

Subregional RTEP Committee – Western FirstEnergy Supplemental Projects

May 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-2026-031
Process Stage: Need Meeting 05/15/2026
Project Driver: Equipment Condition/Performance/Risk

Specific Assumption Reference:

- System Performance Global Factors
- System reliability/performance
- Line Condition Rebuild/Replacement
- Age/condition of steel-lattice transmission line structures

Problem Statement:

The Ashtabula-Leroy Center 138 kV Q-1 Line and the Ashtabula-Leroy Center 138 kV Q-2 Line were constructed on common structures approximately 96 years ago and are approaching end of life. The line is approximately 28 miles long with 242 steel lattice transmission line structures.

The Ashtabula-Stacy-Leroy Center 138 kV Q-3 Line and the Ashtabula-Leroy Center 138 kV Q-4 Line were constructed on common structures approximately 96 years ago and are approaching end of life. The line is approximately 55 miles long with 233 wood poles and 166 steel lattice transmission line structures.

The existing conductor for the Ashtabula-Leroy Center 138 kV Q-1, Q-2, Q-3, and Q-4 lines is copper conductor. The low capacity of the conductor limits the current carrying capability and causes protection concerns for fault events.

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Need Number: ATSI-2026-031
Process Stage: Need Meeting 05/15/2026

Problem Statement (Cont’):

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

Ashtabula-Leroy Center 138 kV Q-1 Line and Ashtabula-Leroy Center 138 kV Q-2 Line:

- 29 structures show signs of rust
- 4 structures are physically broken

Ashtabula-Stacy-Leroy Center 138 kV Q-3 Line and Ashtabula-Leroy Center 138 kV Q-4 Line:

- 2 structures show signs of rust
- 14 structures are physically broken or exhibiting burn damage

Since 2020, there were a total of eight unscheduled, sustained outages on the lines: three on the Ashtabula-Leroy Center 138 kV Q-1 Line, four on the Ashtabula-Stacy-Leroy Center 138 kV Q-3 Line, and one on the Ashtabula-Leroy Center 138 kV Q-4 Line.

Ashtabula-Leroy Center 138 kV Q-1 Line:

Ashtabula-Sanborn 138 kV Q-1 Line Existing Transmission Line and Conductor Ratings:

- 118 / 121 / 133 / 133 MVA (SN/SE/WN/WE)

Sanborn-Austinburg 138 kV Q-1 Line Existing Transmission Line and Conductor Ratings:

- 148 / 151 / 166 / 166 MVA (SN/SE/WN/WE)

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Need Number: ATSI-2026-031

Process Stage: Need Meeting 05/15/2026

Problem Statement (Cont’):

Austinburg-Leroy Center 138 kV Q-1 Line Existing Transmission Line and Conductor Ratings:

- 148 / 151 / 166 / 166 MVA (SN/SE/WN/WE)

Ashtabula-Leroy Center 138 kV Q-2 Line:

Ashtabula-Sanborn 138 kV Q-2 Existing Transmission Line and Conductor Ratings:

- 118 / 121 / 133 / 133 MVA (SN/SE/WN/WE)

Sanborn-Austinburg 138 kV Q-2 Existing Transmission Line and Conductor Ratings:

- 148 / 151 / 166 / 166 MVA (SN/SE/WN/WE)

Austinburg-Spruce 138 kV Q-2 Existing Transmission Line and Conductor Ratings:

- 148 / 151 / 166 / 166 MVA (SN/SE/WN/WE)

Spruce-Leroy Center 138 kV Q-2 Existing Transmission Line and Conductor Ratings:

- 148 / 151 / 166 / 166 MVA (SN/SE/WN/WE)

Ashtabula-Stacy-Leroy Center 138 kV Q-3 Line:

Ashtabula-Stacy 138 kV Q-3 Existing Transmission Line and Conductor Ratings:

- 118 / 121 / 133 / 133 MVA (SN/SE/WN/WE)

Stacy-Leroy Center 138 kV Q-3 Existing Transmission Line and Conductor Ratings:

- 148 / 151 / 166 / 166 MVA (SN/SE/WN/WE)

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Need Number: ATSI-2026-031
Process Stage: Need Meeting 05/15/2026

Problem Statement (Cont’):

Ashtabula-Leroy Center 138 kV Q-4 Line:

Ashtabula-Sanborn 138 kV Q4 Existing Transmission Line and Conductor Ratings:

- 118 / 121 / 133 / 133 MVA (SN/SE/WN/WE)

Sanborn-Spruce 138 kV Q-4 Existing Transmission Line and Conductor Ratings:

- 148 / 151 / 166 / 166 MVA (SN/SE/WN/WE)

Spruce-Leroy Center 138 kV Q-4 Existing Transmission Line and Conductor Ratings:

- 148 / 151 / 166 / 166 MVA (SN/SE/WN/WE)



Need Number: ATSI-2026-036
Process Stage: 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.

