Reliability Analysis Update
PJM West

Julia Spatafore, Bo Zhang
Sub Regional RTEP Committee – PJM West

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2025 RTEP
Recommended Read
Baseline Reliability Projects

ComEd Transmission Zone: Baseline Mendota-Sandwich 138 kV

Process Stage: Recommended Solution

Criteria: Generator Deliverability

Assumption Reference: 2025 RTEP assumptions

Model Used for Analysis: 2030 winter and LL base case

Proposal Window Exclusion: Below 200 kV exclusion

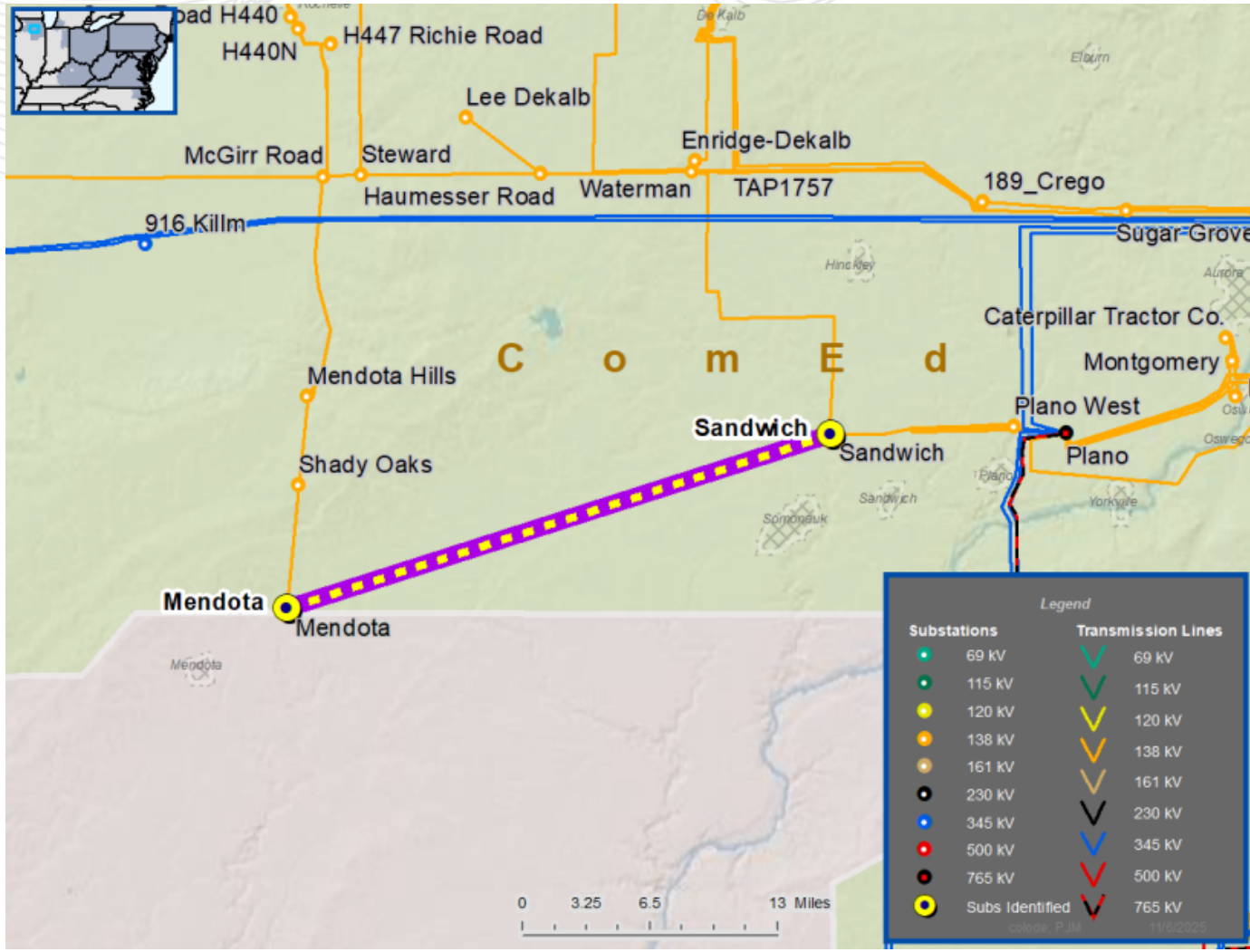
Problem Statement:

FG: 2025-W1-GD-LL189, 2025-W1-GD-W61, 2025-W1-GD-W217, 2025-W1-GD-W370

In the 2030 light load and winter case, the Waterman-Sandwich 138 kV and Steward-Haumesser 138 kV lines are overloaded for N-1 and N-2 outages.

