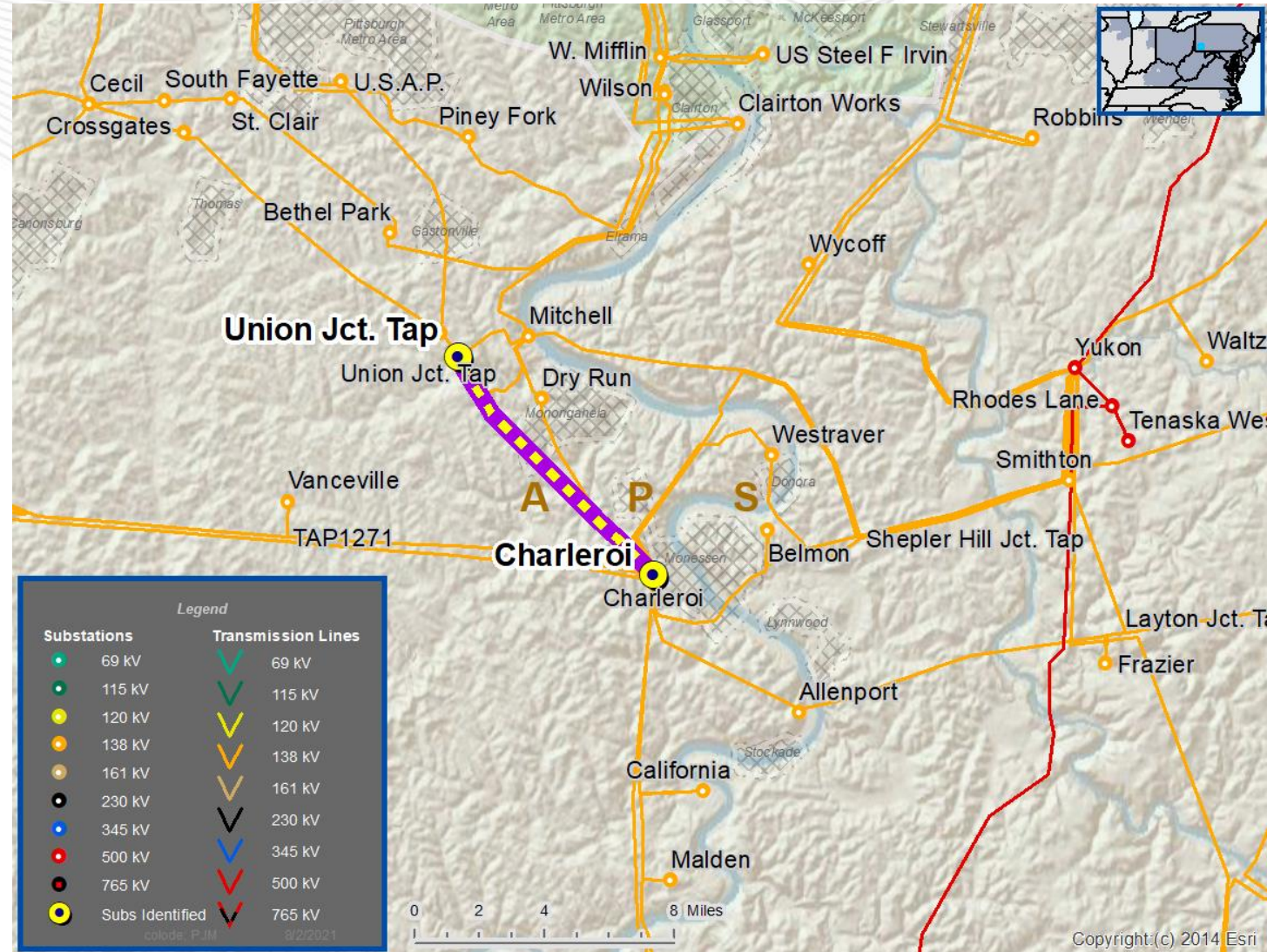
- New baseline b3325 – Reconductor the Charleroi – Union 138 kV line and upgrade terminal equipment at Charleroi.
- Current Rating: 296 MVA SN/ 302 MVA SE
- New Rating: 308 MVA SN/ 376 MVA SE

Estimated Cost: \$11M

Required IS Date: 06/01/2022

Projected IS Date: 06/01/2023

* Operating measures identified to mitigate reliability impacts in interim.



