# Subregional RTEP Committee – Western
# FirstEnergy Supplemental Projects

## APS Transmission Zone

January 16, 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

# APS Transmission Zone M-3 Process
# Smithton 138 kV Substation

**Need Number:** APS-2026-001

**Process Stage:** Need Meeting 01/16/2026

**Project Driver:**

Operational Flexibility and Efficiency

**Specific Assumption Reference:**

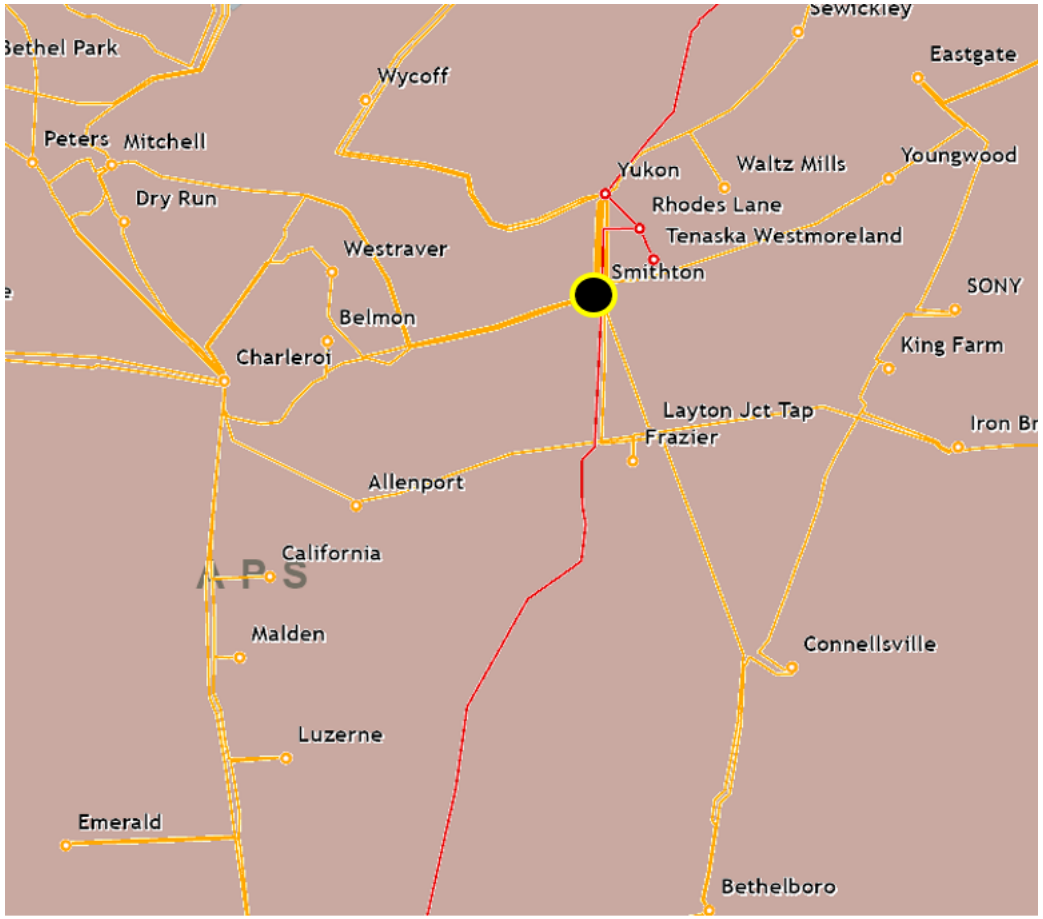
System Performance Projects

- 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:**

Smithton Substation is currently configured as a 138 kV straight bus with a feed from the Charleroi - Mitchell - Yukon 138 kV Line (Shepler Hill Jct) and the Allenport - Iron Bridge - Yukon 138 kV Line (Layton Jct). Smithton Substation also serves two distribution transformers, totaling approximately 4,300 customers and 10 MW of load.

There is a normally open 138 kV bus tie that cannot be closed when the Shepler Hill Jct 138 kV Line is energized, as it does not have the ability to clear certain fault scenarios. Therefore, each distribution transformer at Smithton Substation is served radially and requires Operational switching to restore customers upon loss of 138 kV source.



# APS Transmission Zone M-3 Process Misoperation Relay Projects

**Need Number:** APS-2026-002

**Process Stage:** Need Meeting 01/16/2026

**Project Driver:**

Equipment Condition/Performance/Risk

**Specific Assumption Reference:**

System Performance Projects Global Factors

- System reliability and performance
- Substation/line equipment limits

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.