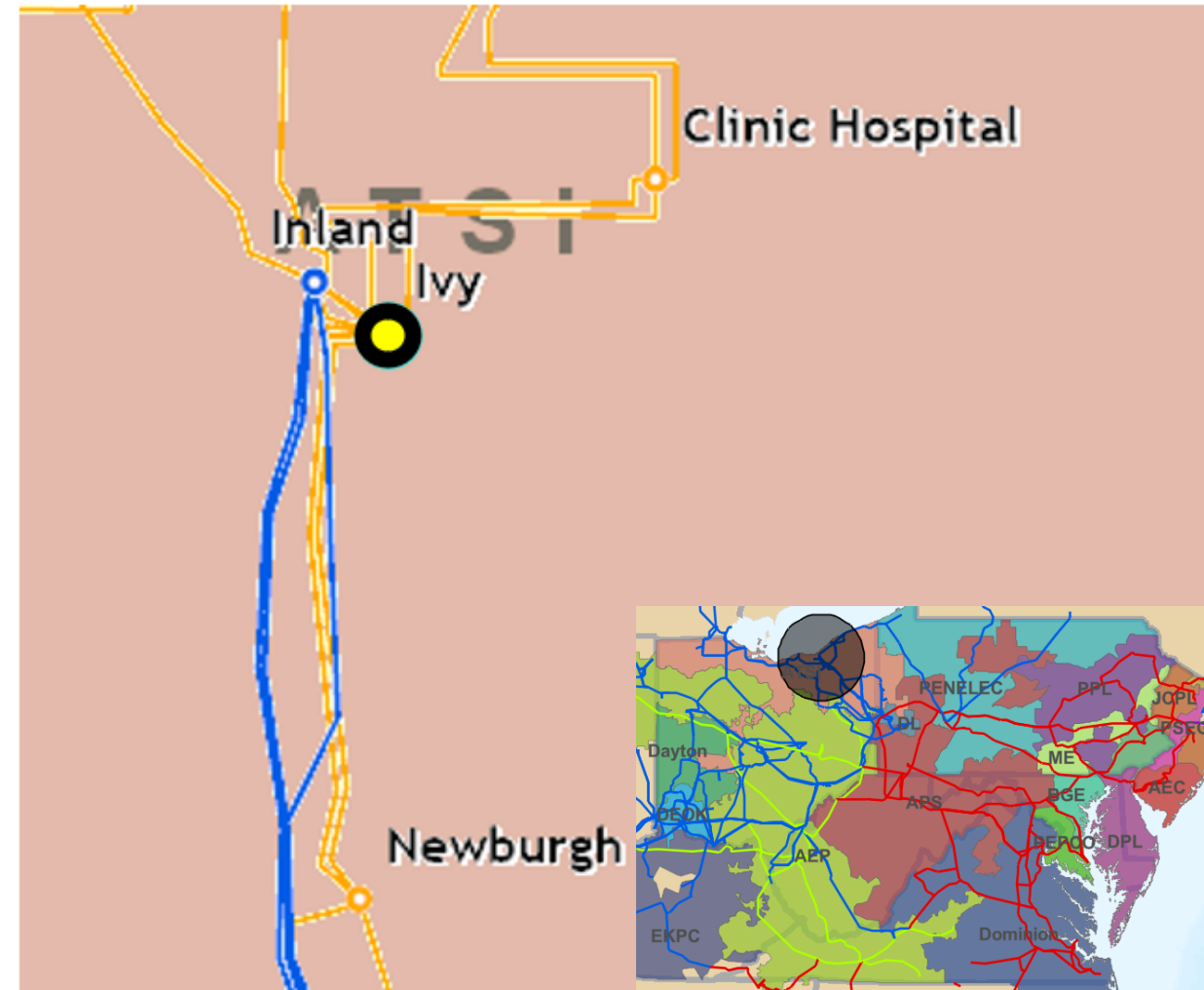
Bus No. 2 includes the Inland-Ivy 138 kV Q-14 Line, Ivy-Juniper-Newburgh 138 kV Q-18 Line, and 138-36 kV transformer No. 1.

