

Subregional RTEP Committee – Western FirstEnergy Supplemental Projects

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

Abbe - Carlisle No. 1 and No. 2 69 kV lines

Need Number: ATSI-2026-001
Process Stage: Need Meeting 01/16/2026
Project Driver:
 Operational Flexibility and Efficiency

- Specific Assumption Reference:**
 System Performance Projects Global Factors
- System reliability and performance
 - Substation/line equipment limits
 - Reliability of Non-Bulk Electric System (Non-BES facilities)
 - Load at risk in planning and operational scenarios

Problem Statement:
 The Abbe - Carlisle No. 2 69 kV Line is approximately five miles long and operated radially. The line serves the LMREC Robson Muni which has approximately 1,700 customers and 9 MW of load.

The Abbe - Carlisle No. 1 69 kV Line overloads 114.87% of its 115 MVA summer emergency rating for the Johnson 69 kV bus fault contingency in the 2025 RTEP case for 2030 Summer 50/50 case.

Over the past five years, the Abbe - Carlisle No. 1 and No. 2 69 kV lines have experienced three sustained unscheduled outages.

Abbe - Carlisle No. 1 69 kV Line
 Existing Line Ratings: 95 / 115 / 138 / 138 MVA (SN/SE/WN/WE)
 Existing Conductor Ratings: 95 / 115 / 139 / 139 MVA (SN/SE/WN/WE)

Abbe - Robson 69 kV Line
 Existing Line and Conductor Ratings: 41 / 49 / 46 / 58 MVA (SN/SE/WN/WE)

Carlisle - Robson 69 kV Line
 Existing Line and Conductor Ratings: 41 / 49 / 46 / 58 MVA (SN/SE/WN/WE)



Need Number: ATSI-2026-002

Process Stage: 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.

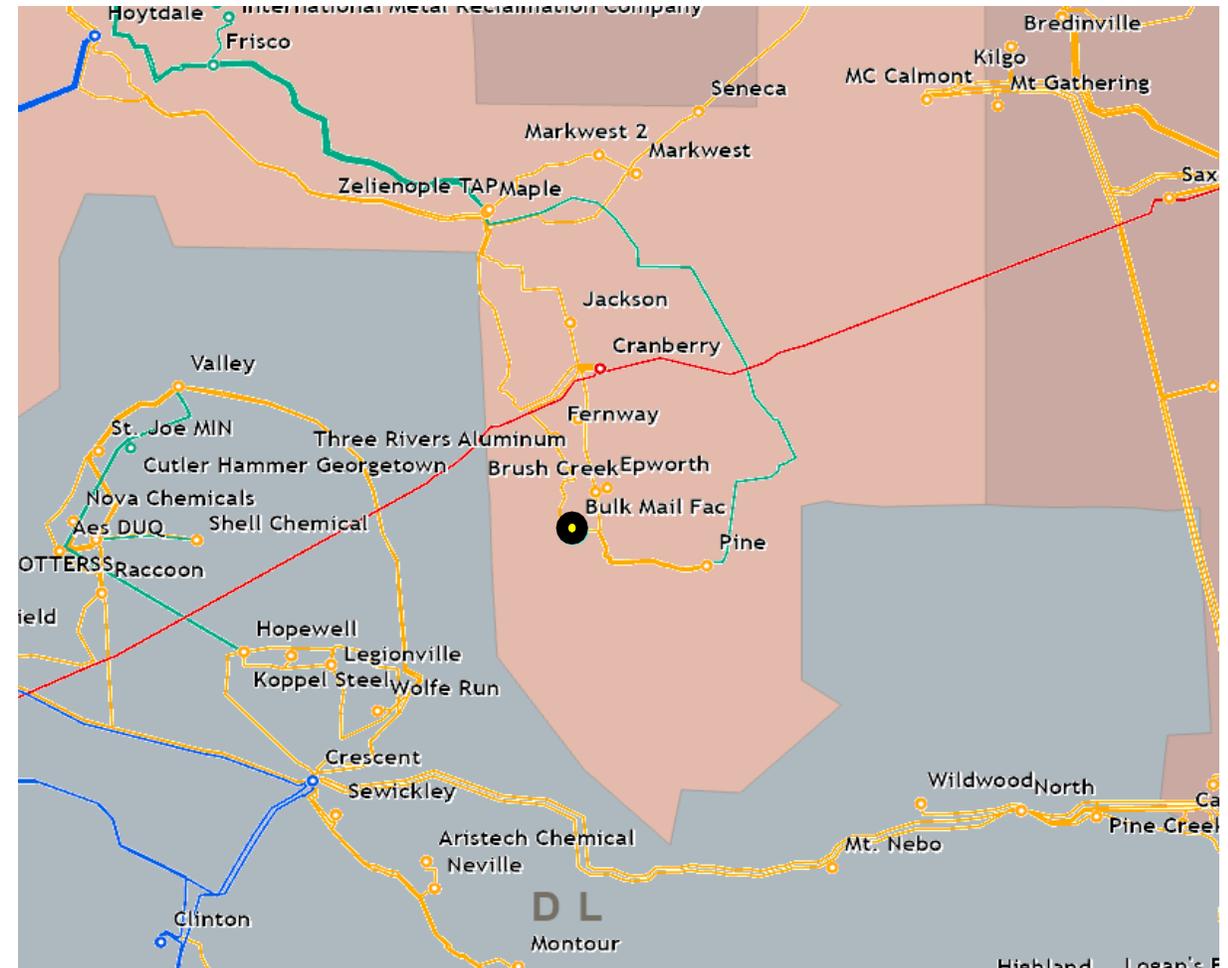
Transmission line ratings are limited by terminal equipment.