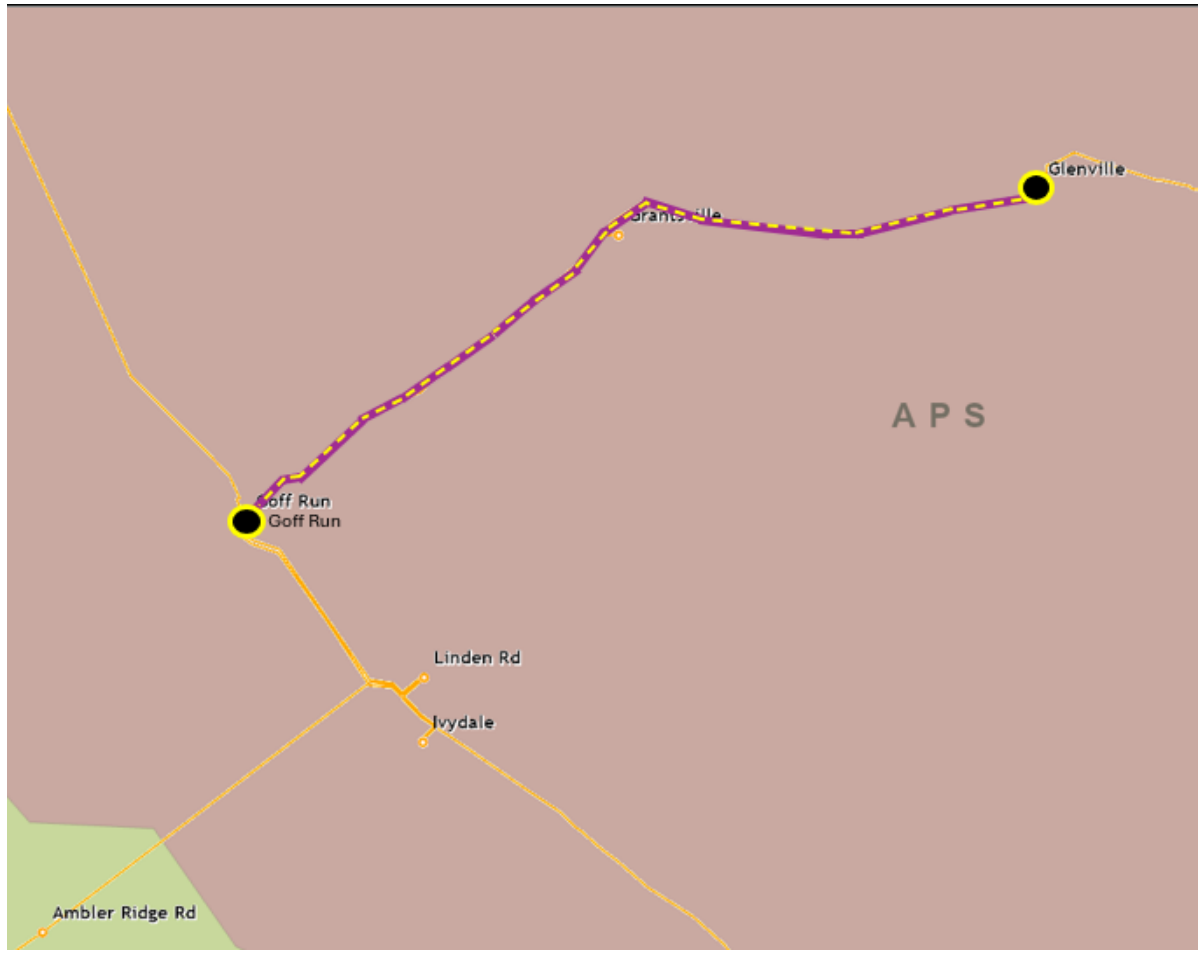
Transmission line ratings are limited by terminal equipment.

Goff Run - Grantsville 138 kV Line:

- Existing Line Rating: 195 / 209 / 217 / 229 MVA (SN/SE/WN/SE)
- Existing Conductor Rating: 221 / 268 / 250 / 317 MVA (SN/SE/WN/SE)

Grantsville - Glenville 138 kV Line:

- Existing Line Rating: 195 / 209 / 217 / 229 MVA (SN/SE/WN/SE)
- Existing Conductor Rating: 221 / 268 / 250 / 317 MVA (SN/SE/WN/SE)



