Subregional RTEP Committee – Western
FirstEnergy Supplemental Projects

March 14, 2025

Needs

Stakeholders must submit any comments within 10 days of this meeting in order to provide time necessary to consider these comments prior to the next phase of the M-3 process

ATSI Transmission Zone M-3 Process
Harper - West Akron 138 kV

Need Number: ATSI-2025-002

Process Stage: Need Meeting 03/14/2025

Project Driver: Equipment Material Condition, Performance & Risk

Specific Assumption References:

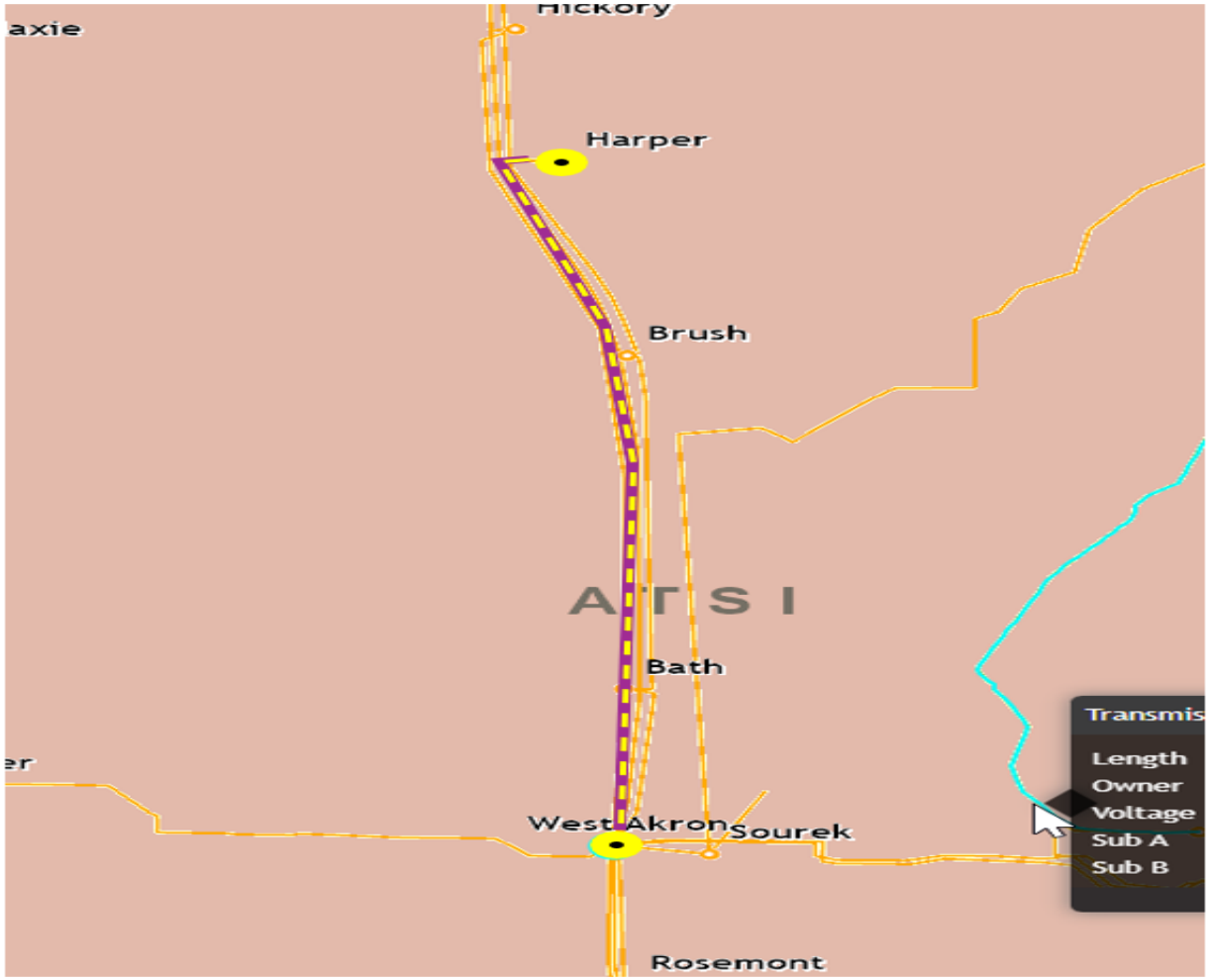
System Performance Global Factors

- System Reliability and Performance
- Load at risk in planning and operational scenarios
- Age/condition of transmission line conductors and hardware
- Increase line loading limits