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-2026-039
Process Stage: Need Meeting 05/15/2026
Project Driver: Customer Service

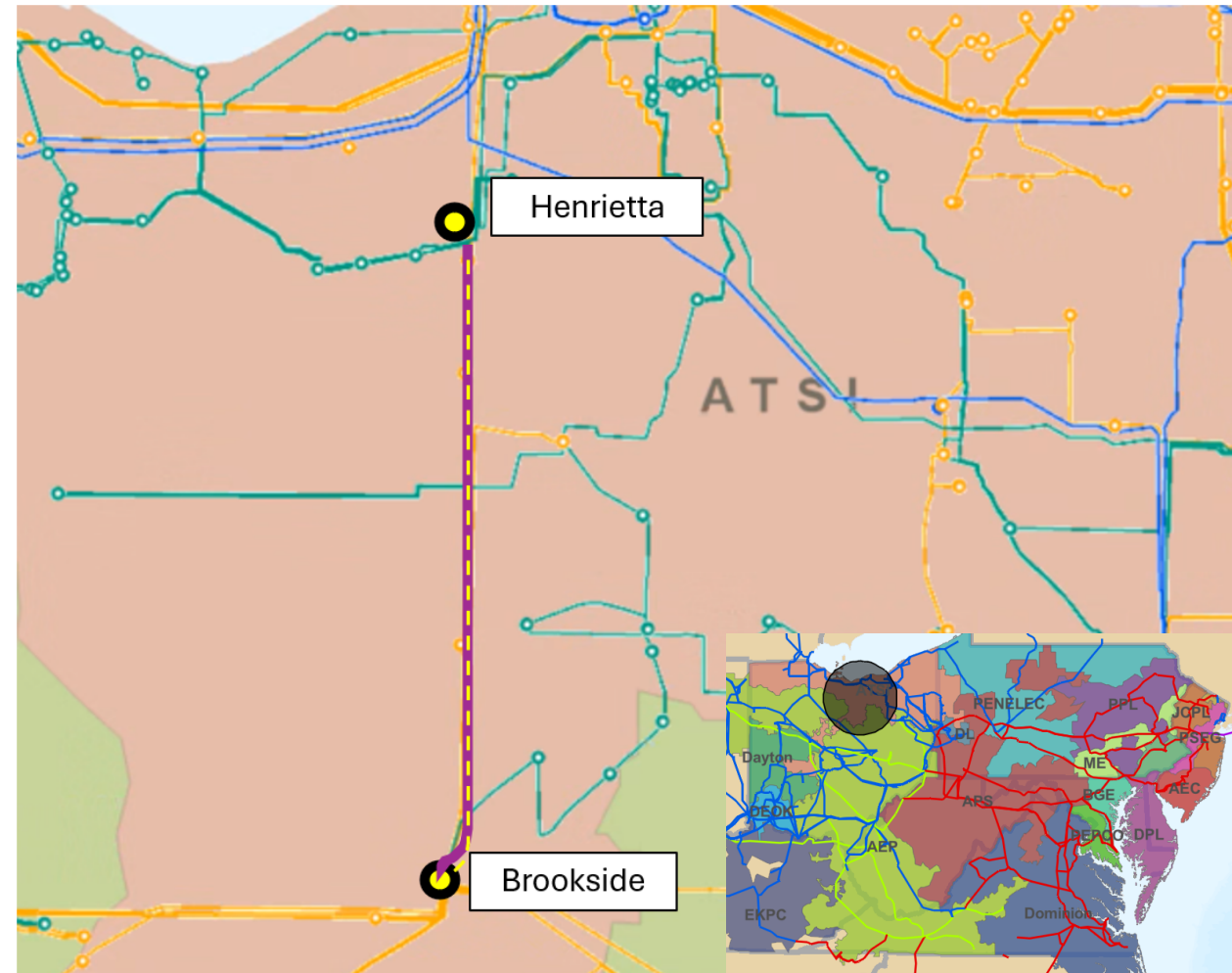
Specific Assumption Reference:

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 wholesale customer requested 138 kV service for load of approximately 16 MW near the Brookside - Henrietta 138 kV Line. The request is approximately 4 miles from Henrietta Substation.

