Market Efficiency Update

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2022/23 Market Efficiency Cycle

2022/2023 RTEP Window Overview

- Modeling Data
  - ME Base Case and Sensitivity Scenarios posted on the Market Efficiency page (PROMOD 11.4 XML format).
  - Base Case Preliminary Results - Simulated Congestion posted at the November TEAC.
- Market Efficiency Training completed on November 29, 2022.
- The final Market Efficiency Base Case to be posted before the start of 2022/23 Long-Term Window.
- 2022/23 Long-Term Window will open once the congestion drivers are finalized.

2022 Acceleration Analysis of Baseline Reliability Projects 2nd Review

Acceleration Analysis Overview

- Scope
  - Determine which Reliability upgrades, if any, have an economic benefit if accelerated or modified.
- Study Assumptions
  - Analysis utilized the most recent Market Efficiency Base Case available.
- Analysis Completed
  - PROMOD simulations
    - 2023 and 2027 study years with 2023 Topology (AS-IS Topology).
    - 2023 and 2027 study years with 2027 Topology (RTEP Topology).
  - Compared the board approved reliability upgrades with the congestion reductions between the AS-IS and the RTEP Base cases.

DOM: Acceleration of Reliability Project B3694 Parts (10,11,12,13)

Process Stage: Second Review

Criteria: Market Efficiency - Acceleration Analysis

Assumptions Reference: 2022 Market Efficiency Assumptions

Model: 2022 Market Efficiency Base Case

Problem Statement:

Simulated congestion on Chesterfield-Hopewell No. 211 and No. 228 lines without the B3694 project

Proposed Solution:

Accelerate the expected in service date of the reliability project B3694 parts (10,11,12,13) from 6/1/2026 to 6/1/2025

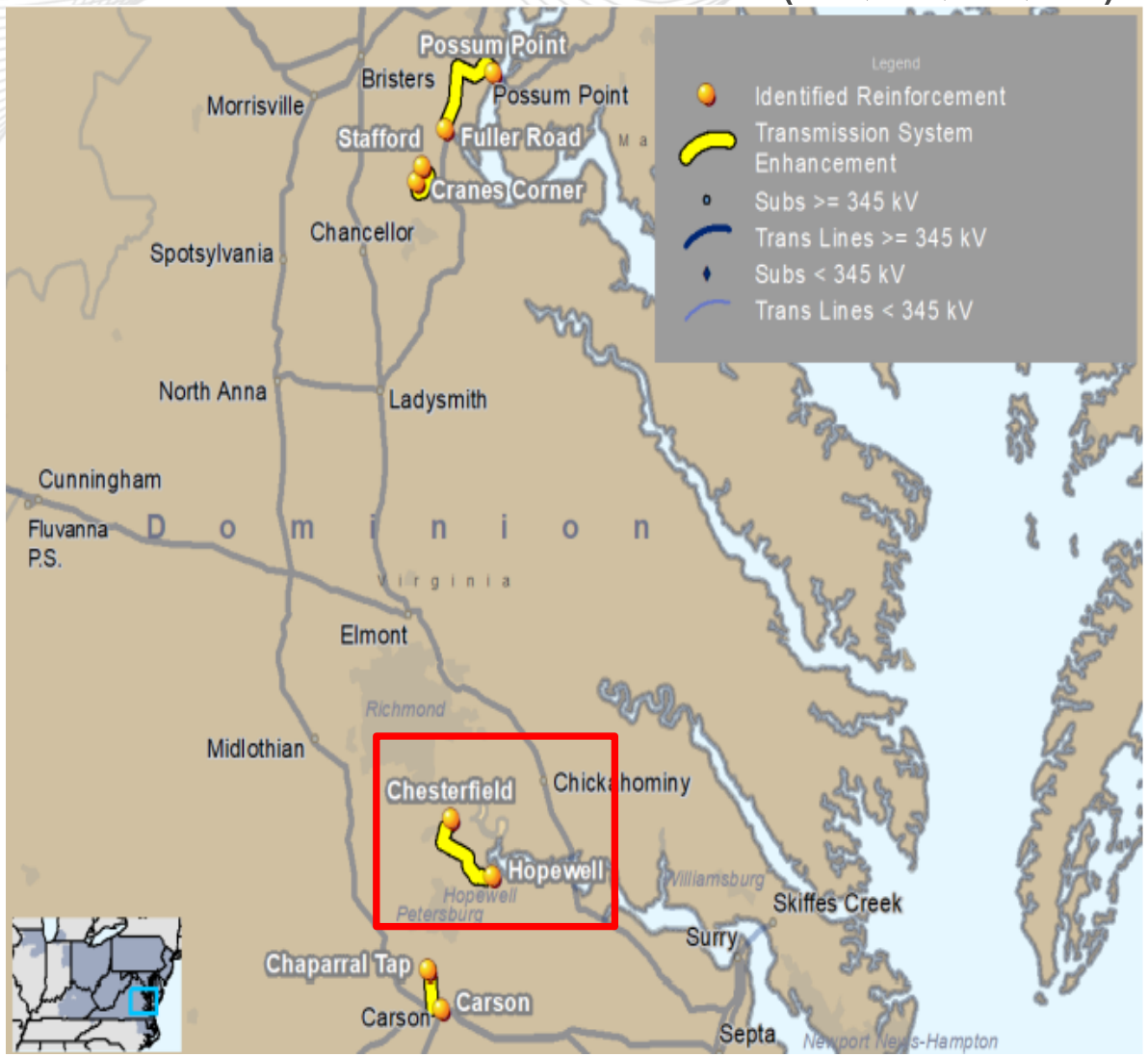
Project Description:

