

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: APS-2026-008
Process Stage: Need Meeting SRRTEP-W - 04/15/2026

Project Driver:
Equipment Condition/Performance/Risk

Specific Assumption References:

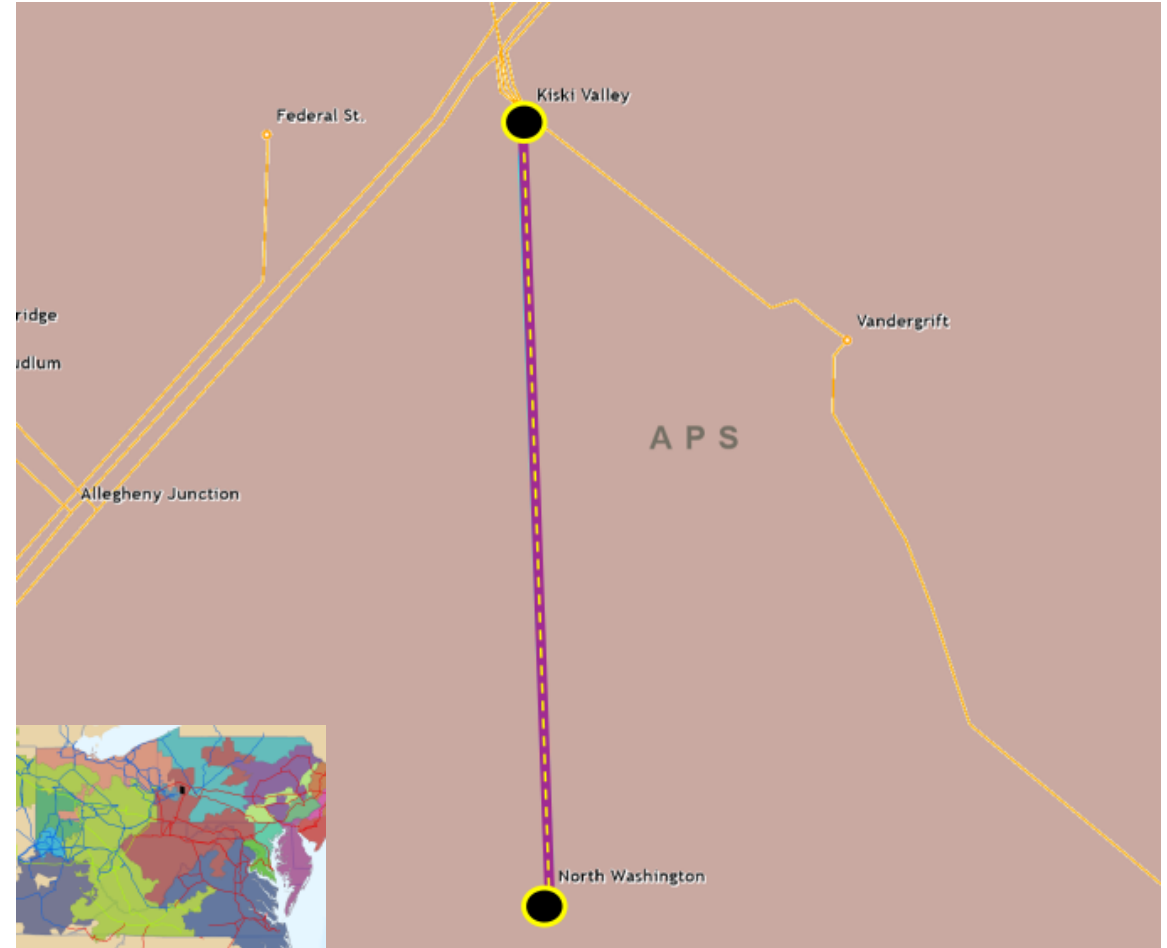
- System Reliability Global Factors
 - System Reliability / Performance
 - Operational Flexibility
 - Load at Risk and/or Customers Affected
 - Add/Expand Bus Configuration
 - Build New Transmission Line

Problem Statement:

The North Washington (Kiski Valley) 138 kV Line is a radial line that is 7.3 miles long and serves approximately 3,600 customers and 18 MW of load.

A fault on the line will result in the loss of all customers served from North Washington Substation. Additionally, limited distribution transfer capability puts the load served from North Washington Substation at risk during maintenance activities on the line or at North Washington Substation.

Over the past five years, there have been five sustained outages experienced on the North Washington (Kiski Valley) 138 kV Line.



Need Number: APS-2026-009
Process Stage: Need Meeting SRRTEP-W - 04/15/2026

Project Driver:
Operational Flexibility and Efficiency

Specific Assumption References:

System Performance Projects

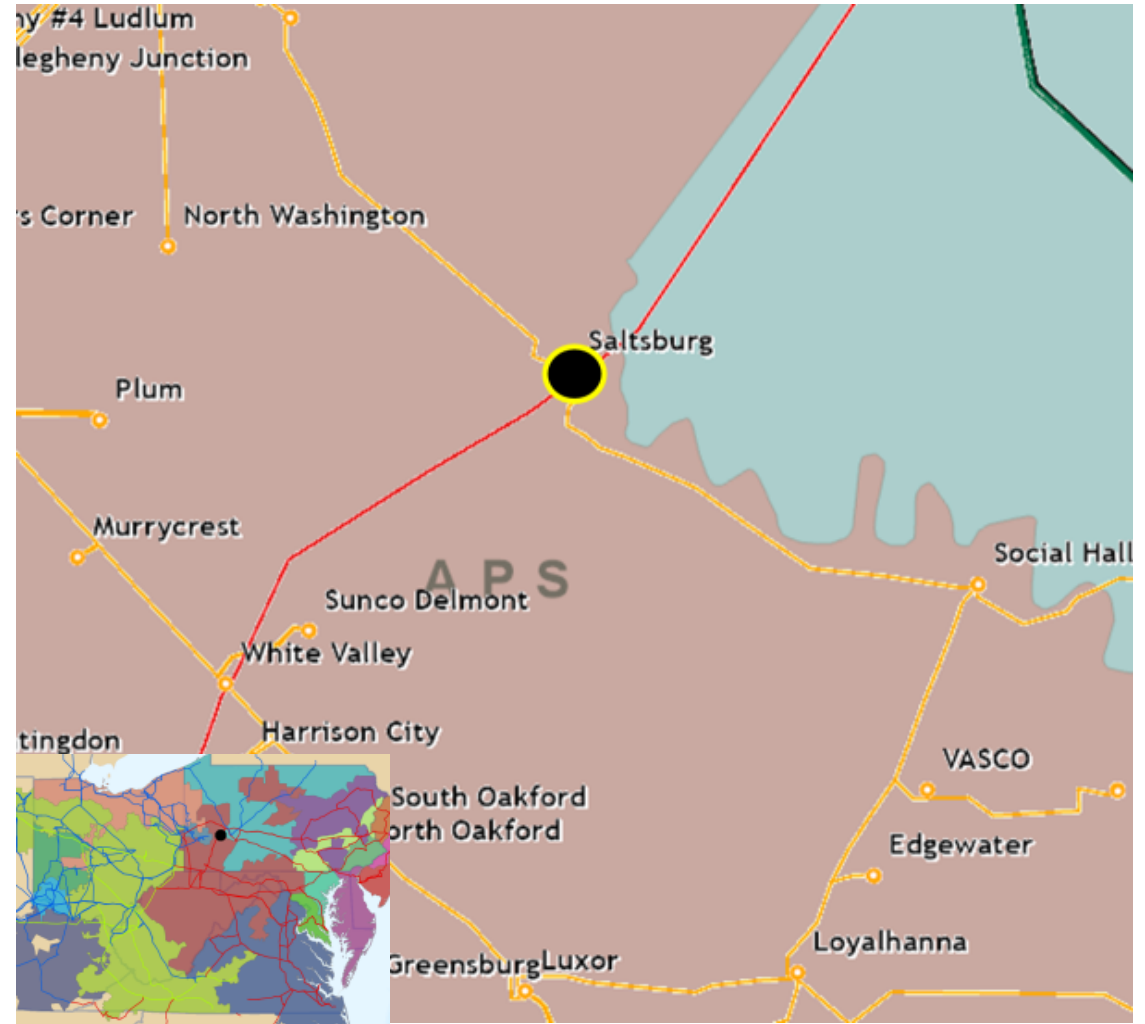
- Add/Expand Bus Configuration
- Load at risk in planning and operational scenarios
- Reduce the amount of exposed potential local load loss during contingency conditions
- Eliminate simultaneous outages to multiple networked elements
- Substation/line equipment limits

Problem Statement:

The Saltsburg Substation has a 138 kV straight bus configuration with no line terminal breakers. Multiple fault scenarios will interrupt approximately 3,840 customers and 11 MW of load. A bus fault or a tie breaker fault at Saltsburg Substation would result in the loss of approximately 53 MW of load at Saltsburg and Vandergrift substations.

Over the past three years, there have been three interruptions on the Saltsburg - Social Hall 138 kV Line, one interruption on the Saltsburg - Vandergrift 138 kV Line, and one tie breaker outage on the Saltsburg Substation 138 kV bus.

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Need Number: APS-2026-009
Process Stage: Need Meeting SRRTEP-W - 04/15/2026

Problem Statement (Cont’):