Existing Facility Rating:

Branch	SN/SLTE/SSTE/SLD WN/WLTE/WSTE/WLD (MVA)
Waterman-Sandwich 138 kV	238/309/312/331 295/343/355/376
Steward-Haumesser 138 kV	351/449/455/471 421/472/476/495



ComEd Transmission Zone: Baseline Mendota-Sandwich 138 kV

Recommended Solution:

- Build a new 28-mile transmission 138 kV line from Mendota to Sandwich. **(b4025.1)**
- Convert Mendota straight bus to a ring by installing four new 138 kV circuit breakers. **(b4025.2)**
- Install 138 kV circuit breaker and associated equipment at Sandwich substation. **(b4025.3)**

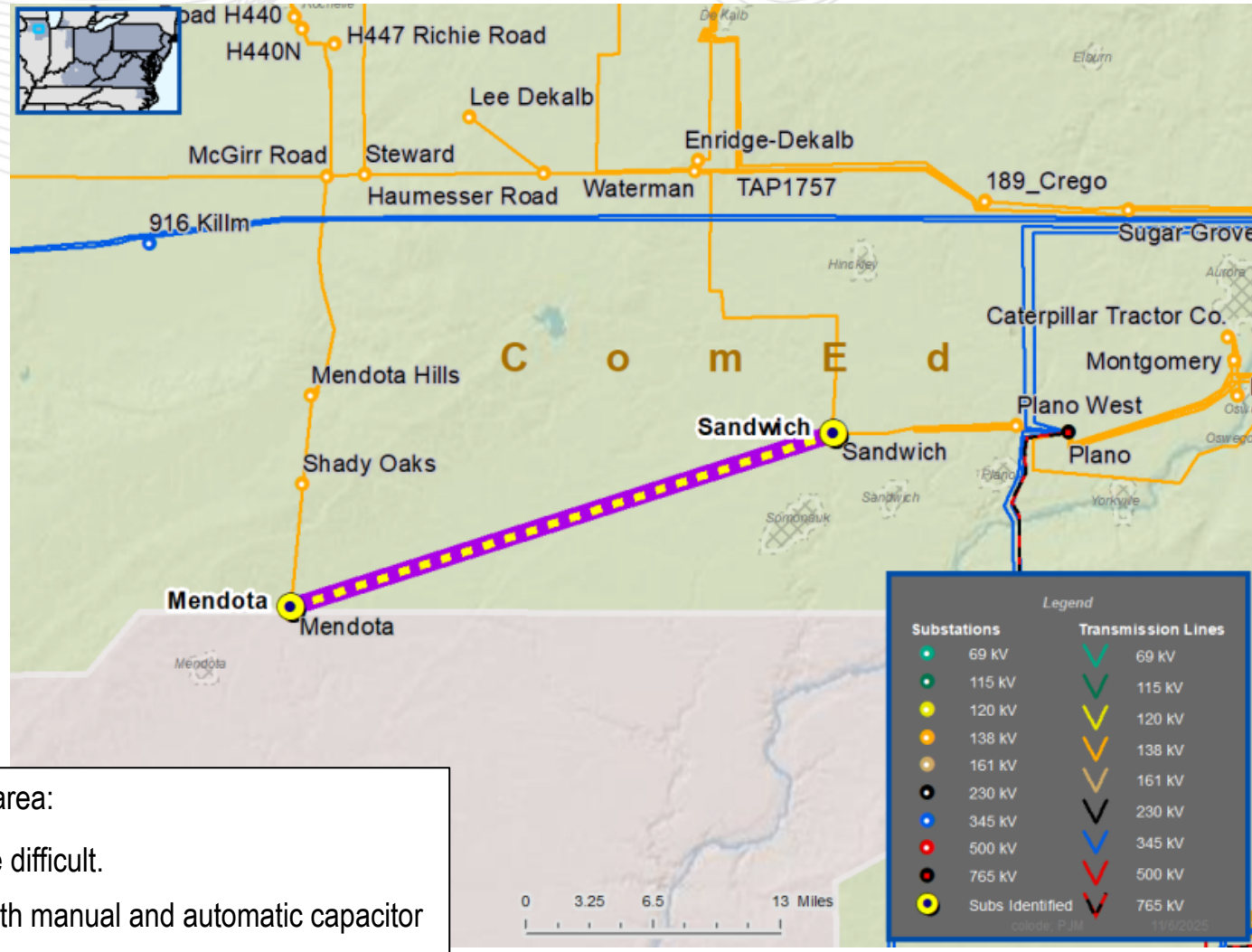
Estimated Cost: $171.88 M

Preliminary Facility Rating:

Branch	SN/SLTE/SSTE/SLD WN/WLTE/WSTE/WLD (MVA)
Mendota-Sandwich 138 kV	351/449/459/498 421/500/513/557

Required In-Service Date: 4/15/2030

Projected In-Service Date: 4/15/2030



