

# Subregional RTEP Committee – Western FirstEnergy Supplemental Projects

April 15, 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-2026-025  
**Process Stage:** Need Meeting SRRTEP-W - 04/15/2026

**Project Driver:**  
*Operational Flexibility and Efficiency*

**Specific Assumption References:**

- System Performance Projects
- Add/Expand Bus Configuration
  - Load at risk in planning and operational scenarios
  - Reduce the amount of exposed potential local load loss during contingency conditions
  - Eliminate simultaneous outages to multiple networked elements
  - Network Radial Lines

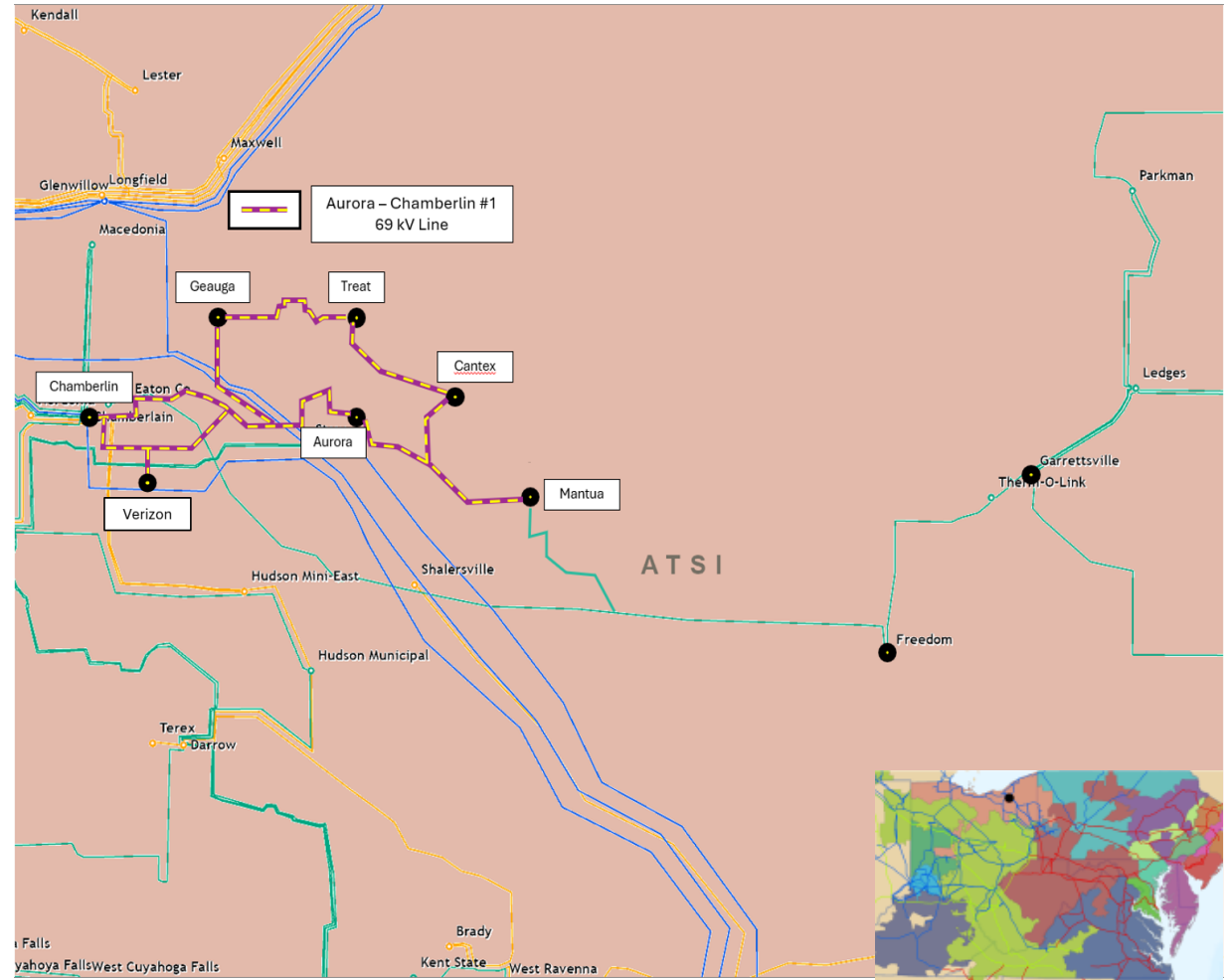
**Problem Statement:**

The Treat Substation is fed from the Aurora-Chamberlin No. 1 69 kV Line. This line is approximately 22 miles long and serves approximately 9,700 customers and 120 MWs of load. The Treat Substation serves approximately 11 MW of load and 2,200 customers.

A line fault on the Aurora-Chamberlin No. 1 69 kV Line results in the loss of customers and load served from the line.

Since 2021, the Aurora-Chamberlin No. 1 69 kV Line has experienced five unscheduled, sustained outages.

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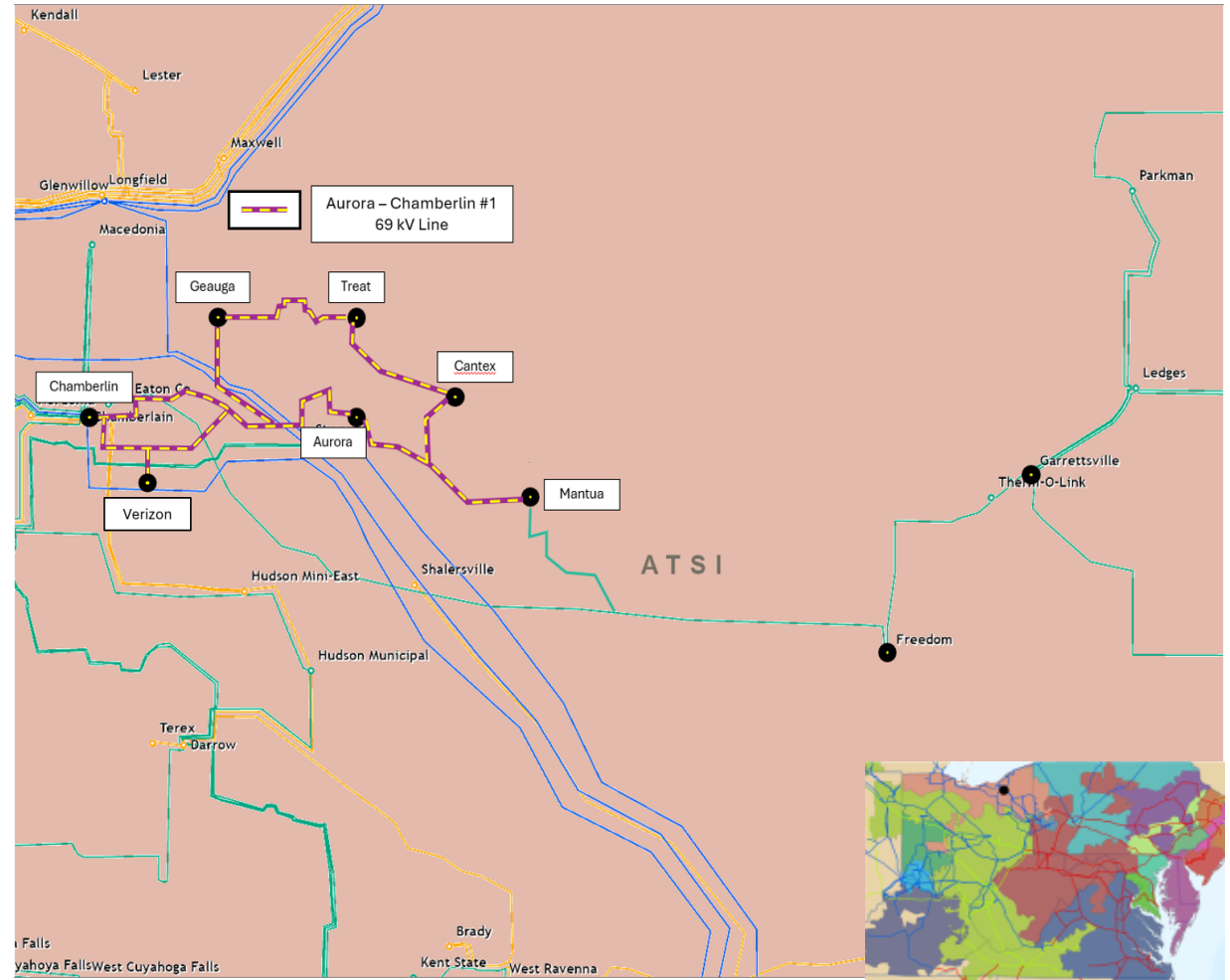
**Need Number:** ATSI-2026-025  
**Process Stage:** Need Meeting SRRTEP-W - 04/15/2026

**Problem Statement(Cont’):**

The Aurora-Chamberlin No. 1 69 kV line overloads to 141% of its summer emergency rating (56 MVA) for N-1-1 loss of Hanna-Shalersville 138 kV Line and Shalersville-Streetsboro 69 kV Line. Under the same N-1-1 conditions, the Aurora-Cantex 69 kV Line overloads to 136% of its summer emergency rating (56 MVA) and Geauga Tap-Treat 69 kV Line loads to 95% of its summer emergency rating (96 MVA).

Voltage magnitudes of 0.78 p.u at the Shalersville, Aurora, Page, Rotek, Cantex, Lucas, Viking and Chillicothe busses for N-1-1 loss of Hanna-Shalersville 138 kV Line and Shalersville-Streetsboro 69 kV Line were observed in the model.

Verizon (Chamberlin) 69 kV Line (~8 miles) operates as radial line due to protection coordination concerns (A-493 switch is normally open). The normally open switch cannot be closed due to identified relay coordination issue between Verizon (Chamberlin) 69 kV Line and Aurora-Chamberlin No. 1 69 kV Line.



