

Subregional RTEP Committee – Western FirstEnergy Supplemental Projects

ATSI Transmission Zone

August 14, 2026

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

Need Number: ATSI-2026-055
Process Stage: Need Meeting 08/14/2026
Project Driver: Equipment Condition/Performance/Risk, Operational Flexibility and Efficiency

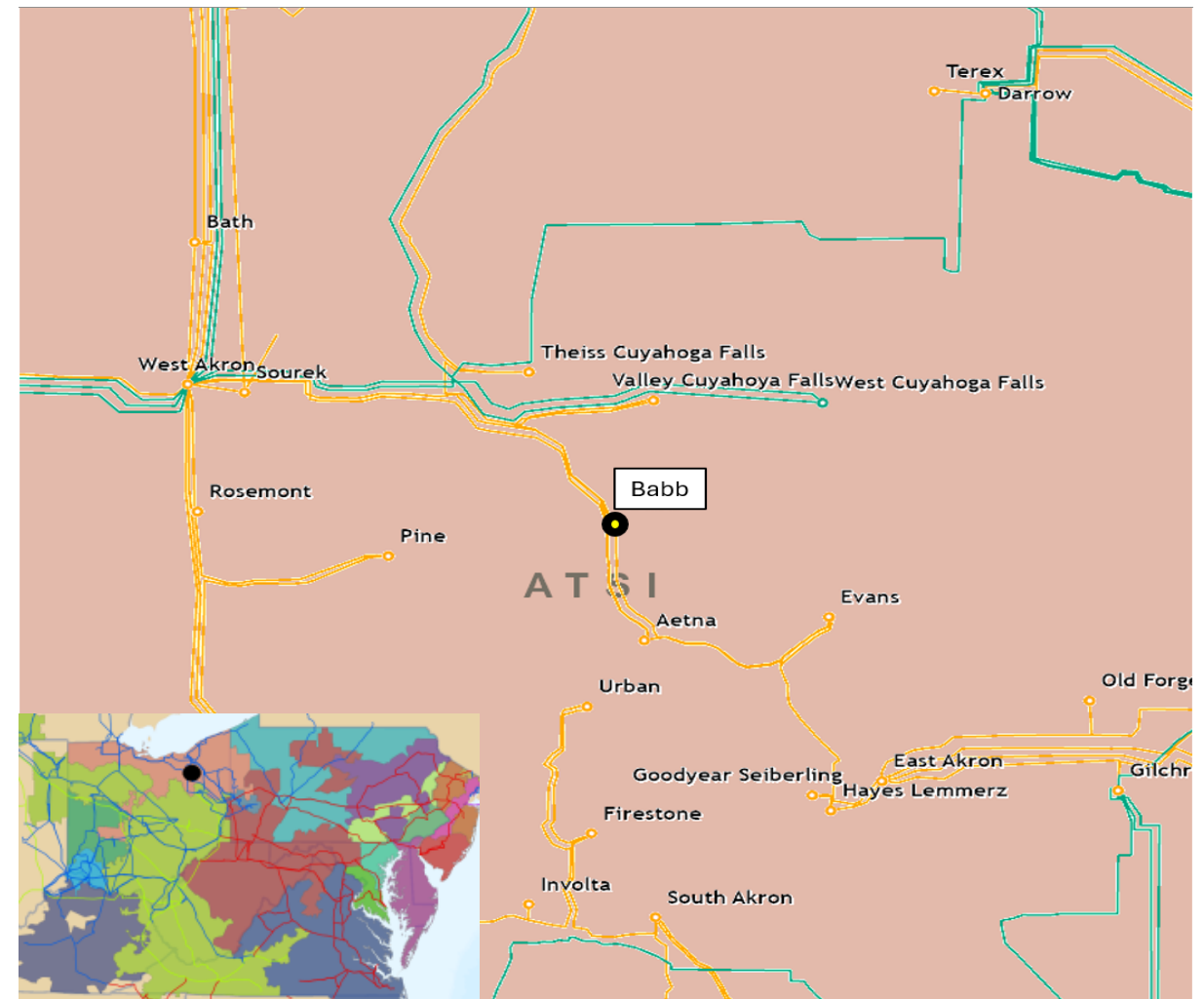
Specific Assumption References:

System Performance Projects Global Factors

- System reliability and performance
- Substation/line equipment limits
- Reliability of Non-Bulk Electric System (Non-BES facilities)
- Load at risk in planning and operational scenarios

Problem Statement:

The Babb Substation is experiencing significant settling issues. The substation was constructed on a capped landfill. The weight from the equipment, stone, poles, and vehicles are causing long term compression settlement at the substation. This settlement is an ongoing issue and is expected to worsen. Settlement of the substation yard has resulted in damage to the substation equipment including; disconnected the ground grid, exposed foundations, difficult vehicle access, leaning poles, depressions in the yard, and damaged fence.



Need Number: ATSI-2026-056
Process Stage: Need Meeting 08/14/2026
Project Driver: Equipment Condition/Performance/Risk,
 Infrastructure Resilience,
 Operational Flexibility and Efficiency

Specific Assumption References:

System Performance Projects Global Factors

- System reliability and performance
- Load at risk in planning and operational scenarios

Problem Statement:

Jordan Substation is configured as two separate straight busses.

Bus No. 1 includes the Clinic Hospital - Jordan No. 2 138 kV Q-14 Line, Eastlake - Jordan 138 kV Q-14 Line, No. 1 138-36 kV Transformer, and No. 2 138-36 kV Transformer.