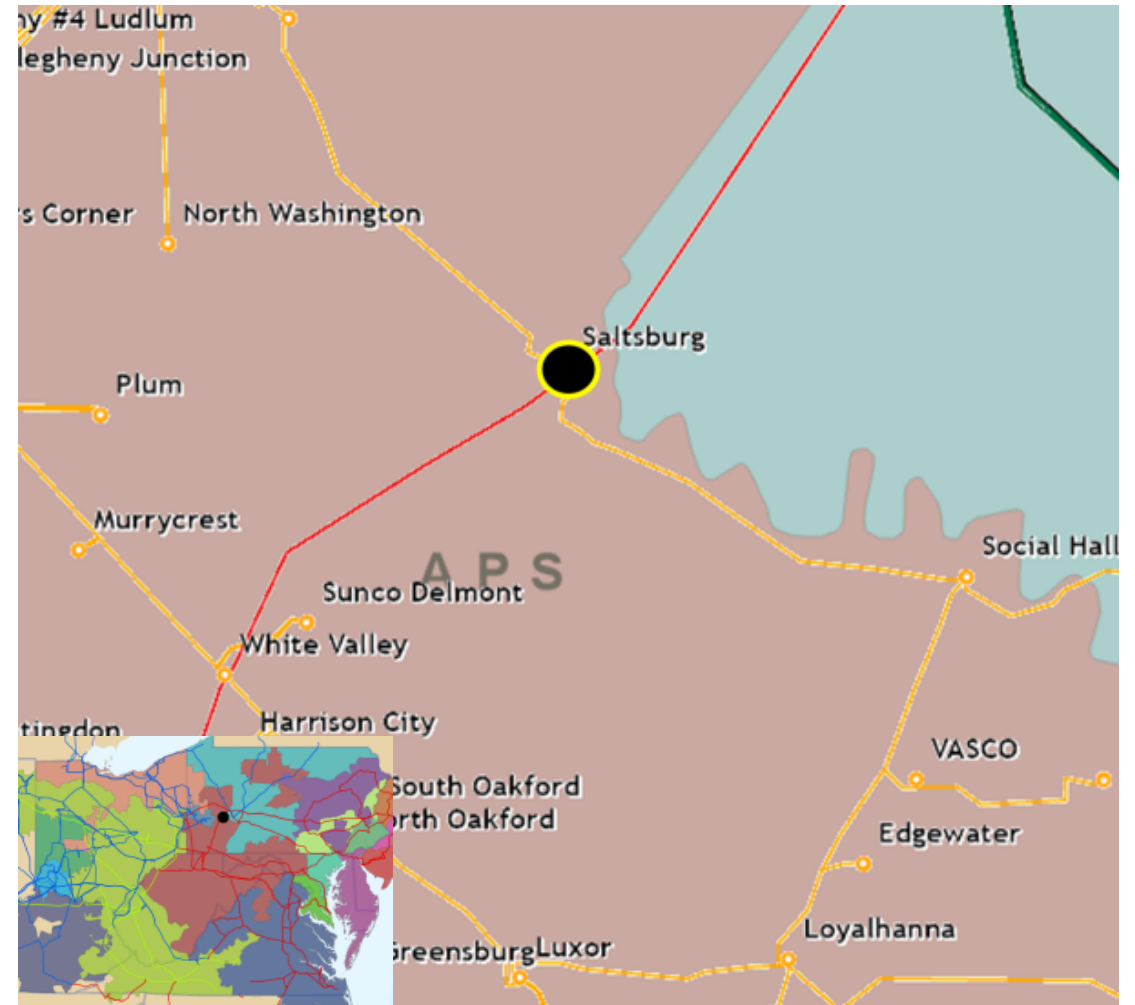
Transmission line ratings are limited by terminal equipment.

Saltsburg - Vandergrift 138 kV Line:

- Existing Line Ratings: 237 / 301 / 306 / 306 MVA (SN/SE/WN/WE)
- Existing Conductor Ratings: 237 / 301 / 306 / 398 MVA (SN/SE/WN/WE)

Saltsburg - Social Hall 138 kV Line:

- Existing Line Ratings: 283 / 349 / 332 / 402 MVA (SN/SE/WN/WE)
- Existing Conductor Ratings: 283 / 349 / 332 / 426 MVA (SN/SE/WN/WE)