**Need Number:** ATSI-2026-026  
**Process Stage:** Need Meeting SRRTEP-W - 04/15/2026

**Project Driver:**  
*Operational Flexibility and Efficiency*

**Specific Assumption References:**

- System Performance Projects
  - Add/Expand Bus Configuration
  - Load at risk in planning and operational scenarios
  - Reduce the amount of exposed potential local load loss during contingency conditions

**Problem Statement:**

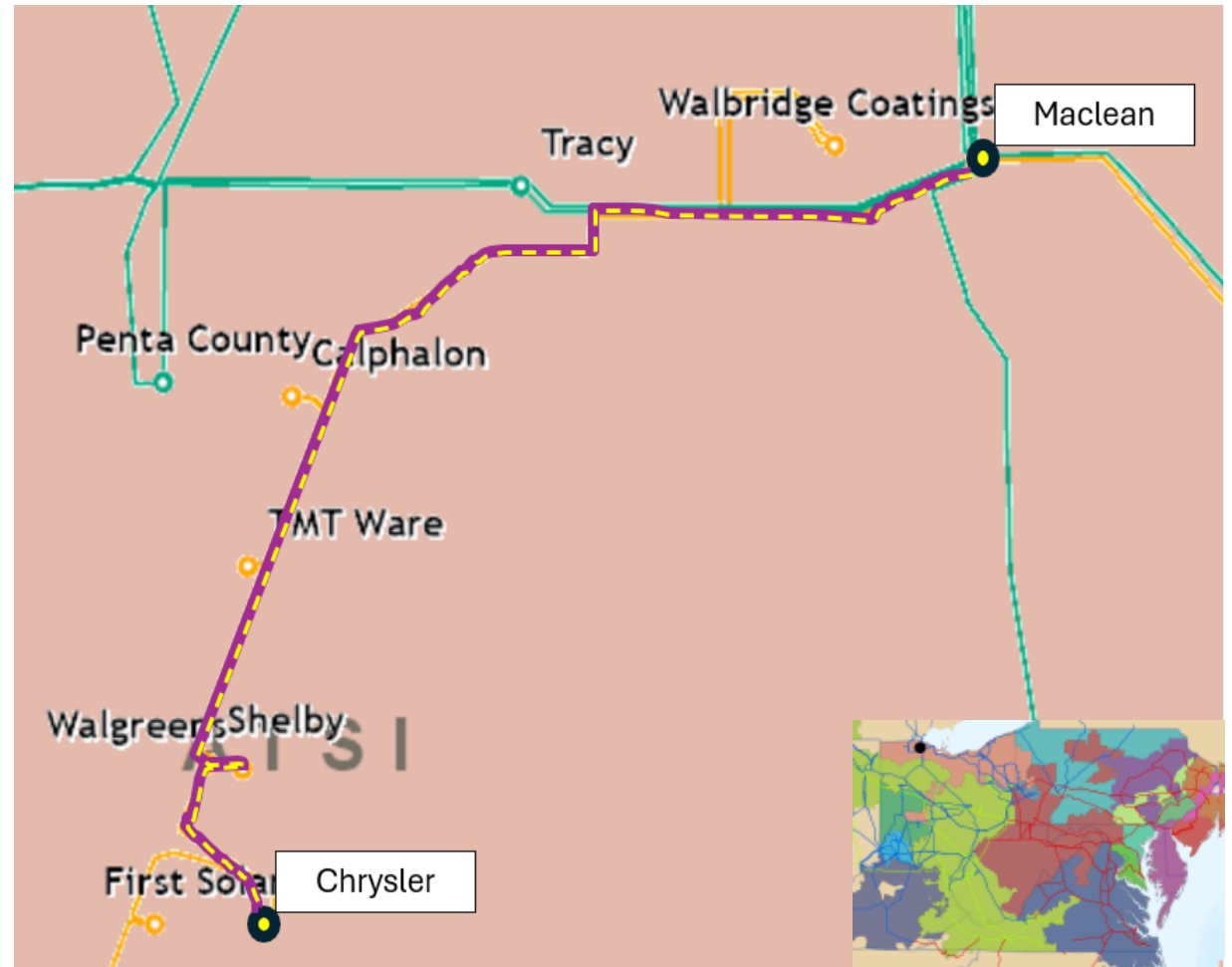
The Chrysler - Maclean 138 kV Line contains a 0.7-mile radial tap to two customer delivery points and one distribution delivery point. The radial portion of the Chrysler - Maclean 138 kV Line serves 3,900 customers and approximately 54 MW.

In the last five years, the Chrysler - Maclean 138 kV Line has experienced six unscheduled, sustained outages.

Chrysler - Maclean 138 kV Line (Chrysler Corp - Shelby First Solar):

- Existing line rating: 278 / 343 / 327 / 396 MVA (SN/SE/WN/WE)
- Existing conductor rating: 278 / 343 / 327 / 420 MVA (SN/SE/WN/WE)

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**Need Number:** ATSI-2026-026  
**Process Stage:** Need Meeting SRRTEP-W - 04/15/2026

**Problem Statement(Cont’):**

Chrysler - Maclean 138 kV Line (Shelby First Solar - Walgreens T):

- Existing line rating: 278 / 343 / 327 / 420 (SN/SE/WN/WE)
- Existing conductor rating: 278 / 343 / 327 / 420 MVA (SN/SE/WN/WE)

Chrysler - Maclean 138 kV Line (Walgreens T - TMT Ware T):

- Existing line rating: 278 / 343 / 327 / 420 (SN/SE/WN/WE)
- Existing conductor rating: 278 / 343 / 327 / 420 MVA (SN/SE/WN/WE)

Chrysler - Maclean 138 kV Line (TMT Ware T - Calphalon T):

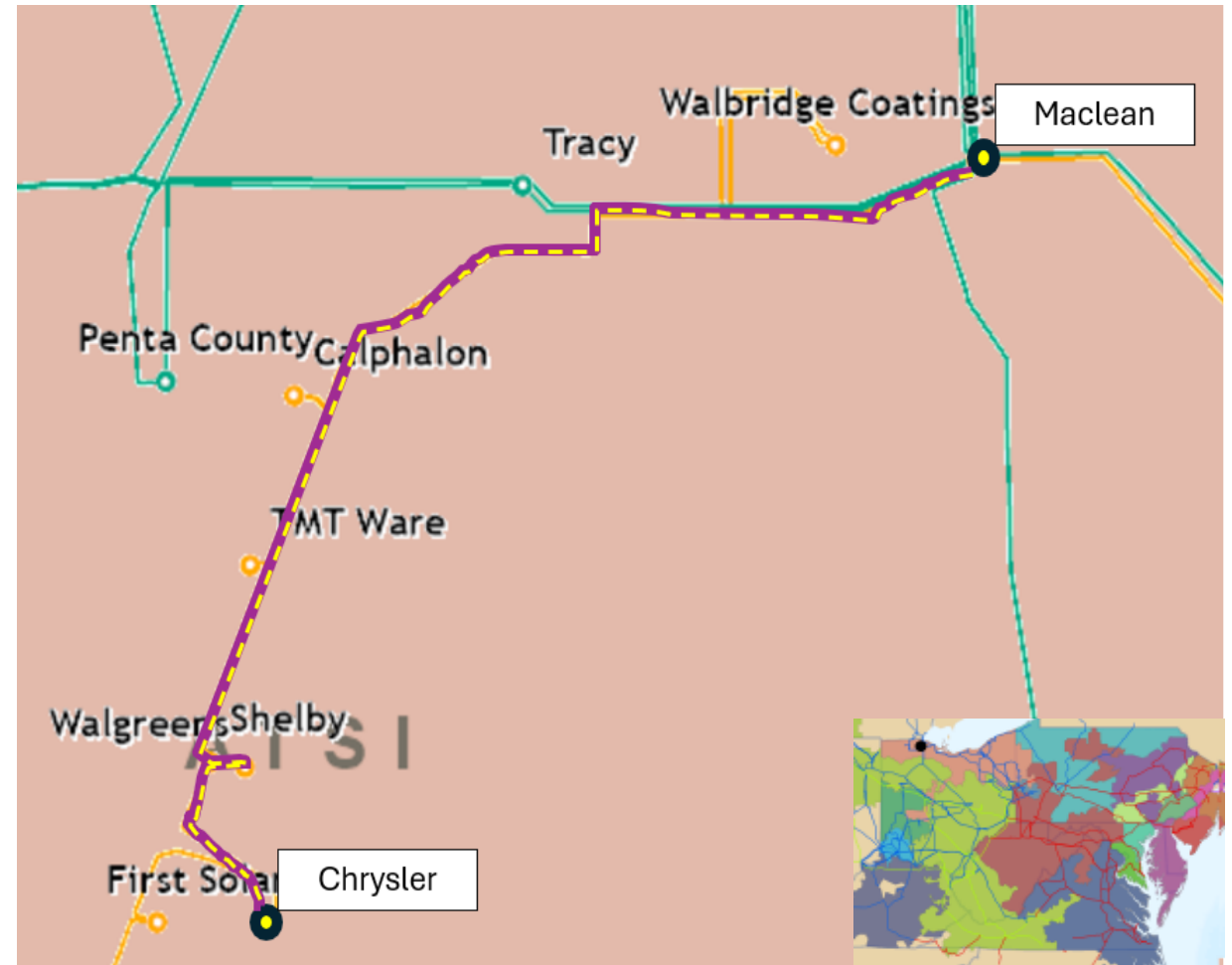
- Existing line rating: 278 / 343 / 327 / 420 (SN/SE/WN/WE)
- Existing conductor rating: 278 / 343 / 327 / 420 MVA (SN/SE/WN/WE)

Chrysler - Maclean 138 kV Line (Calphalon T - Walbridge Coating T):

- Existing line rating: 278 / 343 / 327 / 420 (SN/SE/WN/WE)
- Existing conductor rating: 278 / 343 / 327 / 420 MVA (SN/SE/WN/WE)

Chrysler - Maclean 138 kV Line (Walbridge Coating T - Maclean):

- Existing line rating: 160 / 192 / 180 / 228 MVA (SN/SE/WN/WE)
- Existing conductor rating: 160 / 192 / 180 / 228 MVA (SN/SE/WN/WE)