Problem Statement: Generation Deliverability and N-1-1 thermal – Indian River 4 Deactivation

- Thermal violation: Vienna - Nelson 138 kV line
- Contingency: N-2, and various N-1 combinations

Potential Solution:

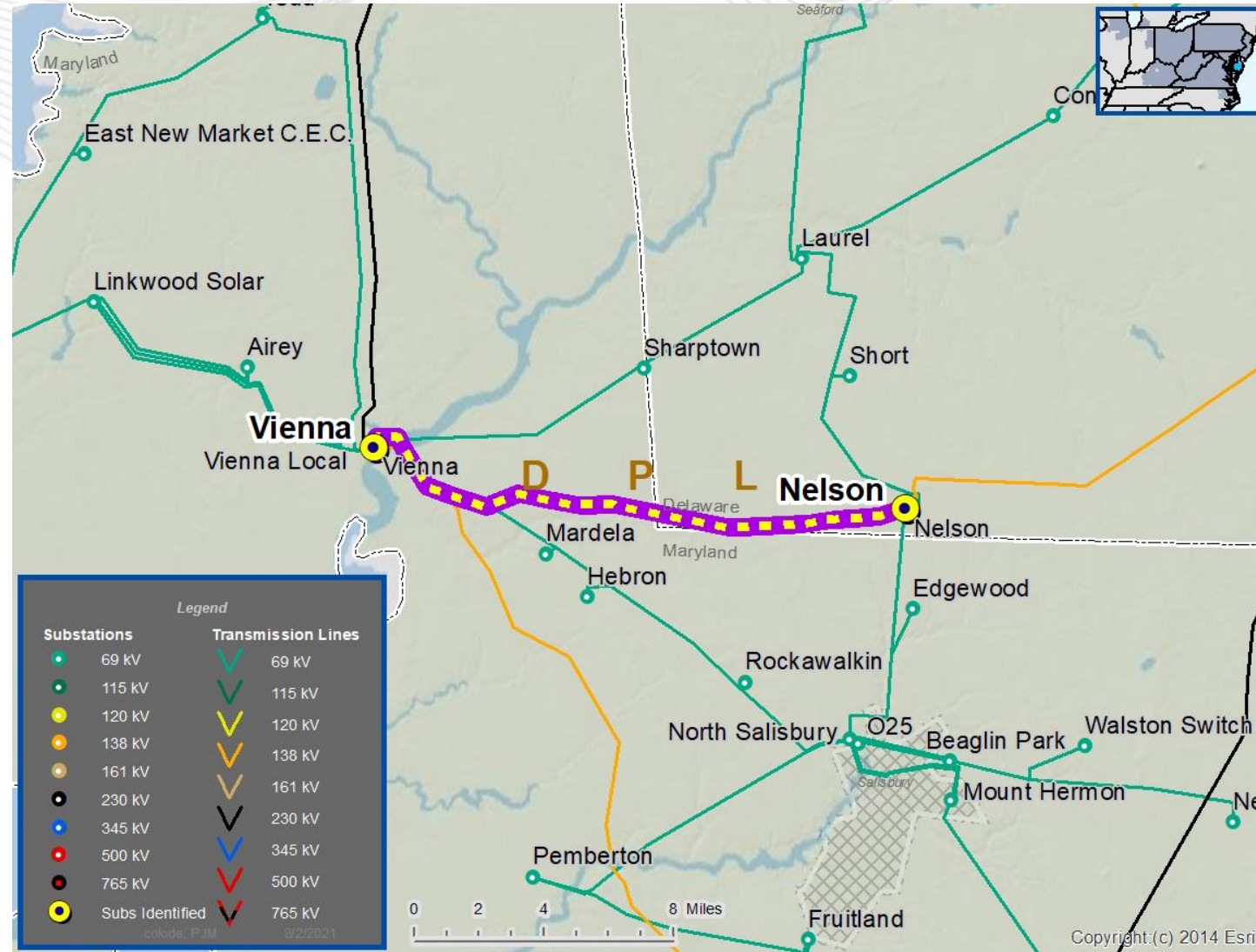
- New baseline b3326 – Rebuild the Vienna – Nelson 138 kV line.
- Current Rating: 101 MVA SN/ 144 MVA SE
- New Rating: 273 MVA SN/ 348 MVA SE

Estimated Cost: \$ 38.5M

Required IS Date: 06/01/2022

Projected IS Date: 12/31/2026

* Operating measures are not available in interim. PJM Planning / Operations and Transmission Owner are continuing to investigate mitigation.