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

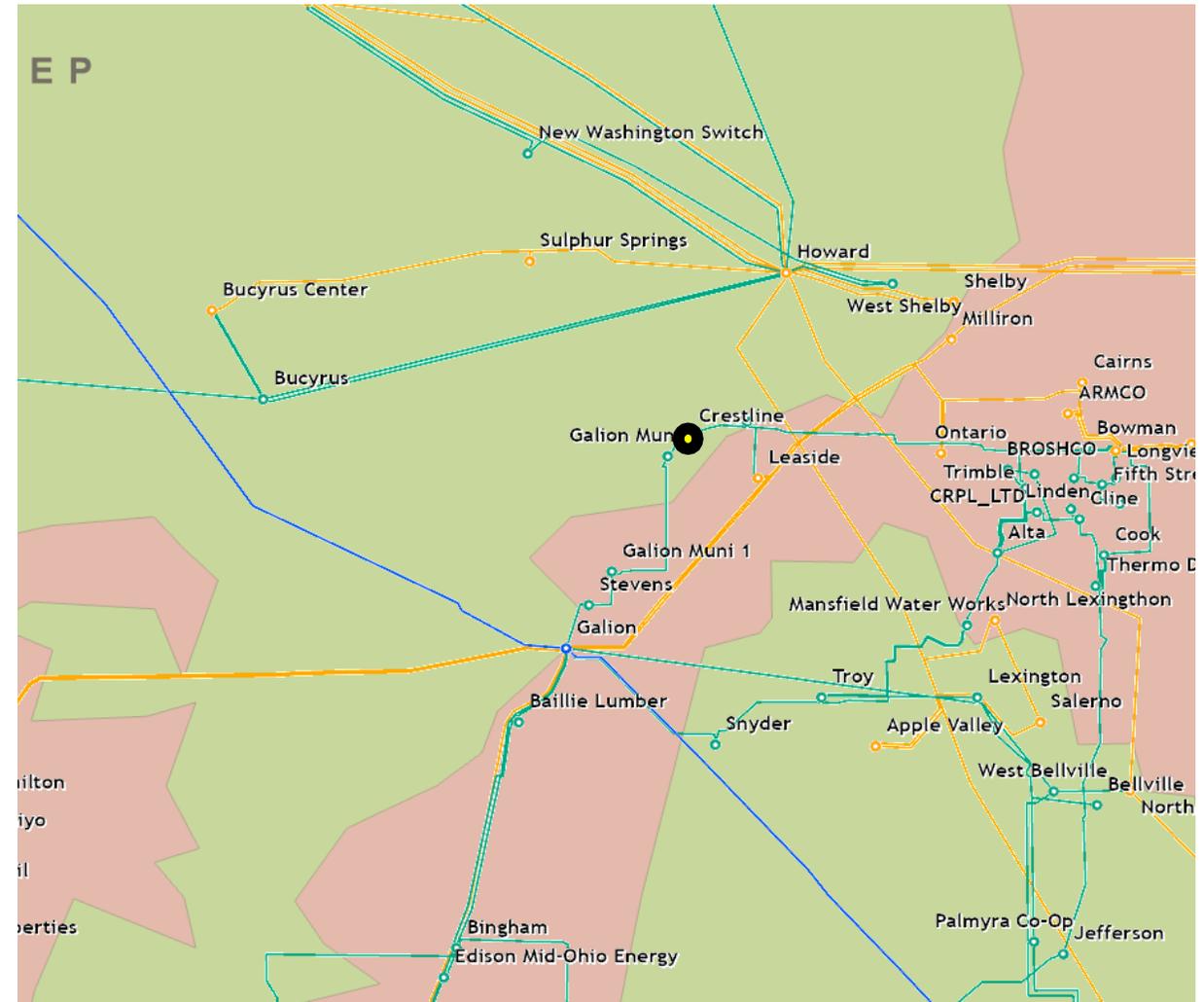
- Existing Line Ratings: 232 / 287 / 287 / 287 MVA (SN/SE/WN/WE)
- Existing Conductor Rating: 278 / 339 / 315 / 401 MVA (SN/SE/WN/WE)



Need Number: ATSI-2026-003
Process Stage: Need Meeting 01/16/2026
Project Driver:
 Equipment Condition/Performance/Risk

- Specific Assumption Reference:**
 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.



Need Number: ATSI-2026-004
Process Stage: Need Meeting 01/16/2026
Project Driver:
 Equipment Condition/Performance/Risk
 Operational Flexibility and Efficiency

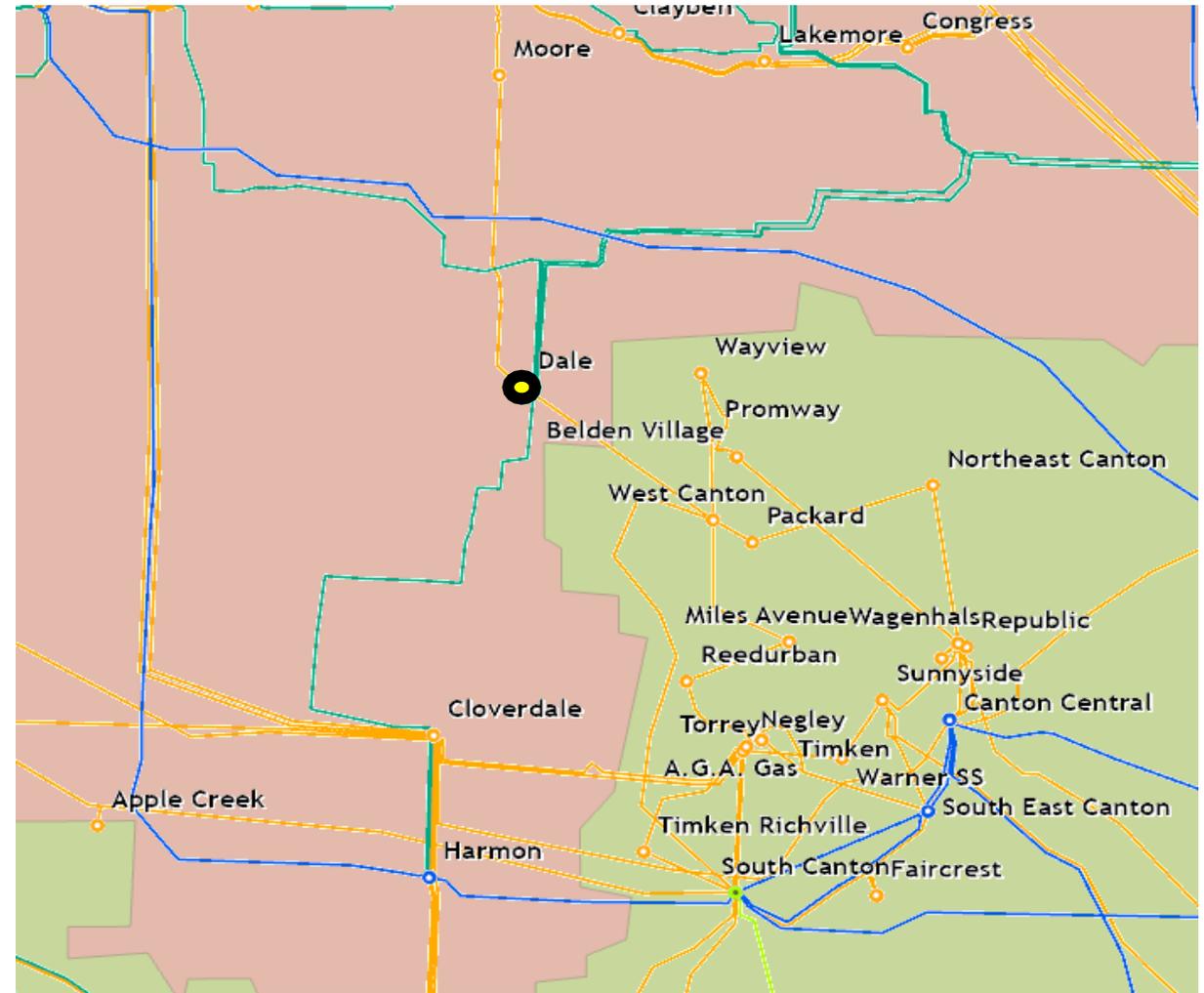
- Specific Assumption Reference:**
 System Performance Projects Global Factors
- System reliability and performance
 - Substation/line equipment limits
 - Reliability of Non-Bulk Electric System (Non-BES facilities)
 - Load at risk in planning and operational scenarios
- Add/Expand Bus Configuration
- Eliminate simultaneous outages to multiple networked elements

Problem Statement:
 The 138 kV yard at Dale Substation is currently configured as a straight bus with two transmission lines, one 138/69 kV transformer, and one 138-12.47 kV transformer. A fault on the Dale 138 kV bus would result in service interruption to approximately 15,700 customers and 56 MW of load.

Anytime the line section between Dale and Moore substations is interrupted (due to a fault or maintenance) on the Dale - South Akron 138 kV Line, the distribution load at Dale Substation is outaged as well. When this occurs, distribution loads are not able to be transferred to the Strobel Substation due to overloads at Strobel.