**Need Number:** ATSI-2026-028  
**Process Stage:** Need Meeting SRRTEP-W - 04/15/2026

**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 wood-pole transmission line structures

**Problem Statement:**

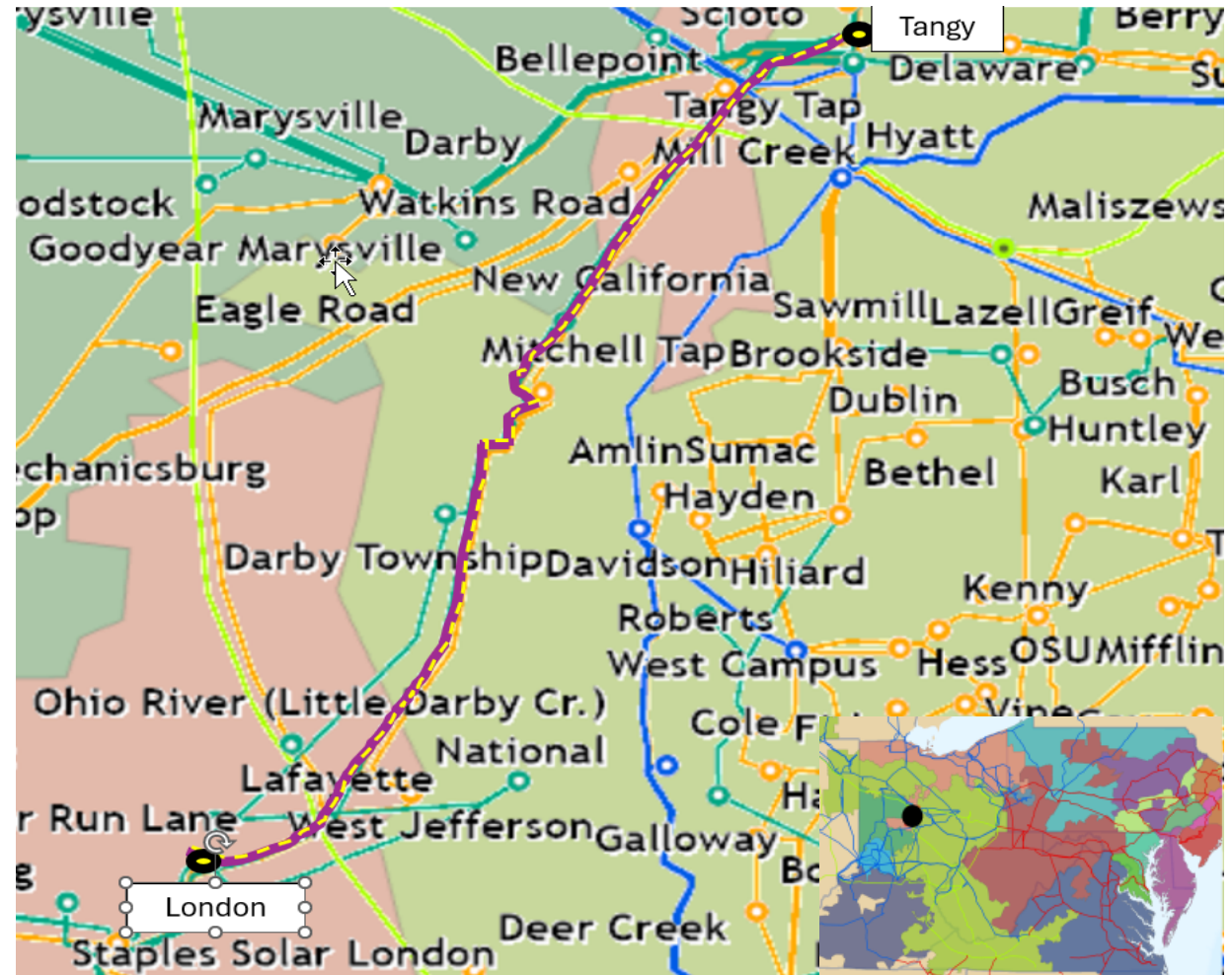
The London-Tangy 69 kV Line was constructed approximately 56 years ago and is approaching end of life. It is 37.2 miles long with 626 wood-pole structures.

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

- 442 structures are at least 49 years old
- 526 structures are showing early stages of decay
- 307 structures are showing shell rot

There has been a total of 16 unscheduled, sustained outages since 2018 with four of these outages being related to AC equipment failure.

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**Need Number:** ATSI-2026-028  
**Process Stage:** Need Meeting SRRETP-W - 04/15/2026

**Problem Statement(Cont’):**

Tangy-Tangy Junction 69 kV Line Existing Transmission Line and Conductor Ratings:

- 76 / 92 / 87 / 111 MVA (SN/SE/WN/WE)

Tangy Junction-New California Union Rec 69 kV Line Existing Transmission Line and Conductor Ratings:

- 45 / 54 / 51 / 65 MVA (SN/SE/WN/WE)

New California Union Rec-Darby 69 kV Line Existing Transmission Line and Conductor Ratings:

- 39 / 47 / 45 / 57 MVA (SN/SE/WN/WE)

Darby-Lafayette Tap 69 kV Line Existing Transmission Line and Conductor Ratings:

- 76 / 92 / 87 / 111 MVA (SN/SE/WN/WE)

Lafayette Tap-Jefferson Industry Tap 69 kV Line Existing Transmission Line and Conductor Ratings:

- 76 / 92 / 87 / 111 MVA (SN/SE/WN/WE)

Jefferson Industry Tap-London Tap 69 kV Line Existing Transmission Line and Conductor Ratings:

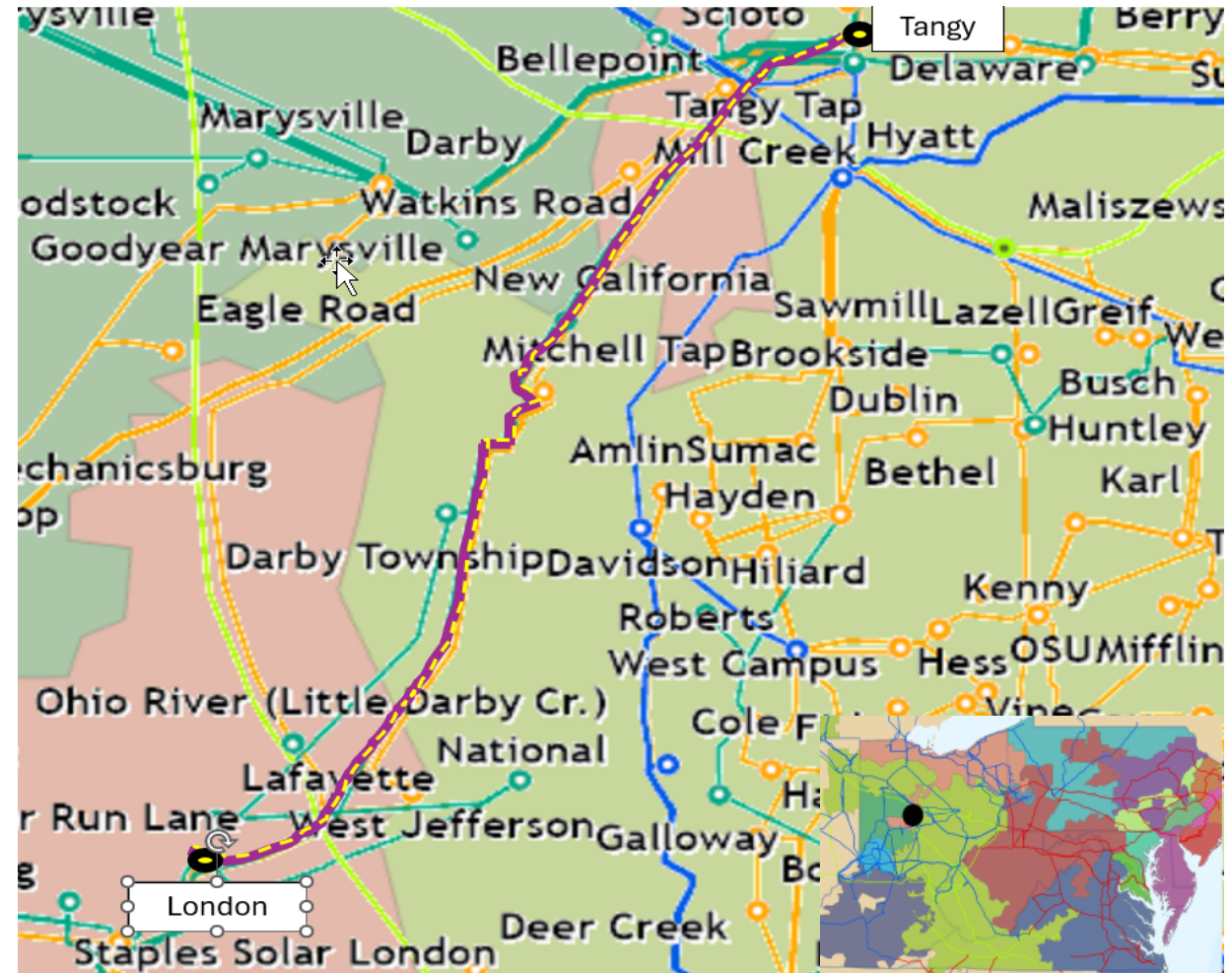
- 76 / 92 / 87 / 111 MVA (SN/SE/WN/WE)

London Tap-Deer 69 kV Line Existing Transmission Line and Conductor Ratings:

- 45 / 54 / 51 / 65 MVA (SN/SE/WN/WE)

London Tap-London 69 kV Line Existing Transmission Line and Conductor Ratings:

- 80 / 96 / 90 / 114 MVA (SN/SE/WN/WE)



**Need Number:** ATSI-2026-030  
**Process Stage:** Need Meeting SRRTEP-W - 04/15/2026

**Project Driver:**  
*Equipment Condition/Performance/Risk*

**Specific Assumption References:**

- System Performance Projects
  - Add/Expand Bus Configuration
  - Load at risk in planning and operational scenarios
  - Reduce the amount of exposed potential local load loss during contingency conditions
  - Eliminate simultaneous outages to multiple networked elements