Problem Statement: Generation Deliverability - Indian River 4 Deactivation

- Thermal violation: Vaughn – Kent 69 kV line
- Contingency: N-2

Potential Solution:

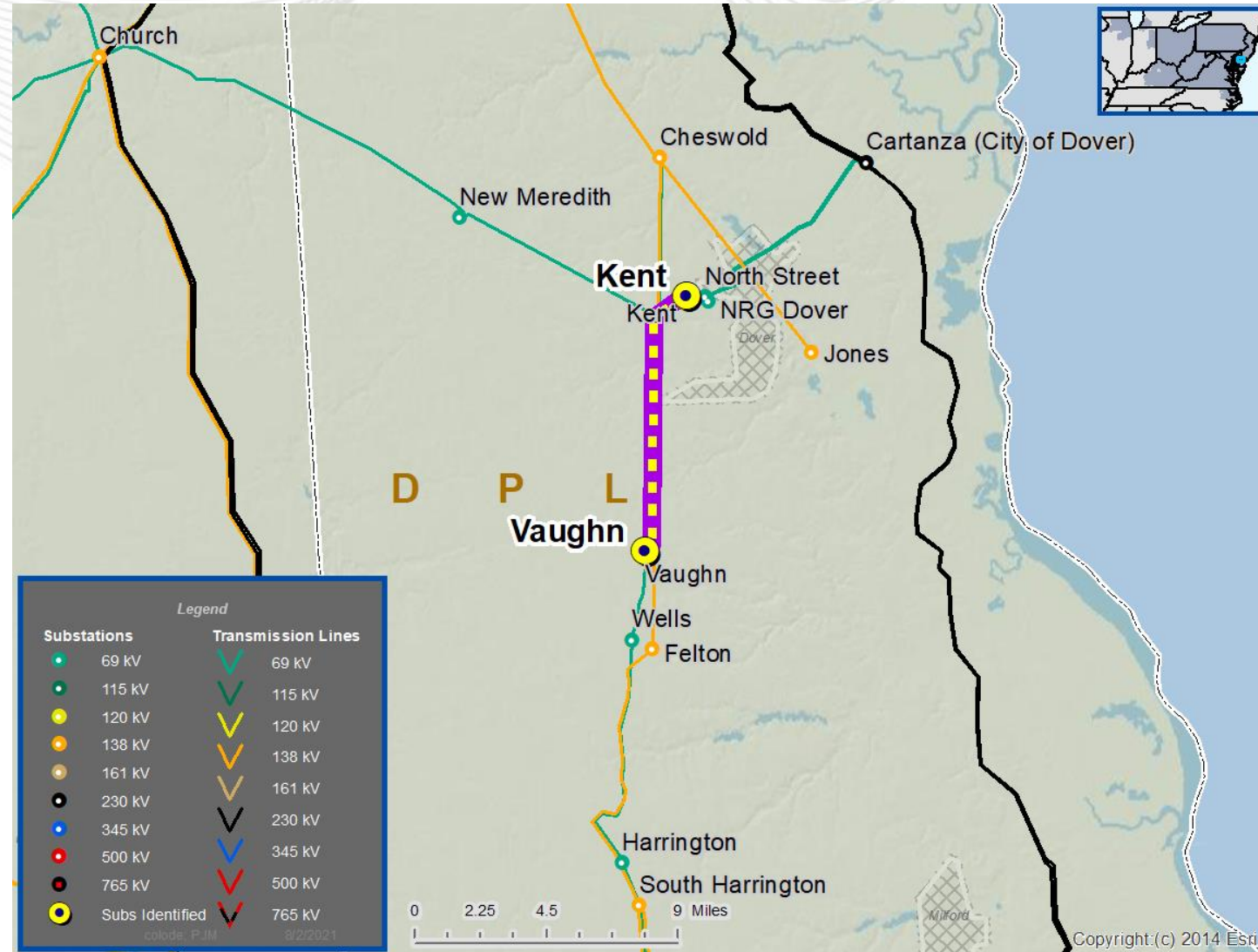
- New baseline b3327 – Upgrade the disconnect switch at Kent.
- Current Rating: 82 MVA SN/ 93 MVA SE
- New Rating: 136 MVA SN/ 165 MVA SE

Estimated Cost: \$ 0.25M

Required IS Date: 06/01/2022

Projected IS Date: 12/31/2022

* Operating measures are not available in interim. PJM Planning / Operations and Transmission Owner are continuing to investigate mitigation.