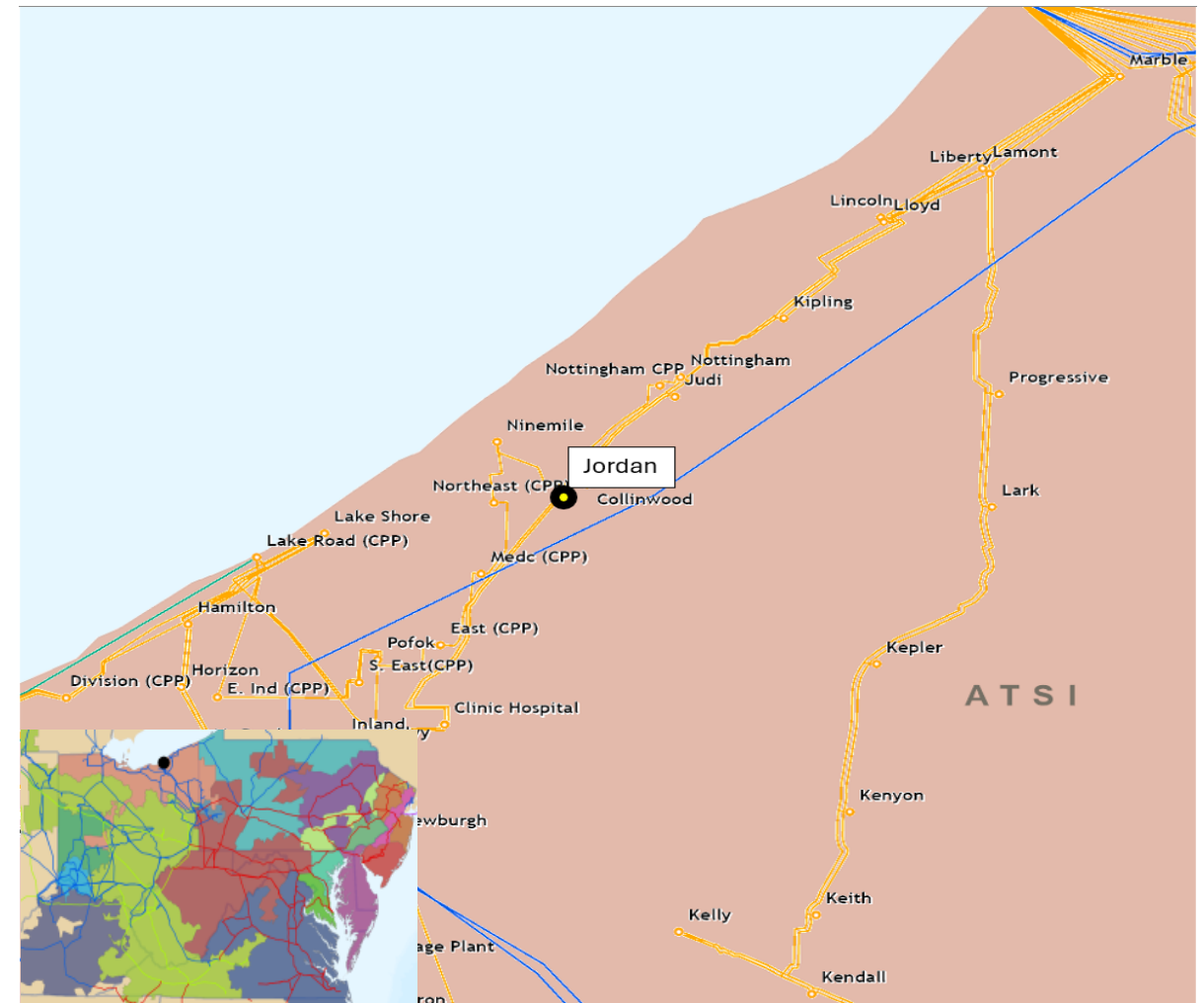
Bus No. 2 includes the Clinic Hospital - Jordan No. 1 138 kV Q-11 Line, Jordan - Nottingham 138 kV Q-11 Line, and No. 3 138-36 kV Transformer.

Jordan Substation serves approximately 56 MW of load and 19 customers.

A fault on the No. 1 or No. 2 138-36 kV transformers at Jordan Substation results in the outage of both transformers due to a shared common bus. This N-1 contingency event results in the No. 3 138-36 kV transformer at Jordan Substation overloading to 129% of its summer emergency rating.

Jordan 138-36 kV No. 3 Transformer Ratings:

- Existing Transformer Circuit Ratings: 113 / 119 / 125 / 125 MVA (SN/SLTE/WN/WLTE)
- Existing Transformer Ratings: 113 / 119 / 138 / 144 MVA (SN/SLTE/WN/WLTE)



Need Number: ATSI-2026-057
Process Stage: Need Meeting 08/14/2026
Project Driver: Equipment Condition/Performance/Risk

Specific Assumption References:

System Performance Projects Global Factors

- System reliability and performance
- Substation/line equipment limits

Problem Statement:

The Star Substation control house is congested. There is not sufficient space for additional relay panel additions or upgrades.

