Subregional RTEP Committee – Western
FirstEnergy Supplemental Projects

ATSI Transmission Zone

November 13, 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

ATSI Transmission Zone M-3 Process
Hamilton-Horizon no 1 & 2 138 kV

Need Number: ATSI-2026-072
Process Stage: Need Meeting SRRTEP-W - 11/13/2026
Project Driver: *Equipment Condition/Performance/Risk*

Specific Assumption References:
System Performance Global Factors
-System reliability/performance
- Substation/Line equipment limits
Line Condition Rebuild/Replacement
- Age/condition of underground cable

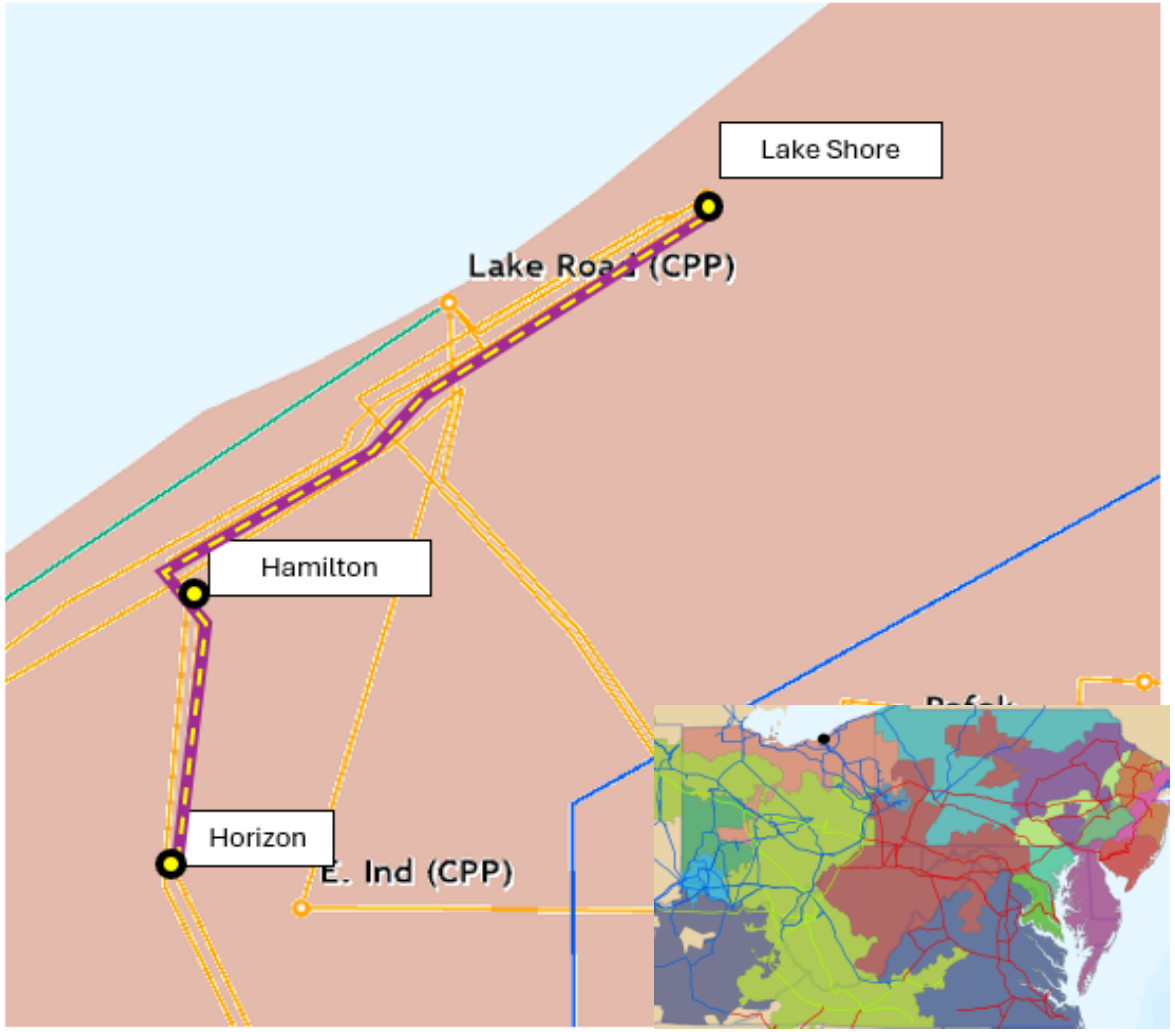
Problem Statement:
The Hamilton-Horizon 138 kV No. 1 and No. 2 and Hamilton-Lakeshore 138 kV No. 1 and No. 2 lines were constructed 68 years ago and are approaching end of life. They are 1.8-miles and 3.1-miles long respectively. All four underground lines use high pressure fluid filled cable (HPFF) with 35 total manholes.

Per recent inspections, the line is exhibiting deterioration resulting in increased maintenance costs. Inspection findings include:

In 2023, a routine inspection found that the outer steel pipe of the Hamilton-Horizon 138 kV No. 2 Line was leaking oil in Manhole 127. Emergency repairs were performed which took the line out of service for 12 days and 2 hours.

In 2025, the Hamilton-Lakeshore 138 kV No. 2 Line experienced a sudden drop in oil pressure, and an emergency outage was forced. Inspections found that the outer steel pipe was leaking oil in Manhole 118. Emergency repairs were performed which took the line out of service for 23 days and 22 hours.

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ATSI Transmission Zone M-3 Process
Hamilton-Horizon no 1 & 2 138 kV

Need Number: ATSI-2026-072
Process Stage: Need Meeting SRRTEP-W - 11/13/2026

Problem Statement (continued):

Note the oil was contained within the manholes.

Replacement components for HPFF cables are difficult to source leading to prolonged non-standard repairs. In addition, they pose a higher environmental risk due to the likelihood of oil leaks as the outer steel pipe starts to age.

Since 2021, the Hamilton-Horizon 138 kV No. 1 and No. 2 lines have both had three unscheduled sustained outages.

Existing Transmission Line and Conductor Ratings:

Hamilton-Horizon 138 kV No. 1 Line:

- 235 / 271 / 307 / 352 MVA (SN/SE/WN/WE)

Hamilton-Horizon 138 kV No. 2 Line:

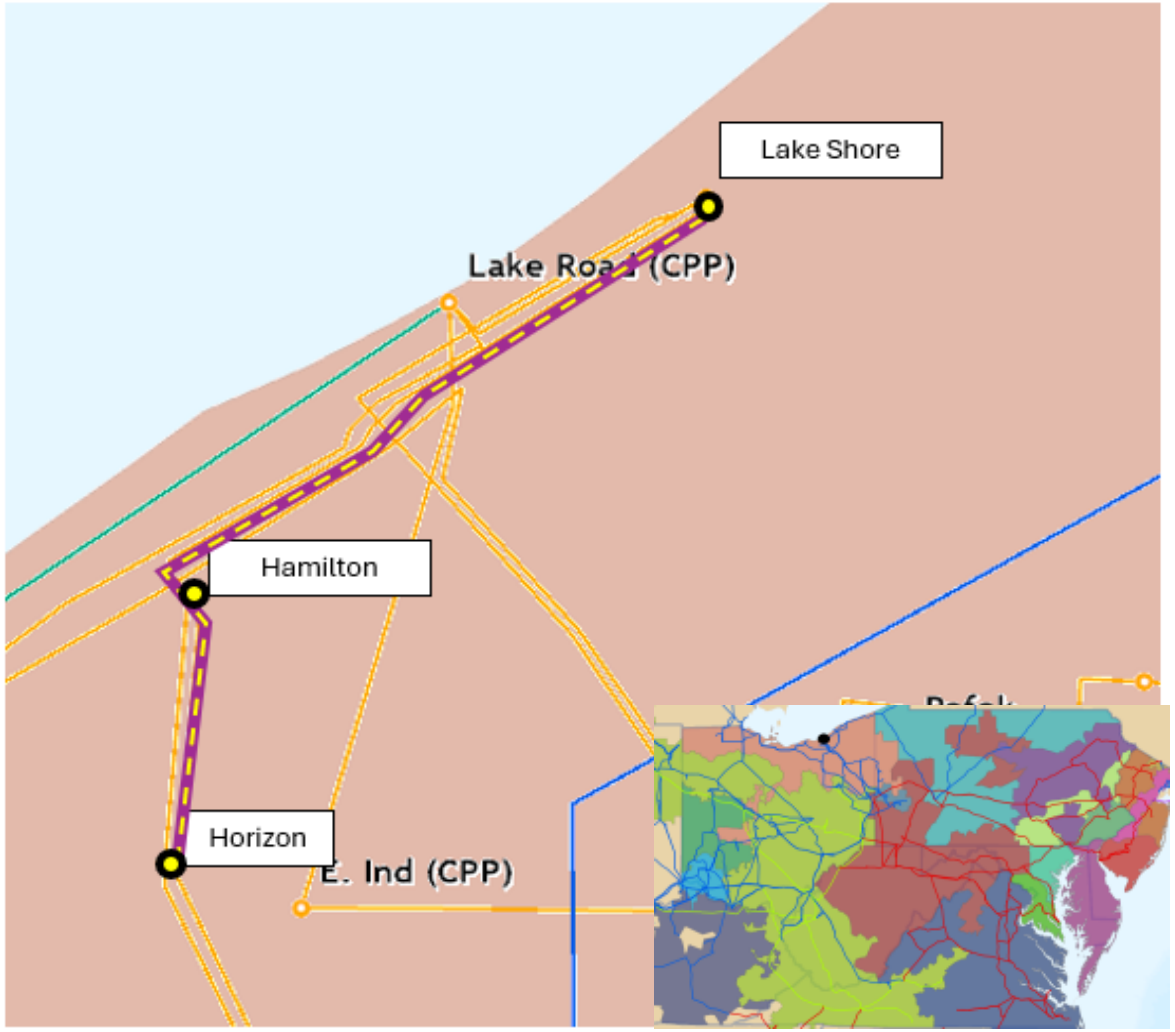
- 235 / 271 / 307 / 352 MVA (SN/SE/WN/WE)

Hamilton-Lakeshore 138 kV No. 1:

- 235 / 271 / 307 / 352 MVA (SN/SE/WN/WE)

Hamilton-Lakeshore 138 kV No. 2:

- 235 / 271 / 307 / 352 MVA (SN/SE/WN/WE)



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
New Customer Request

Need Number: ATSI-2026-060
Process Stage: Solution Meeting SRRTEP-W - 11/13/2026
Previously Presented: Need Meeting SRRTEP-W - 09/18/2026
Project Driver: *Customer Service*

Specific Assumption References:

New customer connection requests will be evaluated per FirstEnergy's "Requirements for Transmission Connected Facilities" document and "Transmission Planning Criteria" document.

Problem Statement:

New Customer Connection - a new customer requested 69 kV service for load of approximately 22 MW near the Chittenden Substation. The request is at the Chittenden Substation.

Requested in-service date is 11/19/2027.



ATSI Transmission Zone M-3 Process
Old Plank 69 kV Ring Bus

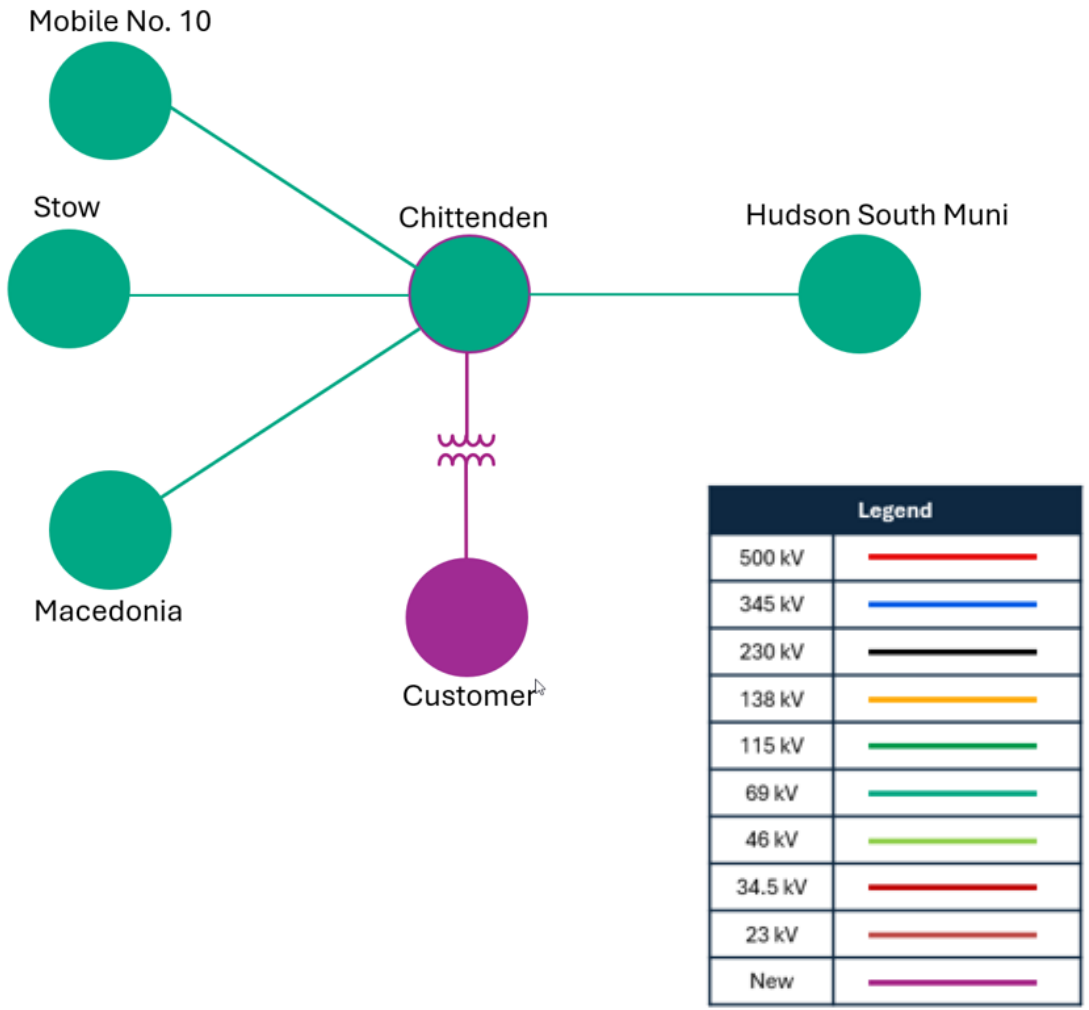
Need Number: ATSI-2026-060
Process Stage: Solution Meeting SRRTEP-W - 11/13/2026

Problem Statement:
Chittenden Substation - Interconnect New Load:

- Install a sixth 69 kV breaker at the existing Chittenden Substation
- Protection/ terminal end relay settings review required at Chittenden Substation
- EDC to install a second transformer

Alternatives Considered:
No reasonable alternatives due to proximity of customer.