Problem Statement: N-1-1 Thermal Violation - Indian River 4 Deactivation

- Thermal violation: Vienna – Vienna 138 kV line
- Contingency: various N-1 combinations

Potential Solution:

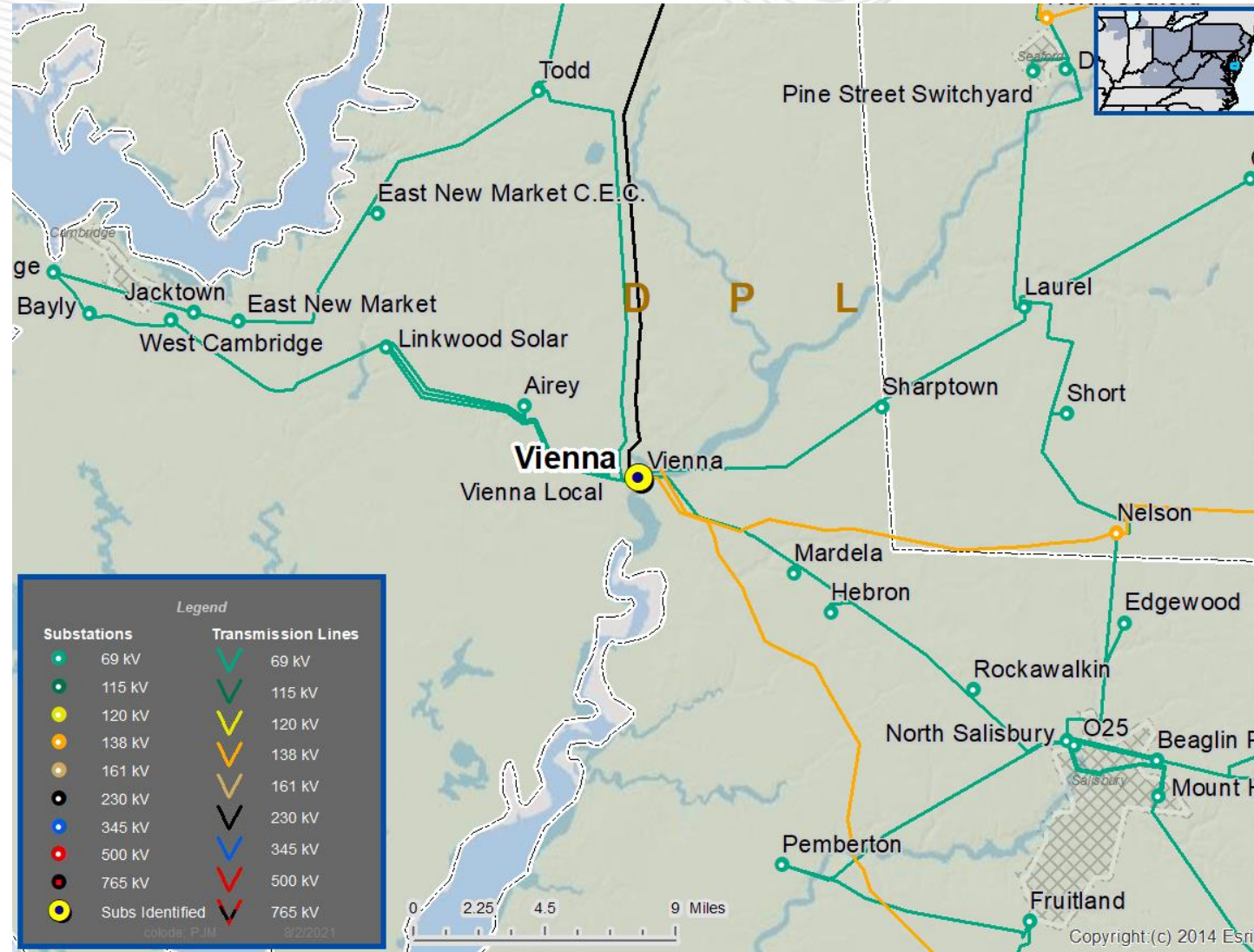
- New baseline b3328 – Upgrade the disconnect switch and CT
- Current Rating: 329 MVA SN/ 372 MVA SE
- New Rating: 392 MVA SN/ 458 MVA SE

Estimated Cost: \$ 0.25M

Required IS Date: 06/01/2022

Projected IS Date: 12/31/2022

* Operating measures are not available in interim. PJM Planning / Operations and Transmission Owner are continuing to investigate mitigation.