Problem Statement:

The Harper - West Akron 138 kV Line is approximately 10 miles in length and serves approximately 71 MW and 2,800 customers. Part of the line (0.8 miles in length) contains vintage 1920's conductor and hardware. Since 2022 there have been two unscheduled, sustained 138 kV line outages. Based on the 2024 RTEP model for 2029 Summer (50/50) case with Perry Unit 1 offline, a loss of two 345 kV lines (N-1-1) results in a thermal loading of 89% of the Summer Emergency rating

Existing Ratings: 143/146/161/161 MVA (SN/SE/WN/WN)



ATSI Transmission Zone M-3 Process
Black River - Johnson West 69 kV Switches

Need Number: ATSI-2025-011

Process Stage: Need Meeting 03/14/2025

Project Driver: Equipment Material Condition, Performance & Risk

Specific Assumption References:

System Performance Global Factors

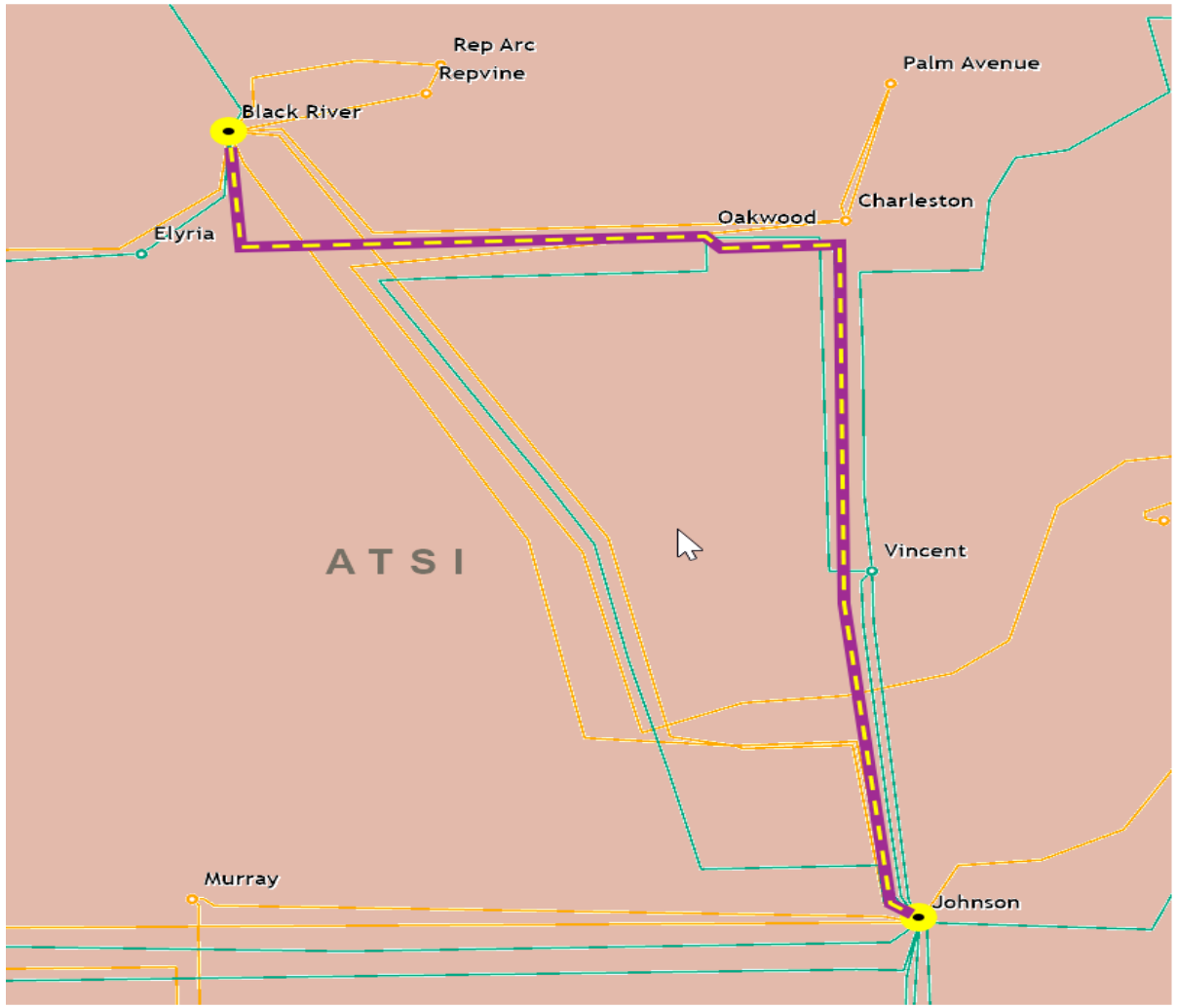
- System Reliability and Performance

Line Condition Rebuild/Replacement

- Aged or deteriorated wood pole transmission line structures
- Negatively impact customer outage frequency and/or durations
- Demonstrate an increasing trend in maintenance findings and/or costs