Ancillary Benefits: The proposed project will alleviate the following issues for the area:

- The network hosts 85MW of wind generation, making stability and control more difficult.
- The network faces significant voltage regulation challenges, made worse by both manual and automatic capacitor bank controls under fluctuating wind output.
- Multiple configurations (single contingency scenarios) left wind generation with no exit path except through overloaded transformers or lines

AEP Transmission Zone: Baseline

Mound Street-St Clair Avenue 138kV Line Rebuild

Process Stage: Recommended Solution

Criteria: Generator Deliverability, N-1 and N-1-1 analysis

Assumption Reference: 2025 RTEP assumptions

Model Used for Analysis: 2030 RTEP Summer and Winter base case

Proposal Window Exclusion: none

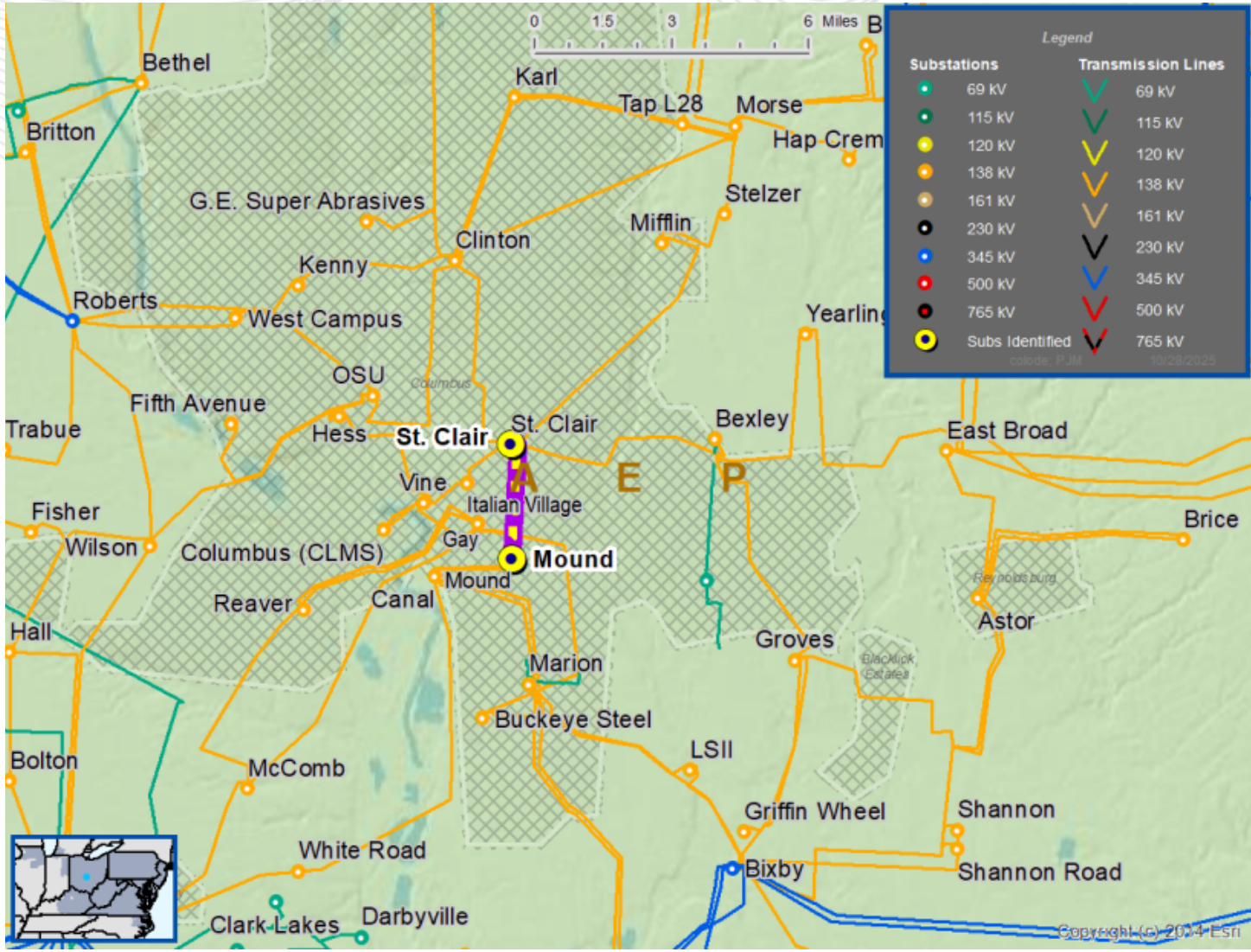
Problem Statement:

FG: 2025W1-GD-S167, 2025W1-GD-S173, 2025W1-GD-S178, 2025W1-GD-S194, 2025W1-GD-S196, 2025W1-GD-S405, 2025W1-GD-S467, 2025W1-GD-S468, 2025W1-GD-S484, 2025W1-IPD-S107, 2025W1-IPD-S113, 2025W1-IPD-S114, 2025W1-IPD-S115, 2025W1-IPD-S117, 2025W1-IPD-S118, 2025W1-IPD-S121, 2025W1-IPD-S127, 2025W1-IPD-S134, 2025W1-IPD-S136, 2025W1-IPD-S137, 2025W1-IPD-S150, 2025W1-IPD-S153, 2025W1-IPD-S155, 2025W1-IPD-S166, 2025W1-IPD-S168, 2025W1-IPD-S171, 2025W1-IPD-S172, 2025W1-IPD-S173, 2025W1-IPD-S176, 2025W1-IPD-S177, 2025W1-IPD-S178, 2025W1-IPD-S179, 2025W1-IPD-S183, 2025W1-IPD-S184, 2025W1-IPD-S189, 2025W1-IPD-S190, 2025W1-IPD-S191, 2025W1-IPD-S60, 2025W1-IPD-S73, 2025W1-IPD-S93, 2025W1-IPD-S97, 2025W1-N1-ST100, 2025W1-N1-ST101, 2025W1-N1-ST96, 2025W1-N1-ST98, 2025W1-N11-WT45, 2025W1-N11-WT49, 2025W1-N11-WT53.

In the 2030 Summer and Winter case, thermal violations are identified at Mound Street-St Clair Avenue 138kV Line under N-1, N-2, and N-1-1 contingencies.

Existing Facility Rating:

Branch	SN/SE/WN/WE(MVA)
Mound Street-St Clair Avenue 138kV	131/173/136/178



AEP Transmission Zone: Baseline

Mound Street-St Clair Avenue 138kV Line Rebuild

Recommended Solution (2025-W1-195):

- Rebuild 2.3 miles of UG line between Mound Street and Saint Clair 138kV stations with XLPE. **(b4028.1)**