The 69 kV yard at Dale Substation is currently configured as a straight bus with a transfer breaker with four transmission lines and one 138/69 kV transformer. A fault on the 69 kV bus or between the bus and the circuit breaker will result in an outage of the entire bus.

Over the past five years, the Dale - South Akron 138 kV Line has experienced three unscheduled sustained outages. The Dale Substation 69 kV bus experienced one unscheduled outage which cleared the Dale Substation 69 kV bus.



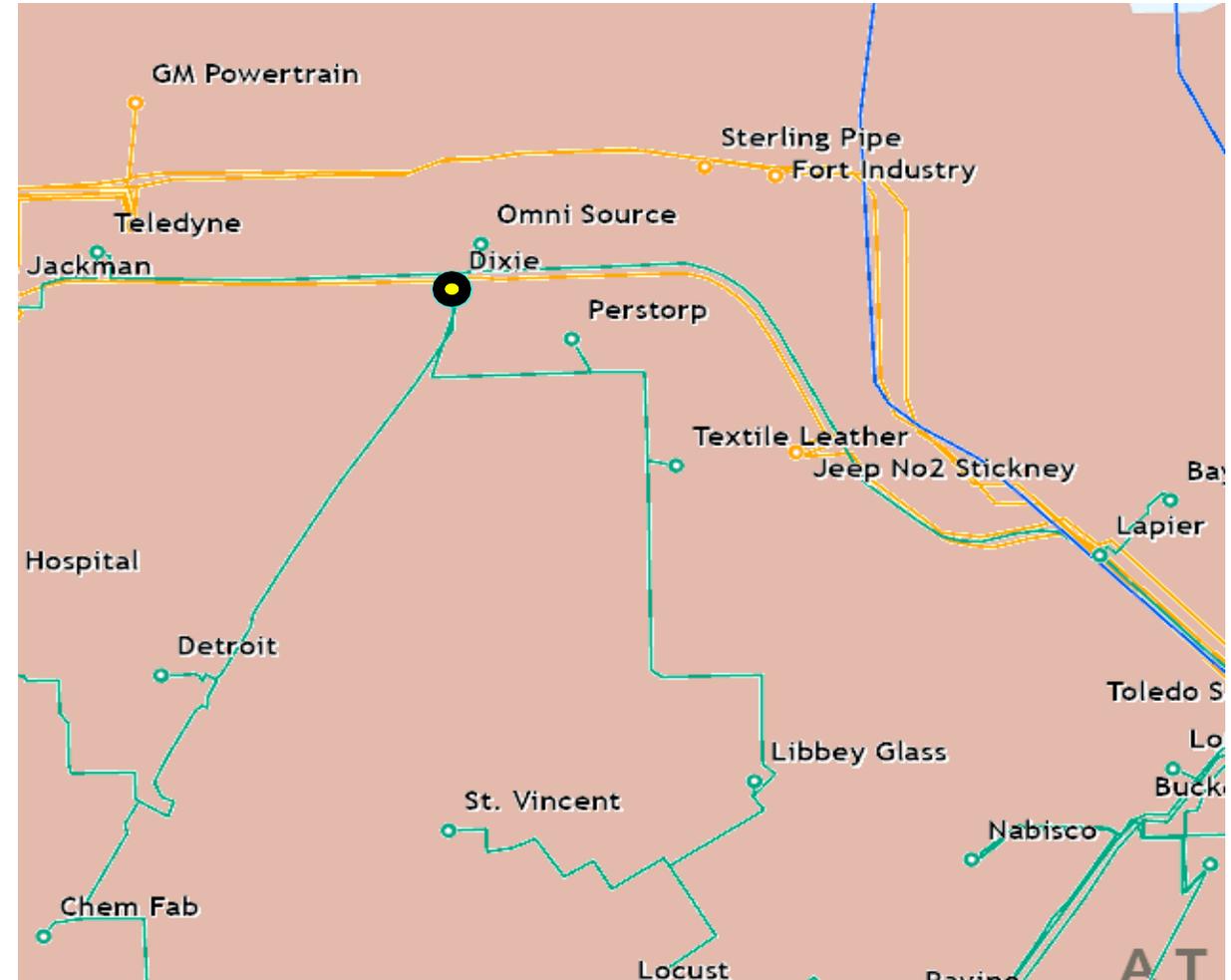
Need Number: ATSI-2026-005
Process Stage: Need Meeting 01/16/2026
Project Driver:
 Equipment Condition/Performance/Risk

- 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-2026-006
Process Stage: Need Meeting 01/16/2026
Project Driver:
 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
- Add/Expand Bus Configuration
- Eliminate simultaneous outages to multiple networked elements

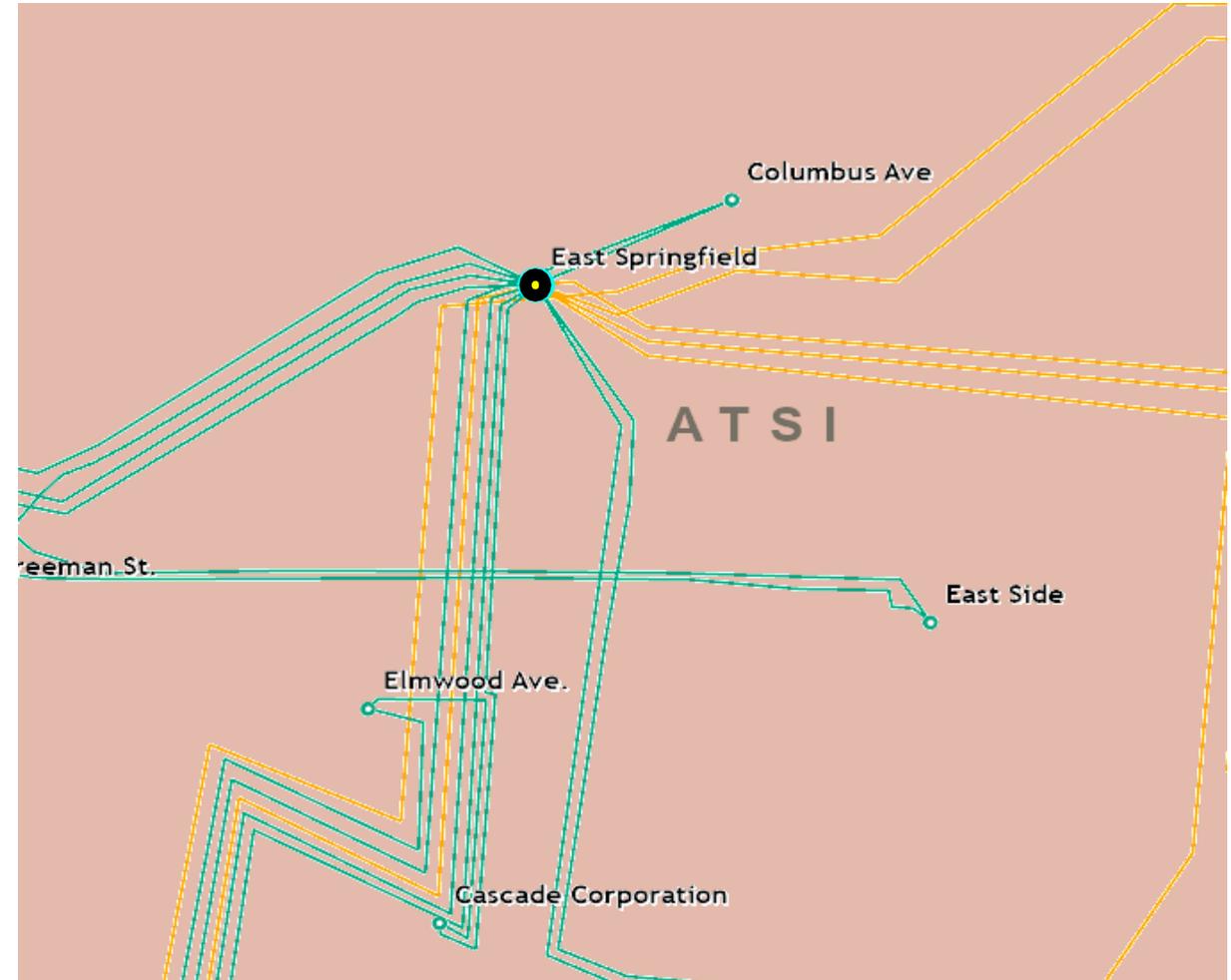
Problem Statement:
 Springfield, Ohio has seen a substantial number of customer load inquiries over the last few years along with increasing load growth on the existing facilities.