Transmission Line Ratings:

North Medina - Star 345 kV Line:

- Existing Line Ratings: 1415 / 1745 / 1637 / 2116 MVA (SN/SLTE/WN/WLTE)
- Existing Conductor Ratings: 1415 / 1745 / 1637 / 2116 MVA (SN/SLTE/WN/WLTE)

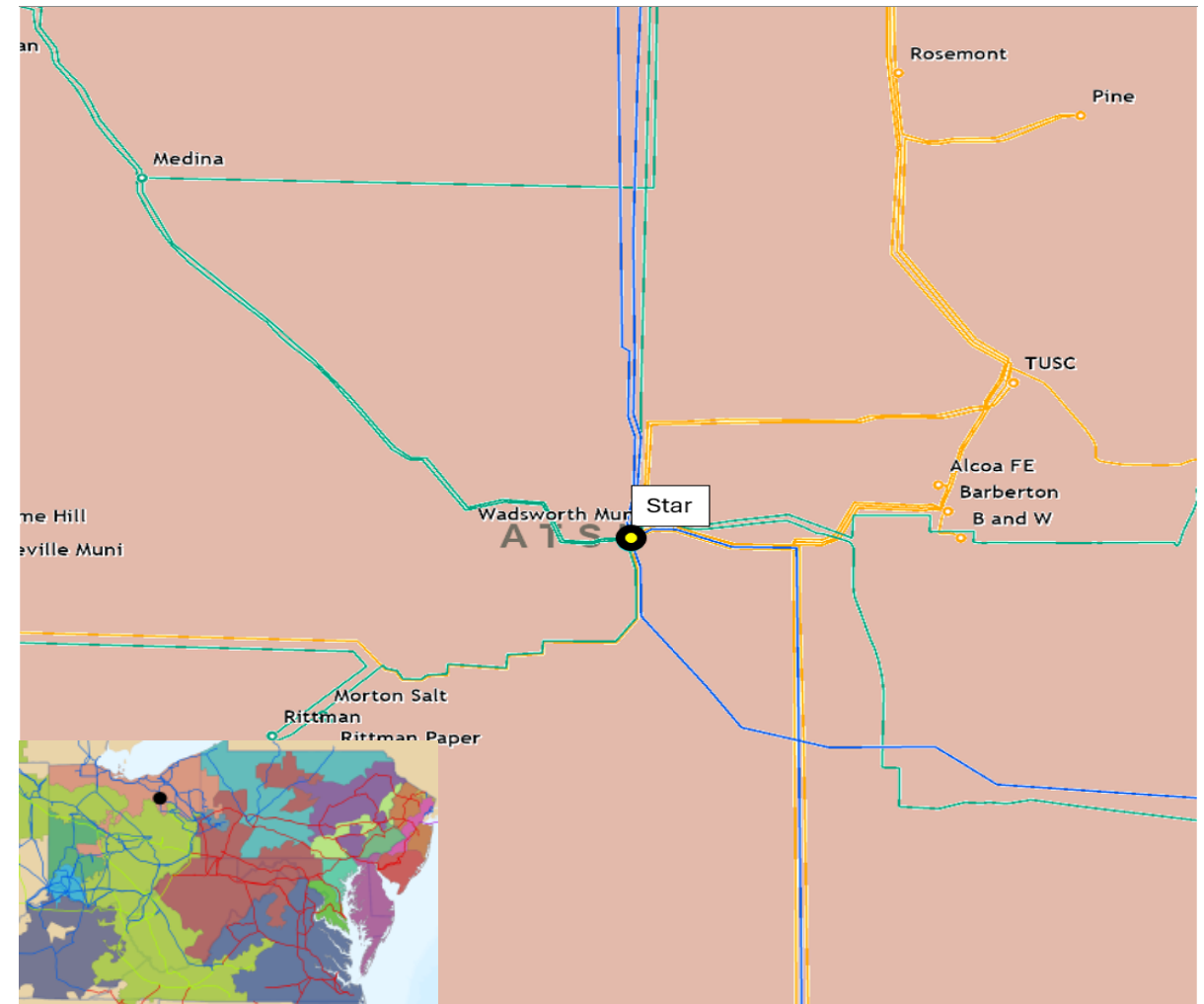
Juniper - Star 345 kV Line:

- Existing Line Ratings: 1518 / 1849 / 1719 / 2192 MVA (SN/SLTE/WN/WLTE)
- Existing Conductor Ratings: 1518 / 1849 / 1719 / 2192 MVA (SN/SLTE/WN/WLTE)

Sammis - Star 345 kV Line:

- Existing Line Ratings: 1382 / 1712 / 1647 / 2120 MVA (SN/SLTE/WN/WLTE)
- Existing Conductor Ratings: 1382 / 1712 / 1647 / 2120 MVA (SN/SLTE/WN/WLTE)

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Need Number: ATSI-2026-057
Process Stage: Need Meeting 08/14/2026

Problem Statement (CONT'):

Harmon - Star 345 kV Line:

- Existing Line Ratings: 1415 / 1745 / 1637 / 2116 MVA (SN/SLTE/WN/WLTE)
- Existing Conductor Ratings: 1518 / 1849 / 1719 / 2192 MVA (SN/SLTE/WN/WLTE)

Barberton - Star 138 kV Ckt 1 Line:

- Existing Line Ratings: 175 / 228 / 239 / 283 MVA (SN/SLTE/WN/WLTE)
- Existing Conductor Ratings: 196 / 242 / 239 / 306 MVA (SN/SLTE/WN/WLTE)

Barberton - Star 138 kV Ckt 2 Line:

- Existing Line Ratings: 175 / 228 / 239 / 283 MVA (SN/SLTE/WN/WLTE)
- Existing Conductor Ratings: 196 / 242 / 239 / 306 MVA (SN/SLTE/WN/WLTE)

Cloverdale - Star 138 kV Line:

- Existing Line Ratings: 233 / 282 / 263 / 333 MVA (SN/SLTE/WN/WLTE)
- Existing Conductor Ratings: 233 / 282 / 263 / 333 MVA (SN/SLTE/WN/WLTE)

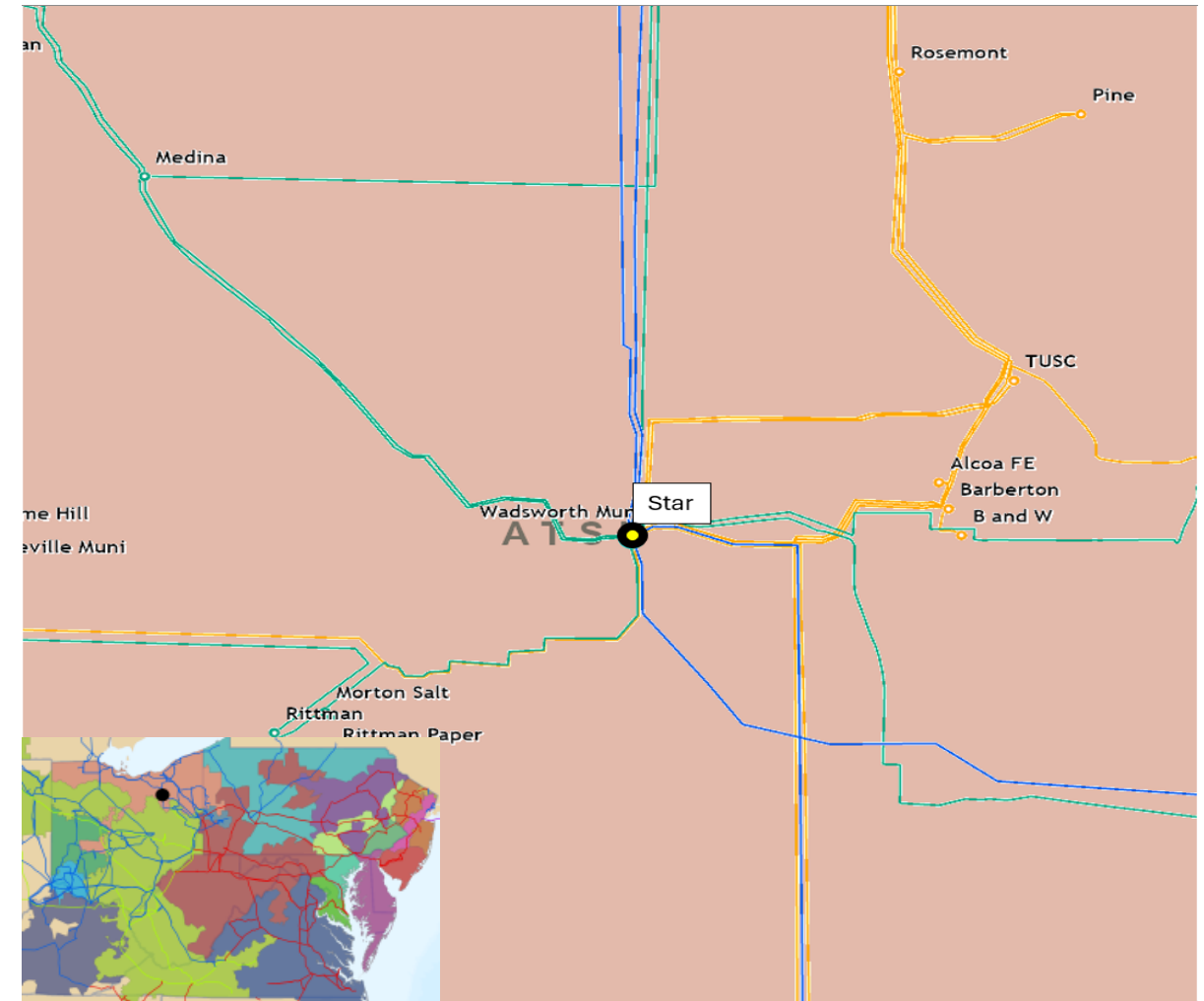
Seville - Star 138 kV Line:

- Existing Line Ratings: 227 / 276 / 259 / 330 MVA (SN/SLTE/WN/WLTE)
- Existing Conductor Ratings: 227 / 276 / 259 / 330 MVA (SN/SLTE/WN/WLTE)

Star - Wadsworth Muni 138 kV Line:

- Existing Line Ratings: 233 / 282 / 263 / 333 MVA (SN/SLTE/WN/WLTE)
- Existing Conductor Ratings: 233 / 282 / 263 / 333 MVA (SN/SLTE/WN/WLTE)

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Need Number: ATSI-2026-057
Process Stage: Need Meeting 08/14/2026

Problem Statement (CONT'):

Star - Tusc 138 kV Line:

- Existing Line Ratings: 233 / 282 / 263 / 333 MVA (SN/SLTE/WN/WLTE)
- Existing Conductor Ratings: 233 / 282 / 263 / 333 MVA (SN/SLTE/WN/WLTE)