Need Number: APS-2026-011
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

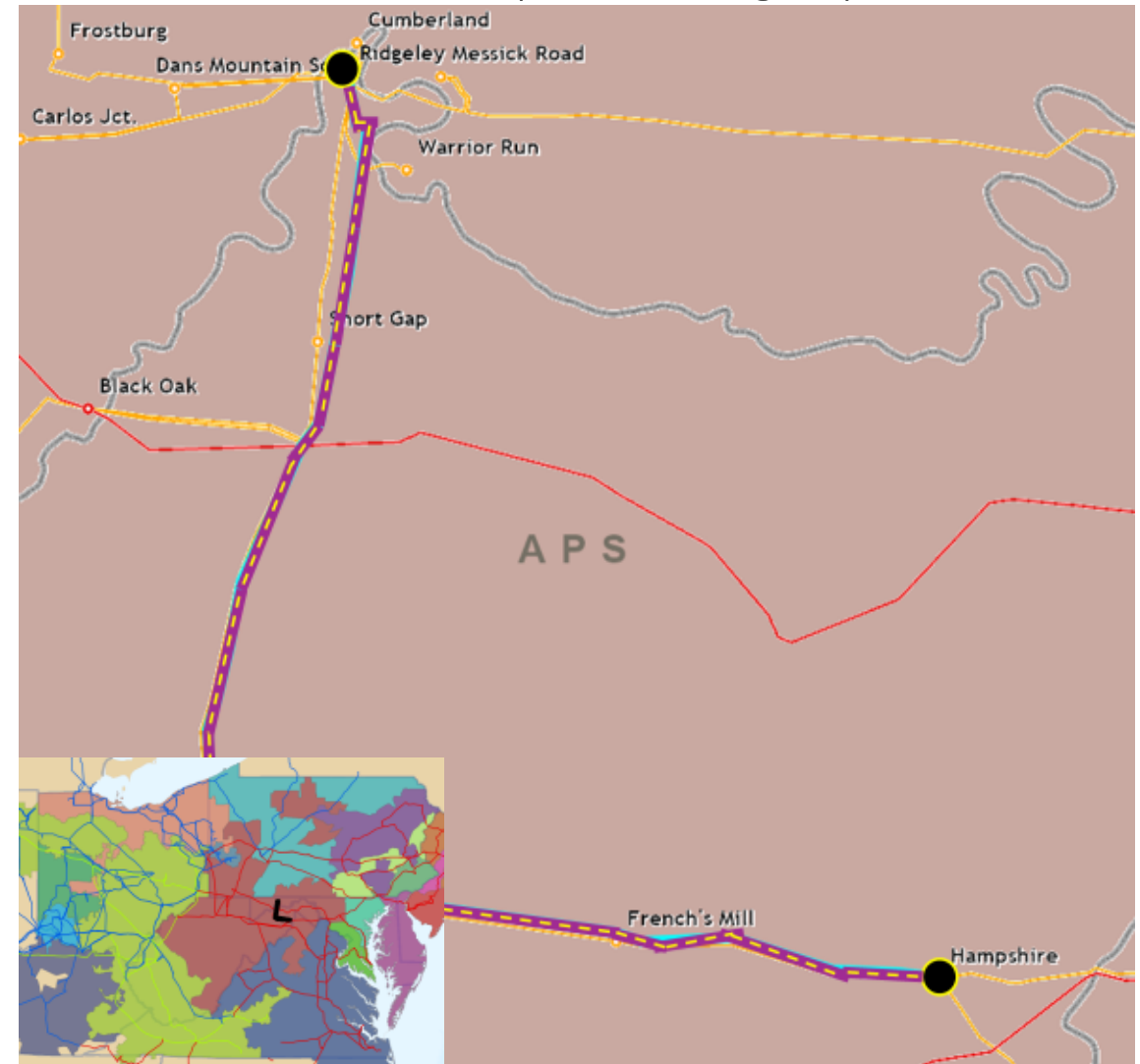
- Age/condition of wood pole transmission line structures

Problem Statement:

The Hampshire - Ridgeley 138 kV Line was constructed approximately 77 years ago and is approaching end of life. It is approximately 30 miles long and is primarily constructed with 187 wood multi-pole structures.

Per recent inspections, the line is exhibiting significant deterioration. Since 2023, 62 structures have priority maintenance conditions recorded, including woodpecker damage, deterioration, cracked wood poles, flashed insulators, and broken static bonds.

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Need Number: APS-2026-011
Process Stage: Need Meeting SRRTEP-W - 04/15/2026

Problem Statement(Cont’):

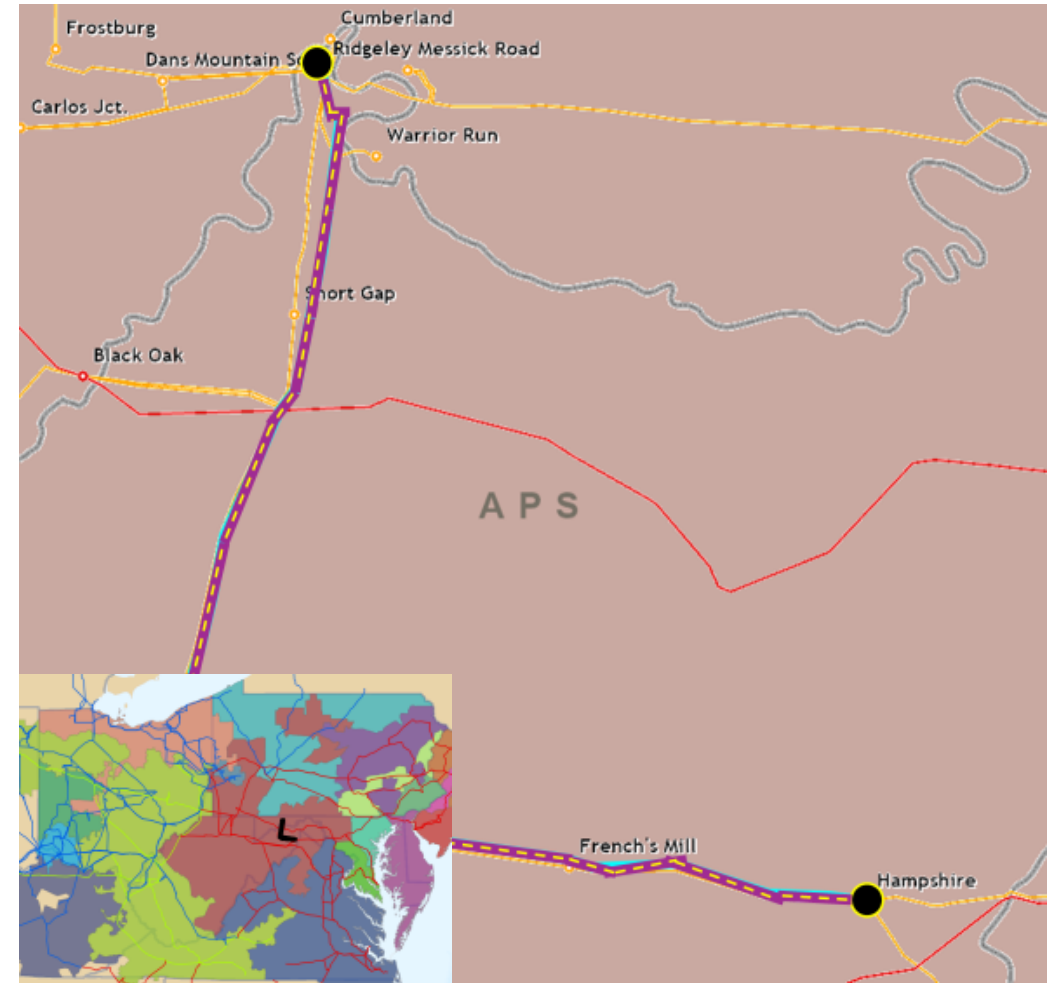
Inspection findings include:

- 2 structures are cracked
- 53 structures are deteriorated
- 5 structures have woodpecker damage
- 1 structure has flashed insulator damage
- 1 structure has a broken static wire attachment

The line has experienced one unplanned outage over the last five years. The line is limited by the transmission conductor.

Hampshire - Ridgeley 138 kV Line:

- Existing Line and Conductor Rating: 160 / 192 / 180 / 228 MVA (SN/SE/WN/WE)



Need Number: APS-2026-012
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

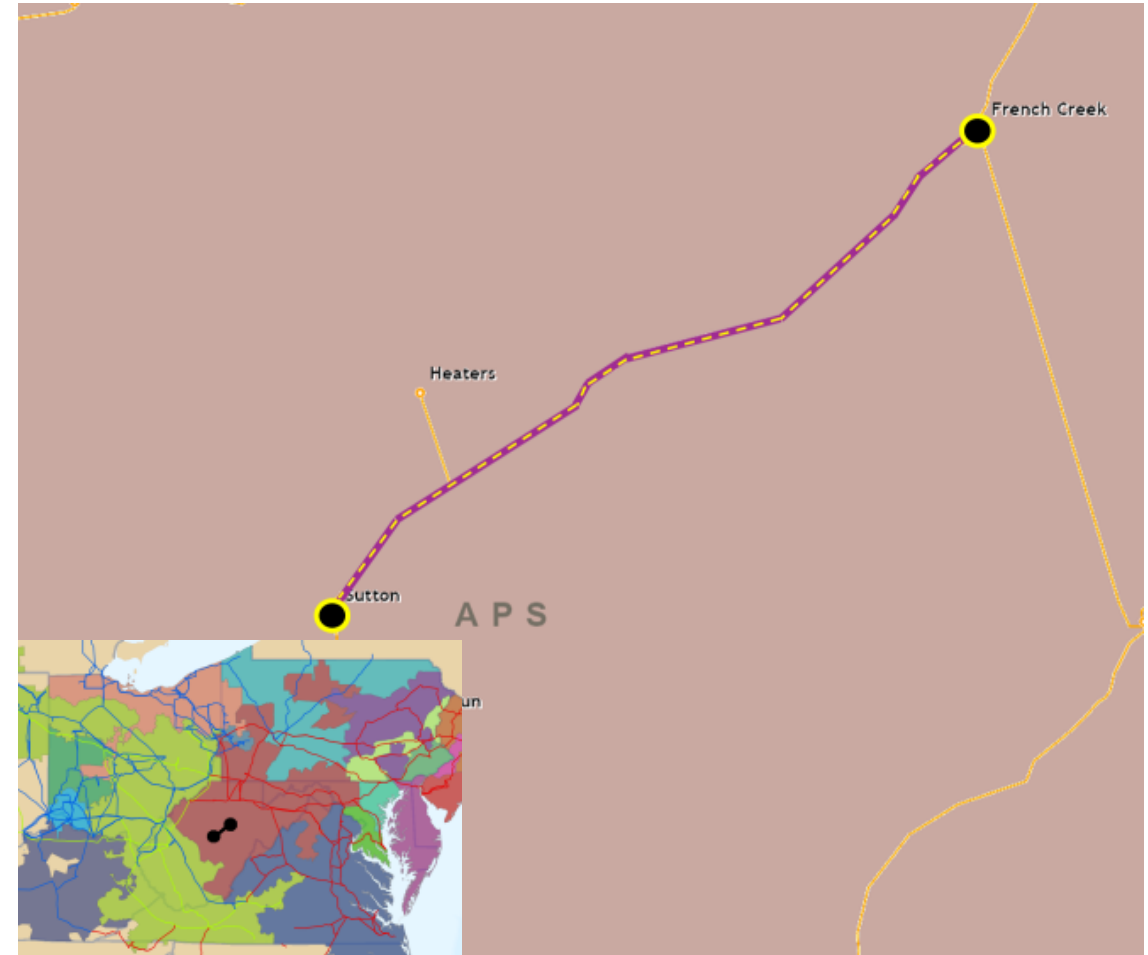
Problem Statement:

The French Creek - Sutton 138 kV Line was constructed approximately 78 years ago and is approaching end of life. It is 30.5 miles long with 248 wood pole structures of which 210 structures were installed approximately 49 years ago.