Problem Statement: N-1-1 Thermal Violation - Indian River 4 Deactivation

- Thermal violation: Farmview – Milford 138 kV line
- Contingency: various N-1 combinations

Potential Solution:

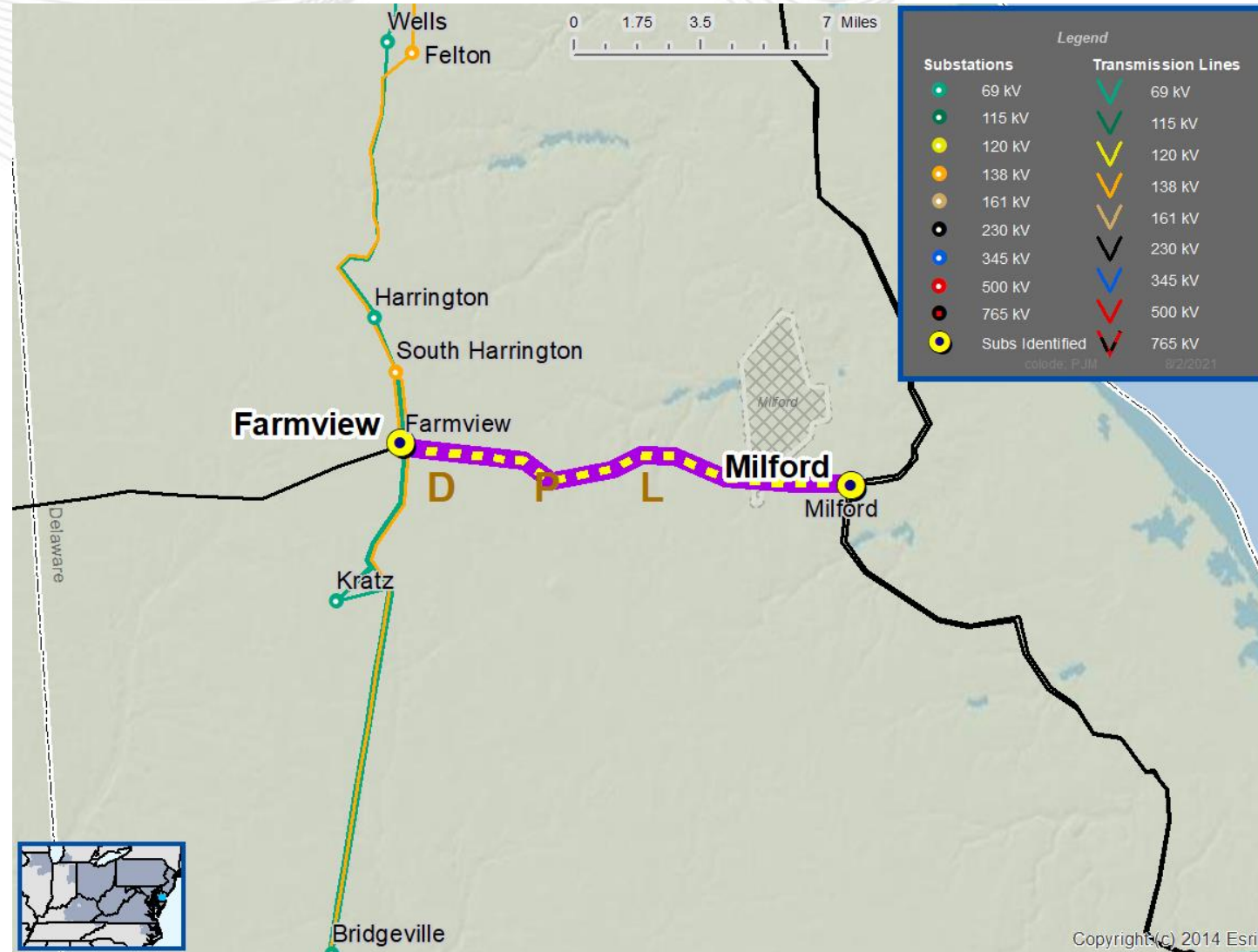
- New baseline b3329 – **Rerate the Farmview –Milford 138 kV line**
- Current Rating: 167 MVA SN/ 240 MVA SE
- New Rating: **218 MVA SN/ 292 MVA SE**

Estimated Cost: \$ 0.3M

Required IS Date: 06/01/2022

Projected IS Date: 12/31/2022

* Operating measures are not available in interim. PJM Planning / Operations and Transmission Owner are continuing to investigate mitigation.