**Problem Statement:**

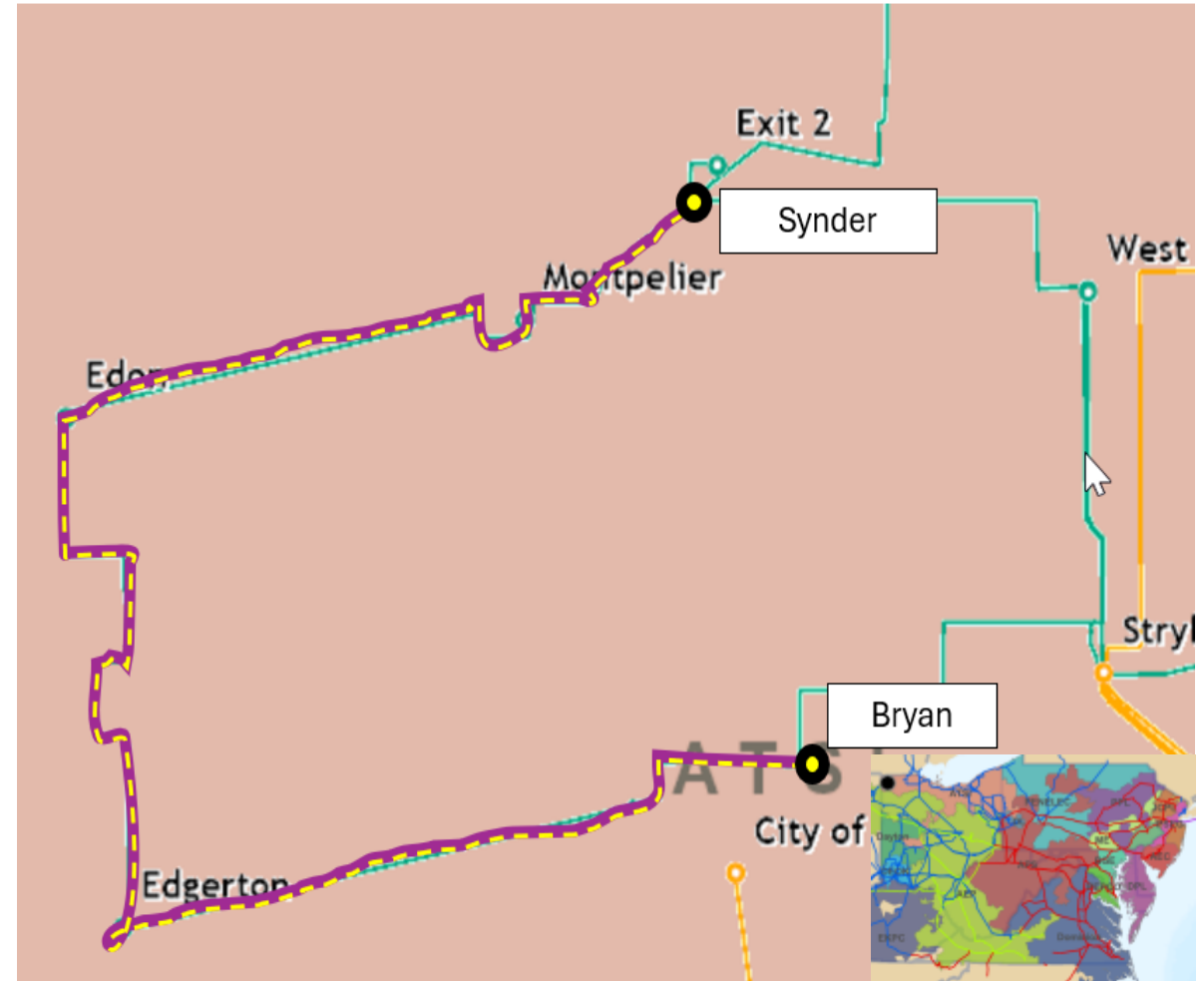
The Bryan - Snyder, Bryan - Stryker, East Fayette - Snyder, and Snyder - Stryker 69 kV lines form a 69-mile loop. A line fault or faulted breaker at one of the remote ends results in 7,200 customers and approximately 72 MW at risk.

The Bryan - Snyder 69 kV Line is approximately 32 miles and serves 4,800 customers and 31 MW. Over the past five years, there have been seven unscheduled, sustained outages.

Bryan - Snyder 69 kV Line (Bryan - Edgerton Muni T):

- Existing line rating: 108 / 132 / 126 / 161 MVA (SN/SE/WN/WE)
- Existing conductor rating: 108 / 132 / 126 / 161 MVA (SN/SE/WN/WE)

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**Need Number:** ATSI-2026-030  
**Process Stage:** Need Meeting SRRTEP-W - 04/15/2026

**Problem Statement(Cont’):**

Bryan - Snyder 69 kV Line (Edgerton Muni T - Edgerton Sub T):

- Existing line rating: 108 / 132 / 126 / 161 MVA (SN/SE/WN/WE)
- Existing conductor rating: 108 / 132 / 126 / 161 MVA (SN/SE/WN/WE)

Bryan - Snyder 69 kV Line (Edgerton Sub T - Edon T):

- Existing line rating: 108 / 132 / 126 / 161 MVA (SN/SE/WN/WE)
- Existing conductor rating: 108 / 132 / 126 / 161 MVA (SN/SE/WN/WE)

Bryan - Snyder 69 kV Line (Edon T - MNTPLR Steuben Sub T):

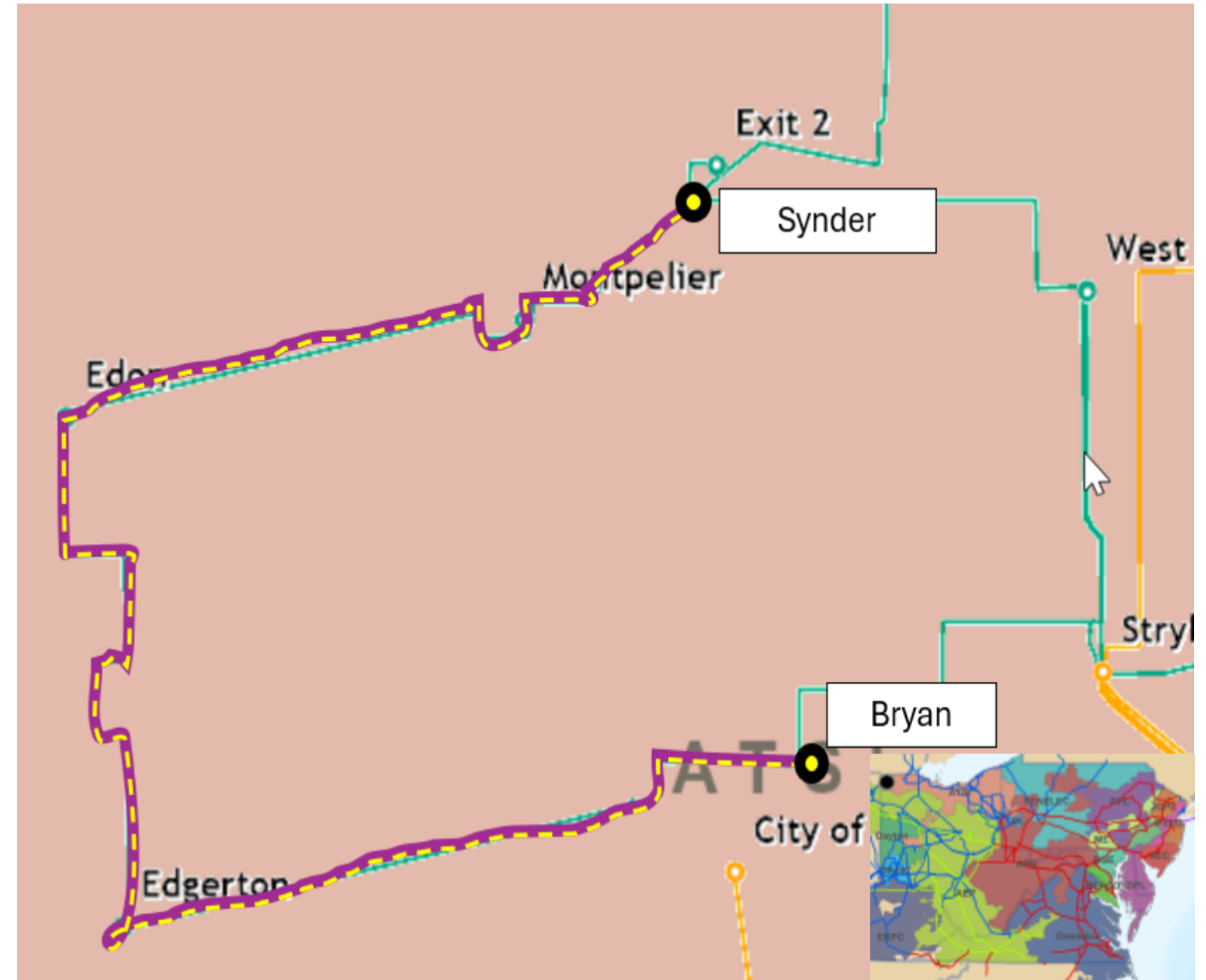
- Existing line rating: 108 / 132 / 126 / 161 MVA (SN/SE/WN/WE)
- Existing conductor rating: 108 / 132 / 126 / 161 MVA (SN/SE/WN/WE)

Bryan - Snyder 69 kV Line (MNTPLR Steuben Sub T - MNTPLR #4 City T):

- Existing line rating: 108 / 132 / 126 / 161 MVA (SN/SE/WN/WE)
- Existing conductor rating: 108 / 132 / 126 / 161 MVA (SN/SE/WN/WE)

Bryan - Snyder 69 kV Line ( MNTPLR #4 City T - Snyder):

- Existing line rating: 108 / 132 / 126 / 161 MVA (SN/SE/WN/WE)
- Existing conductor rating: 108 / 132 / 126 / 161 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

**Need Number:** ATSI-2025-003  
**Process Stage:** Solution Meeting SRRTEP-W - 04/15/2026  
**Previously Presented:** Need Meeting 04/11/2025