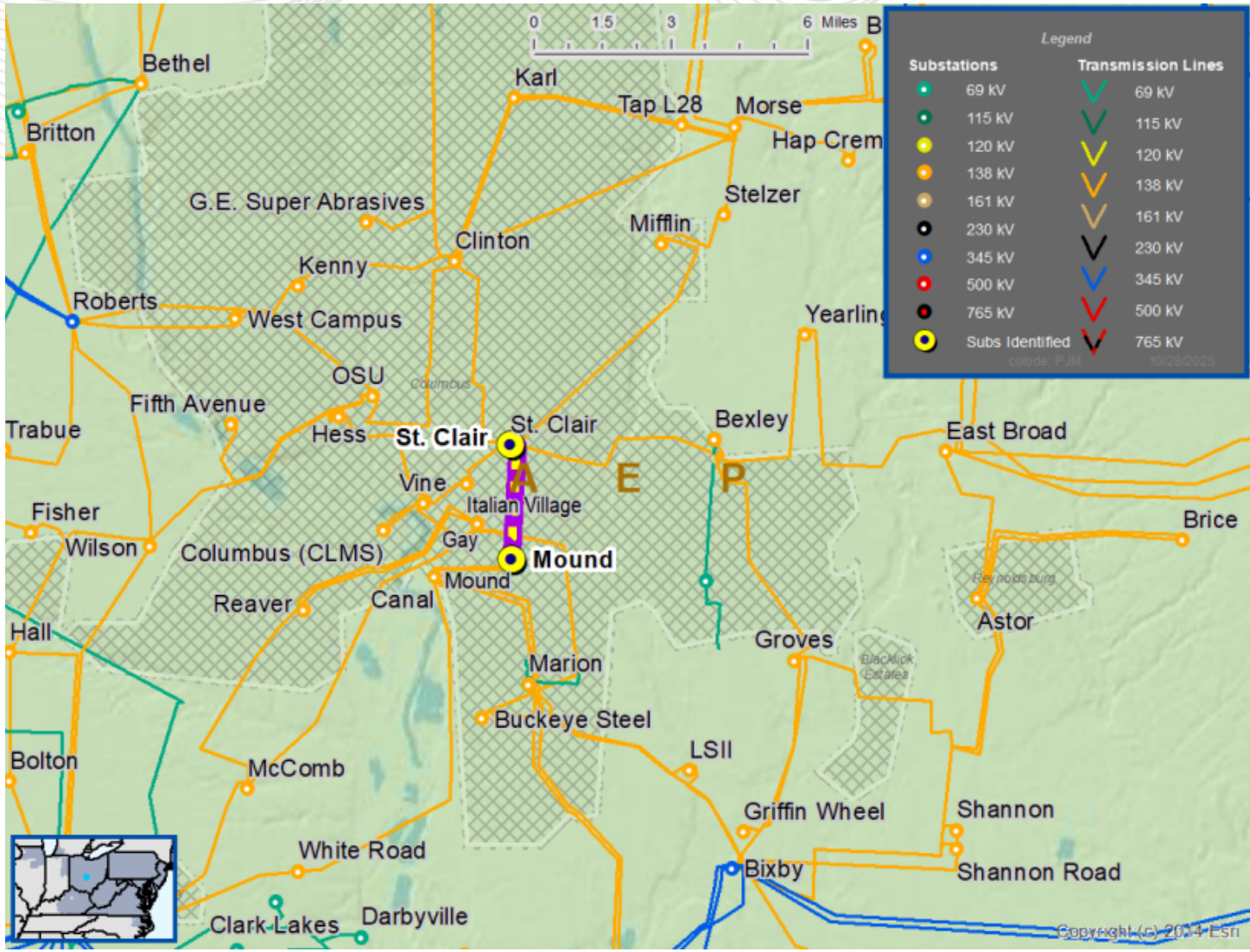
Total Estimated Cost: $41.586M

Preliminary Facility Rating:

Branch	SN/SE/WN/WE(MVA)
Mound Street-St Clair Avenue 138kV	290/320/310/340

Required In-Service: 06/01/2030

Projected IS Date: 04/01/2030



Baseline Reliability Projects
Changes to Previously Approved Projects

AEP Transmission Zone: Baseline b4000.209 Cancellation

B4000.209 was presented on 1/7/2025 TEAC

Scope: Rebuild 0.9 miles of Altavista - Otter 138 kV line. (B4000.209)