# APS Transmission Zone M-3 Process
# Joffre 138 kV Substation

**Need Number:** APS-2026-003

**Process Stage:** Need Meeting 01/16/2026

**Project Driver:**

Customer Service

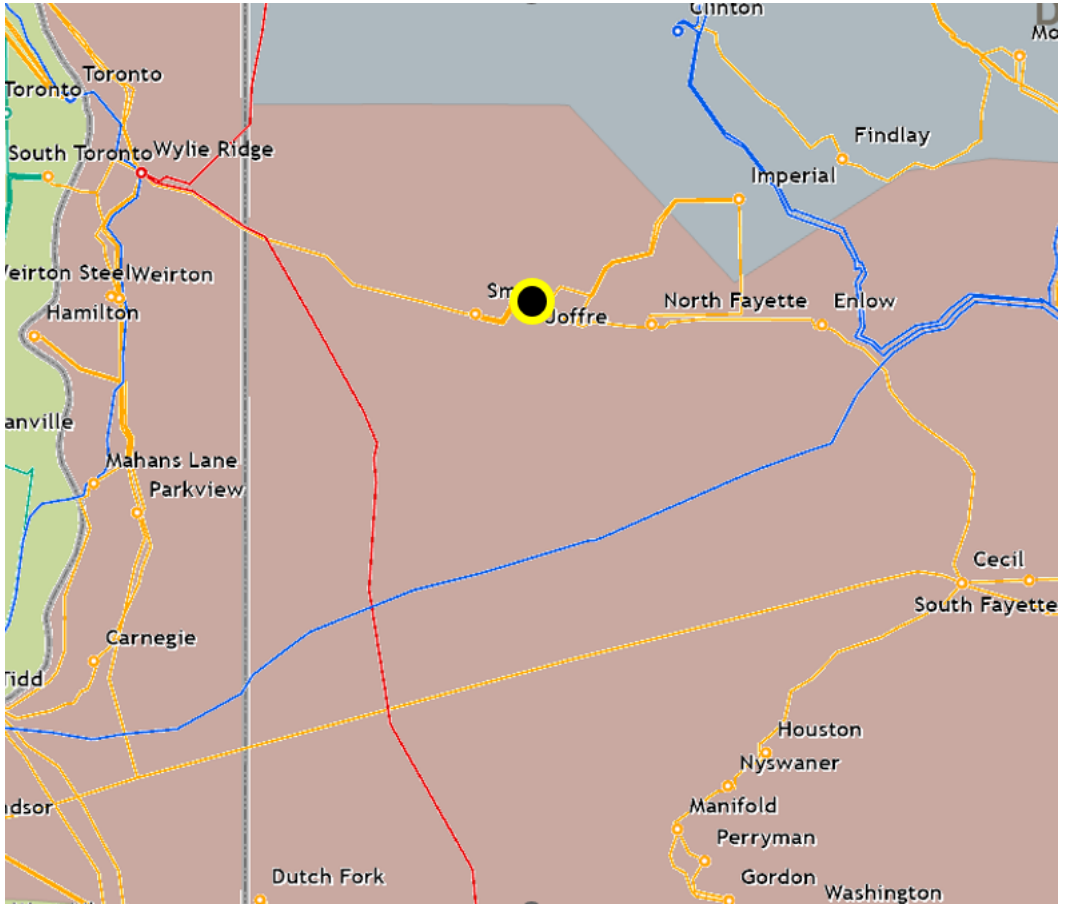
**Specific Assumption Reference:**

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

**Problem Statement:**

Existing Customer Connection - A customer located near the existing Joffre Substation requested an increase of load at the existing 138 kV delivery point. The anticipated load increase is 79 MVA for a total load of 99 MVA.

The requested in-service date is 05/27/2027.