**Project Driver:**  
*Equipment Condition/Performance/Risk*  
*Infrastructure Resilience*  
*Operational Flexibility and Efficiency*

- Specific Assumption References:**
- System reliability and performance
  - Load at risk in planning and operational scenarios

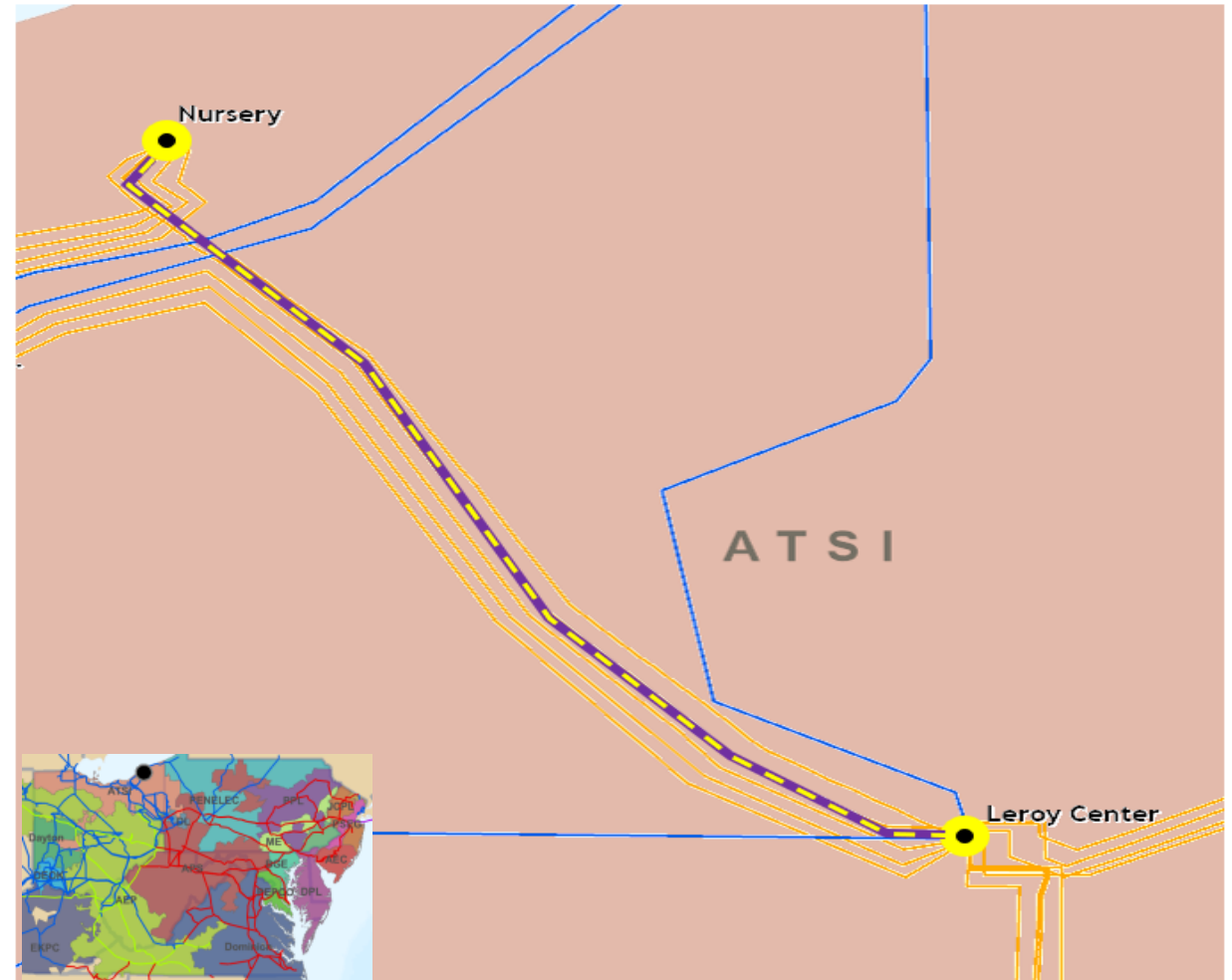
**Problem Statement:**  
 The Grand River – Leroy Center No. 1 138 kV Line is approximately 11 miles long and supplies three wholesale delivery points (including Nursery Substation.)

The three wholesale delivery points serve approximately 29,400 customers and 135 MW.

Based on the 2024 Series 2029 RTEP Summer Case, an N-1 contingency results in the outage of the Nursery No. 1 and No. 3 138-36 kV transformers due to a shared a common bus. The Nursery No. 2 138-36 kV transformer consequentially loads to 145% of its Summer Emergency (SE) rating.

Existing Rating: 57 / 63 / 57 / 63 MVA (SN/SE/WN/WE)  
 The 138 kV Breaker Q3T at Nursery is 77 years old with increasing maintenance concerns due to compressor issues, deteriorated operating mechanisms and increasing maintenance trends.

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**Need Number:** ATSI-2025-003  
**Process Stage:** Solution Meeting SRRTEP-W - 04/15/2026

**Proposed Solution:**  
 Convert Nursery Substation 138 kV yard to breaker-and-a-half configuration. Reterminate the existing 138-36 kV transformers and Queen 138-13.2 kV transformer into the new 138 kV bus.

Loop the existing Grand River - Leroy Center 138 kV No. 1 Line into the Nursery Substation 138 kV yard. Cut the Grand River - Leroy Center 138 kV No. 1 Line between structures 1172-W and 1172-C and cut the Grand River - Leroy Center 138 kV No. 2 Line extension on structure 1172-W and reterminate it on structure 1172-C. This will create Grand River - Nursery 138 kV and Nursery - Leroy Center 138 kV.

Transmission Line Ratings Before Proposed Solution:

Existing Painesville Muni Tap-Nursery Tap 138 kV Q15 Transmission Line and Conductor Ratings:  
 278 / 339 / 315 / 401 MVA (SN/SE/WN/WE)

Existing Nursery Tap-Nursery 138 kV Q15 Transmission Line and Conductor Ratings:  
 278 / 339 / 315 / 401 MVA (SN/SE/WN/WE)

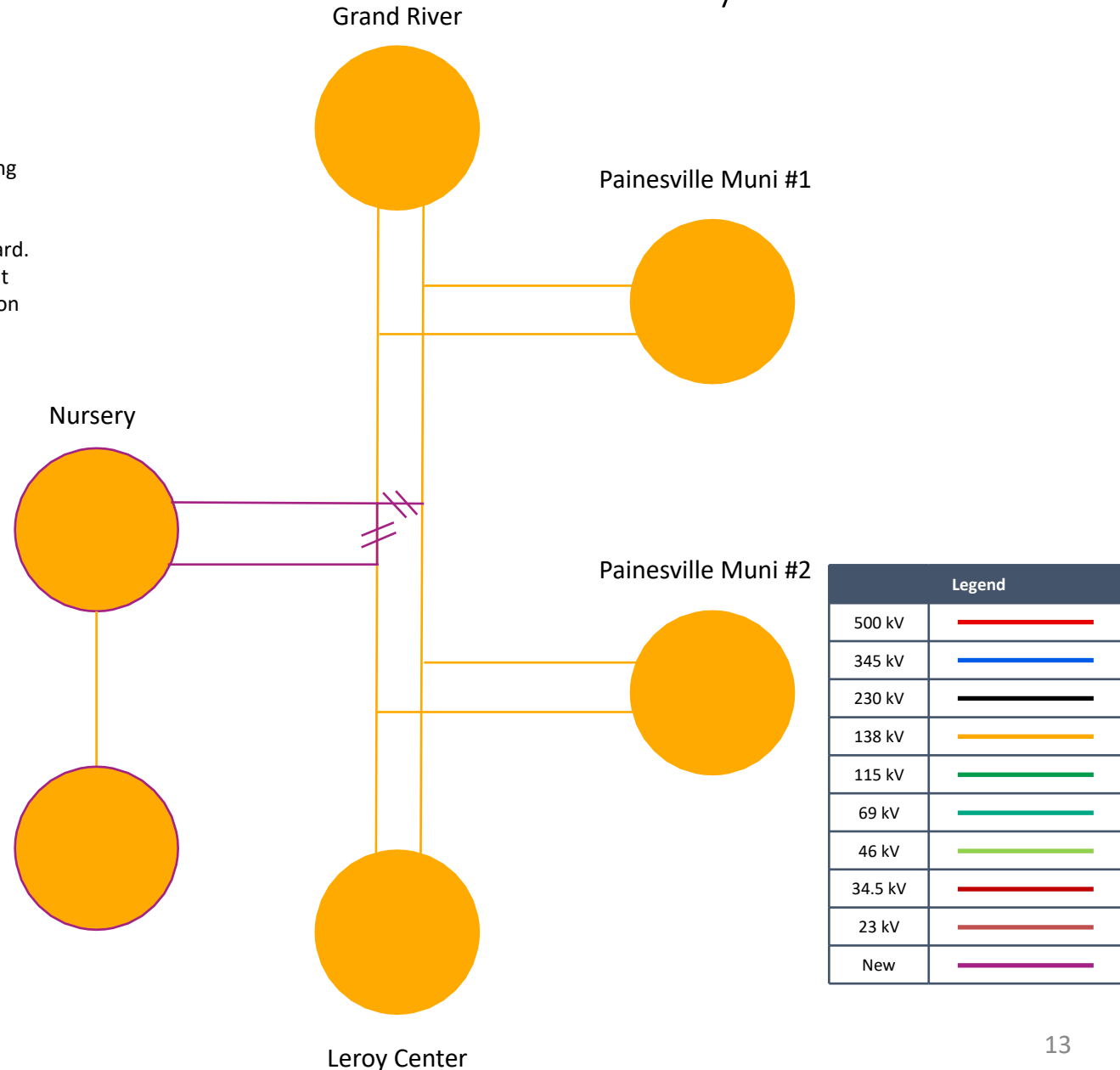
Existing Nursery Tap-Painesville Muni 2 Tap 138 kV Q15 Transmission Line and Conductor Ratings:  
 273 / 332 / 309 / 393 MVA (SN/SE/WN/WE)