East Springfield station is the largest source out of only a few into the city and is a convergence point of four 138 kV lines. The East Springfield Substation has four 138 kV lines, three 138/69 kV transformers and one capacitor bank. A bus fault or stuck line/transformer breaker results in loss of two 138 kV lines and either two transformers, or a transformer and a capacitor bank. A stuck bus tie breaker results in loss of the entire substation.

Since 2020, the East Springfield Substation has experienced two sustained unscheduled outages.

Transmission line ratings are limited by terminal equipment.

- East Springfield - North Titus 138 kV Line (East Springfield - Benjamin T Branch):
- Existing Line Ratings: 176 / 229 / 226 / 285 MVA (SN/SE/WN/WE)
 - Existing Conductor Ratings: 200 / 242 / 226 / 286 MVA (SN/SE/WN/WE)



Need Number: ATSI-2026-007

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:

Eber Substation is currently configured as a straight bus design with two transmission lines, one radial line serving two industrial customers and one distribution transformer. A stuck breaker or fault on the bus at Eber Substation results in the loss of the entire Eber Substation. Eber Substation serves 2,700 customers and approximately 13 MW. The stuck breaker or fault on the bus at Eber Substation also impacts two large industrial customers that are radially fed from Eber Substation which results in an additional load loss of 30 MW for a total approximate loss of 43 MW.

Eber - Wentworth 138 kV Line:

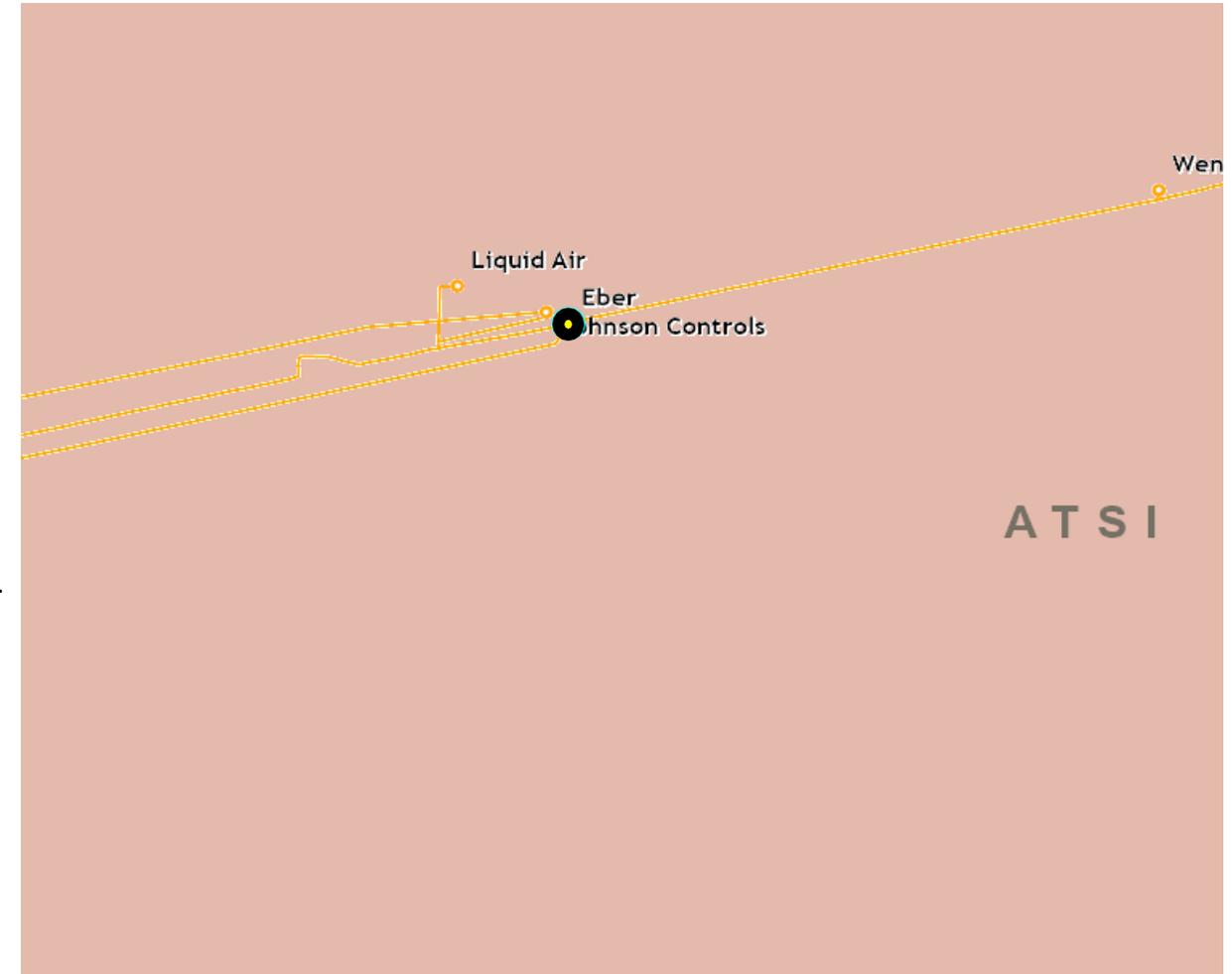
- Existing Line and Conductor Ratings: 278 / 343 / 327 / 420 MVA (SN/SE/WN/WE)

Eber - Swanton 138 kV Line (Branch Eber to Johnson Controls & Matheson Tri-Gas):

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

Eber - Swanton 138 kV Line (Branch Eber to Swanton):

- Existing Line and Conductor Ratings: 278 / 343 / 327 / 420 MVA (SN/SE/WN/WE)



Need Number: ATSI-2026-008

Process Stage: Need Meeting 01/16/2026

Project Driver:

Equipment Condition/Performance/Risk

Specific Assumption Reference:

System Performance Global Factors

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

Problem Statement:

The Genoa - Maclean 69 kV Line was constructed approximately 60 years ago and is approaching end of life. It is approximately eight miles long with 142 wood pole transmission line structures.