# APS Transmission Zone M-3 Process
# Bredinville - McCalmont 138 kV Line

**Need Number:** APS-2026-004

**Process Stage:** Need Meeting 01/16/2026

**Project Driver:**

Customer Service

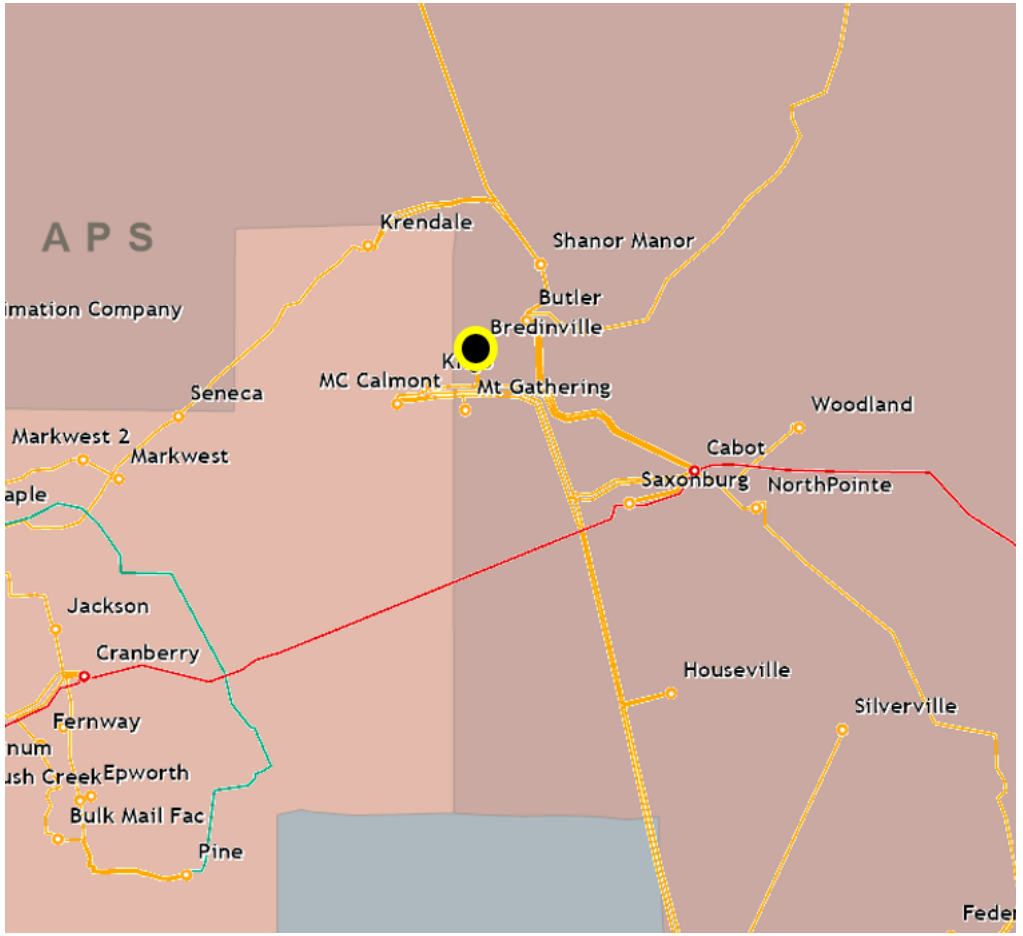
**Specific Assumption Reference:**

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 customer located near the existing Bredinville - McCalmont 138 kV Line requested a new 138 kV delivery point. The anticipated load of the new customer connection is 80 MW.

Anticipated in-service date is 3/15/2028.