Problem Statement: N-1-1 Thermal Violation - Indian River 4 Deactivation

- Thermal violation: Farmview – S. Harrington 138 kV line
- Contingency: various N-1 combinations

Potential Solution:

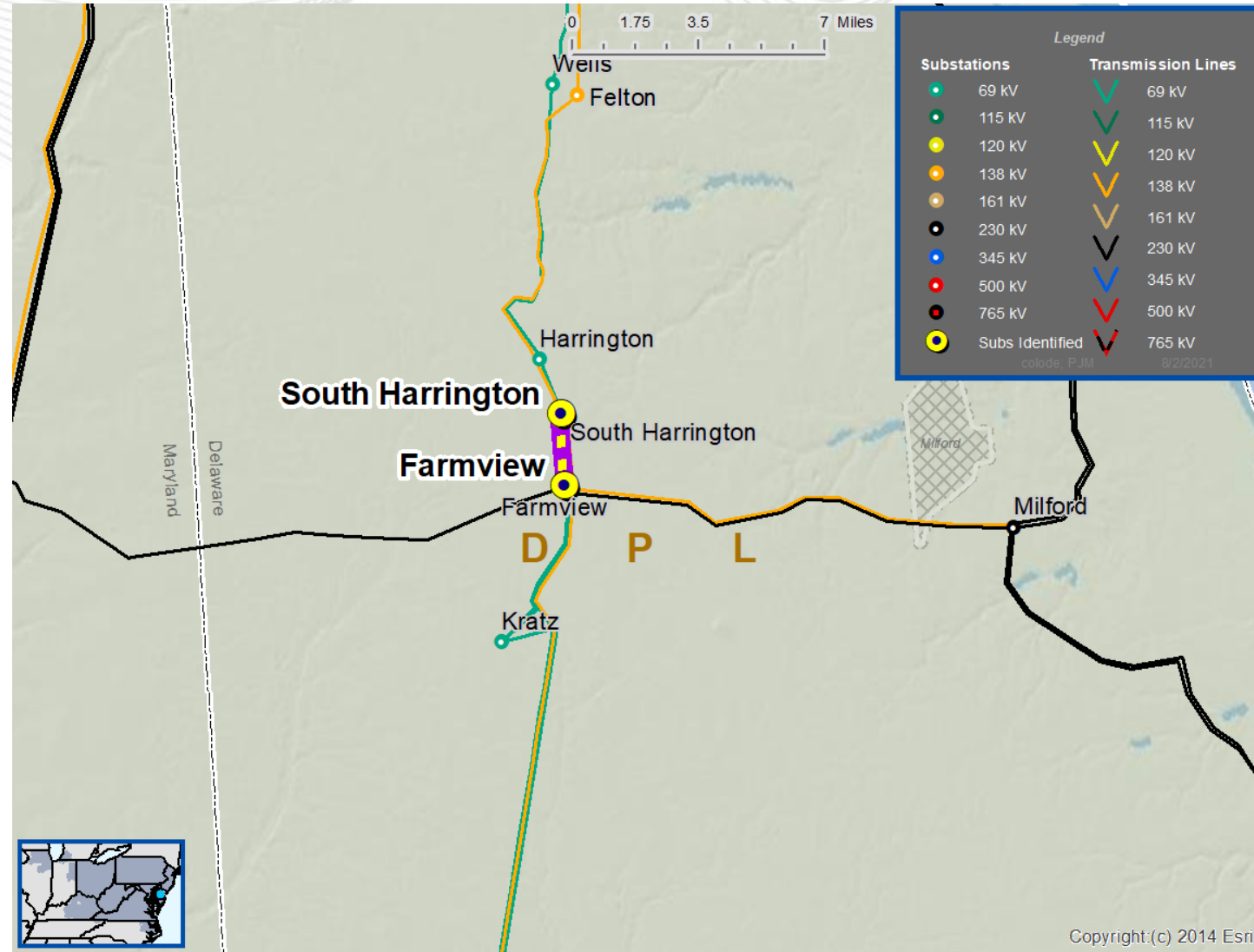
- New baseline b3330 – **Rerate the Farmview – S. Harrington 138 kV line**
- Current Rating: 167 MVA SN/ 242 MVA SE
- New Rating: **218 MVA SN/ 292 MVA SE**

Estimated Cost: \$ 0.25M

Required IS Date: 06/01/2022

Projected IS Date: 12/31/2022

* Operating measures are not available in interim. PJM Planning / Operations and Transmission Owner are continuing to investigate mitigation.