Transmission Cost Estimate: $1.06 M
Projected In-Service: 05/19/2028
Project Status: Conceptual
Model: 2025 RTEP model for 2030 Summer (50/50)



ATSI Transmission Zone M-3 Process
BP Husky – Jackman 138 kV Line

Need Number: ATSI-2025-024
Process Stage: Solution Meeting SRRTEP-W - 11/13/2026
Previously Presented: Need Meeting SRRTEP-W - 10/17/2025
Project Driver: *Operational Flexibility and Efficiency*

Specific Assumption References:

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

Add/Expand Bus Configuration
- Loss of substation bus adversely impacts transmission system performance
- Eliminate simultaneous outages to multiple networked elements under N-1 analysis
- Accommodate future transmission facilities
- Capability to perform system maintenance

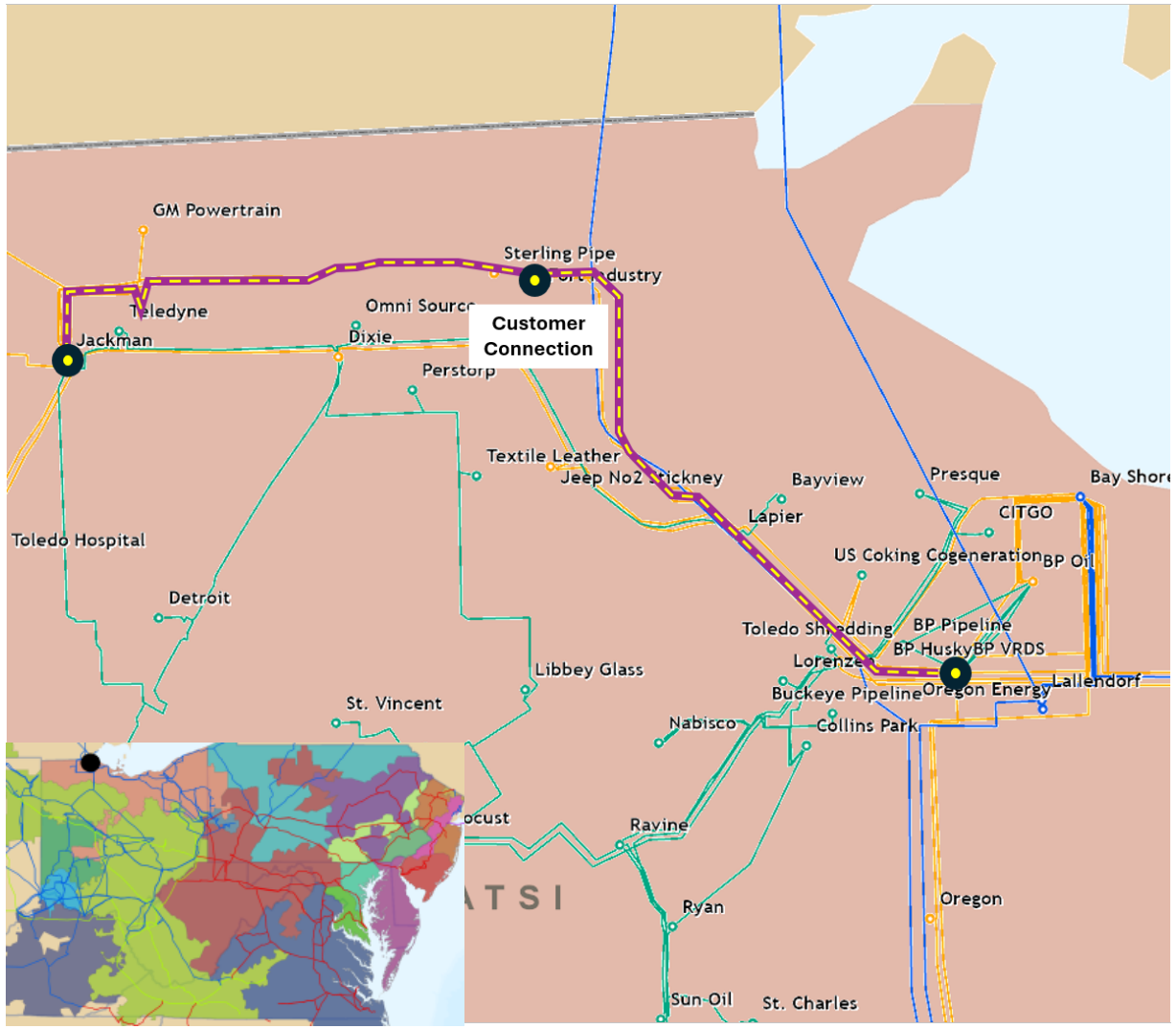
Problem Statement:

The BP Husky – Jackman 138 kV Line is 9.0 miles long and serves two delivery points and one Toledo Edison's Fort Industry Substation.

A loss of the BP Husky – Jackman 138 kV Line will cause approximately 27 MVA of consequential load loss and interrupt approximately 3,800 customers.

Toledo Edison is anticipating load growth at Fort Industry Substation approaching 44 MVA.

Since 2020, the BP Husky - Jackman 138 kV Line has experienced two sustained outages.



ATSI Transmission Zone M-3 Process
BP Husky – Jackman 138 kV Line

Need Number: ATSI-2025-024
Process Stage: Solution Meeting SRRTEP-W - 11/13/2026

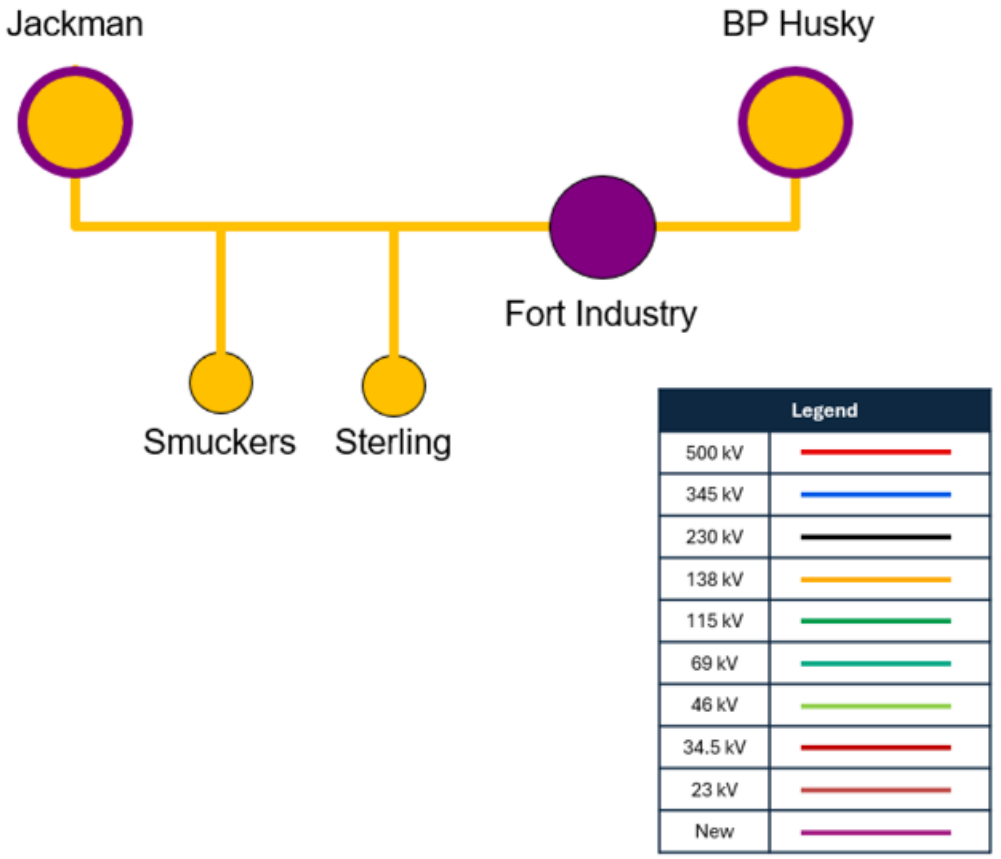
Proposed Solution:

- Rebuild the existing Fort Industry Tap Substation as a four-breaker ring bus with 40 kA 138 kV breakers
- Reterminate BP Husky - Jackman 138 kV Line in and out of the new Fort Industry Substation ring bus
- The project will split the BP Husky - Jackman 138 kV Line and create the following two lines: BP Husky - Fort Industry 138 kV Line (5.26 miles) and Fort Industry - Jackman 138 kV Line (4.15 miles)
- Remove switches 13405 and 13406 at the Fort Industry Substation
- Terminal end relay settings review required at Jackman Substation and BP Husky Substation

Transmission Line Ratings:
BP Husky - Jackman 138 kV Line:
Before Proposed Solution: 241/292/272/346 (SN/SE/WN/WE)
After Proposed Solution: N/A
BP Husky - Fort Industry 138 kV Line:
Before Proposed Solution: N/A
After Proposed Solution: 241/292/272/346 (SN/SE/WN/WE)
Fort Industry - Jackman 138 kV Line:
Before Proposed Solution: N/A
After Proposed Solution: 241/292/272/346 (SN/SE/WN/WE)

Alternatives Considered:
Maintain existing configuration with risk of loss of load.

Transmission Cost Estimate: $17.05 M
Projected In-Service: 10/30/2029
Project Status: Conceptual
Model: 2025 RTEP model for 2030 Summer (50/50)



ATSI Transmission Zone M-3 Process
Jordan Substation

Need Number: ATSI-2026-056

Process Stage: Solution Meeting SRRTEP-W - 11/13/2026

Previously Presented: Need Meeting SRRTEP-W - 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.

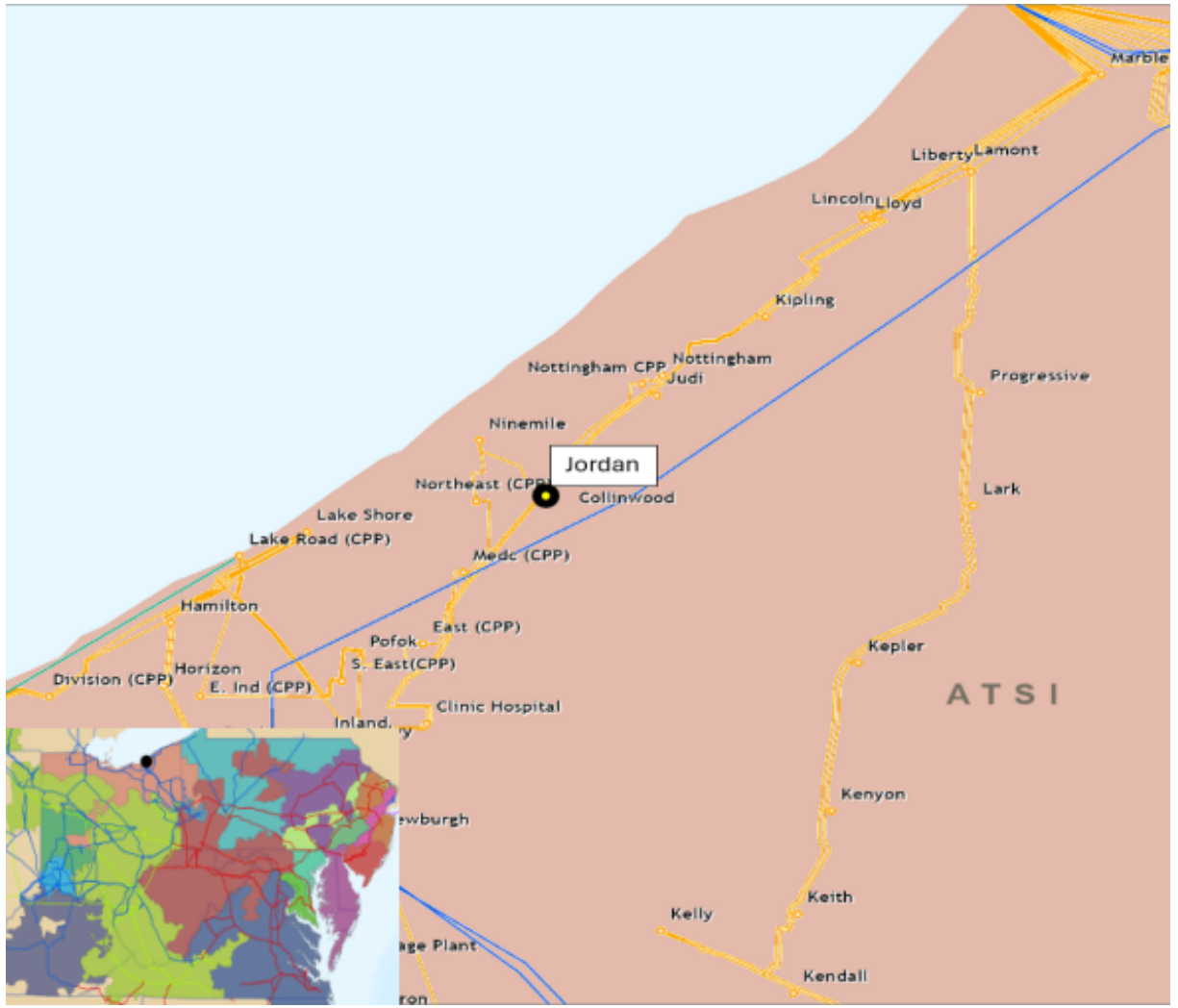
Bus No. 2 includes the Clinic Hospital - Jordan No. 1 138 kV Q-11 Line, Jordan - Nottingham 138 kV Q11 Line, and No. 3 138-36 kV Transformer.