# 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

# APS Transmission Zone M-3 Process
# Loughs Lane - Pickens 138 kV Line

**Need Number:** APS-2025-016

**Process Stage:** Solution Meeting - 01/16/2026

**Previously Presented:** Need Meeting - 05/16/2025

**Project Driver:**

*Equipment Condition/Performance/Risk*

**Specific Assumption Reference:**

System Performance Global Factors

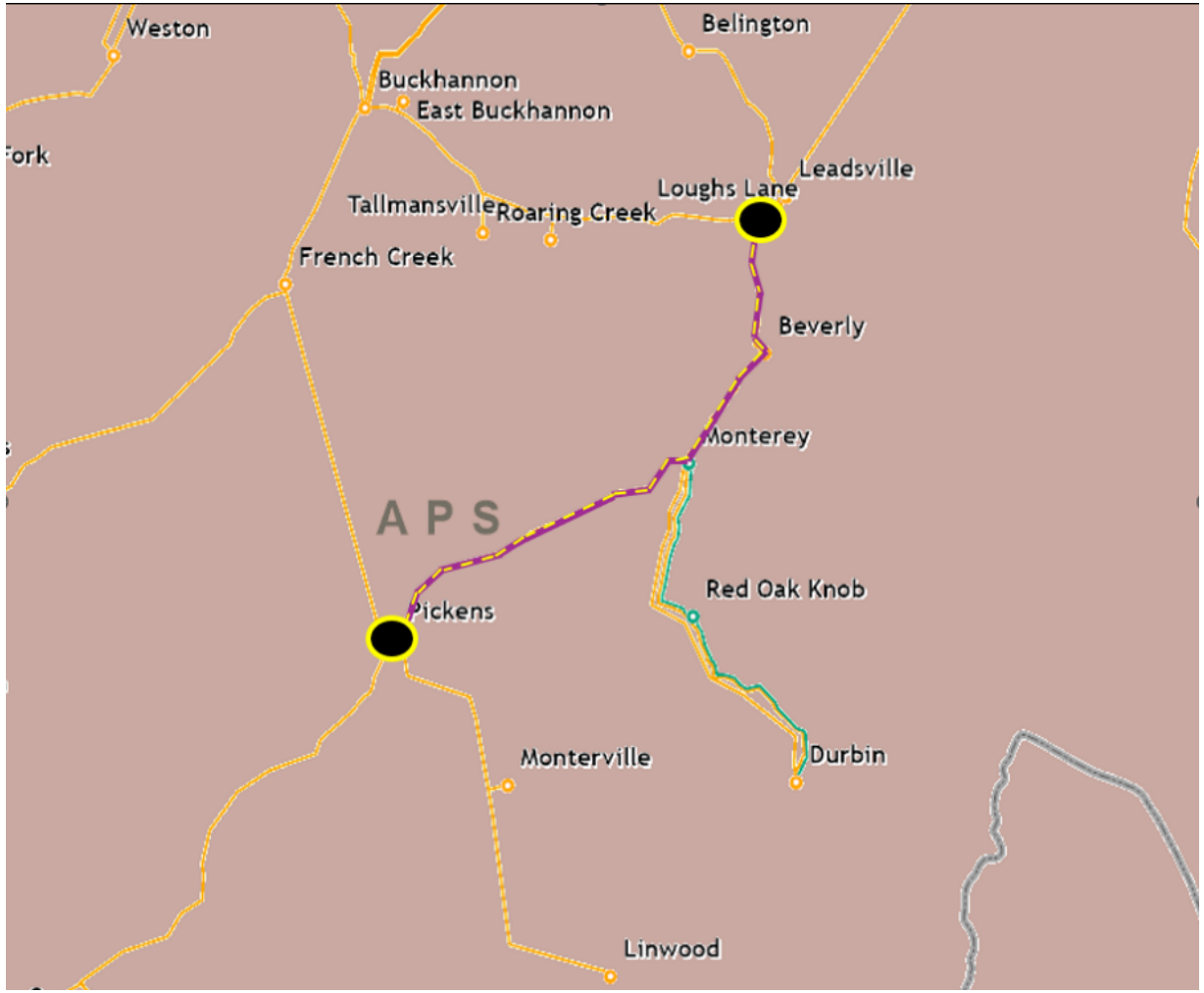
- System reliability/performance
- Substation/Line equipment limits
- Line Condition Rebuild/Replacement

**Problem Statement:**

- Line Switch 1007 on the Loughs Lane - Pickens 138 kV Line at Durbin Tap is obsolete and underrated.
- The Transmission Line ratings are limited by the switch.

Beverly Tap - Durbin Tap 138 kV Branch

- Existing Line Ratings: 164 / 206 / 216 / 248 MVA (SN/SE/WN/WE)
- Existing Conductor Ratings: 169 / 213 / 217 / 280 MVA (SN/SE/WN/WE)



# APS Transmission Zone M-3 Process
# Loughs Lane - Pickens 138 kV Line

**Need Number:** APS-2025-016

**Process Stage:** Solution Meeting - 01/16/2026

**Proposed Solution:**

Loughs Lane - Pickens 138 kV Line switch 1007

- Replace the Line Switch 1007 on the Loughs Lane - Pickens 138 kV Line at the Durbin Tap.

Beverly Tap - Durbin Tap 138 kV Line

- Before Proposed Solution: 164 / 206 / 216 / 248 MVA (SN/SE/WN/WE)
- After Proposed Solution: 169 / 213 / 217 / 280 MVA (SN/SE/WN/WE)