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

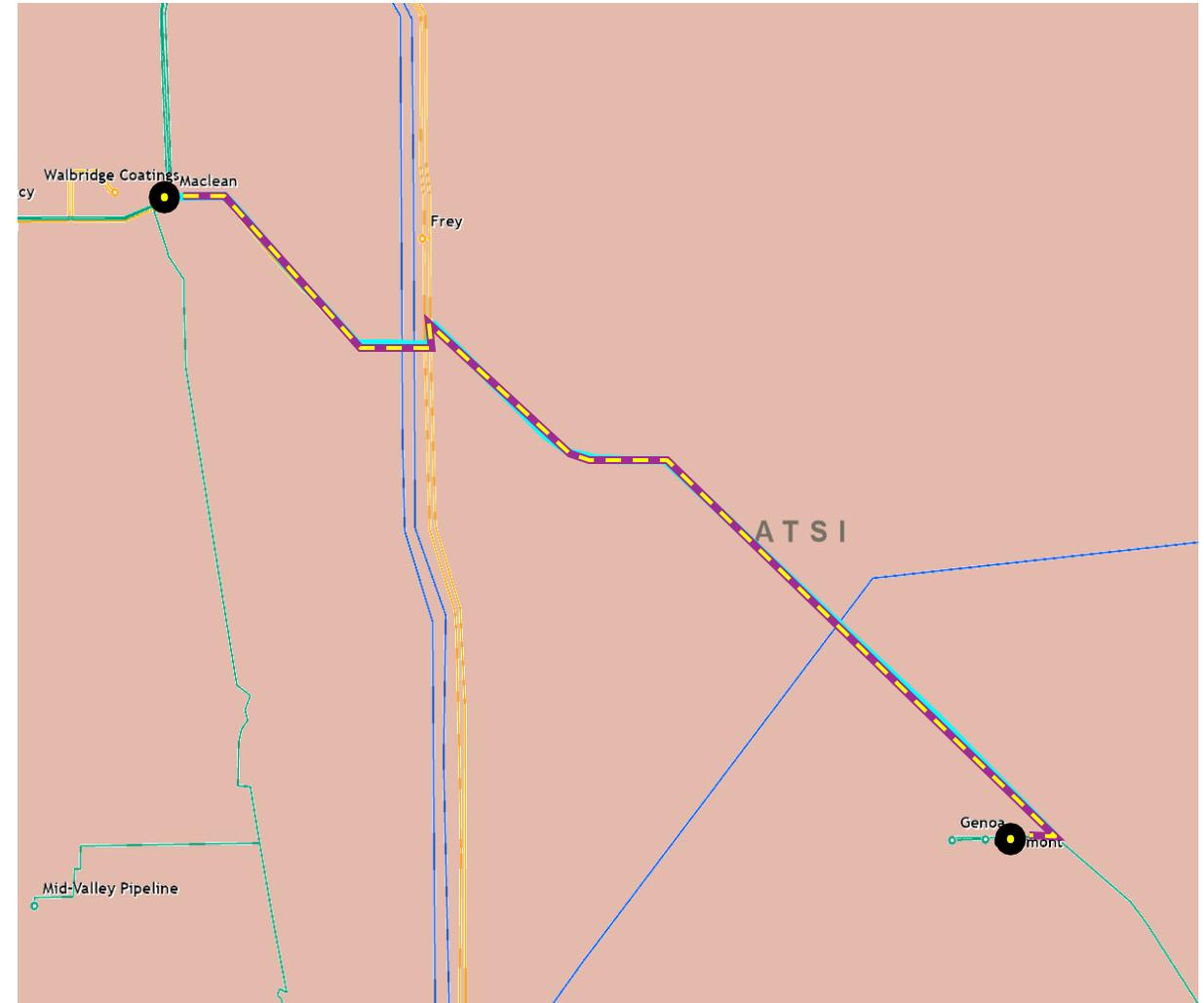
92% of structures failed inspection due to decay.

71% of structures failed inspection due to shell rot.

Since 2017, the line has experienced two unscheduled sustained outages due to pole failures.

Genoa - Maclean 69 kV Line:

- Existing Line and Conductor Ratings: 56 / 58 / 72 / 72 MVA (SN/SE/WN/WE)



Need Number: ATSI-2026-009

Process Stage: 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
- Line Condition Rebuild/Replacement
- Age/condition of wood pole transmission line structures

Problem Statement:

The Gilchrist - Hartville 69 kV Line was constructed approximately 65 years ago and is approaching end of life. It is approximately 14 miles long with 286 wood pole transmission line structures.

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

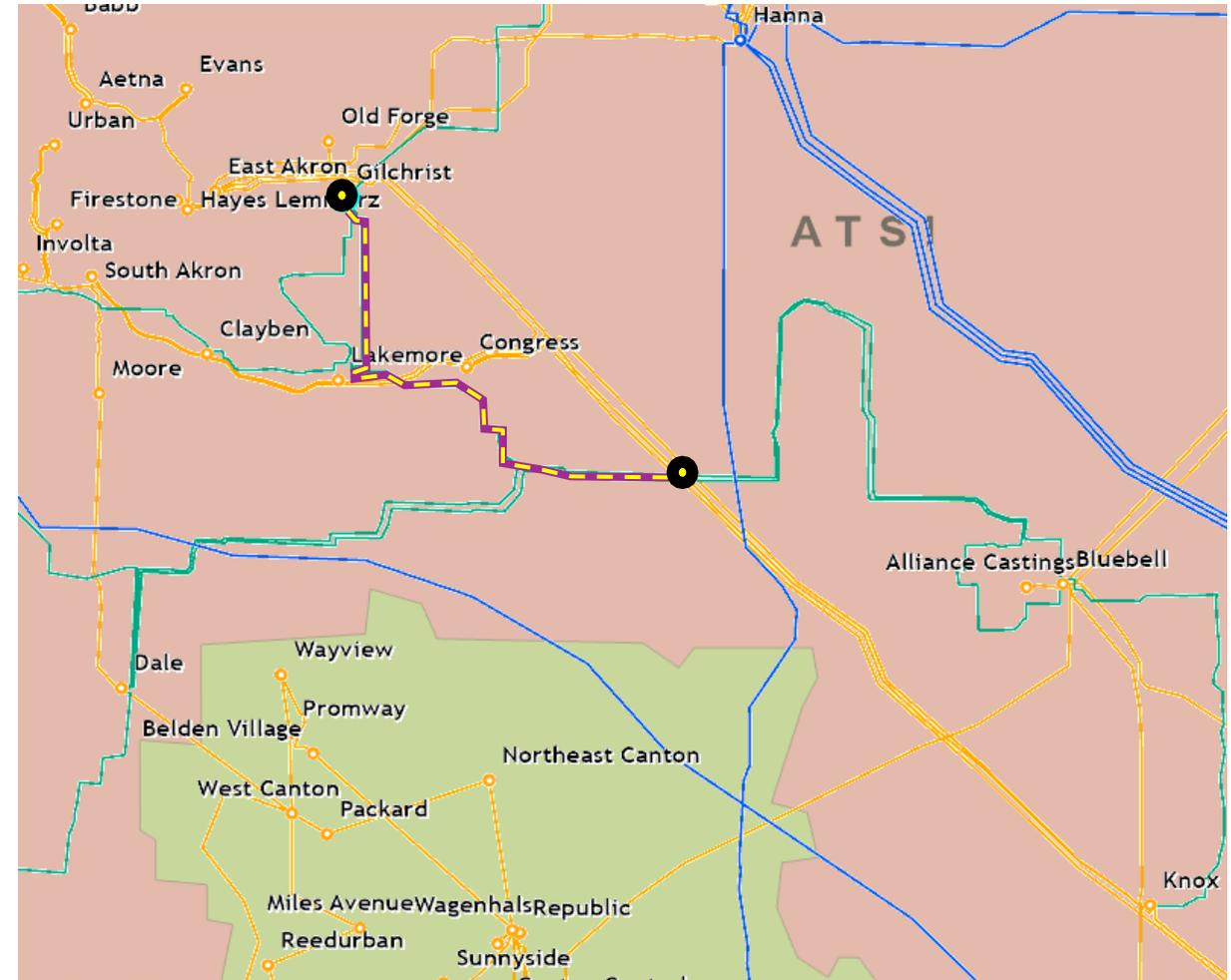
- 10% failed inspection due to shell rot.
- 56% failed inspection due to decay.