Problem Statement:

The manually operated A-81 and A-82 switches on the Black River - Johnson West 69 kV Line were installed in 1956. The switches and supporting structure have reached expected end of life. Replacement components are difficult to source leading to non-standard repairs. The assembly of these switches is also subject to dimensional changes in the wood pole structure such as warping, shrinking or deflection. These changes can result in misoperation with the potential for unintended arcing, thereby increasing the exposure risk to switchmen



Solutions

Stakeholders must submit any comments within 10 days of this meeting in order to provide time necessary to consider these comments prior to the next phase of the M-3 process

ATSI Transmission Zone M-3 Process
Bellevue-Groton 69 kV Line

Need Number: ATSI-2023-013

Process Stage: Solution Meeting SRRTEP-W - 03/14/2025

Previously Presented: Need Meeting 10/20/2023

Project Driver:

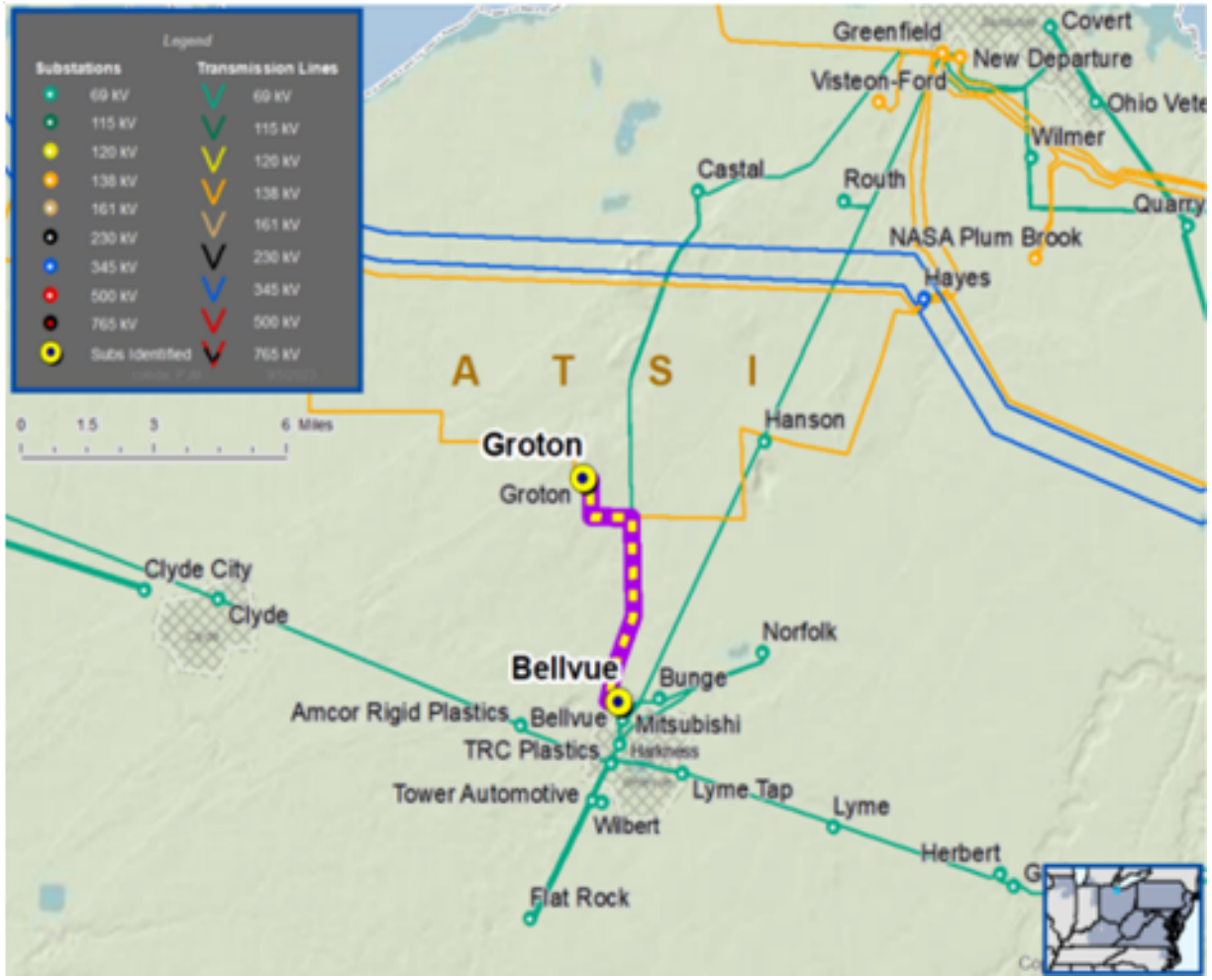
Equipment Material Condition, Performance & Risk / Infrastructure Resilience /Operational Flexibility and Efficiency / Other