Existing Painesville Muni Tap-Nursery Tap 138 kV Q16 Transmission Line and Conductor Ratings:  
 278 / 339 / 315 / 401 MVA (SN/SE/WN/WE)

Existing Nursery Tap-Nursery 138 kV Q16 Transmission Line and Conductor Ratings:  
 278 / 339 / 315 / 401 MVA (SN/SE/WN/WE)

Existing Nursery Tap-Painesville Muni 2 Tap 138 kV Q16 Transmission Line and Conductor Ratings:  
 273 / 332 / 309 / 393 MVA (SN/SE/WN/WE)

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# ATSI Transmission Zone M-3 Process Nursery Substation 138 kV

**Need Number:** ATSI-2025-003  
**Process Stage:** Solution Meeting SRRTEP-W - 04/15/2026

**Proposed Solution:**  
 Transmission Line Ratings After Proposed Solution:

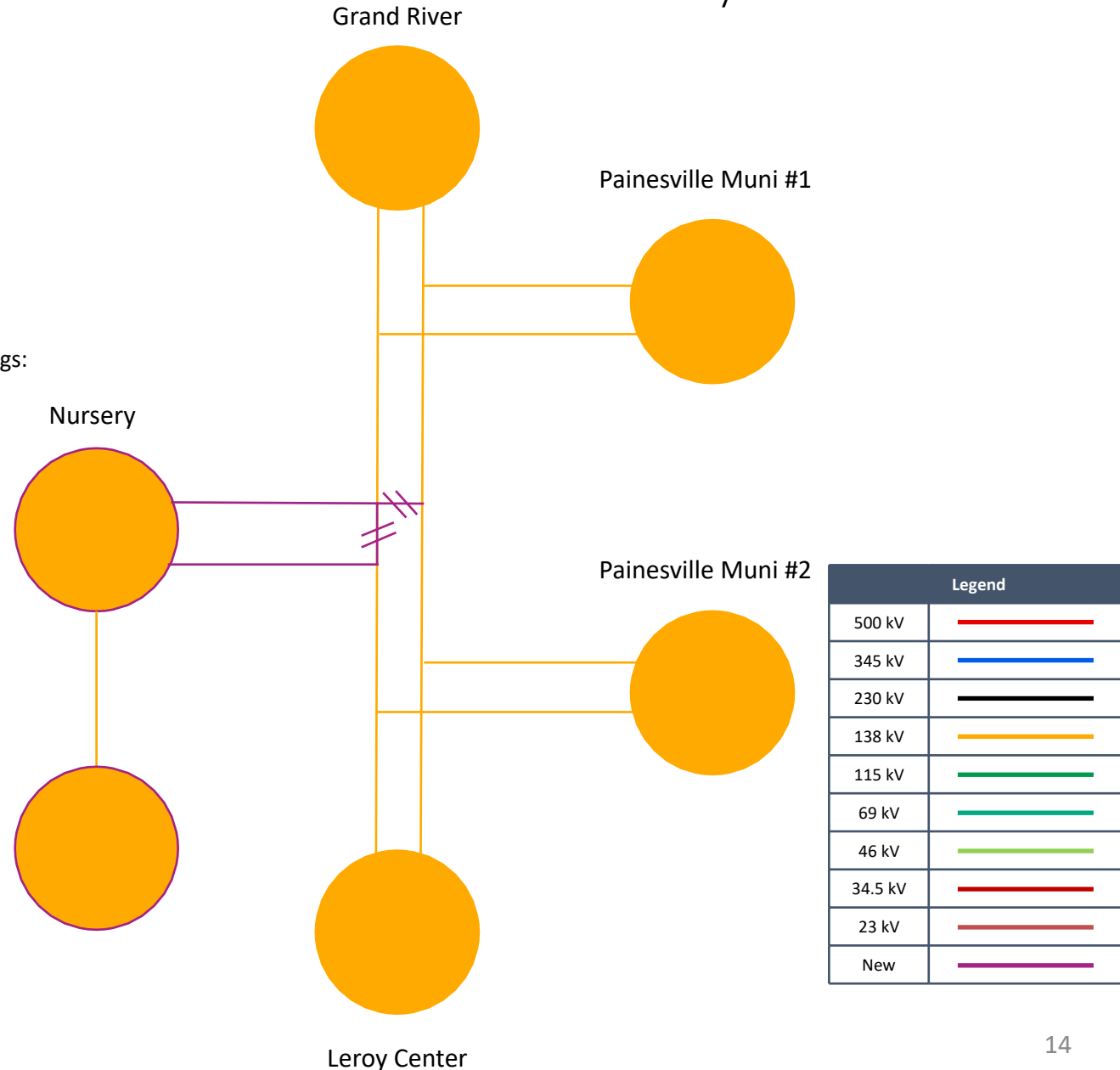
Proposed Painesville Muni Tap-Painesville Muni Tap 2 138 kV Q16 Transmission Line and Conductor Ratings:  
 273 / 332 / 309 / 393 MVA (SN/SE/WN/WE)

Proposed Painesville Muni Tap-Nursery 138 kV Q15 Transmission Line and Conductor Ratings:  
 278 / 339 / 315 / 401 MVA (SN/SE/WN/WE)

Proposed Nursery-Painesville Muni 2 Tap 138 kV Q15 Transmission Line and Conductor Ratings:  
 273 / 332 / 309 / 393 MVA (SN/SE/WN/WE)

**Alternatives Considered:**  
 Maintain equipment in existing condition with elevated risk of misoperations.

**Estimated Project Cost:** \$25.58M  
**Projected In-Service:** 04/28/2028  
**Status:** Conceptual  
**Model:** 2024 RTEP model for 2029 Summer & Winter (50/50)



**Need Number:** ATSI-2025-038  
**Process Stage:** Solution Meeting SRRTEP-W - 04/15/2026  
**Previously Presented:** Need Meeting 12/12/2025

**Project Driver:**  
*Equipment Condition/Performance/Risk*

**Specific Assumption References:**

System Performance Projects Global Factors

- System reliability and performance
- Upgrade Relay Schemes
- Obsolete and difficult to repair communication equipment
- Communication technology

System Condition Projects

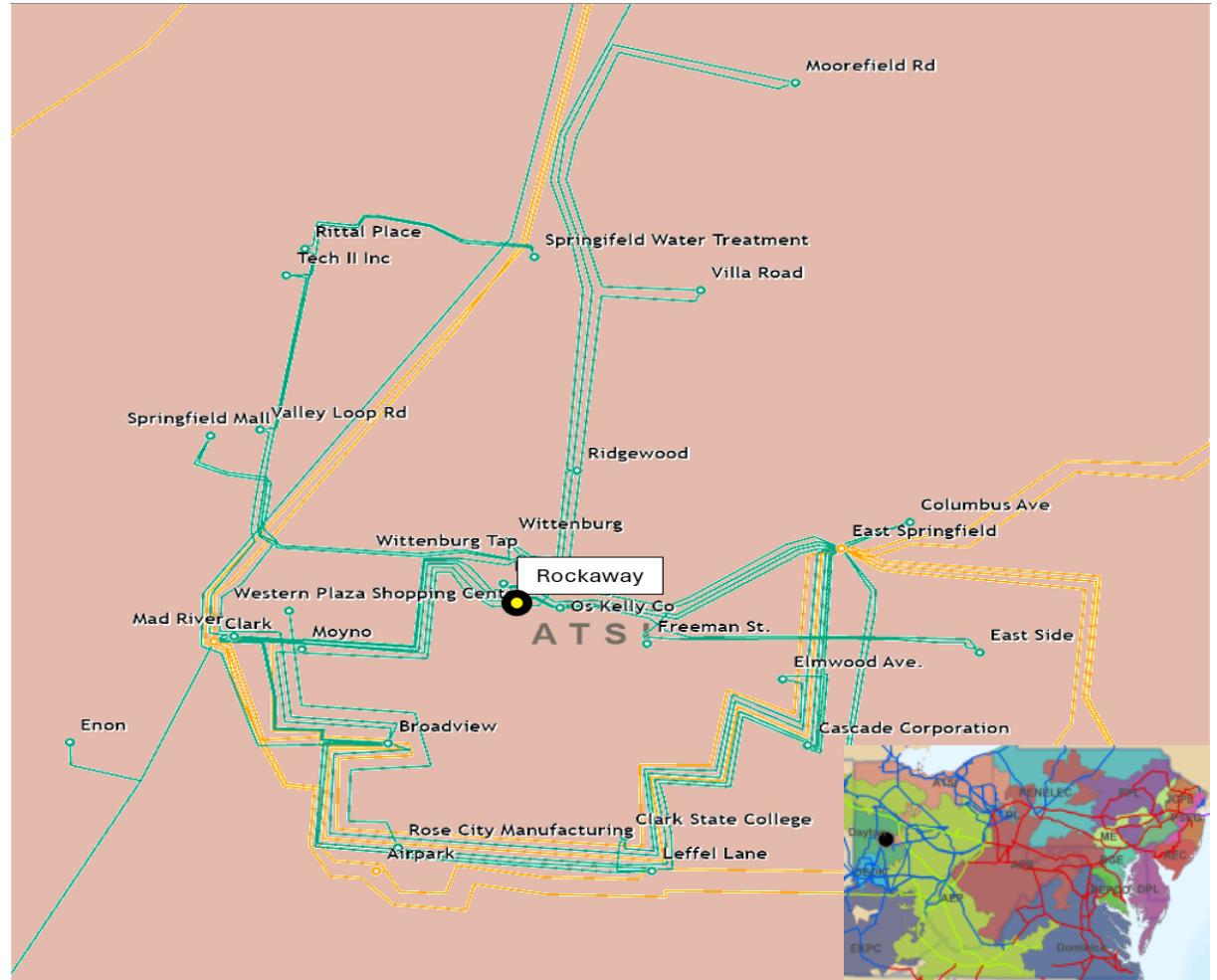
- Increasing negative trend in maintenance finds and/or cost
- Limited availability of spare parts, software obsolescence and/or compatibility, or vendor technical support
- Expected service life (at or beyond) or obsolescence
- Circuit breakers and other fault interrupting devices

**Problem Statement:**

The existing Rockaway Substation 69 kV oil circuit breakers 20, 21 and 22 and associated disconnect switches are 70 years old and approaching end of life. Replacement components are difficult to source leading to non-standard repairs.