Babcock Wilcox Tap - Star 69 kV Line:

- Existing Line Ratings: 74 / 76 / 83 / 83 MVA (SN/SLTE/WN/WLTE)
- Existing Conductor Ratings: 74 / 76 / 83 / 83 MVA (SN/SLTE/WN/WLTE)

Martin - Star 69 kV Line:

- Existing Line Ratings: 71 / 91 / 87 / 111 MVA (SN/SLTE/WN/WLTE)
- Existing Conductor Ratings: 76 / 92 / 87 / 111 MVA (SN/SLTE/WN/WLTE)

Rittman Tap - Star 69 kV Line:

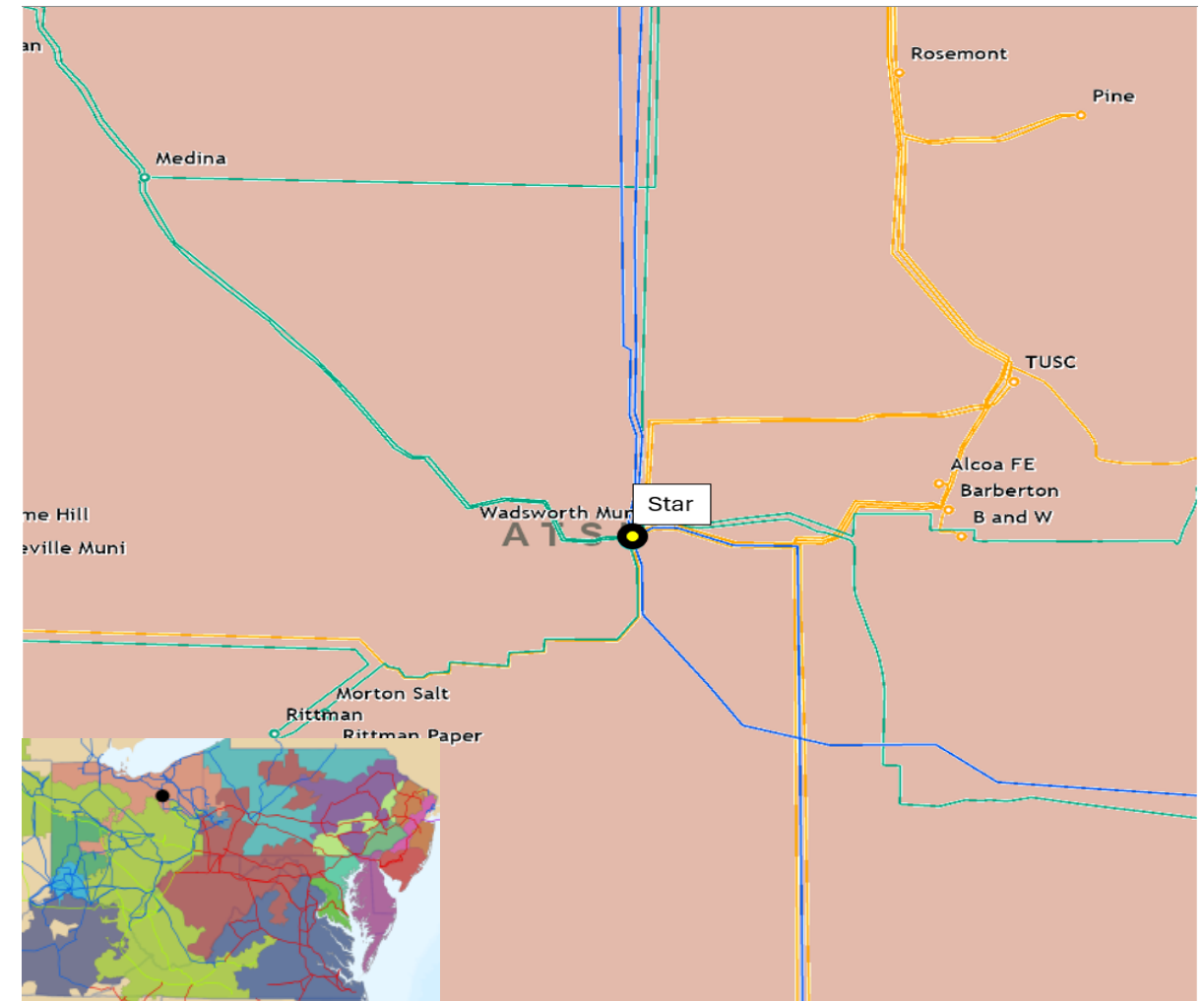
- Existing Line Ratings: 44 / 45 / 50 / 50 MVA (SN/SLTE/WN/WLTE)
- Existing Conductor Ratings: 44 / 45 / 50 / 50 MVA (SN/SLTE/WN/WLTE)

Star - West Akron 69 kV Line:

- Existing Line Ratings: 76 / 92 / 87 / 111 MVA (SN/SLTE/WN/WLTE)
- Existing Conductor Ratings: 76 / 92 / 87 / 111 MVA (SN/SLTE/WN/WLTE)

Star - Wadsworth Muni Tap 69 kV Line:

- Existing Line Ratings: 76 / 92 / 87 / 111 MVA (SN/SLTE/WN/WLTE)
- Existing Conductor Ratings: 76 / 92 / 87 / 111 MVA (SN/SLTE/WN/WLTE)



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

Need Number: ATSI-2026-036
Process Stage: Solution Meeting 08/14/2026
Previously Presented: Need Meeting 05/15/2026
Project Driver: Equipment Condition/Performance/Risk, Infrastructure Resilience, Operational Flexibility and Efficiency

Specific Assumption Reference:

System Performance Projects Global Factors

- System reliability and performance
- Substation/line equipment limits
- Load at risk in planning and operational scenarios

Problem Statement:

Ivy Substation is configured as two separate straight busses.