Problem Statement: N-1-1 Thermal Violation - Indian River 4 Deactivation

- Thermal violation: S. Harrington – North Seaford 138 kV line
- Contingency: various N-1 combinations

Potential Solution:

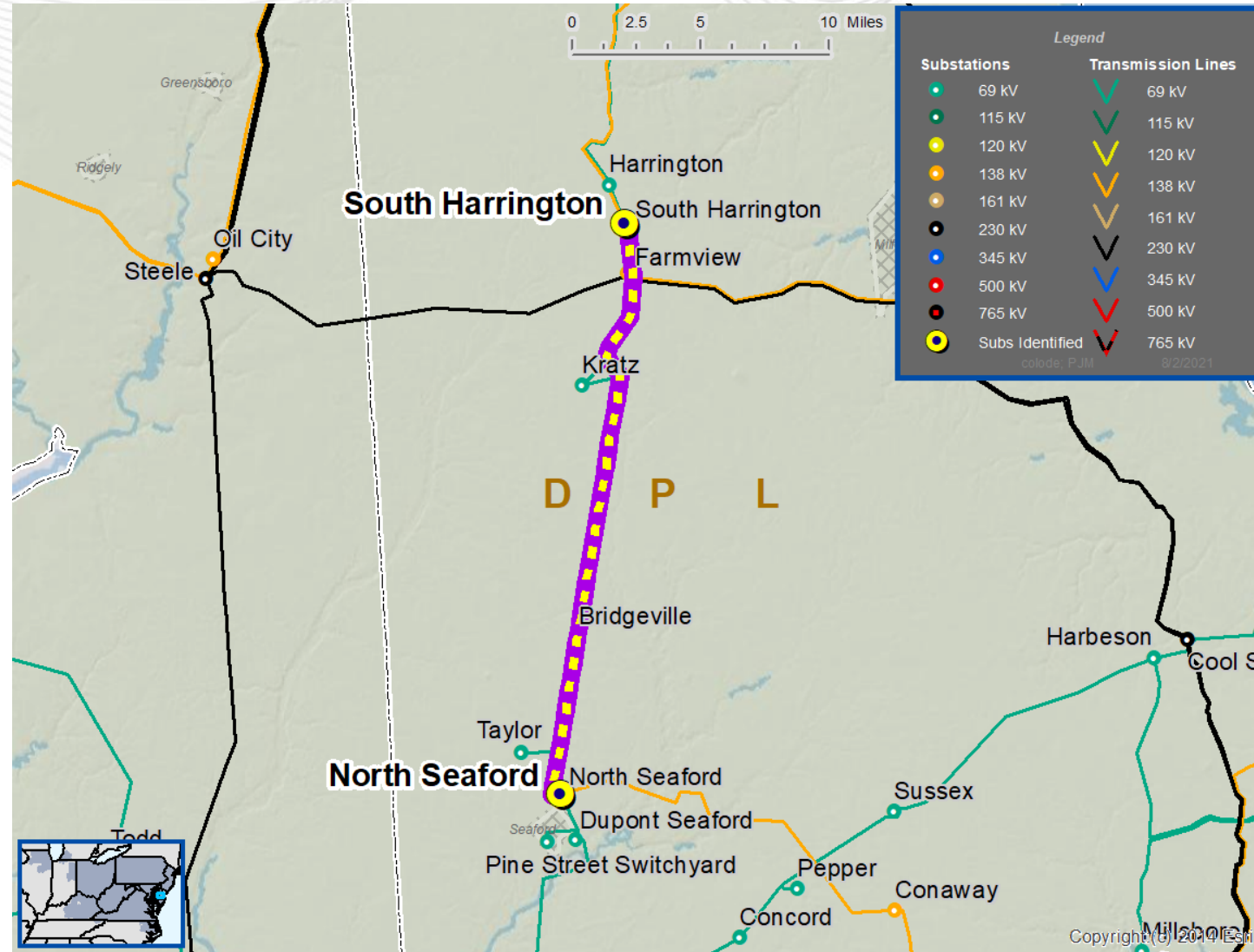
- New baseline b3331 – Upgrade stranded bus and relay at Seaford
- Current Rating: 183 MVA SN/ 247 MVA SE
- New Rating: 273 MVA SN/ 347 MVA SE

Estimated Cost: \$ 0.5M

Required IS Date: 06/01/2022

Projected IS Date: 12/31/2022

* Operating measures are not available in interim. PJM Planning / Operations and Transmission Owner are continuing to investigate mitigation.