Specific Assumption References:

- Substation / Line equipment limits
- System reliability and performance
- Reliability of Non-Bulk Electric System (Non-BES) Facilities
- Transmission line with high loading

Problem Statement:

The Bellevue – Groton 69 kV Line is approximately four miles in length with 4/0 CU and 336 ACSR 26/7 conductor types. The Bellevue-Groton 69 kV Line is expected to approach its thermal capability based on local planning studies. Bellevue-Groton 69 kV line has experienced 5 unscheduled outages (sustained) since 2018. The structures on this line are 41 years old.



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ATSI Transmission Zone M-3 Process

Proposed Solution:

Rebuild 4 miles of the Bellevue-Groton 69 kV Line with 556 kcmil ACSR conductor. The portion of Bellevue to Str 220-1b will be rebuilt. The portion of Groton to Str 220-1b will be reconductored

Groton Substation: Revise relay settings

Bellevue Substation : Replace 6 manual switches with 2 GOAB switches, replace switch A98. Revise relay settings, upgrade ACSR connections

Alternatives Considered:

Maintain existing condition and elevated risk of failure

Estimated Project Cost: $10.1 M

Projected In-Service: 06/01/2026

Status: Preliminary Engineering

Model: 2023 RTEP model for 2028 Summer (50/50)

Legend	
500 kV	
345 kV	
230 kV	
138 kV	
115 kV	
69 kV	
46 kV	
34.5 kV	
23 kV	
New	

Appendix

High Level M-3 Meeting Schedule

Assumptions

Activity	Timing
Posting of TO Assumptions Meeting information	20 days before Assumptions Meeting
Stakeholder comments	10 days after Assumptions Meeting

Needs

Activity	Timing
TOs and Stakeholders Post Needs Meeting slides	10 days before Needs Meeting
Stakeholder comments	10 days after Needs Meeting

Solutions

Activity	Timing
TOs and Stakeholders Post Solutions Meeting slides	10 days before Solutions Meeting
Stakeholder comments	10 days after Solutions Meeting

Submission of Supplemental Projects & Local Plan

Activity	Timing
Do No Harm (DNH) analysis for selected solution	Prior to posting selected solution
Post selected solution(s)	Following completion of DNH analysis
Stakeholder comments	10 days prior to Local Plan Submission for integration into RTEP
Local Plan submitted to PJM for integration into RTEP	Following review and consideration of comments received after posting of selected solutions

Revision History

03/04/2025– V1 – Original version posted to pjm.com

03/13/2025 – V2 – updated Need number on slide 6 and update map on slide 7