Per recent inspections, the line is exhibiting deterioration. Inspection findings include:

- Five structures have phase-raisers
- Five structure replacements have been completed in past two years due to deteriorating conditions observed.
- 172 structures failed inspection due to woodpecker damage, top rot, decay, cracking, and delamination of cross-arms, of which 138 structures require repairs.
- Seven structures require repairs to insulators and related hardware, indicating that components are reaching end of life.

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Need Number: APS-2026-012
Process Stage: Need Meeting SRRTEP-W - 04/15/2026

Problem Statement(Cont’):

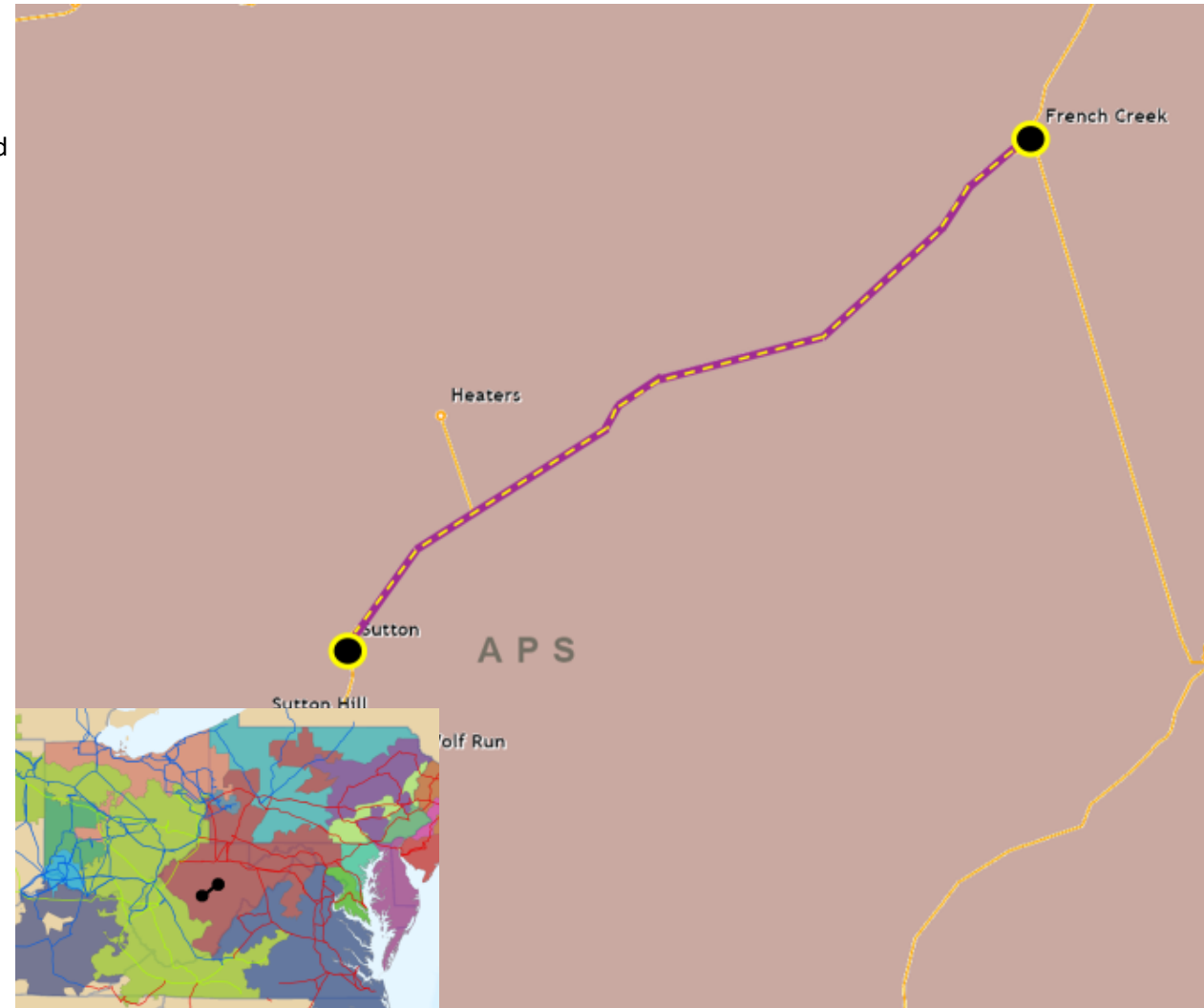
There were 208 priority maintenance repairs recorded since 2014 of which 172 were recorded in 2023.

French Creek - Heaters Tap 138 kV Line:

- Existing line and conductor rating: 107 / 128 / 120 / 152 MVA (SN/SE/WN/WE)

Heaters Tap - Sutton 138 kV Line:

- Existing line and conductor rating: 107 / 128 / 120 / 152 MVA (SN/SE/WN/WE)



Need Number: APS-2026-013
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
 - Load at Risk and/or Customers Affected
 - Expand Bus Configuration
 - Build New Transmission Line