Requested in-service date is 7/30/2027.



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-2026-002
Process Stage: Solution Meeting SRTEP-W - 05/15/2026
Previously Presented: Need Meeting 01/16/2026
Project Driver: Equipment Condition/Performance/Risk

Specific Assumption Reference:

- System Performance Global Factors
 - System reliability/performance
 - Substation/Line equipment limits
- Substation Condition Rebuild/Replacement
 - Age/condition of substation equipment
 - Circuit breakers and other fault interrupting devices

Problem Statement:

The existing Bulk Mail Facility 138 kV breaker B4 is 61 years old and is approaching end of life. The breaker using a pneumatic system for closing energy. The system has frequent air leaks and are difficult to maintain. Due to frequent air leaks, there is a risk the breaker is unable to close due to low pneumatic pressure.

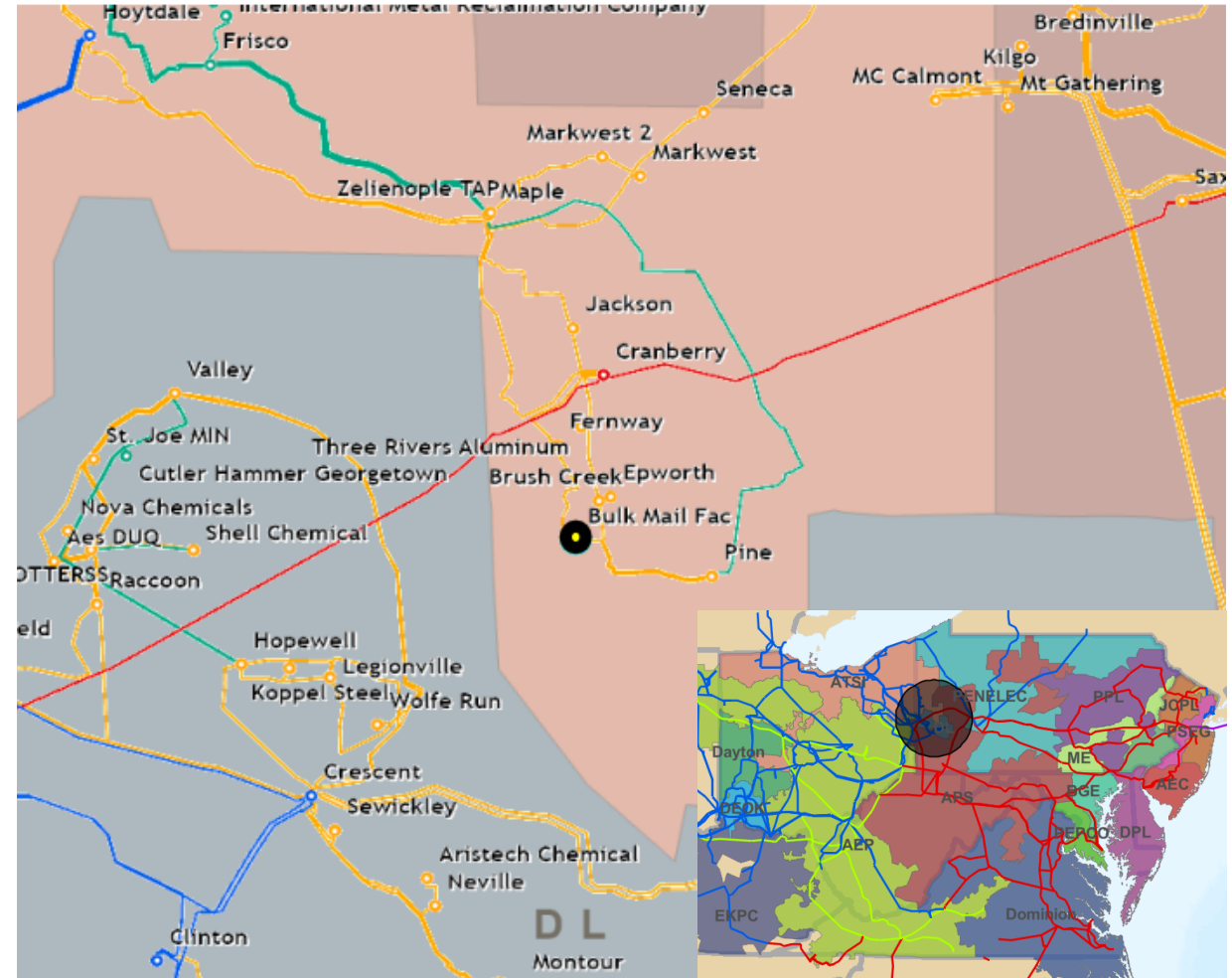
Transmission line ratings are limited by terminal equipment.