Accelerate the reconductoring of approximately 2.9 miles each of 230 kV lines No. 211 (Chesterfield-Hopewell) and No. 228 (Chesterfield-Hopewell) to achieve a minimum summer emergency rating of 1046 MVA (equipment at Chesterfield and Hopewell substations will be upgraded to not limit ratings on lines No. 211 and No. 228).

Cost/Benefit Analysis:

- **Estimated Acceleration Cost**: $0
- **Estimated Annual Congestion Benefit**: $ 3.9 M

New Required In-Service: 6/1/2025



PJM-MISO TMEP Study
1st Review

- Historically binding (2020 + 2021) Market-to-Market flowgates
  - Focus on constraints with >$1million congestion
- Initial list of TMEP study candidates posted at the April 25, 2022 IPSAC meeting.
- TMEP Criteria
  - Limited to historically binding M2M flowgates.
  - Projects must be in service by 3rd summer peak .
  - Projects capital cost < $20 million.
  - Benefits based on average of past 2 years of historical congestion (Day Ahead + Balancing)
  - Four years worth of benefits must completely cover project's installed capital cost
- Interregional cost allocation based on congestion relief in each RTO
    - Adjusted by M2M payments

ComEd:Baseline
Powerton Sub 138kV Wave Trap

Process Stage: First Review

Reference: PJM/MISO JOA – Article 9 – Interregional TMEP Analysis

Assumptions: 2-year historical congestion (2020, 2021)

Analytical Framework: 2022 Coordinated System Plan Study

TMEP Candidate: Yes

Problem Statement:

Greater than $1 M of historical congestion identified on the Powerton-Towerline 138kV tie-line with MISO (Ameren)

Existing Facility Rating: SN/SE/WN/WE = 195 / 214 / 211 / 229

Proposed Facility Rating: SN/SE/WN/WE = 207 / 268 / 252 / 298

Proposed Solution:

TMEP-2022-01: At Powerton Substation (ComEd), replace most limiting facility, 800A wave trap with 2000A wave trap, on the Powerton-Towerline 138kV line terminal.