Problem Statement: N-1-1 Thermal Violation - Indian River 4 Deactivation

- Thermal violation: Steel – Milford 230 kV line
- Contingency: various N-1 combinations

Potential Solution:

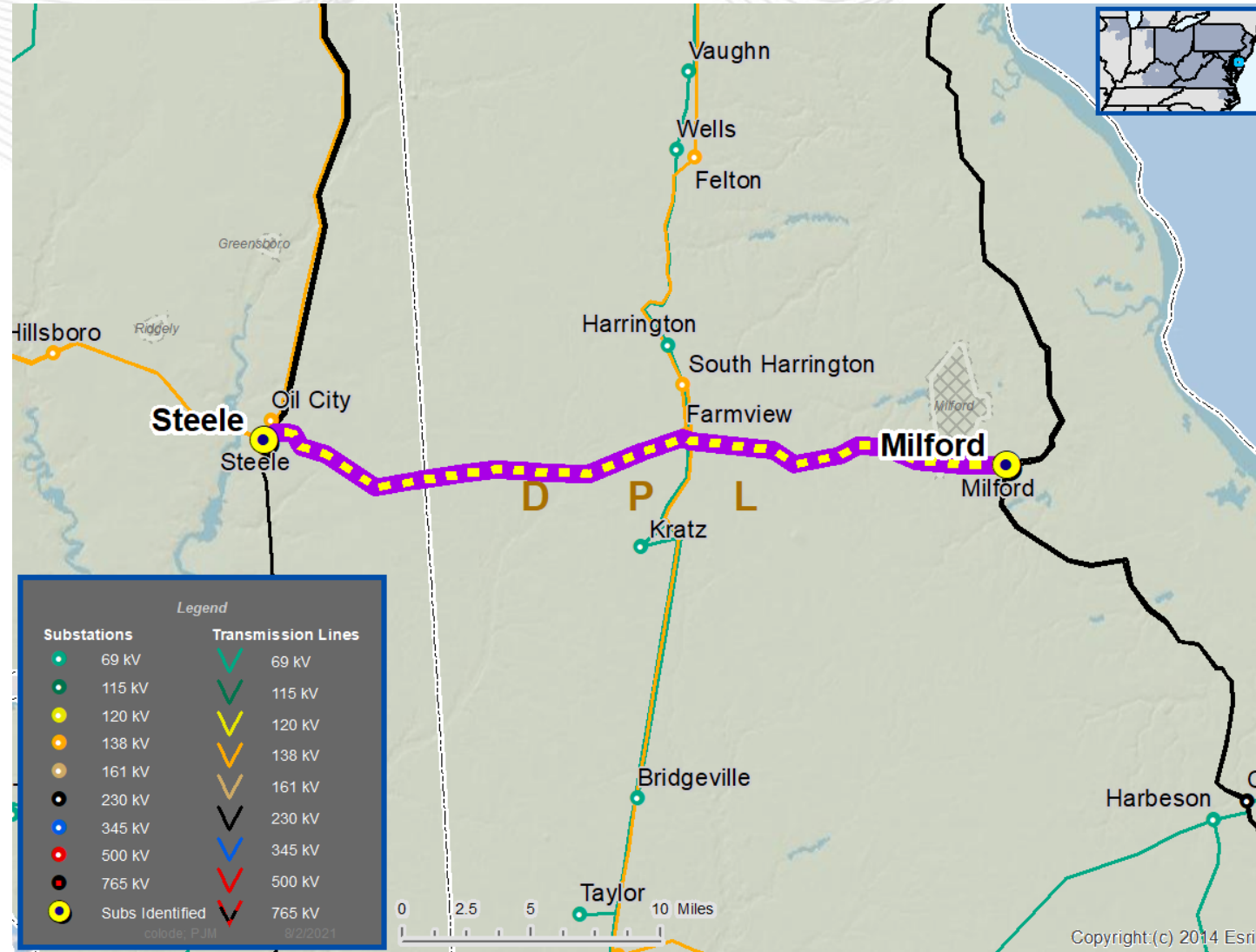
- New baseline **B3332 – Rerate the Steel – Milford 230 kV line**
- Current Rating: 395 MVA SN/ 552 MVA SE
- New Rating: 653 MVA SN/ 799 MVA SE

Estimated Cost: \$ 0.6M

Required IS Date: 06/01/2022

Projected IS Date: 12/31/2022

* Operating measures are not available in interim. PJM Planning / Operations and Transmission Owner are continuing to investigate mitigation.



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Generation Deactivation Notification



Member Hotline

(610) 666 – 8980

(866) 400 – 8980

custsvc@pjm.com

- V1 - 8/25/21 - Original slides posted.
- V2- 09/22/21 –Slide 7- added the language for operational measurement.
Slide 14 – Updated scope and cost
Slide 22-26 – updated scope, cost, and schedule.