Bulk Mail Facility - Fernway Tap 138 kV Line

- Existing Line Ratings: 232 / 287 / 287 / 287 MVA (SN/SE/WN/WE)
- Existing Conductor Rating: 278 / 339 / 315 / 401 MVA (SN/SE/WN/WE)

Bulk Mail Facility - Pine 138 kV Line

- Existing Line Ratings: 232 / 287 / 287 / 287 MVA (SN/SE/WN/WE)
- Existing Conductor Rating: 278 / 339 / 315 / 401 MVA (SN/SE/WN/WE)



Need Number: ATSI-2026-002
Process Stage: Solution Meeting SRRTEP-W - 05/15/2026

Proposed Solution:

Replace 138 kV breaker B-4 and three switches at Bulk Mail Facility Station.

Transmission Line Ratings:

Bulk Mail Facility-Pine 138 kV Line

- Before Proposed Solution: 232 / 287 / 287 / 287 MVA (SN/SE/WN/WE)
- After Proposed Solution: 265 / 316 / 326 / 361 MVA (SN/SE/WN/WE)

Bulk Mail Facility-Fernway 138 kV Line

- Before Proposed Solution: 232 / 287 / 287 / 287 MVA (SN/SE/WN/WE)
- After Proposed Solution: 278 / 339 / 315 / 401 MVA (SN/SE/WN/WE)

Alternatives Considered:

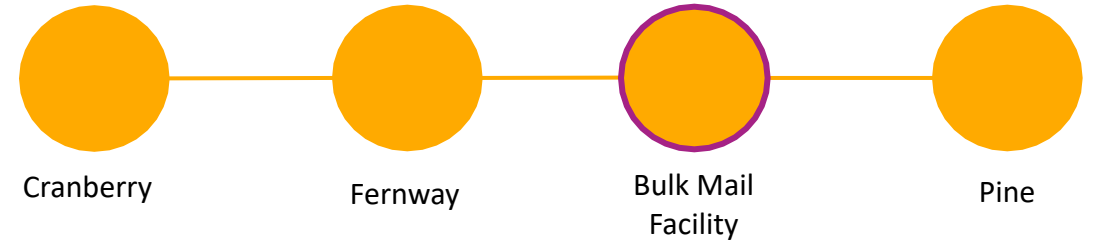
Maintain equipment in existing condition with elevated risk of failure due to equipment condition.

Estimated Project Cost: \$1.69M

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	

Need Number: ATSI-2026-005
Process Stage: Solution Meeting SRRTEP-W - 05/15/2026
Previously Presented: Need Meeting 01/16/2026
Project Driver: Equipment Condition/Performance/Risk

Specific Assumption Reference:

System Performance Global Factors

- System reliability/performance
- Substation/Line equipment limits

Substation Condition Rebuild/Replacement

- Age/condition of substation equipment
- Circuit breakers and other fault interrupting devices

Problem Statement:

The existing Dixie Substation 69 kV breakers B6903, B6904 and B6923 are 60 years old and are approaching end of life. Replacement components for oil circuit breakers are difficult to source in quantity leading to non-standard repairs. The associated disconnect switches and metering PTs/CTs are also past their expected service life.

The lines are currently limited by terminal equipment.

Existing Transmission Line Ratings:

Dixie - Teledyne 69 kV Line:

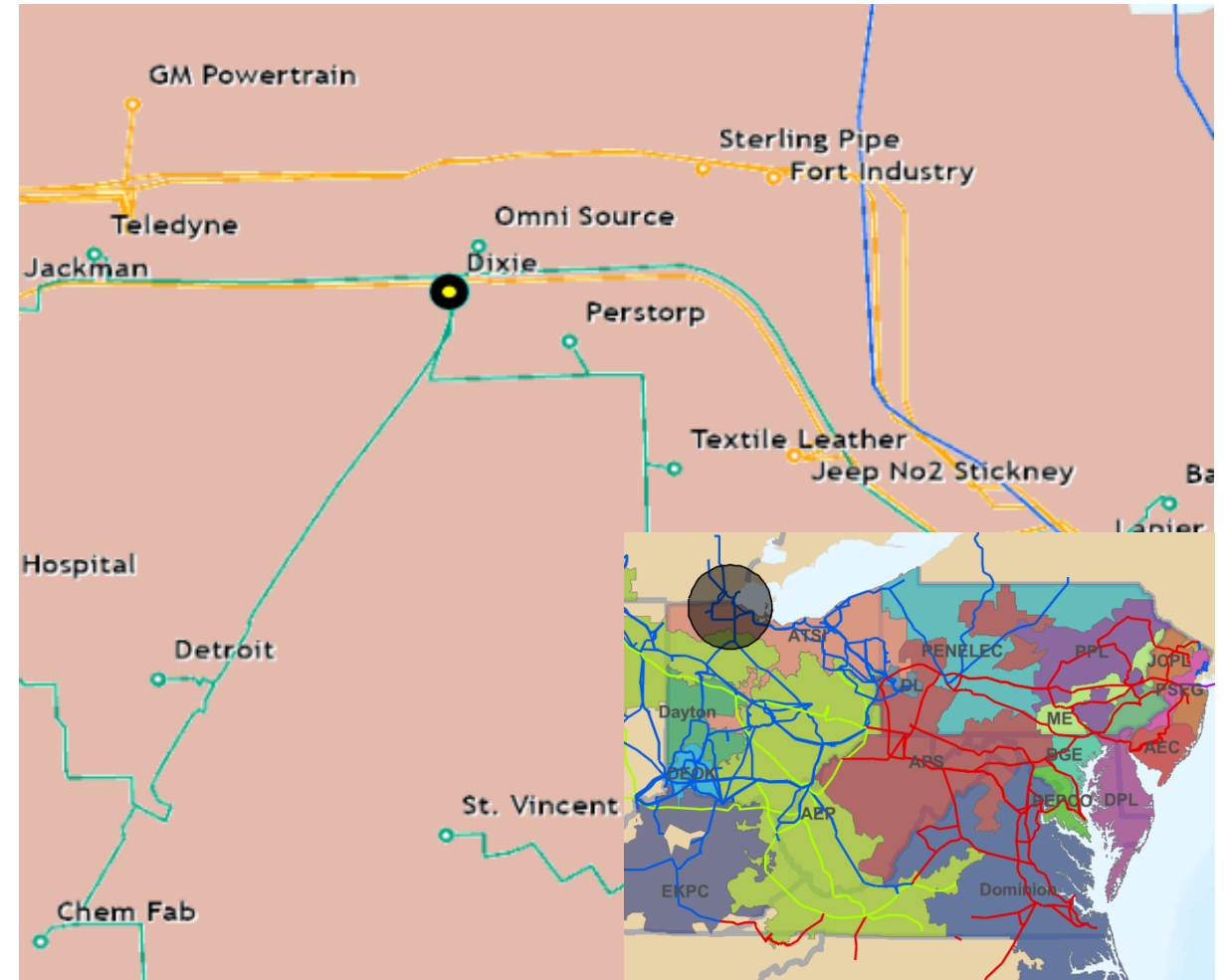
- Existing Line Ratings: 107 / 136 / 129 / 164 MVA (SN/SE/WN/WE)
- Existing Conductor Ratings: 111 / 136 / 129 / 164 MVA (SN/SE/WN/WE)

Dixie - Omni 69 kV Line:

- Existing Line Ratings: 107 / 138 / 140 / 166 MVA (SN/SE/WN/WE)
- Existing Conductor Ratings: 121 / 148 / 140 / 179 MVA (SN/SE/WN/WE)

Dixie - Perstorp Polyols 69 kV Line:

- Existing Line Ratings: 107 / 134 / 139 / 154 MVA (SN/SE/WN/WE)
- Existing Conductor Ratings: 139 / 171 / 164 / 210 MVA (SN/SE/WN/WE)



Need Number: ATSI-2026-005
Process Stage: Solution Meeting SRRTEP-W - 05/15/2026

Proposed Solution:

At Dixie Substation, replace three 69 kV breakers (B6903, B6904, and B6923), seven disconnect switches, 69 kV bus PTs, station conductor, strain bus and brown insulators, and relays for the line towards Jeep.