**Alternatives Considered:**

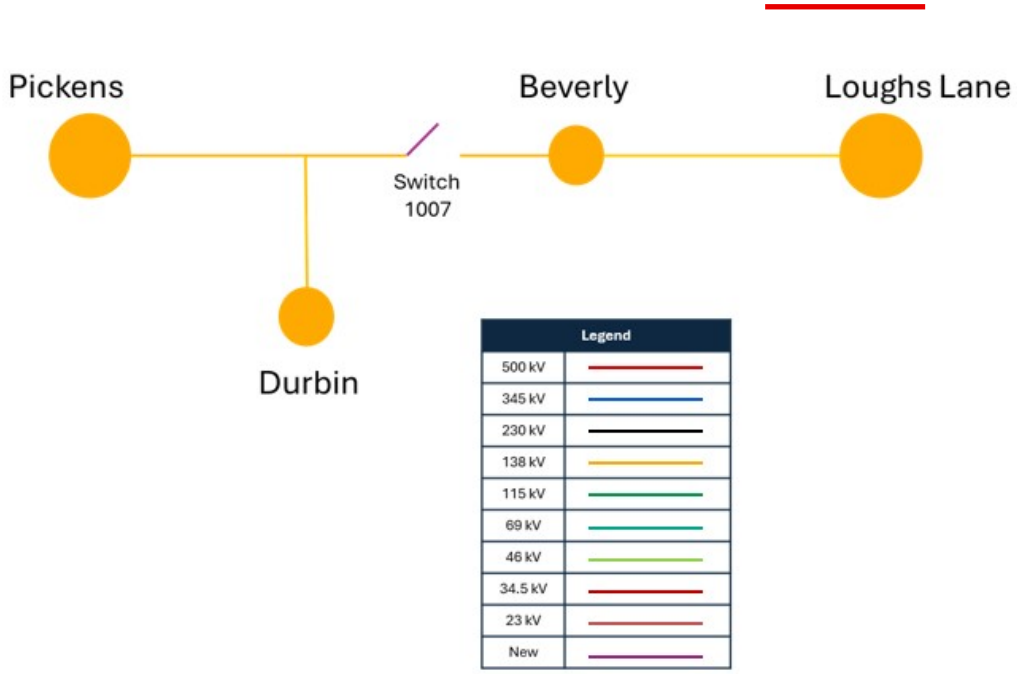
Maintain equipment in existing condition with elevated risk of switch failure.

**Estimated Project Cost:** $1.05M

**Projected In-Service:** 12/31/2026

**Project Status:** Conceptual

**Model:** 2024 RTEP model for 2029 Summer & Winter (50/50)



# APS Transmission Zone M-3 Process
# Glenville - Weston 138 kV Line

**Need Number:** APS-2025-074

**Process Stage:** Solution Meeting - 01/16/2026

**Previously Presented:** Need Meeting - 08/16/2024

**Project Driver:**

*Equipment Condition/Performance/Risk*

**Specific Assumption Reference:**

System Performance Global Factors

- System reliability/performance
- Substation/Line equipment limits Line Condition Rebuild/Replacement
- Age/condition of wood transmission line structures

**Problem Statement:**

- The Weston – Glenville 138 kV Line was constructed approximately 44 years ago. It is approximately 31 miles long with 30 miles of wood pole structures and one mile of steel transmission line structures.
- The line has experienced six unplanned sustained outages over the last five years. Four outages related to failure of polymer insulators on the line.
- Per recent inspections, 124 of 130 wood pole structures utilize the polymer insulators related to recent failures.

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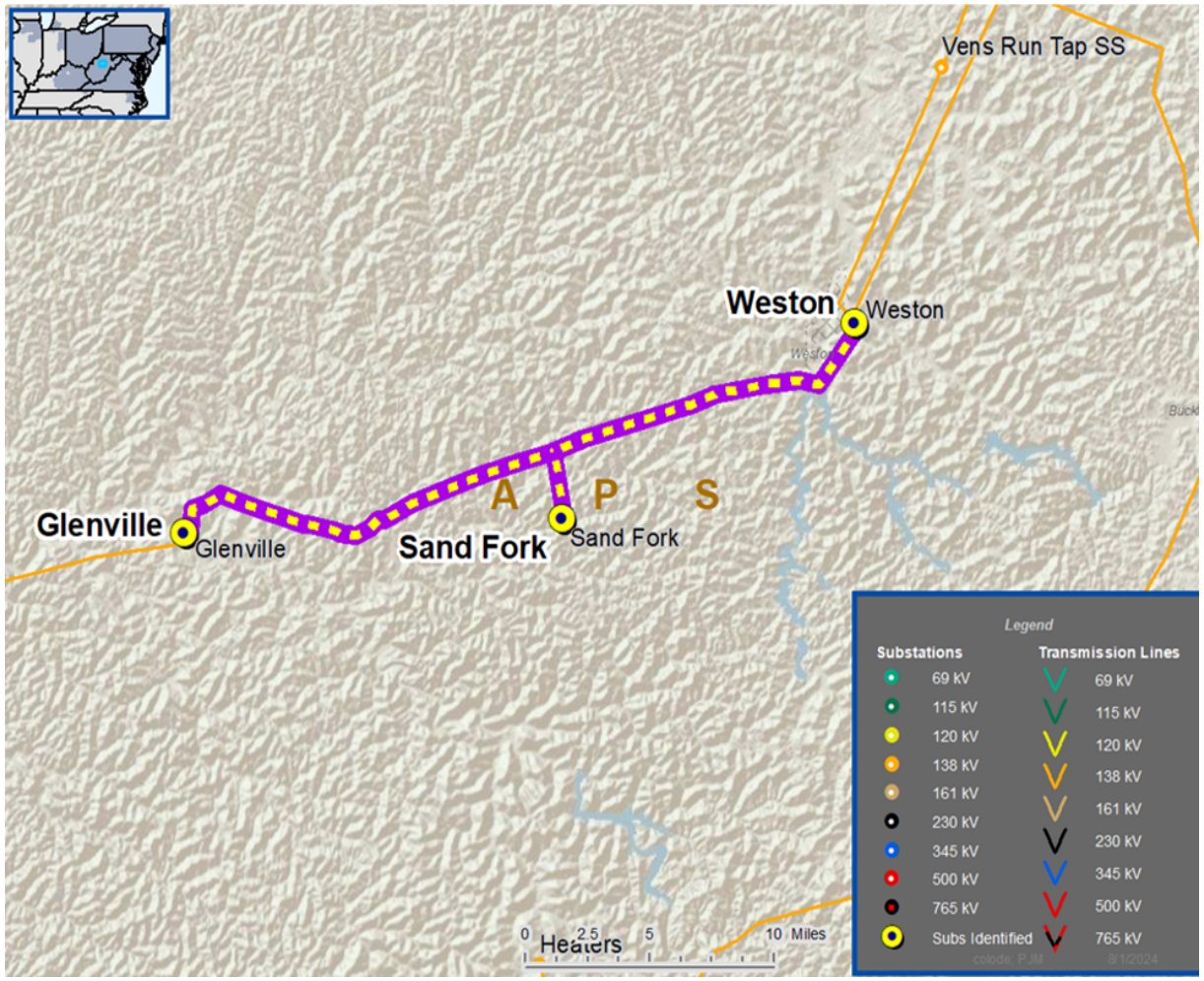