Bus No. 1 includes the Inland-Ivy 138 kV Q-11 Line, Ivy-Juniper-Newburgh 138 kV Q-17 Line, 138-36 kV transformer No. 3, and 138-36 kV transformer No. 4.

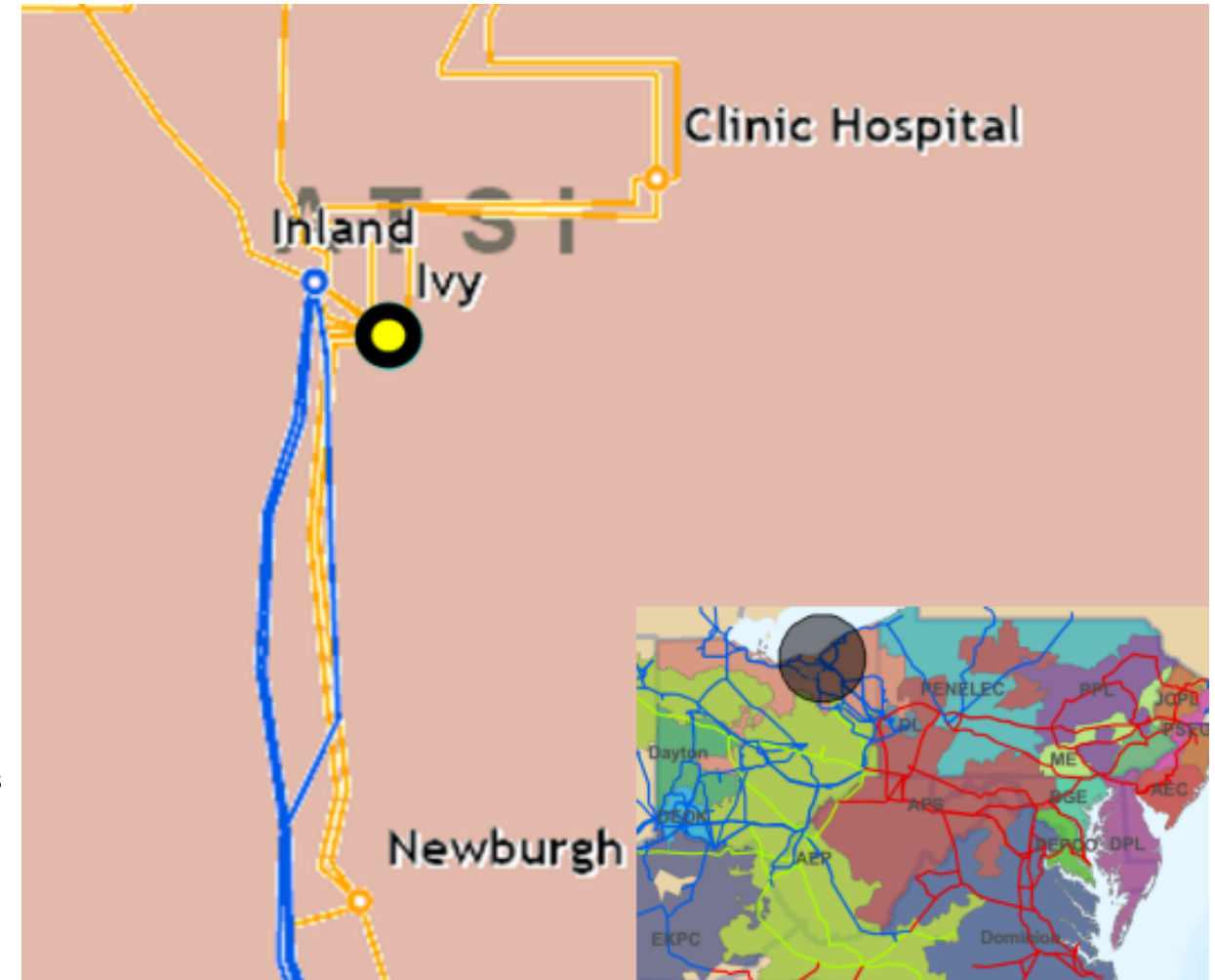
Bus No. 2 includes the Inland-Ivy 138 kV Q-14 Line, Ivy-Juniper-Newburgh 138 kV Q-18 Line, and 138-36 kV transformer No. 1.

Ivy Substation serves approximately 29 MW of load and 17 customers.

A fault on Ivy 138-36 kV No. 3 or No. 4 transformer results in the outage of both transformers due to a shared common bus. Based on the 2025 Series 2030 RTEP Summer Case, this N-1 contingency event results in Ivy 138-36 kV No. 1 Transformer overloading to 101% of its SSTE rating.

Ivy 138-36 kV No. 1 Transformer Ratings:

- Existing Transformer Circuit Ratings: 70 / 73 / 75 / 75 MVA (SN/SSTE/WN/WSTE)
- Existing Transformer Ratings: 70 / 73 / 84 / 87 MVA (SN/SSTE/WN/WSTE)



Need Number: ATSI-2026-036
Process Stage: Solution Meeting 08/14/2026

Proposed Solution:

Install a 138 kV bus-tie breaker at Ivy Station. Also, upgrade station conductor and disconnect switches at Ivy Station.