Since 2012, the line has experienced 21 unscheduled sustained outages with seven of them related to line equipment.

- Pole fire (2012)
- Crossarm failure (2014, 2022)
- Crossarm brace failure (2017, 2019, 2019)
- Insulator failure (2018)

Transmission line ratings are limited by terminal equipment.

Continued on next slide...



Problem Statement (Cont'):

Gilchrist - Burger Rubbermaid Tap 69 kV Line:

- Existing Line and Conductor Ratings: 76 / 92 / 87 / 111 MVA (SN/SE/WN/WE)

Burger Rubbermaid Tap - Burger Iron Tap 69 kV Line:

- Existing Line and Conductor Ratings: 76 / 92 / 87 / 111 MVA (SN/SE/WN/WE)

Burger Iron Tap - Burger Iron 69 kV Line:

- Existing Line and Conductor Ratings: 76 / 92 / 87 / 111 MVA (SN/SE/WN/WE)

Burger Iron - Rubbermaid 69 kV Line:

- Existing Line and Conductor Ratings: 45 / 54 / 51 / 65 MVA (SN/SE/WN/WE)

Burger Rubbermaid Tap - Omnova Tap 69 kV Line:

- Existing Line and Conductor Ratings: 76 / 92 / 87 / 111 MVA (SN/SE/WN/WE)

Omnova - Goodyear Wingfoot Tap 69 kV Line:

- Existing Line and Conductor Ratings: 80 / 96 / 90 / 114 MVA (SN/SE/WN/WE)

Goodyear Wingfoot Tap - Goodyear Wingfoot 69 kV Line:

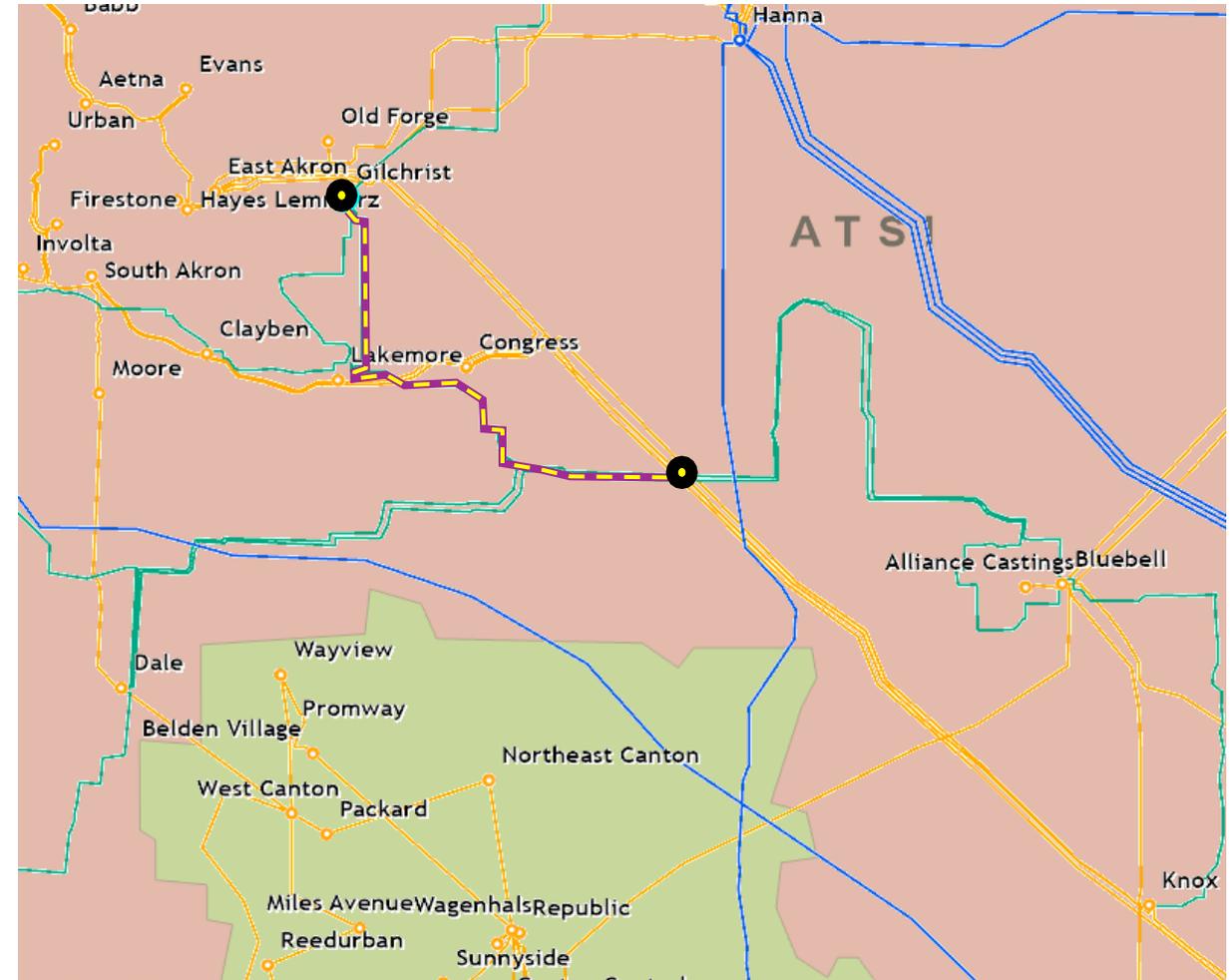
- Existing Line and Conductor Ratings: 34 / 41 / 39 / 50 MVA (SN/SE/WN/WE)

Goodyear Wingfoot - Trelleborg Wheel 69 kV Line:

- Existing Line and Conductor Ratings: 76 / 92 / 87 / 111 MVA (SN/SE/WN/WE)

Trelleborg Wheel - Hartville 69 kV Line:

- Existing Line Ratings: 76 / 76 / 76 / 76 MVA (SN/SE/WN/WE)
- Existing Conductor Ratings: 76 / 92 / 87 / 111 MVA (SN/SE/WN/WE)



Need Number: ATSI-2026-013
Process Stage: 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 Pemberville 69 kV breakers 7286 and 7287 are 61 years old and are approaching end of life. Replacement components for oil circuit breakers are difficult to source leading to non-standard repairs.

The lines are currently limited by terminal equipment.