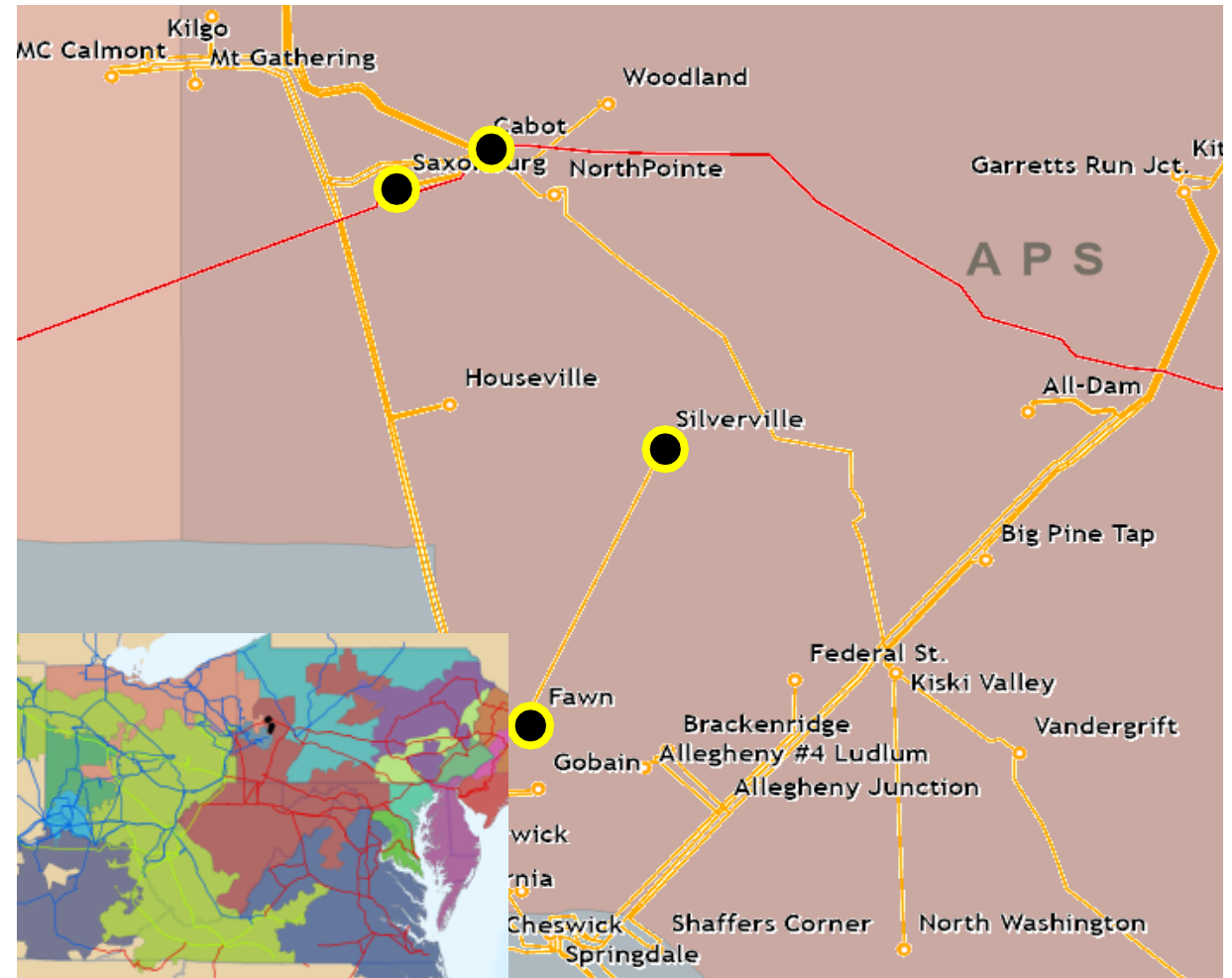
Problem Statement:
 The Cabot - Saxonburg 138 kV Line is a radial line that is 3.7 miles long and serves approximately 2,950 customers and 13.5 MW of load.

The Fawn - Silverville 138 kV Line is a radial line that is 5.7 miles long and serves approximately 4,020 customers and 15.5 MW of load.

An N-1 loss of either respective line results in the loss of the load.

An N-1-1 loss of the Cabot - Fawn - McCalmont (Lawson Jct) 138 kV Line and the Pittsburgh Mills - Springdale 138 kV Line results in voltage collapse on the 25 kV buses at Pittsburgh Mills, Gobain, Fawn, and Silverville. It also results in thermal overloads on the 25 kV lines between Houseville Substation and Fawn Substation.

In the last five years, the Fawn - Silverville 138 kV Line has experienced one unscheduled, sustained outage.



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: APS-2024-085
Process Stage: Solution Meeting SRRTEP-W – 04/15/2026
Previously Presented: Need Meeting SRRTEP-W – 10/18/2024

Project Driver:
Equipment Condition/Performance/Risk

Specific Assumption References:

System Performance Projects Global Factors

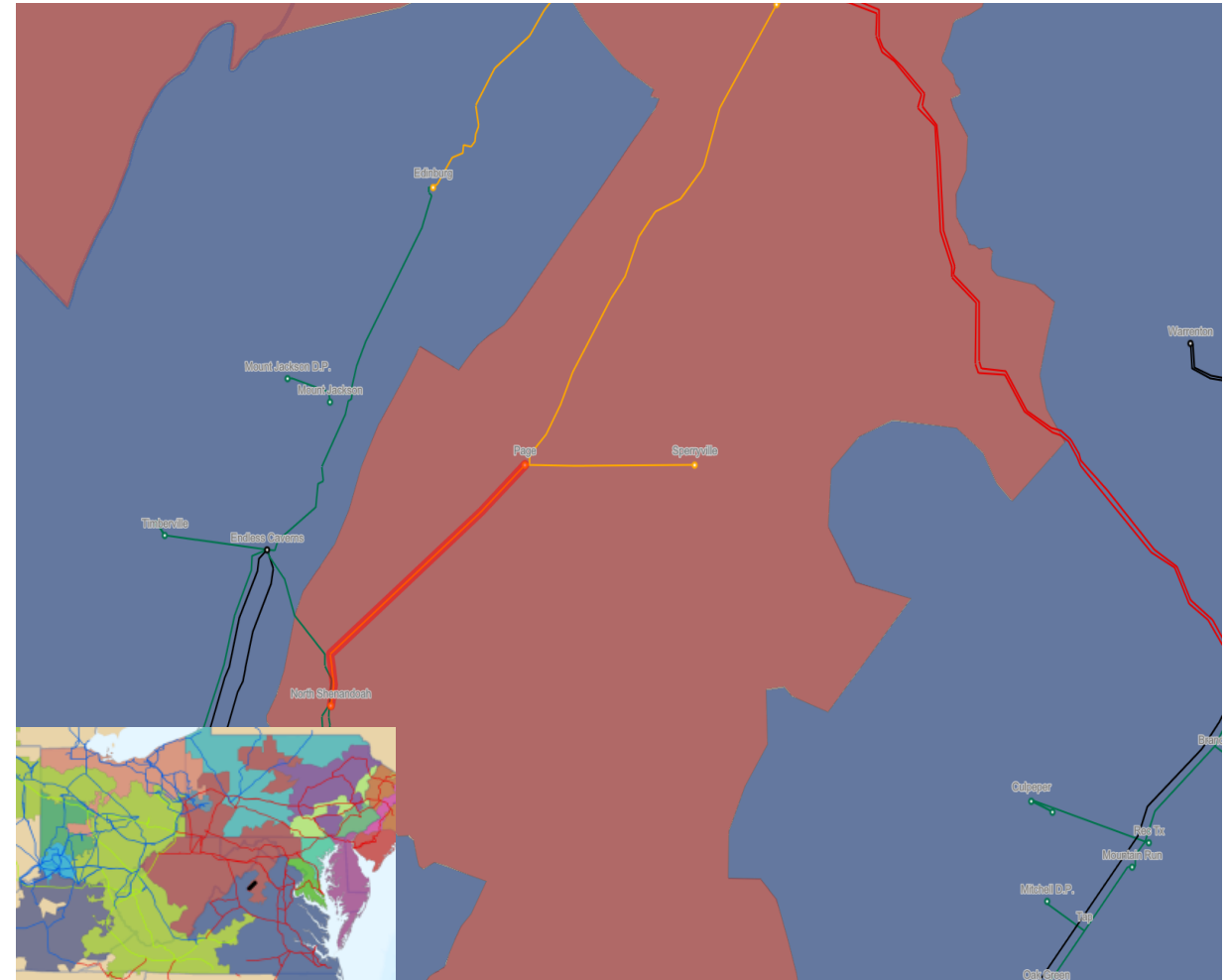
- System reliability and performance
- Substation/line equipment limits System Condition Projects
- Substation Condition Rebuild/Replacement Upgrade Relay Schemes
- Obsolete and difficult to repair communication equipment (DTT, Blocking, etc.)
- Communication technology upgrades

Problem Statement:

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. Transmission line ratings are limited by terminal equipment.

North Shenandoah – Page 138 kV Line

- Existing Line Rating MVA (SN / SE / WN / WE): 292 / 306 / 306 / 306
- Existing Conductor Rating MVA (SN / SE / WN / WE): 308 / 376 / 349 / 445



Need Number: APS-2024-085
Process Stage: Solution Meeting SRRTEP-W – 04/15/2026

Proposed Solution:

At North Shenandoah Substation, replace 138 kV substation conductor, CVT, circuit breaker and associated disconnect switches and relaying.
At Page Substation, replace 138 kV wave trap, line turner and coax, CVT and relaying.
North Shenandoah - Page 138 kV Line

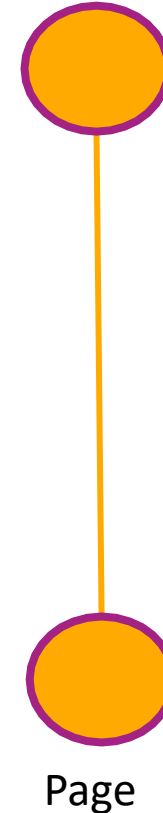
- Before Proposed Solution: 292 / 306 / 306 / 306 MVA (SN/SE/WN/WE)
- After Proposed Solution: 308 / 376 / 349 / 445 MVA (SN/SE/WN/WE)

Alternatives Considered:

Maintain equipment in existing condition with elevated risk of misoperations.

Estimated Project Cost: \$4.06M
Projected In-Service: 06/01/2029
Status: Conceptual
Model: 2024 RTEP model for 2029 Summer & Winter (50/50)

North Shenandoah



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

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