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)



ATSI Transmission Zone M-3 Process
Jordan Substation

Need Number: ATSI-2026-056
Process Stage: Solution Meeting SRRTEP-W - 11/13/2026

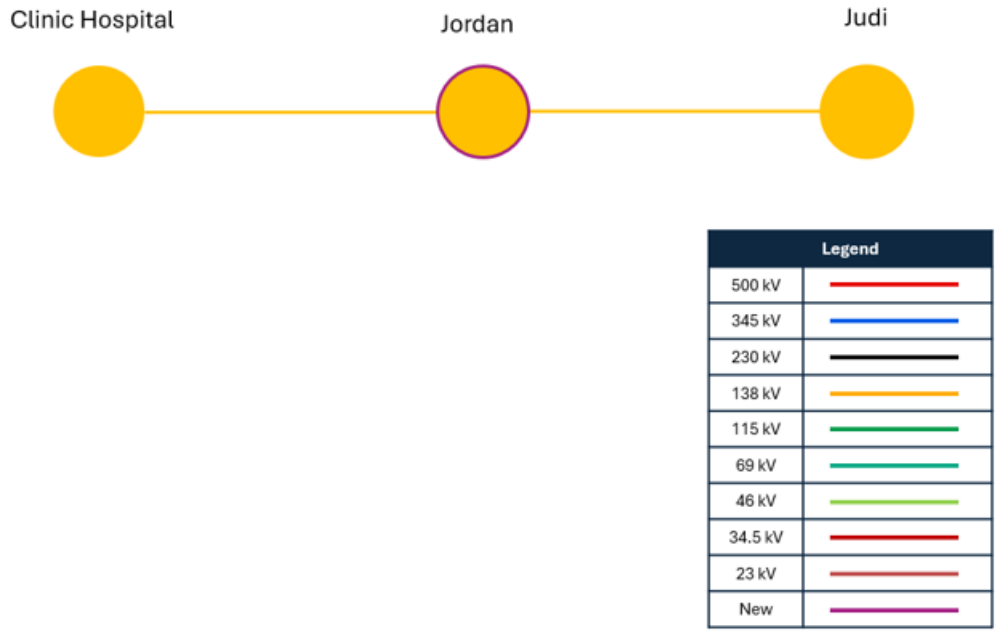
Proposed Solution:
Jordan Substation 138 kV Bus-Tie Breaker: Install a 138 kV bus-tie breaker and upgrade station conductor at Jordan Station.

Transmission Line Ratings:
Clinic Hospital-Jordan 138 kV Q-14 Line:
- Before Proposed Solution: 265 / 316 / 309 / 361 MVA (SN/SE/WN/WE)
- After Proposed Solution: 273 / 332 / 309 / 393 MVA (SN/SE/WN/WE)

Jordan-Judi Tap 138 kV Q-14 Line:
- Before Proposed Solution: 265 / 316 / 309 / 361 MVA (SN/SE/WN/WE)
- After Proposed Solution: 273 / 332 / 309 / 393 MVA (SN/SE/WN/WE)

Alternatives Considered:
Maintain the station in its existing configuration.

Transmission Cost Estimate: $2.54 M
Projected In-Service: 12/06/2030
Project Status: Conceptual
Model: 2025 RTEP model for 2030 Summer (50/50)



ATSI Transmission Zone M-3 Process
Delta – Wauseon 138 kV Area Improvements

Need Number: ATSI-2023-014
Process Stage: Solution Meeting SRRTEP-W - 11/13/2026
Previously Presented: Need Meeting 08/18/2023
Project Driver: *Equipment Condition/Performance/Risk, Infrastructure Resilience & Operational Flexibility and Efficiency*

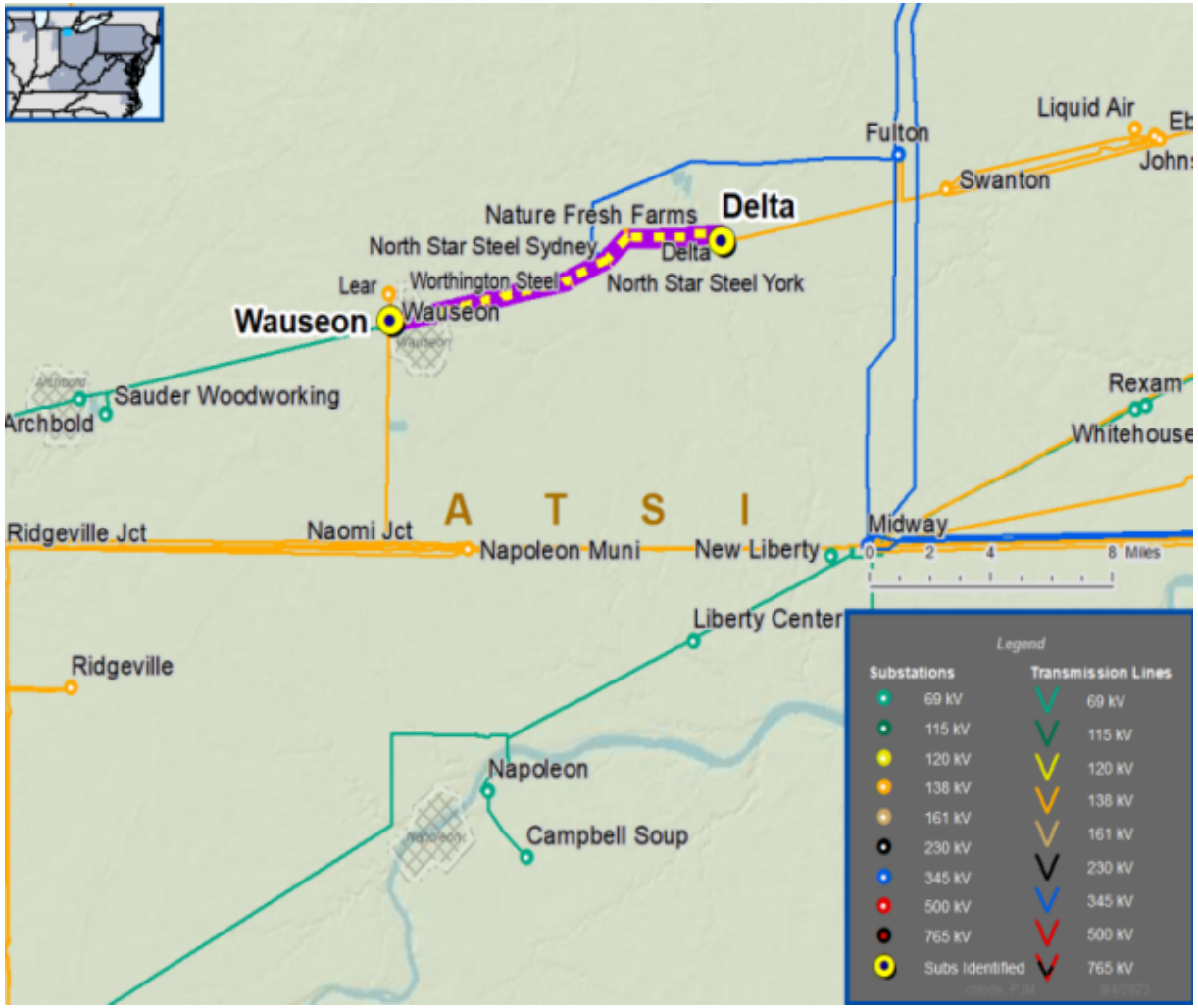
Specific Assumption References:

Global Considerations

- System reliability and performance
- Load at risk in planning and operational scenarios
- Networking a radial line

Problem Statement:

- The Delta – Wauseon 138 kV Line is 12.8 miles in length and serves nine delivery points.
- An existing radial tap line from Delta – Wauseon 138 kV Line serves four delivery points - three (3) industrial and one (1) wholesale customer. The existing tap splits into two branches - one side of the tap is approximately 1.8 miles and serves three of the delivery points and the other side of the tap is approximately 1.1 miles and serves one delivery point. An existing customer is increasing load from 25 MVA to 55 MVA in 2023. The anticipated total load on the radial tap is approximately 75 MVA with potential future load growth from existing and new customers.
- These four customers have approximately 75 MVA of load at risk for a single line fault



ATSI Transmission Zone M-3 Process
Delta – Wauseon 138 kV Area Improvements

Need Number: ATSI-2023-014

Process Stage: Solution Meeting SRRTEP-W - 11/13/2026

Proposed Solution:

Construct a new three-breaker (future four-breaker) ring bus on the Delta - Wauseon 138 kV Line, south of the Nova Steel Substation.