- Pemberville - Maclean 69 kV Line:
- Existing Line Ratings: 116 / 143 / 143 / 164 MVA (SN/SE/WN/WE)
 - Existing Conductor Ratings: 139 / 169 / 158 / 201 MVA (SN/SE/WN/WE)

- Pemberville - Hancock Wood Tap 69 kV Line:
- Existing Line and Conductor Ratings: 100 / 121 / 113 / 143 MVA (SN/SE/WN/WE)

- Hancock Wood Tap - Bowling Green No. 4 69 kV Line:
- Existing Line Ratings: 79 / 79 / 79 / 79 MVA (SN/SE/WN/WE)
 - Existing Conductor Ratings: 79 / 95 / 89 / 113 MVA (SN/SE/WN/WE)



Need Number: ATSI-2026-014
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:
 The 69 kV yard at Toussaint Substation is currently configured as a straight bus design with a 138/69 kV transformer and two 69 kV lines. A stuck breaker or fault on the bus at Toussaint Substation results in the loss of the entire Toussaint Substation. The Toussaint Substation serves two customers, one industrial customer, the Davis Besse service building and approximately 25 MW.

Additionally, the 138 kV switches at the Toussaint Substation cannot break parallel or charging current.

Over the past five years, the Toussaint Substation has experienced three unscheduled sustained outages.

- Existing Ratings:**
- Bayshore - Ottawa - Toussaint 138 kV Line
- Existing line rating: 235 / 288 / 275 / 341 MVA (SN/SE/WN/WE)
 - Existing conductor rating: 235 / 288 / 275 / 352 MVA (SN/SE/WN/WE)
- Brush Wellman - Toussaint 69 kV Line
- Existing line rating: 74 / 88 / 89 / 101 MVA (SN/SE/WN/WE)
 - Existing conductor rating: 79 / 95 / 89 / 113 MVA (SN/SE/WN/WE)
- Davis Besse (Toussaint) 69 kV Line
- Existing line rating: 45 / 59 / 69 / 89 MVA (SN/SE/WN/WE)
 - Existing conductor rating: 45 / 59 / 69 / 89 MVA (SN/SE/WN/WE)



Changes to the Existing Projects

s3495.1: Originally presented in 2/18/2022 and 6/14/2024 SRRETP Western meetings.

Changes are marked in red

Supplemental Project Driver(s):

Equipment Material Condition, Performance and Risk

Specific Assumption Reference(s):

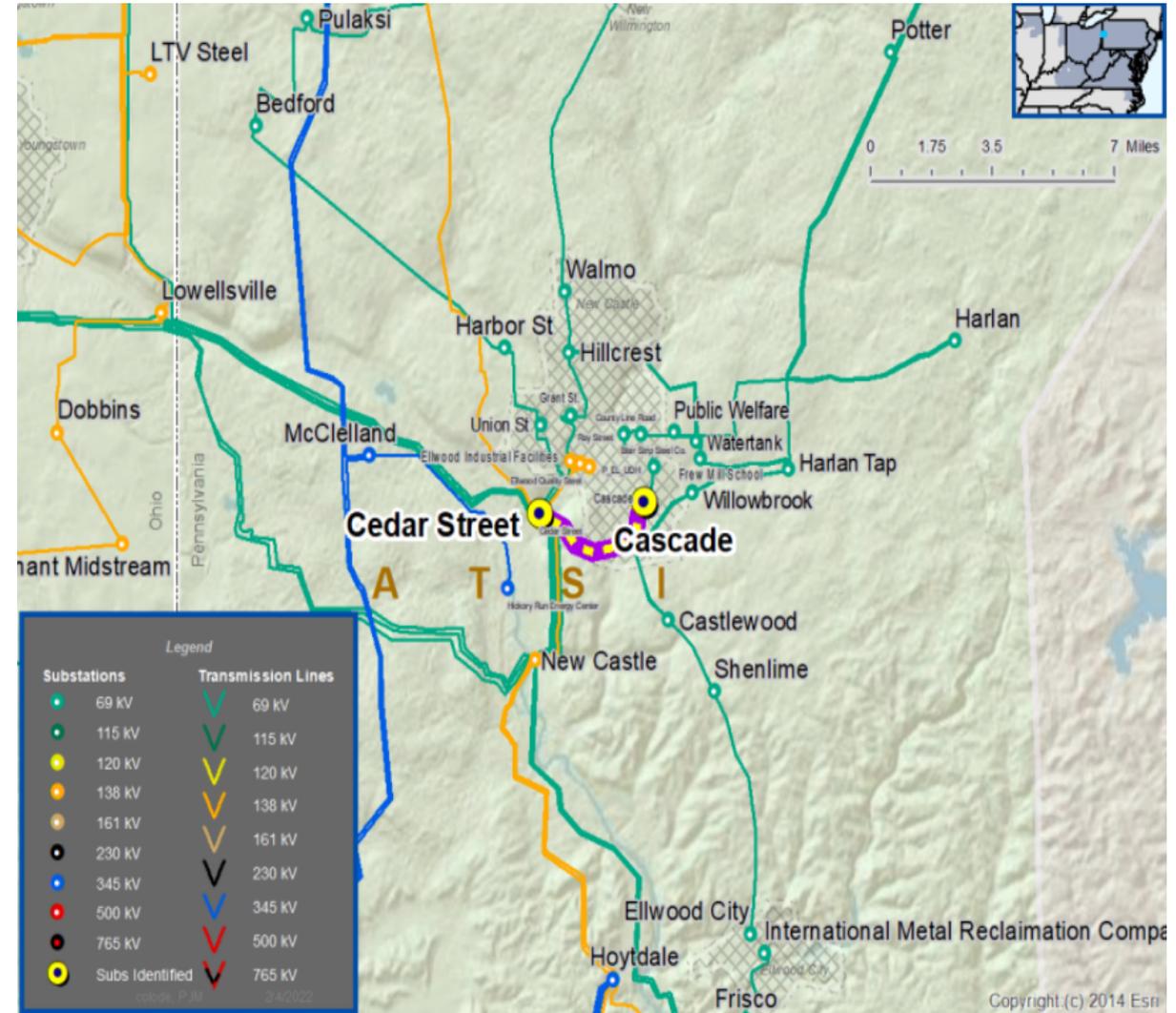
Line Condition Rebuild / Replacement

- Aged or deteriorated wood pole transmission line structures
- Negatively impact customer outage frequency and/or durations
- Demonstrate an increasing trend in maintenance findings and/or costs
- Transmission line ratings are limited by terminal equipment

Problem Statement:

Cascade 69 kV (~18.3 miles) transmission line:

- The average age of structures on this line are 55 years old.
- The Cascade (Cedar Street) 69 kV line is exhibiting an upward trend in both minor and major maintenance required with 108 open priority conditions.
- Recent inspections show a structure reject rate of 38% (117 of 307). The primary reasons for reject were cracked and deteriorated wood poles, woodpecker holes, and failed insulators.
- 3 out of the 11 line switches on the Cascade (Cedar Street) 69 kV line are obsolete and no longer meet established design standards.
- The Cascade (Cedar Street) 69 kV line has experienced 14 unscheduled outages in the past five years (5 sustained).





Need Number: ATSI-2022-001

Process Stage: Solutions Meeting – 06/14/2024

Proposed Solution:

Cascade (Cedar Street) 69 kV Line

- Reconductor the Cascade (Cedar Street) 69 kV Line with **556 ACSR 26/7 conductor** ~~336 ACSR 36/7 conductor~~, approximately 18.3 miles.