Transmission Line Ratings:

Inland-Ivy 138 kV Line:

- Before Proposed Solution: 329 / 413 / 432 / 495 MVA (SN/SE/WN/WE)
- After Proposed Solution: 376 / 465 / 438 / 563 MVA (SN/SE/WN/WE)

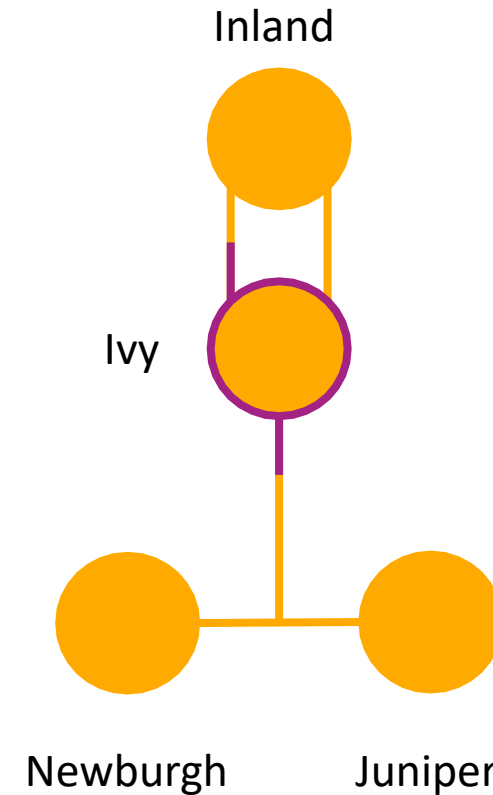
Ivy-Newburgh Tap 138 kV Line:

- Before Proposed Solution: 260 / 309 / 309 / 354 MVA (SN/SE/WN/WE)
- After Proposed Solution: 273 / 332 / 319 / 393 MVA (SN/SE/WN/WE)

Alternatives Considered:

Maintain Station in existing configuration with elevated risk of failure.

Estimated Project Cost: \$3.45 M
Projected In-Service: 12/01/2030
Project Status: Conceptual
Model: 2024 RTEP model for 2029 Summer & Winter (50/50)



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

Need Number: ATSI-2026-049
Process Stage: Solution Meeting 08/14/2026
Previously Presented: Need Meeting 07/17/2026
Project Driver: Equipment Condition/Performance/Risk

Specific Assumption Reference:

System Performance Global Factors

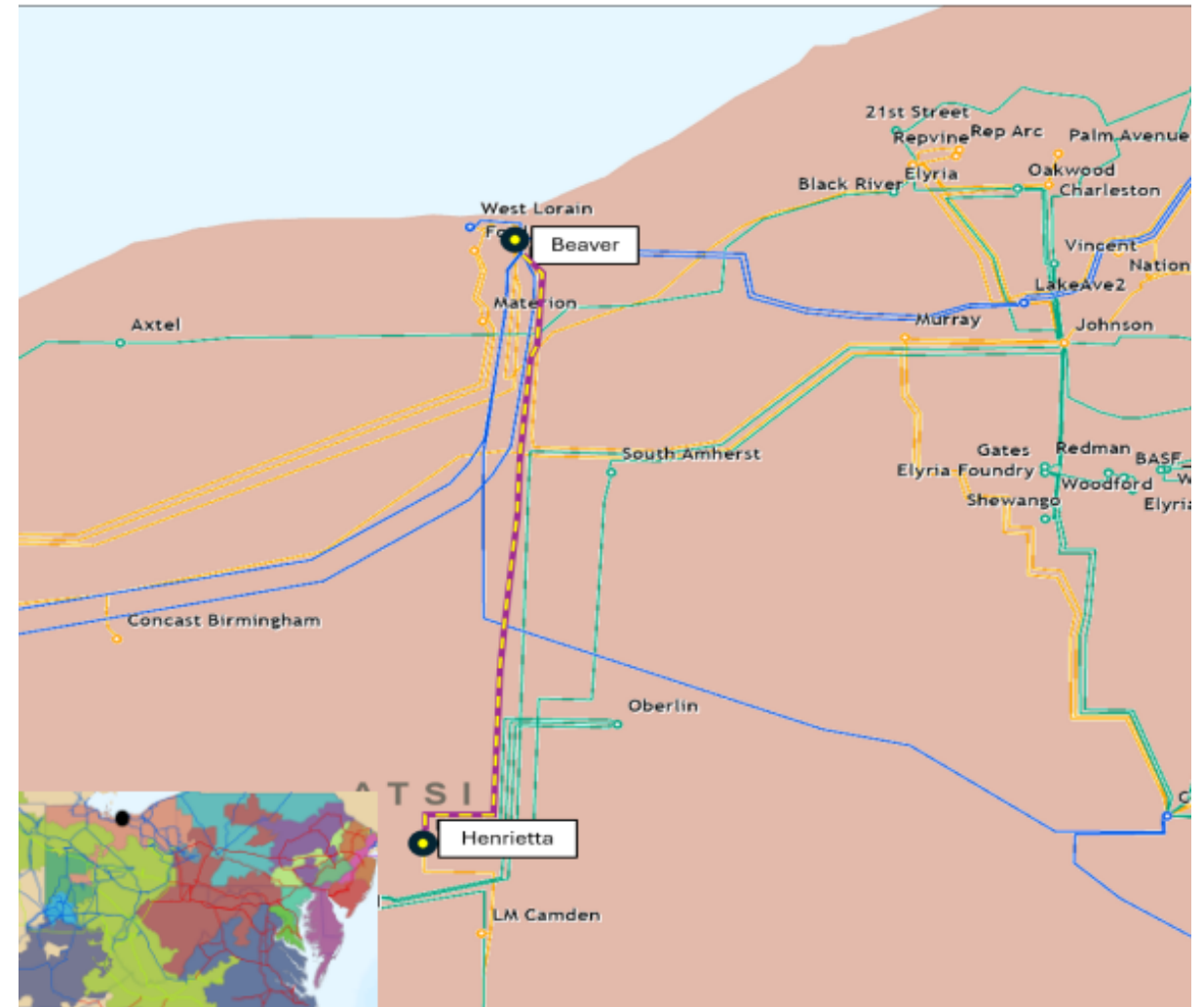
- System reliability/performance
- Substation/Line equipment limits