Loop the Delta - Wauseon 138 kV Line in and out of the new Tomato Substation with conductor.

Using the same conductor, connect the Nature Fresh Farms Substation to the new Tomato Substation ring bus. Disconnect the Nature Fresh Farms Substation from the Metal X Substation and NS York Substation. Remove switch A386.

Modify the Tri County - Nova Steel 138 kV Line by installing two new disconnect switches, one at the Tri County Substation and one at the Nova Steel Substation. Construct 0.6 miles of conductor between the two switches.

The Delta - Tomato 138 kV Line will be reconfigured by cutting the transmission line between structures 61 and 62 and installing one new disconnect switch with SCADA control at the Nova Steel Substation.

Additionally, 0.6 miles of conductor will be constructed from structure 61 to the new Tomato Substation ring bus. Switch A-385 and all equipment from existing Nova Steel tap point to the new interconnection will be removed.

Transmission Line Ratings:
Delta - Nova Steel 138 kV Line:

Before Proposed Solution: 278/343/327/420 (SN/SE/WN/WE)

After Proposed Solution: N/A

Delta - Tomato 138 kV Line:

Before Proposed Solution: N/A

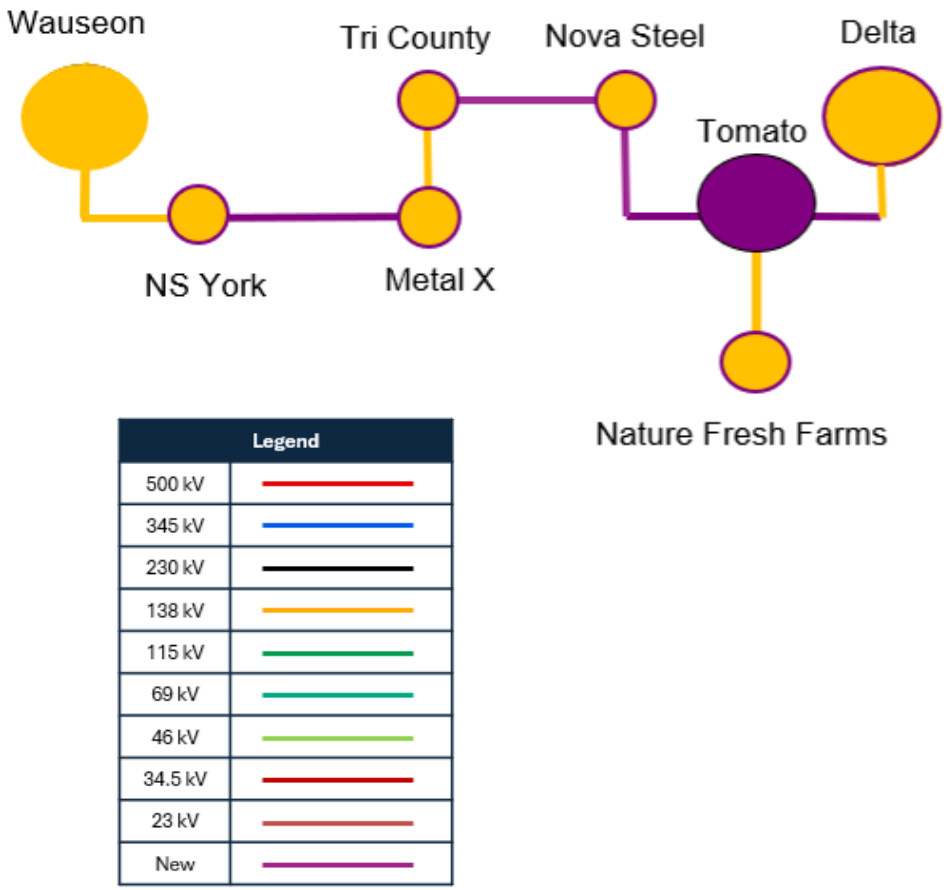
After Proposed Solution: 308/376/349/445 (SN/SE/WN/WE)

Nature Fresh Farms - Tomato 138 kV Line:

Before Proposed Solution: N/A

After Proposed Solution:308/376/349/445 (SN/SE/WN/WE)

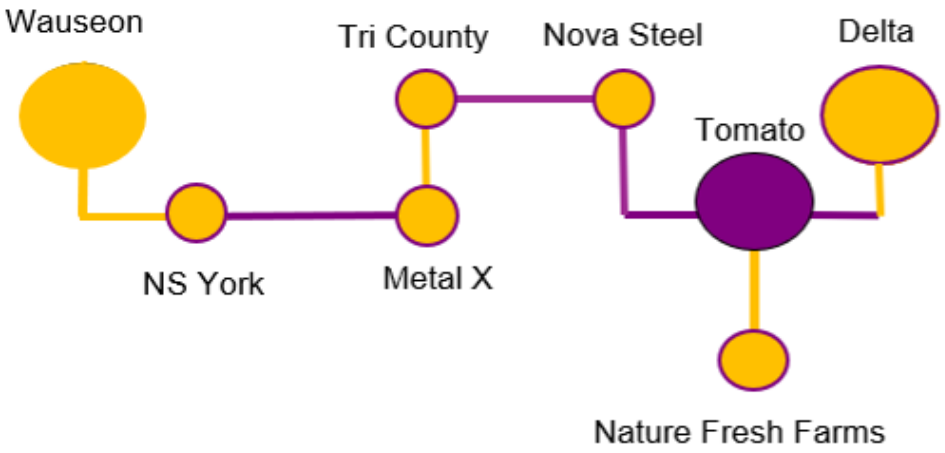
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ATSI Transmission Zone M-3 Process
Delta – Wauseon 138 kV Area Improvements

Need Number: ATSI-2023-014
Process Stage: Solution Meeting SRRTEP-W - 11/13/2026

Proposed Solution (continued):
Nova Tube - Tri County 138 kV Line:
Before Proposed Solution: N/A
After Proposed Solution:308/376/349/445 (SN/SE/WN/WE)
Metal X – Tri County 138 kV Line:
Before Proposed Solution: 308/376/349/445 (SN/SE/WN/WE)
After Proposed Solution:308/376/349/445 (SN/SE/WN/WE)
Metal X - Nature Farms 138 kV Line:
Before Proposed Solution: 308/376/349/445 (SN/SE/WN/WE)
After Proposed Solution: N/A
Nature Farms - NS York 138 kV Line:
Before Proposed Solution: 278/343/327/420 (SN/SE/WN/WE)
After Proposed Solution: N/A
Metal X - NS York 138 kV Line:
Before Proposed Solution: N/A
After Proposed Solution:278/343/327/420 (SN/SE/WN/WE)



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

Alternatives Considered:
Two alternative locations for the ring bus were considered. The first location was between Nature Fresh Farms and NS York near Structure 16002; however, this location was eliminated due to spacing limitations and existing facility constraints. The second option, which involved locating the substation closer to Metal X Substation, was ruled out due to customer property restrictions.