Transmission Line Ratings:

▪ **Cedar St- Cascade 69kV Line**

- Before Proposed Solution: 80 MVA SN / 96 MVA SE / 90 MVA WN / 114 MVA WE

~~After Proposed Solution: 80 MVA SN / 96 MVA SE / 90 MVA WN / 114 MVA WE~~

- After Proposed Solution: **111 MVA SN / 134 MVA SE / 125 MVA WN / 159 MVA WE**

▪ **Blair Strip Steel- Cascade 69kV Line**

- Before Proposed Solution: 80 MVA SN / 96 MVA SE / 90 MVA WN / 114 MVA WE

~~After Proposed Solution: 80 MVA SN / 96 MVA SE / 90 MVA WN / 114 MVA WE~~

- After Proposed Solution: **111 MVA SN / 134 MVA SE / 125 MVA WN / 159 MVA WE**

▪ **Blair Strip Steel- Ray St 69kV Line**

- Before Proposed Solution: 80 MVA SN / 96 MVA SE / 90 MVA WN / 114 MVA WE

~~After Proposed Solution: 80 MVA SN / 96 MVA SE / 90 MVA WN / 114 MVA WE~~

- After Proposed Solution: **111 MVA SN / 134 MVA SE / 125 MVA WN / 159 MVA WE**

▪ **Ray St- YDC- West Tap 69kV Line**

- Before Proposed Solution: 80 MVA SN / 96 MVA SE / 90 MVA WN / 114 MVA WE

~~After Proposed Solution: 80 MVA SN / 96 MVA SE / 90 MVA WN / 114 MVA WE~~

- After Proposed Solution: **111 MVA SN / 134 MVA SE / 125 MVA WN / 159 MVA WE**

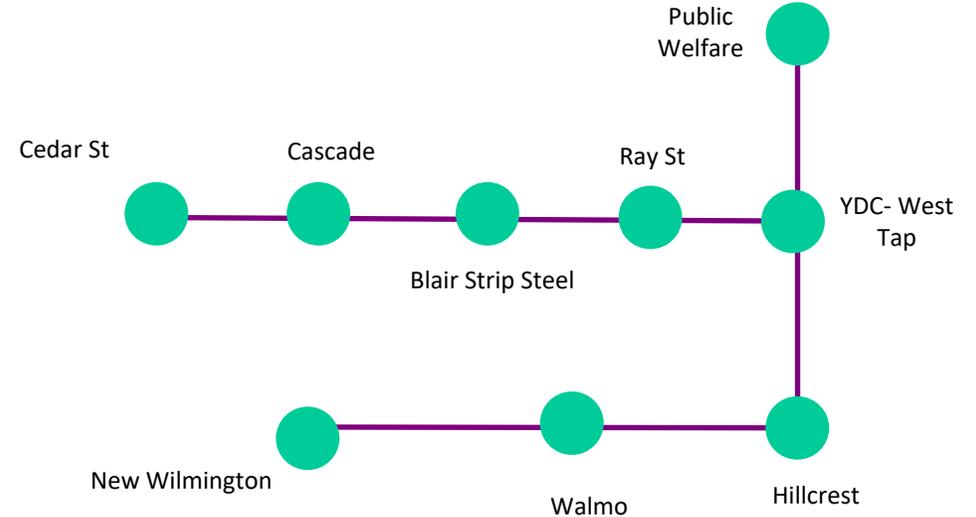
▪ **Public Welfare- YDC- West Tap 69kV Line**

- 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~~

- After Proposed Solution: **111 MVA SN / 134 MVA SE / 125 MVA WN / 159 MVA WE**

ATSI Transmission Zone M-3 Process Cascade (Cedar Street) 69 kV Line



Legend	
500 kV	
345 kV	
138 kV	
69 kV	
34.5 kV	
23 kV	
New	



Need Number: ATSI-2022-001

Process Stage: Solution Meeting – 06/14/2024

Transmission Line Ratings:

▪ **Hillcrest- YDC- West Tap 69kV Line**

- Before Proposed Solution: 80 MVA SN / 96 MVA SE / 90 MVA WN / 114 MVA WE
- ~~After Proposed Solution: 80 MVA SN / 96 MVA SE / 90 MVA WN / 114 MVA WE~~
- **After Proposed Solution: 111 MVA SN / 134 MVA SE / 125 MVA WN / 159 MVA WE**

▪ **Hillcrest- Walmo 69kV Line**

- Before Proposed Solution: 80 MVA SN / 96 MVA SE / 90 MVA WN / 114 MVA WE
- ~~After Proposed Solution: 80 MVA SN / 96 MVA SE / 90 MVA WN / 114 MVA WE~~
- **After Proposed Solution: 111 MVA SN / 134 MVA SE / 125 MVA WN / 159 MVA WE**

▪ **New Wilmington- Walmo 69kV Line**

- Before Proposed Solution: 47 MVA SN / 48 MVA SE / 53 MVA WN / 53 MVA WE
- ~~After Proposed Solution: 80 MVA SN / 96 MVA SE / 90 MVA WN / 114 MVA WE~~
- **After Proposed Solution: 111 MVA SN / 134 MVA SE / 125 MVA WN / 159 MVA WE**

Alternatives Considered:

- Maintain existing condition and elevated risk of mis-operations

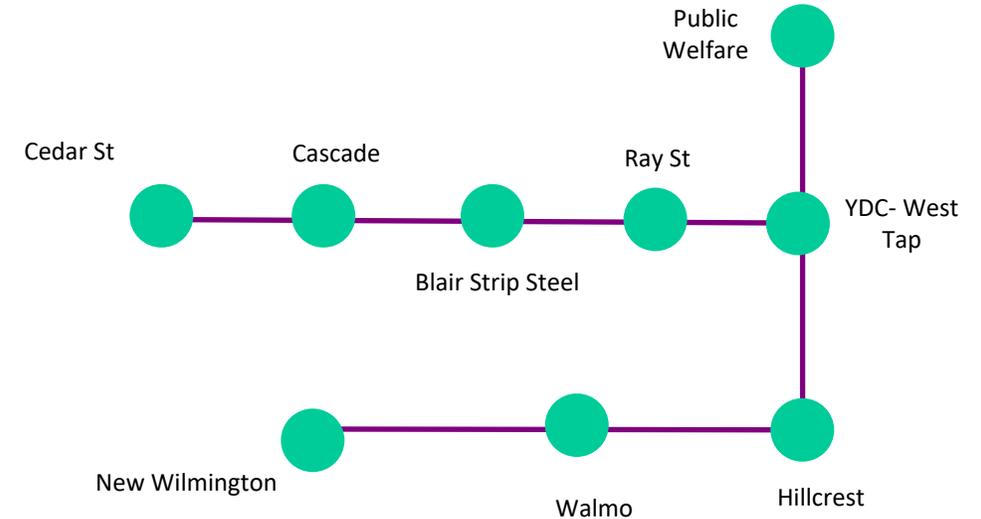
Estimated Project Cost: \$34.7 M

Projected In-Service: 3/31/2028

Status: Conceptual

Model: 2023 RTEP model for 2027 Summer (50/50)

ATSI Transmission Zone M-3 Process Cascade (Cedar Street) 69 kV Line



Legend	
500 kV	
345 kV	
138 kV	
69 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

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