Transmission Line Ratings:

Dixie-Perstorp 69 kV Line

- Before Proposed Solution: 107 / 134 / 139 / 154 MVA (SN/SE/WN/WE)
- After Proposed Solution: 139 / 171 / 164 / 210 MVA (SN/SE/WN/WE)

Dixie-Teledyne 69 kV Line

- Before Proposed Solution: 107 / 136 / 129 / 164 MVA (SN/SE/WN/WE)
- After Proposed Solution: 111 / 136 / 129 / 164 MVA (SN/SE/WN/WE)

Dixie-Omni 69 kV Line

- Before Proposed Solution: 107 / 138 / 140 / 166 MVA (SN/SE/WN/WE)
- After Proposed Solution: 121 / 148 / 140 / 179 MVA (SN/SE/WN/WE)

Transformer Ratings:

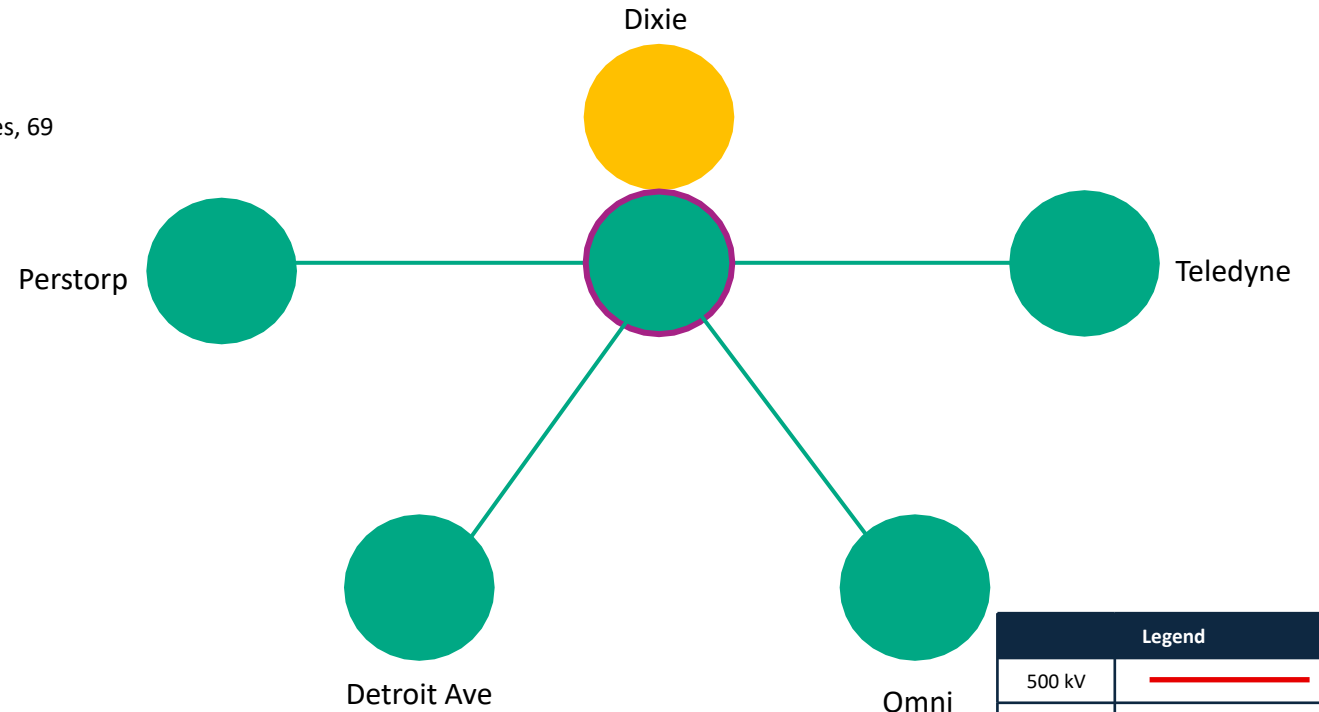
Dixie No. 6 138/69 kV Transformer

- Before Proposed Solution: 187 / 241 / 267 / 298 MVA (SN/SSTE/WN/WSTE)
- After Proposed Solution: 305 / 305 / 383 / 383 MVA (SN/SSTE/WN/WSTE)

Alternatives Considered:

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

Estimated Project Cost: \$3.43M
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

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