Cost/Benefit Analysis:

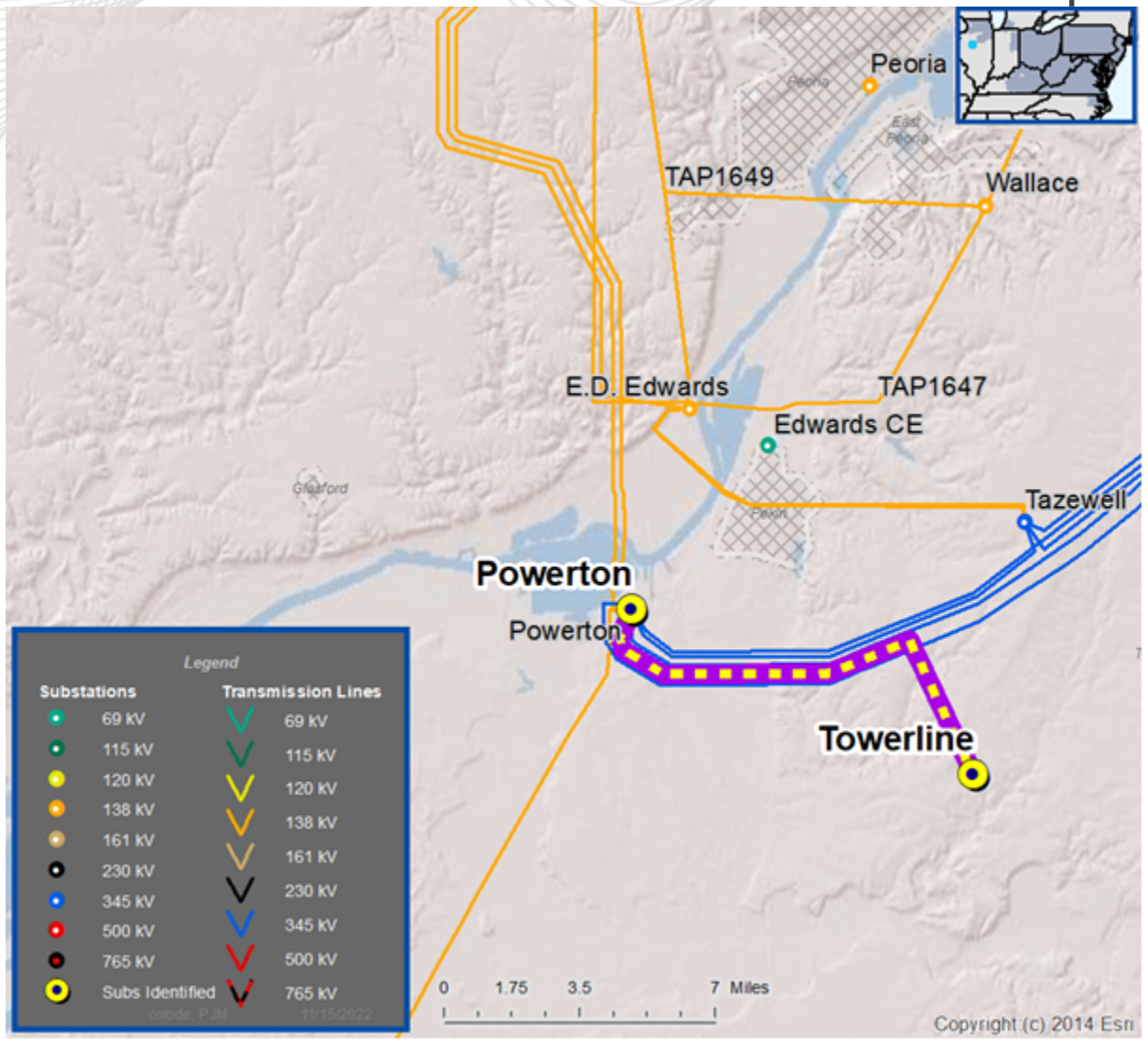
- **Estimated TMEP Cost**: $0.2 M
- **Annual TMEP Congestion Benefit**: $ 1.827 M/Year (2-Years Hist. Cong. Avg.)
- **Expected TMEP Future Congestion Relief:** $ 7.31 M = 4 x $ 1.827 M/Year
  (Sum of $ 1.827 M annual congestion benefit over 4 years period after study year).

Criterion: TMEP Capital Cost < Expected TMEP Future Congestion Relief

$0.2 M < $ 7.31 M

Alternatives: None

Required In-Service: 6/1/2025



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Market Efficiency Update

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Revision History

- V1 – 12/1/2022 – Original slides posted

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