# APS Transmission Zone M-3 Process
# Glenville - Weston 138 kV Line

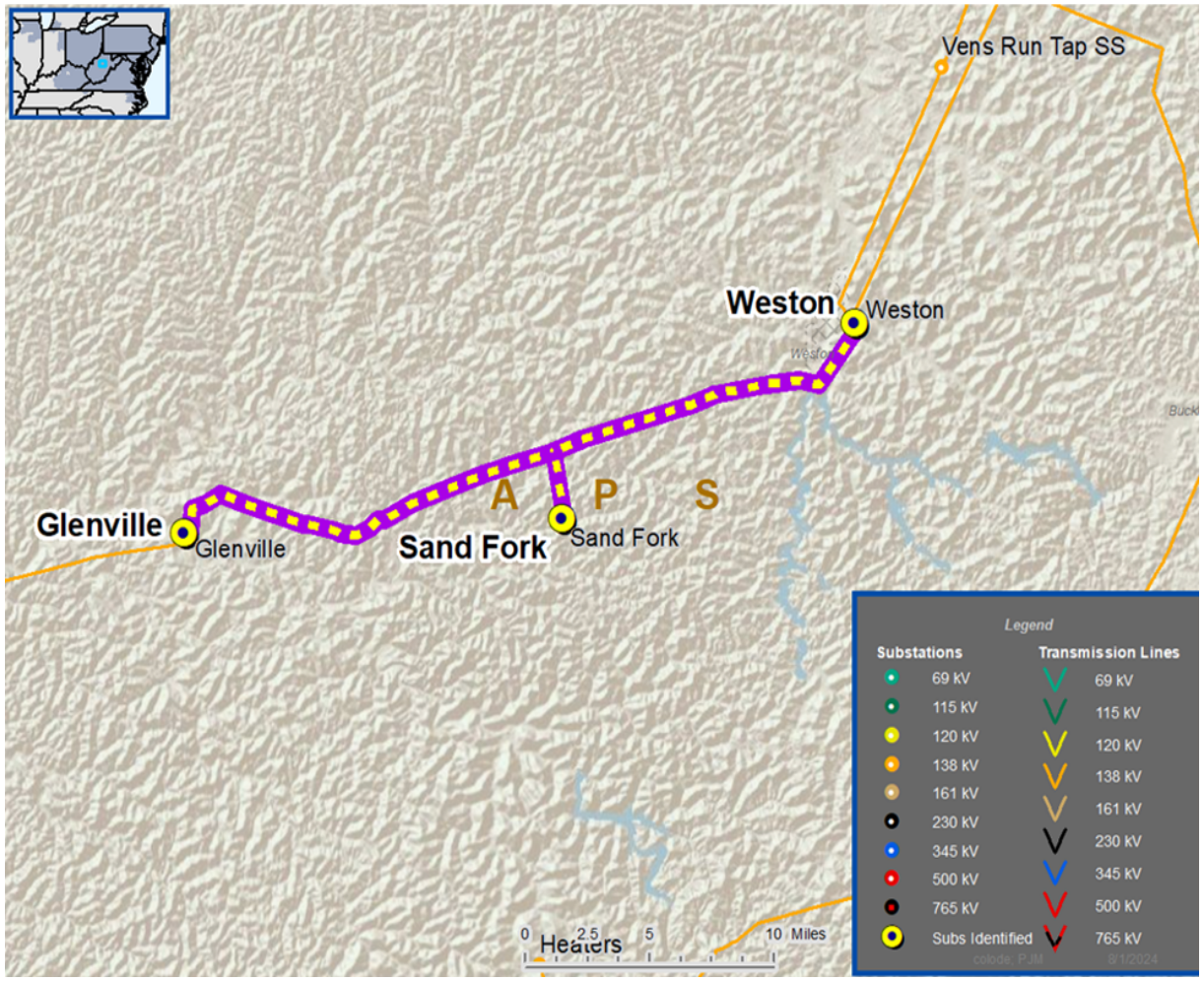
**Need Number:** APS-2025-074

**Process Stage:** Solution Meeting - 01/16/2026

**Problem Statement:**

Transmission Line / Substation Locations

- Glenville – Sand Fork Tap 138 kV Line
  - Existing Line Rating: 195 / 209 / 217 / 229 MVA (SN/SE/WN/WE)
  - Existing Conductor Rating: 221 / 268 / 250 / 317 MVA (SN/SE/WN/WE)
- Sand Fork Tap – Weston 138 kV Line
  - Existing Line Rating: 221 / 268 / 250 / 317 MVA (SN/SE/WN/WE)
  - Existing Conductor Rating: 221 / 268 / 250 / 317 MVA (SN/SE/WN/WE)



# ATSI Transmission Zone M-3 Process
# Glenville - Weston 138 kV Line

**Need Number:** APS-2025-074
**Process Stage:** Solution Meeting - 01/16/2026

**Proposed Solution:**

- Rebuild approximately 30.2 miles of Glenville - Weston 138 kV Line using steel structures and install new conductor.
- Replace one double circuit steel lattice structure #94-A with steel monopole structure.