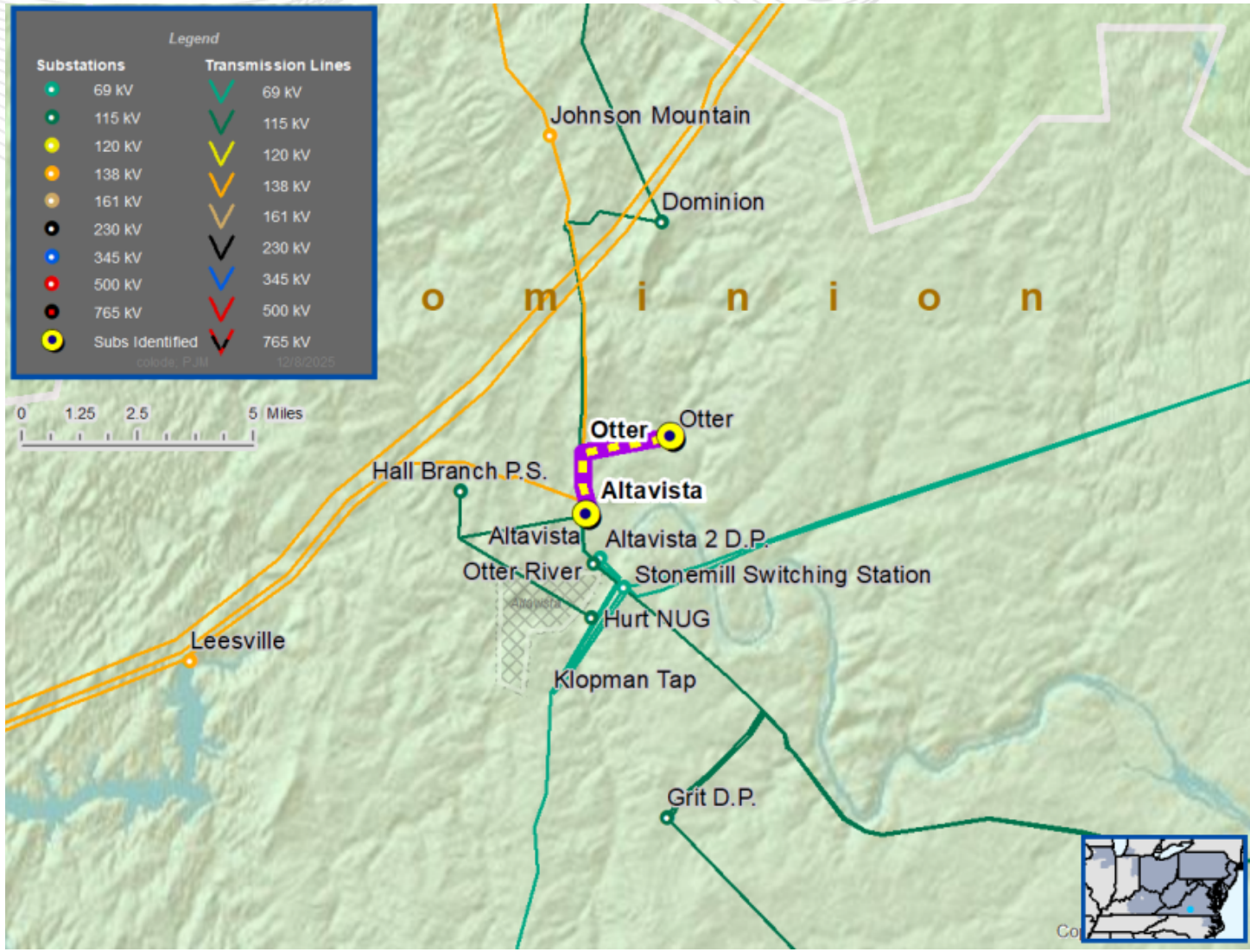
Estimated Cost: $1.2 M

Required IS Date : 6/1/2029

Reason for Cancellation:

The N5613 network upgrade has the same scope and was required by the AE1-250 Queue Project, whose GIA was executed as part of the IA Fast Lane process and signed by parties 6/12/2025 and accepted by FERC 7/8/2025 and funded this network upgrade.

AE1-250 is modeled but N5613 was missed in 2029 RTEP cases. Therefore, B4000.209 is not needed.



Contact

Facilitator:
Wenzheng Qiu Wenzheng.Qiu@pjm.com

Secretary:
Katherine Graham Katherine.Graham@pjm.com

SME/Presenter:
Julia Spatafore; Julia.Spatafore@pjm.com
Bo Zhang; Bo.Zhang@pjm.com

Reliability Analysis Update

Member Hotline

(610) 666 – 8980

(866) 400 – 8980

custsvc@pjm.com

Revision History

Version No.	Date	Description
1	Dec. 9, 2025	• Original slides posted

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