Transmission Cost Estimate: $25.25 M
Projected In-Service: 12/29/2028
Project Status: Conceptual
Model: 2025 RTEP model for 2030 Summer (50/50)

Re-present

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
Maysville-McDowell 69 kV Line

Reason for represent: The modified scope includes the rebuild of 43 miles instead of the original rebuild of 35 miles. The cost does not increase.

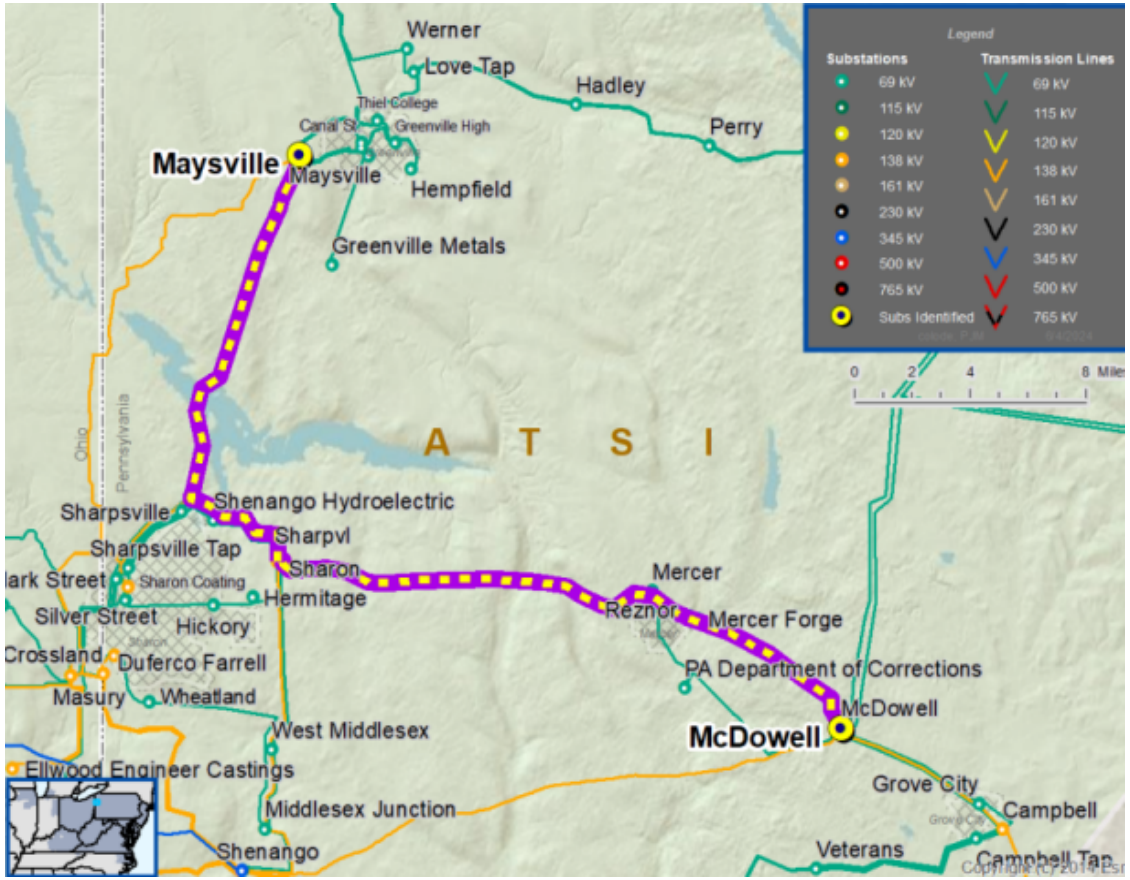
Need Number: ATSI-2020-031
Process Stage: Re-present Solution Meeting – 11/13/2026
Previously Presented: Solutions Meeting – 06/14/2024
Need Meeting – 08/14/2020

Supplemental Project Driver(s):
Equipment Material Condition, Performance and Risk

Specific Assumption Reference(s)

Line Condition Rebuild / Replacement
- Aged or deteriorated transmission line structures
- Negatively impact customer outage frequency and/or durations
- Demonstrate an increasing trend in maintenance findings and/or costs

Problem Statement:
Maysville-McDowell 69kV Line (~43 miles) Rebuild is being proposed to the due following:
- Line was originally constructed in the 1960s. The average age of structures on this line are 54 years old. FirstEnergy has historically experienced an average age of reject for wood poles to be 48.7 years.
- Line survey in 2019 showed a structure reject rate of 86% (528 of 613). The primary reasons for reject were woodpecker holes, wood pole decay, and pole top extensions previously used to mitigate the issue of pole top rot, an indicator that the pole is deteriorating.
- Conductor condition is deteriorating with over 40 conductor splices in a 30 mile line section.
- Terminal end equipment at McDowell should be upgraded due to age and condition.
- Obsolete line switches (A-2092, A-2091, A-2143 N.O.) are no longer supported by the manufacturer.



ATSI Transmission Zone M-3 Process
Maysville-McDowell 69 kV Line

Need Number: ATSI-2020-031

Process Stage: Re-present Solution Meeting – 11/13/2026

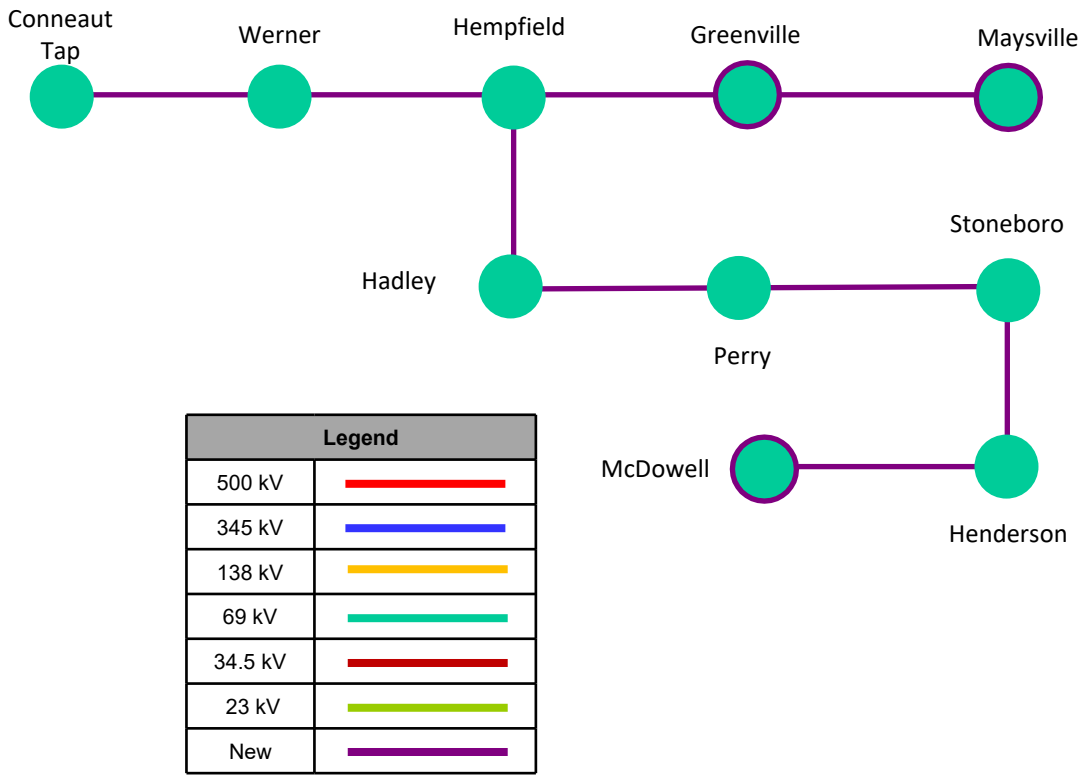
Proposed Solution:

Maysville-McDowell 69 kV Line Rebuild

- ~~Rebuild the Maysville-McDowell 69 kV Line, excluding the line section from Werner substation to Hartstown substations with 336 ACSR conductor (total rebuild length approximately 35 miles).~~
- Rebuild the Maysville-McDowell 69 kV Line, including the line section from Werner Substation to Conneaut Tap with 336 ACSR conductor (total rebuild length approximately 43 miles).
- Replace three obsolete line switches to present design standards.
- Replace the 69 kV circuit breaker B26 and associated disconnect switches at McDowell.
- Replace the existing low rated sub conductor at Greenville.
- Upgrade line relaying at McDowell.
- Update relay settings at Maysville.

Transmission Line Ratings:

- **Maysville-Greenville 69 kV Line**
  - Before Proposed Solution: 62 MVA SN / 77 MVA SE / 78 MVA WN / 101 MVA WE
  - After Proposed Solution: 80 MVA SN / 96 MVA SE / 90 MVA WN / 114 MVA WE
- **Greenville-Hempfield 69 kV Line**
  - Before Proposed Solution: 37 MVA SN / 46 MVA SE / 47 MVA WN / 61 MVA WE
  - After Proposed Solution: 80 MVA SN / 96 MVA SE / 90 MVA WN / 114 MVA WE
- **Hempfield-Werner 69 kV Line**
  - Before Proposed Solution: 37 MVA SN / 46 MVA SE / 47 MVA WN / 61 MVA WE
  - After Proposed Solution: 80 MVA SN / 96 MVA SE / 90 MVA WN / 114 MVA WE
- **Werner-Hadley 69 kV Line**
  - Before Proposed Solution: 62 MVA SN / 77 MVA SE / 78 MVA WN / 101 MVA WE
  - After Proposed Solution: 80 MVA SN / 96 MVA SE / 90 MVA WN / 114 MVA WE



ATSI Transmission Zone M-3 Process
Maysville-McDowell 69 kV Line

Need Number: ATSI-2020-031
Process Stage: Re-present Solution Meeting – 11/13/2026

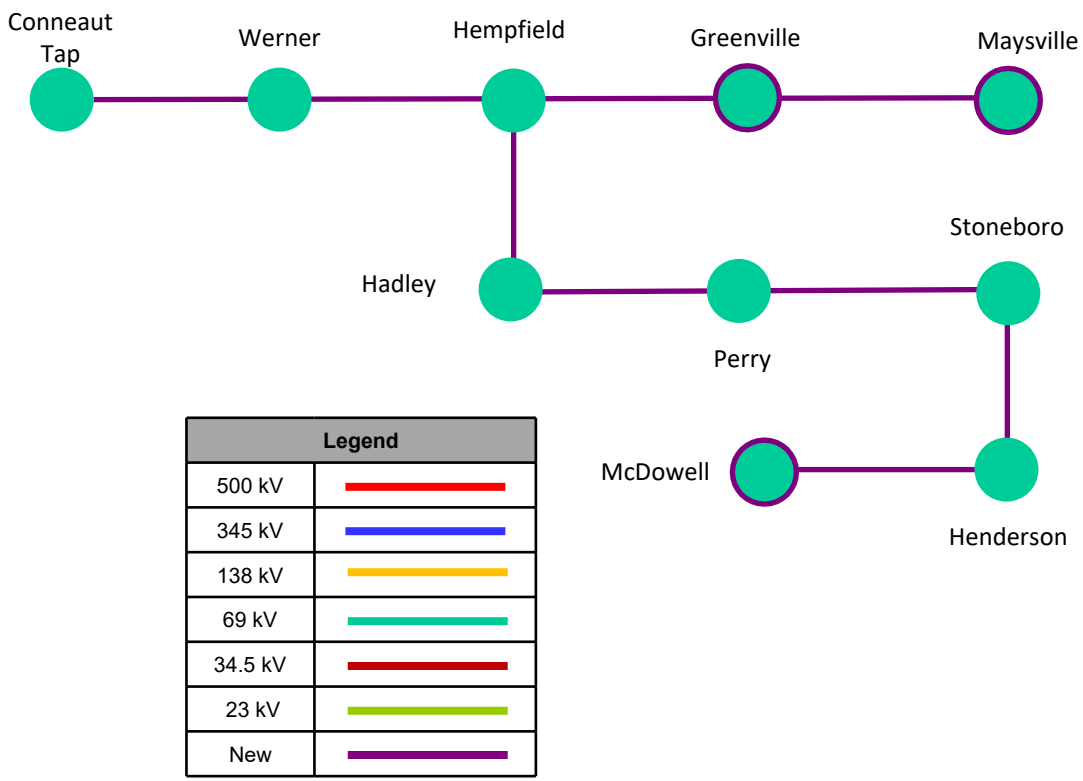
Transmission Line Ratings Continued:

- **Hadley-Perry 69 kV Line**
  - Before Proposed Solution: 62 MVA SN / 77 MVA SE / 78 MVA WN / 101 MVA WE
  - After Proposed Solution: 80 MVA SN / 96 MVA SE / 90 MVA WN / 114 MVA WE
- **Perry-Stoneboro 69 kV Line**
  - Before Proposed Solution: 62 MVA SN / 77 MVA SE / 78 MVA WN / 101 MVA WE
  - After Proposed Solution: 80 MVA SN / 96 MVA SE / 90 MVA WN / 114 MVA WE
- **Stoneboro-Henderson 69 kV Line**
  - Before Proposed Solution: 47 MVA SN / 56 MVA SE / 53 MVA WN / 67 MVA WE
  - After Proposed Solution: 80 MVA SN / 96 MVA SE / 90 MVA WN / 114 MVA WE
- **Henderson-McDowell 69 kV Line**
  - Before Proposed Solution: 47 MVA SN / 56 MVA SE / 53 MVA WN / 67 MVA WE
  - After Proposed Solution: 80 MVA SN / 96 MVA SE / 90 MVA WN / 114 MVA WE
- **Werner-Conneaut Tap 69 kV Line**
  - Before Proposed Solution: 44 MVA SN / 44 MVA SE / 44 MVA WN / 44 MVA WE
  - After Proposed Solution: 80 MVA SN / 96 MVA SE / 90 MVA WN / 114 MVA WE

Alternatives Considered:

- Maintain existing condition and elevated risk of failure

Estimated Project Cost: $55.3 M
Projected In-Service: 7/25/2028
Status: ~~Conceptual~~ Engineering
Model: 2023 RTEP model for 2027 Summer (50/50)



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

11/xx/2026– V1 – Original version posted to pjm.com
11/13/2026 –v2- Added ‘Reason for represent for ATSI-2020-031)