FirstEnergy has identified protection schemes using a certain vintage of relays and communication equipment that have a history of misoperation. Proper operation of the protection scheme requires all the separate components perform adequately during a fault. In many cases the protection equipment cannot be repaired due to a lack of replacement parts and available expertise in the outdated technology.

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**Need Number:** ATSI-2025-038  
**Process Stage:** Solution Meeting SRRTEP-W - 04/15/2026

**Problem Statement (Cont’):**

Transmission line ratings are limited by terminal equipment.

**Rockaway - OS Kelly 69 kV Line:**

- Existing line rating: 62 / 62 / 62 / 62 MVA (SN/SE/WN/WE)
- Existing conductor rating: 76 / 92 / 87 / 111 MVA (SN/SE/WN/WE)

**Rockaway - Springfield Medical 69 kV Line:**

- Existing line rating: 76 / 92 / 87 / 111 MVA (SN/SE/WN/WE)
- Existing conductor rating: 76 / 92 / 87 / 111 MVA (SN/SE/WN/WE)

**Proposed Solution:**

Replace breakers B-20, B-21 and B-22 and associated disconnect switches at Rockaway Substation.

**Transmission Line Ratings**

**Rockaway - OS Kelly 69 kV Line:**

Before Proposed Solution: 62 / 62 / 62 / 62 MVA (SN/SE/WN/WE)

After Proposed Solution: 76 / 92 / 87 / 111 MVA (SN/SE/WN/WE)

**Alternatives Considered:**

Maintain equipment in existing condition with elevated risk of failure due to equipment condition.

**Estimated Project Cost:** \$3.43M  
**Projected In-Service:** 06/22/2028  
**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-2025-039  
**Process Stage:** Solution Meeting SRRTEP-W - 04/15/2026  
**Previously Presented:** Need Meeting 12/12/2025

**Project Driver:**  
*Equipment Condition/Performance/Risk*

**Specific Assumption References:**

System Performance Projects Global Factors

- System reliability and performance
- Upgrade Relay Schemes
- Obsolete and difficult to repair communication equipment
- Communication technology

System Condition Projects

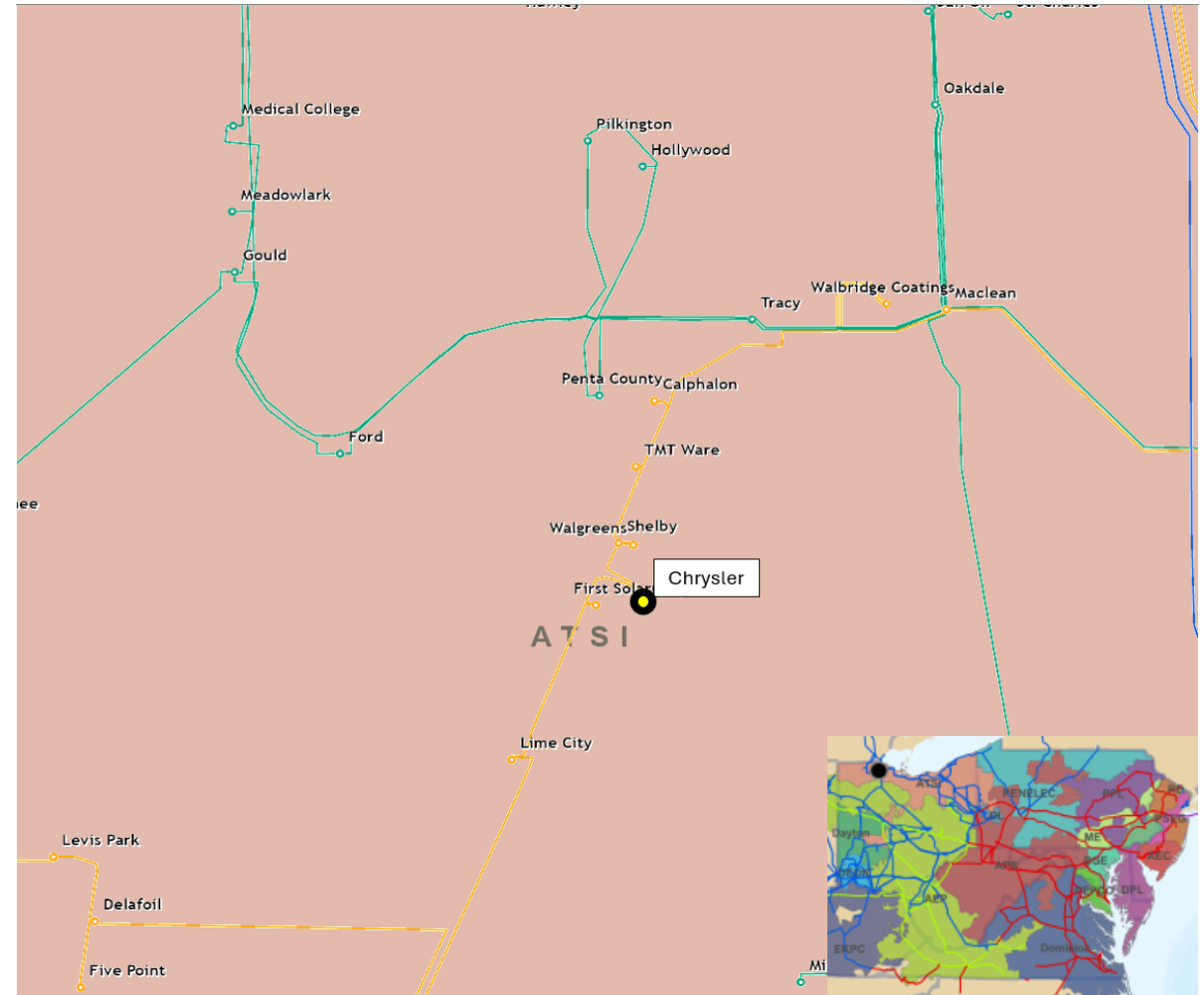
- Increasing negative trend in maintenance finds and/or cost
- Limited availability of spare parts, software obsolescence and/or compatibility, or vendor technical support
- Expected service life (at or beyond) or obsolescence
- Circuit breakers and other fault interrupting devices

**Problem Statement:**

The existing Chrysler Substation 138 kV oil circuit breakers B13290, B13291, and B1392 and associated disconnect switches are 59 years old and approaching end of life. Replacement components are difficult to source leading to non-standard repairs.

FirstEnergy has identified protection schemes using a certain vintage of relays and communication equipment that have a history of misoperation. Proper operation of the protection scheme requires all the separate components perform adequately during a fault. In many cases the protection equipment cannot be repaired due to a lack of replacement parts and available expertise in the outdated technology.

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**Need Number:** ATSI-2025-039  
**Process Stage:** Solution Meeting SRRTEP-W - 04/15/2026

**Problem Statement (Cont’):**

Transmission line ratings are limited by terminal equipment.

**Chrysler - Shelby 138 kV Line:**

- Existing line rating: 278 / 343 / 327 / 396 MVA (SN/SE/WN/WE)
- Existing conductor rating: 278 / 343 / 327 / 420 MVA (SN/SE/WN/WE)

**Chrysler - First Solar 138 kV Line:**

- Existing line rating: 288 / 346 / 333 / 396 MVA (SN/SE/WN/WE)
- Existing conductor rating: 288 / 353 / 333 / 427 MVA (SN/SE/WN/WE)

**Proposed Solution:**

At Chrysler Station, replace three 138 kV breakers (B13290, B13291 and B13292), eight 138 kV disconnect switches, two CCVT’s, and wavetraps/tuners.

**Transmission Line Ratings:**

**Chrysler-Shelby 138 kV Line**

- Before Proposed Solution: 278 / 343 / 327 / 396 MVA (SN/SE/WN/WE)
- After Proposed Solution: 278 / 343 / 327 / 420 MVA (SN/SE/WN/WE)

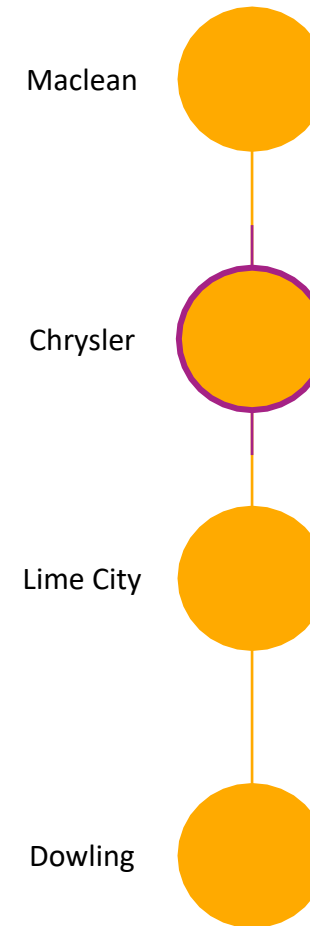
**Chrysler-First Solar 138 kV Line**

- Before Proposed Solution: 288 / 346 / 333 / 396 MVA (SN/SE/WN/WE)
- After Proposed Solution: 288 / 353 / 333 / 427 MVA (SN/SE/WN/WE)

**Alternatives Considered:**

Maintain equipment in existing condition with elevated risk of failure due to equipment condition.