Problem Statement:

- The Beaver-Henrietta 138 kV Line was constructed approximately 58 years ago and is approaching end of life. It is approximately eight miles long.
- Per recent inspections, the line is exhibiting deterioration resulting in increased maintenance costs. Inspection findings include:
- A section of the transmission line conductor failed in 2025 due to a burnt splice in a tower jumper loop. During replacement, more deteriorated conductor was identified. Additional inspection and testing confirmed the conductor is in poor condition.

Existing Transmission Line Ratings:

- 153 / 185 / 176 / 223 MVA (SN/SE/WN/WE)



Need Number: ATSI-2026-049
Process Stage: Solution Meeting 08/14/2026

Proposed Solution:

Reconductor the Beaver - Henrietta and Beaver - Wellington 138 kV Lines from deadend structure #8888 to structure #987 (1.2-miles). This section of conductor is deteriorated and needs to be replaced. Also replace tangent tower #987 with a deadend steel pole on a foundation. Existing tower #992 is in standing water, so it is preferred to install a new deadend at tower #987 to complete the wire pull over the OH Turnpike.

Transmission Line Ratings:

Beaver - Henrietta 138 kV Line:

- Before Proposed Solution: 153 / 185 / 176 / 223 MVA (SN/SE/WN/WE)
- After Proposed Solution: 153 / 185 / 176 / 223 MVA (SN/SE/WN/WE)

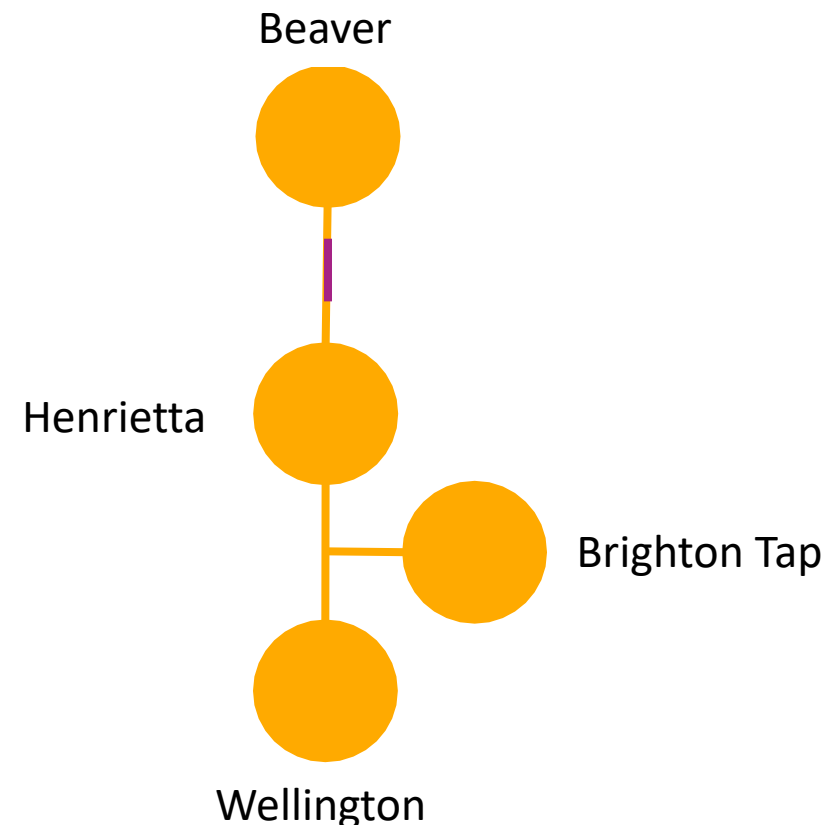
Beaver - Brighton Tap 138 kV Line:

- Before Proposed Solution: 111 / 141 / 151 / 195 MVA (SN/SE/WN/WE)
- After Proposed Solution: 111 / 141 / 151 / 195 MVA (SN/SE/WN/WE)

Alternatives Considered:

Maintain Station in existing configuration with elevated risk of failure.

Estimated Project Cost: \$0.96 M
Projected In-Service: 12/31/2027
Project Status: Conceptual
Model: 2024 RTEP model for 2029 Summer & Winter (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

08/xx/2026– V1 – Original version posted to pjm.com