At Glenville Substation:

- Replace line trap, substation conductor, and revise relay settings.

At Weston Substation:

- Replace substation conductor and revise relay settings.

Glenville - Sand Fork Tap 138 kV Line Ratings:

- Before Proposed Solution: 195 / 209 / 217 / 229 MVA (SN/SE/WN/WE)
- After Proposed Solution: 278 / 339 / 315 / 401 MVA (SN/SE/WN/WE)

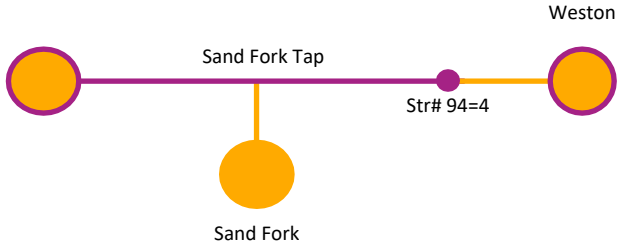
Sand Fork Tap - Weston 138 kV Line Ratings:

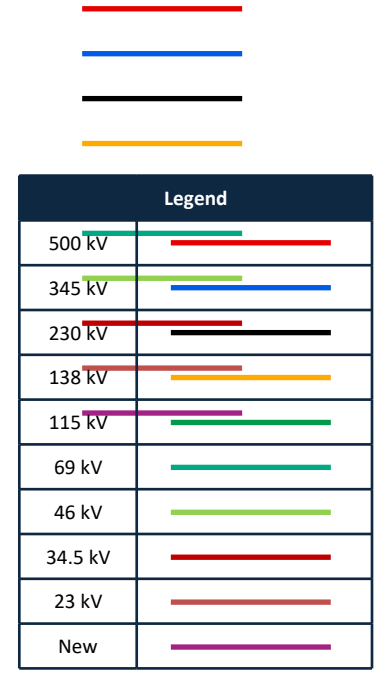
- Before Proposed Solution: 221 / 268 / 250 / 317 MVA (SN/SE/WN/WE)
- After Proposed Solution: 278 / 339 / 315 / 401 MVA (SN/SE/WN/WE)

**Alternatives Considered:**

Maintain the line in existing condition with elevated risk of failure due polymer insulators.

**Estimated Project Cost:** $89.52M
**Projected In-Service:** 12/15/2030
**Project 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

01/06/2026– V1 – Original version posted to pjm.com