**Estimated Project Cost:** \$2.76M  
**Projected In-Service:** 12/31/2028  
**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	

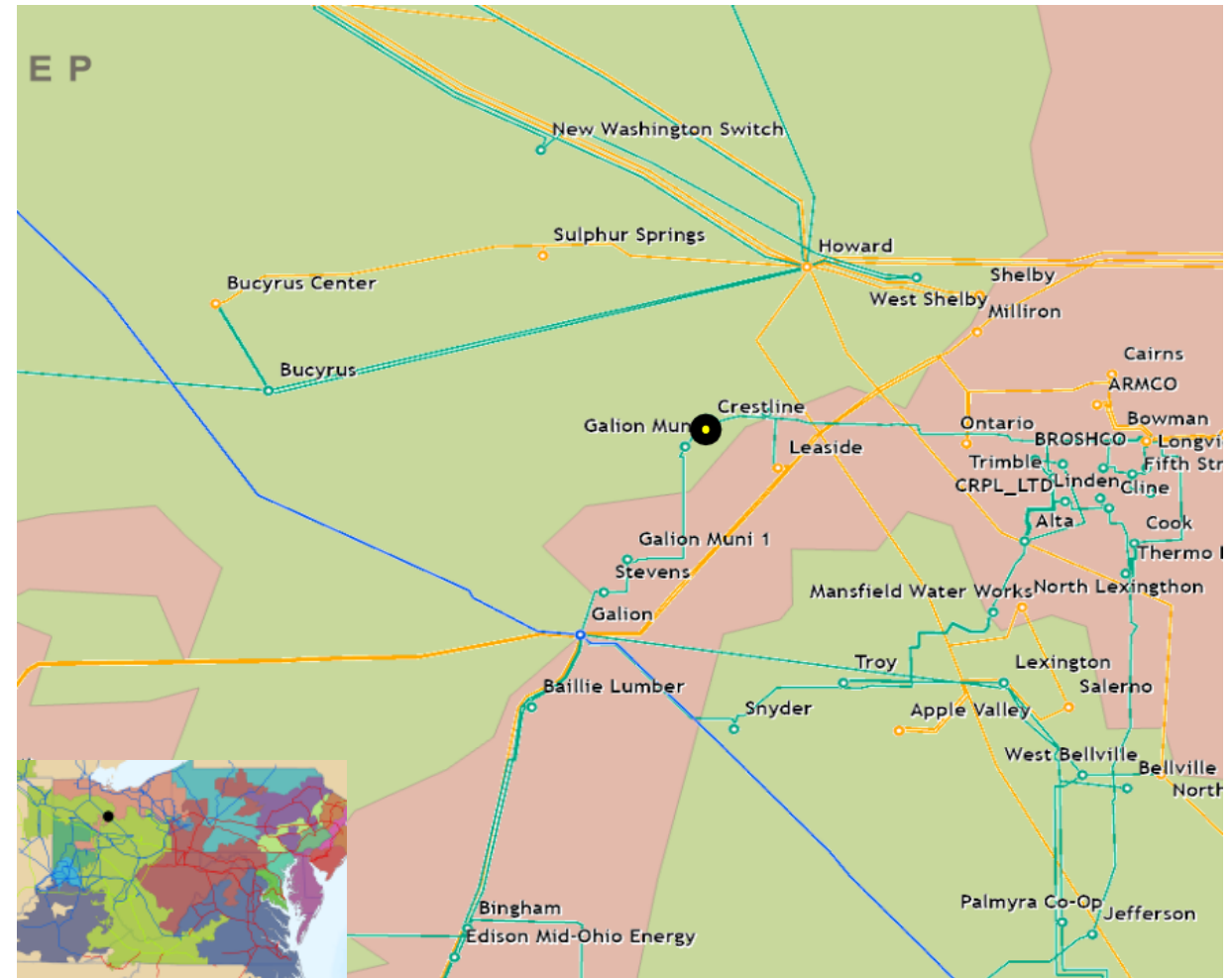
**Need Number:** ATSI-2026-003  
**Process Stage:** Solution Meeting SRRTEP-W - 04/15/2026  
**Previously Presented:** Need Meeting 01/16/2026

**Project Driver:**  
*Equipment Condition/Performance/Risk*

- Specific Assumption References:**
- System Performance Global Factors
    - System reliability/performance
  - Substation Condition Rebuild/Replacement
    - Age/condition of substation equipment

**Problem Statement:**  
 The Crestline 69 kV 12.6 MVAR capacitor bank is tapped on the Leaside - Stevens 69 kV Line. In Summer 2024, the capacitor bank tripped several times. The capacitor bank was field inspected and found to have condition issues such as failed cans and bad fuse holders.

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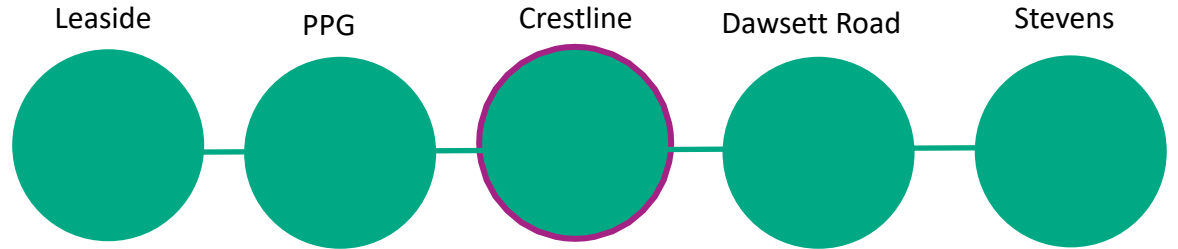


**Need Number:** ATSI-2026-003  
**Process Stage:** Solution Meeting SRRTEP-W - 04/15/2026

**Proposed Solution:**  
 Retire the capacitor bank, breaker B65, switch D65, and associated relays at Crestline Station

**Alternatives Considered:**  
 Maintain equipment in existing condition with elevated risk of failure due to equipment condition.

**Estimated Project Cost:** \$0.44M  
**Projected In-Service:** 04/16/2027  
**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	





# ATSI Transmission Zone M-3 Process Pemberville Station

**Need Number:** ATSI-2026-013  
**Process Stage:** Solution Meeting SRRTEP-W - 04/15/2026

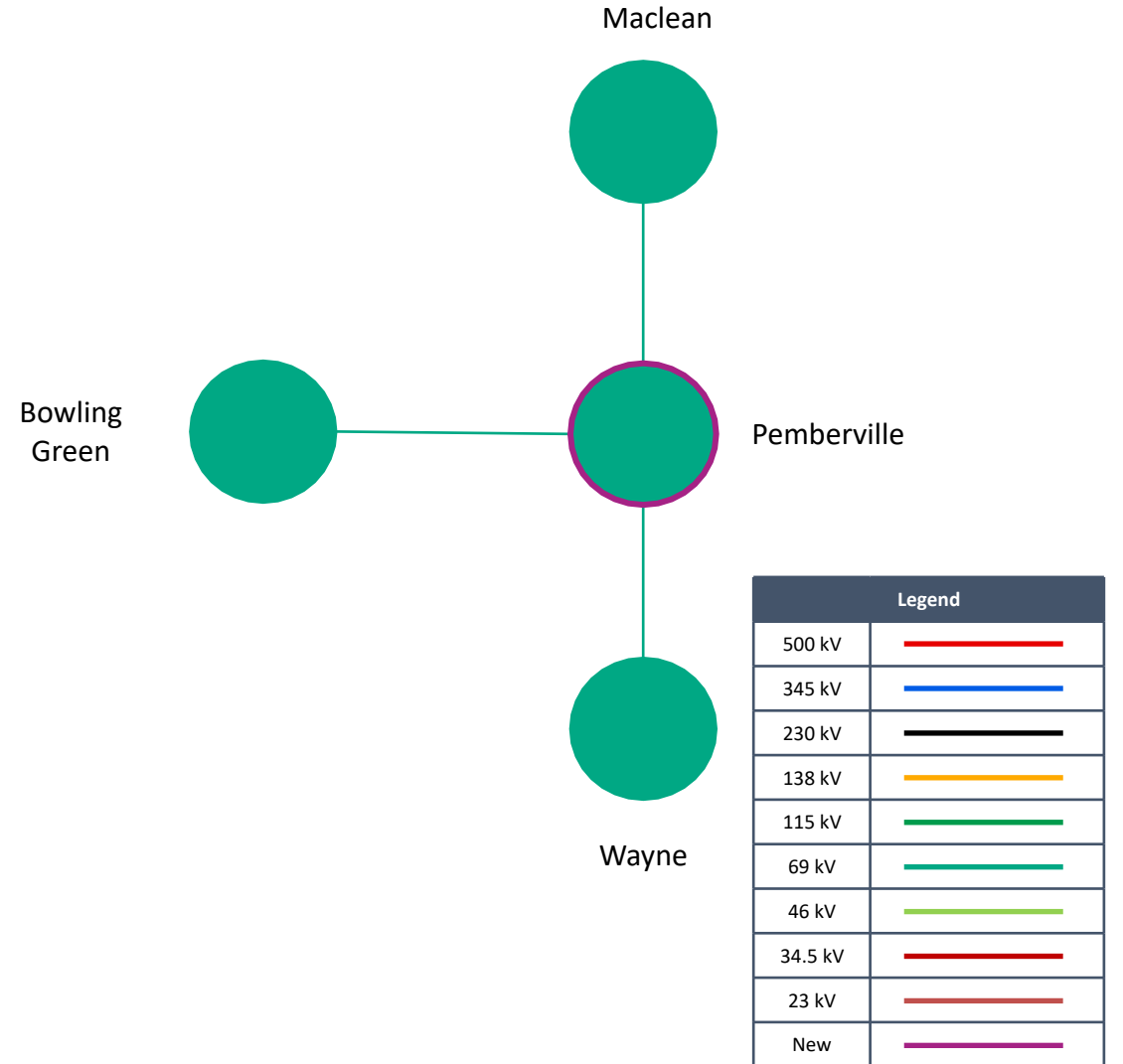
**Proposed Solution:**  
 At Pemberville Station, replace two 69 kV breakers (7286 and 7287), four disconnect switches, and line relays.

**Transmission Line Ratings:**

- Pemberville-Maclean 69 kV Line**
- Before Proposed Solution: 116 / 143 / 143 / 143 MVA (SN/SE/WN/WE)
  - After Proposed Solution: 139 / 169 / 158 / 201 MVA (SN/SE/WN/WE)

**Alternatives Considered:**  
 Maintain equipment in existing condition with elevated risk of failure due to equipment condition.

**Estimated Project Cost:** \$3.46M  
**Projected In-Service:** 12/31/2027  
**Status:** Conceptual  
**Model:** 2024 RTEP model for 2029 Summer & Winter (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

04/03/2026– V1 – Original version posted to pjm.com