Subregional RTEP Committee – Western
FirstEnergy Supplemental Projects

ATSI Transmission Zone

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

ATSI Transmission Zone M-3 Process
BP Husky – Jackman 138 kV Line

Need Number: ATSI-2025-024

Process Stage: Need Meeting - SRRTEP-W - 10/17/2025

Project Driver:

Operational Flexibility and Efficiency

Specific Assumption Reference:

Global Considerations

- System reliability and performance
- Load at risk in planning and operational scenarios

Add/Expand Bus Configuration

- Loss of substation bus adversely impacts transmission system performance
- Eliminate simultaneous outages to multiple networked elements under N-1 analysis
- Accommodate future transmission facilities
- Capability to perform system maintenance

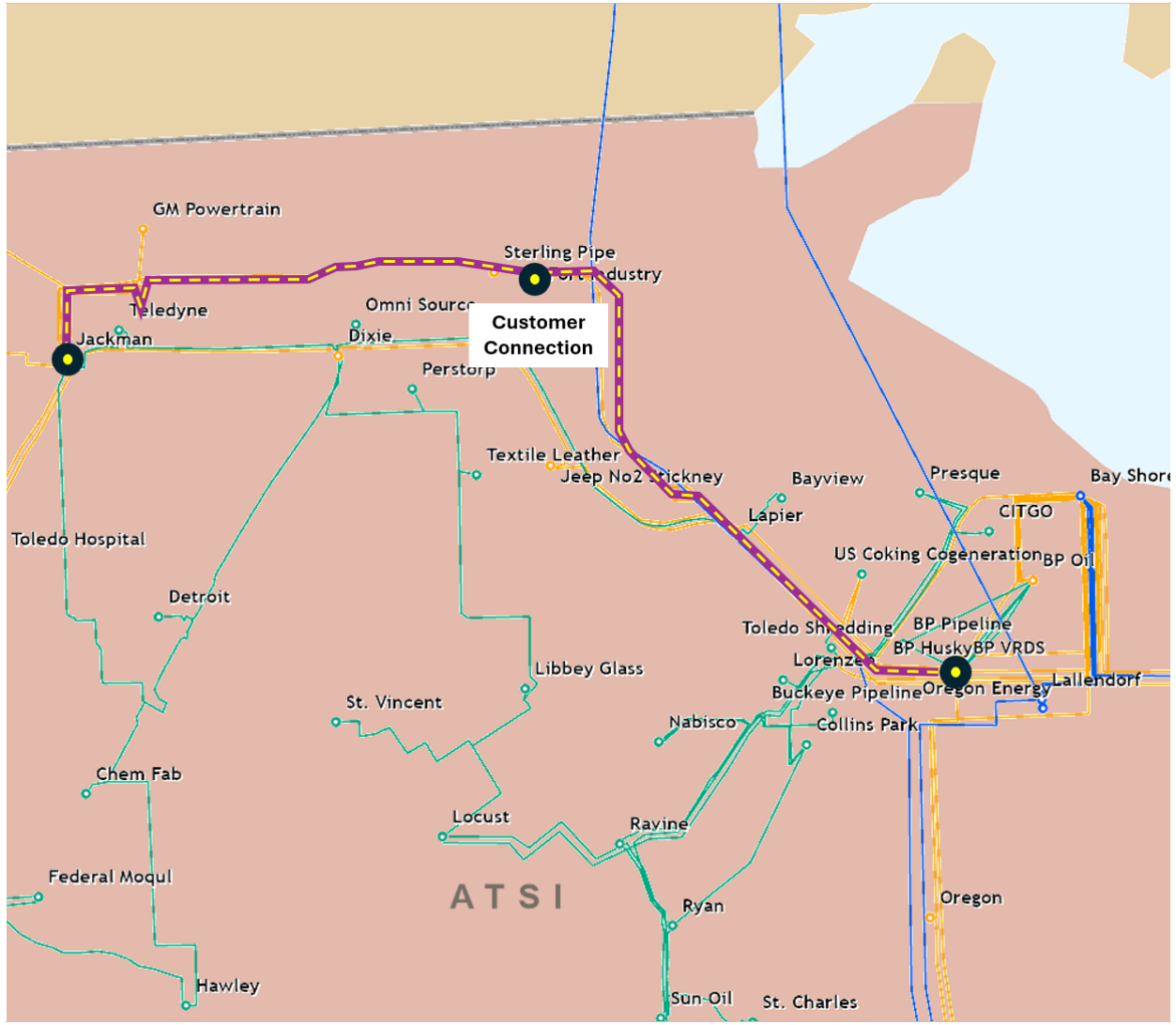
Problem Statement:

The BP Husky – Jackman 138 kV Line is 9.0 miles long and serves two delivery points and one Toledo Edison's Fort Industry Substation.

A loss of the BP Husky – Jackman 138 kV Line will cause approximately 27 MVA of consequential load loss and interrupt approximately 3,800 customers.

Toledo Edison is anticipating load growth at Fort Industry Substation approaching 44 MVA.

Since 2020, the BP Husky - Jackman 138 kV Line has experienced two sustained outages.



ATSI Transmission Zone M-3 Process
Bellevue – West Fremont 69 kV Line

Need Number: ATSI-2025-026

Process Stage: Need Meeting - SRRTEP-W - 10/17/2025

Project Driver:

Equipment Condition/Performance/Risk

Specific Assumption Reference:

System Performance Global Factors

- System reliability and performance
- Substation/line equipment limits

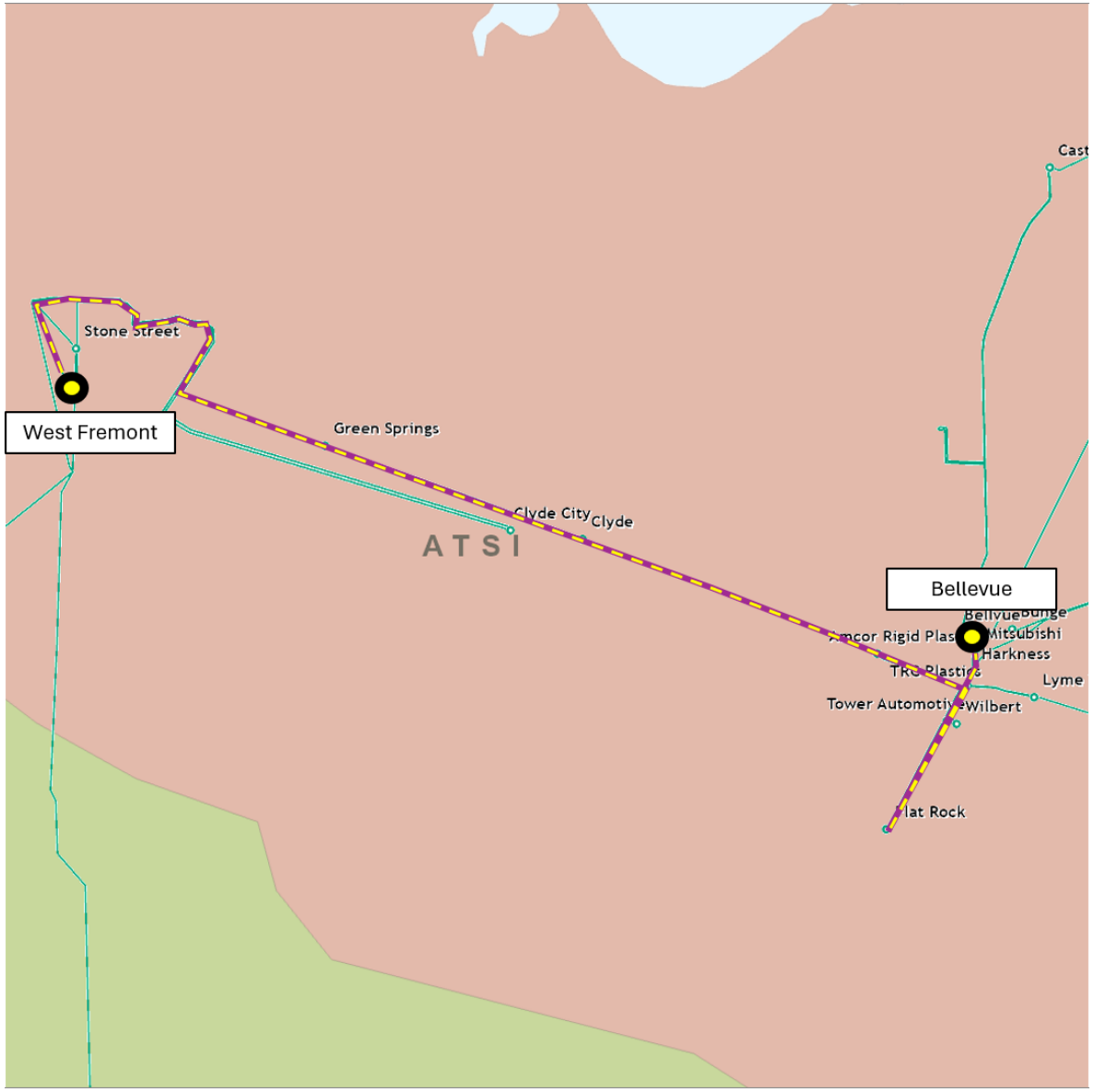
Line Condition Rebuild/Replacement

- Age/condition of wood pole transmission line structures

Problem Statement:

The Flat Rock (Bellevue) 69 kV Line is 26.1 miles in length and has been a consistent low performing line in the ATSI zone. In terms of age, approximately 4% of wood poles were installed in 1950 or before and 62% of wood poles were installed in 1973. The last wood pole inspection in 2019 found that over 41% of wood poles had defects such as rot, decay or defective grounds.

This line has had a total of ten outages in the last five years. Four outages have been caused by failed equipment.



ATSI Transmission Zone M-3 Process
Ironville-Sun Oil 69 kV Line

Need Number: ATSI-2025-027

Process Stage: Need Meeting - SRRTEP-W - 10/17/2025

Project Driver:

Equipment Condition/Performance/Risk

Specific Assumption Reference:

System Performance Global Factors

- System reliability and performance
- Substation/line equipment limits

Line Condition Rebuild/Replacement

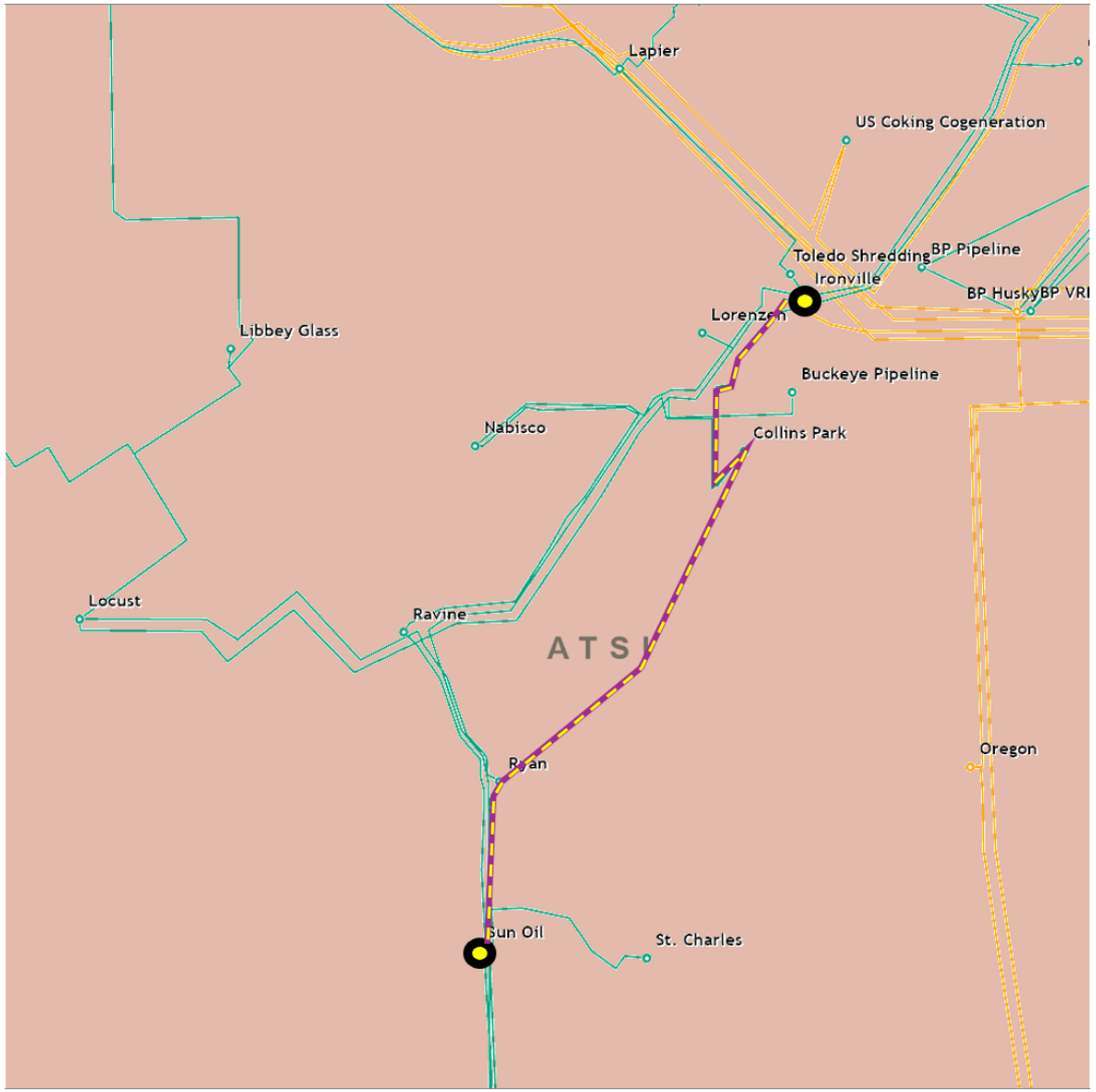
- Age/condition of wood pole transmission line structures

Problem Statement:

The Ironville-Sun Oil 69 kV Line was constructed in 1950 and is approaching end of life. It is 4.5 miles long including the tap to Modelez, with wood pole transmission structures.

Recent inspections found the line is exhibiting deterioration resulting in increased maintenance costs. Inspection findings include:

- Most structures require replacement due to overall deterioration.
- Most structures require repairs to insulators and related hardware condition, indicating that components are reaching end of life.
- The majority of conductor on this line is past its expected life span of 40-60 years. 4.5 miles of conductor was installed in 1950.
- On the tap to Modelez (0.7 miles), 20 of the 25 wood poles (80%) were installed in 1954 or before. These poles are outside of their expected life span of 40-60 years.



ATSI Transmission Zone M-3 Process
Ravenna – Streetsboro 69 kV Line

Need Number: ATSI-2025-028

Process Stage: Need Meeting - SRRTEP-W - 10/17/2025

Project Driver:

Equipment Condition/Performance/Risk

Infrastructure Resilience

Operational Flexibility and Efficiency

Specific Assumption Reference:

System Performance Global Factors

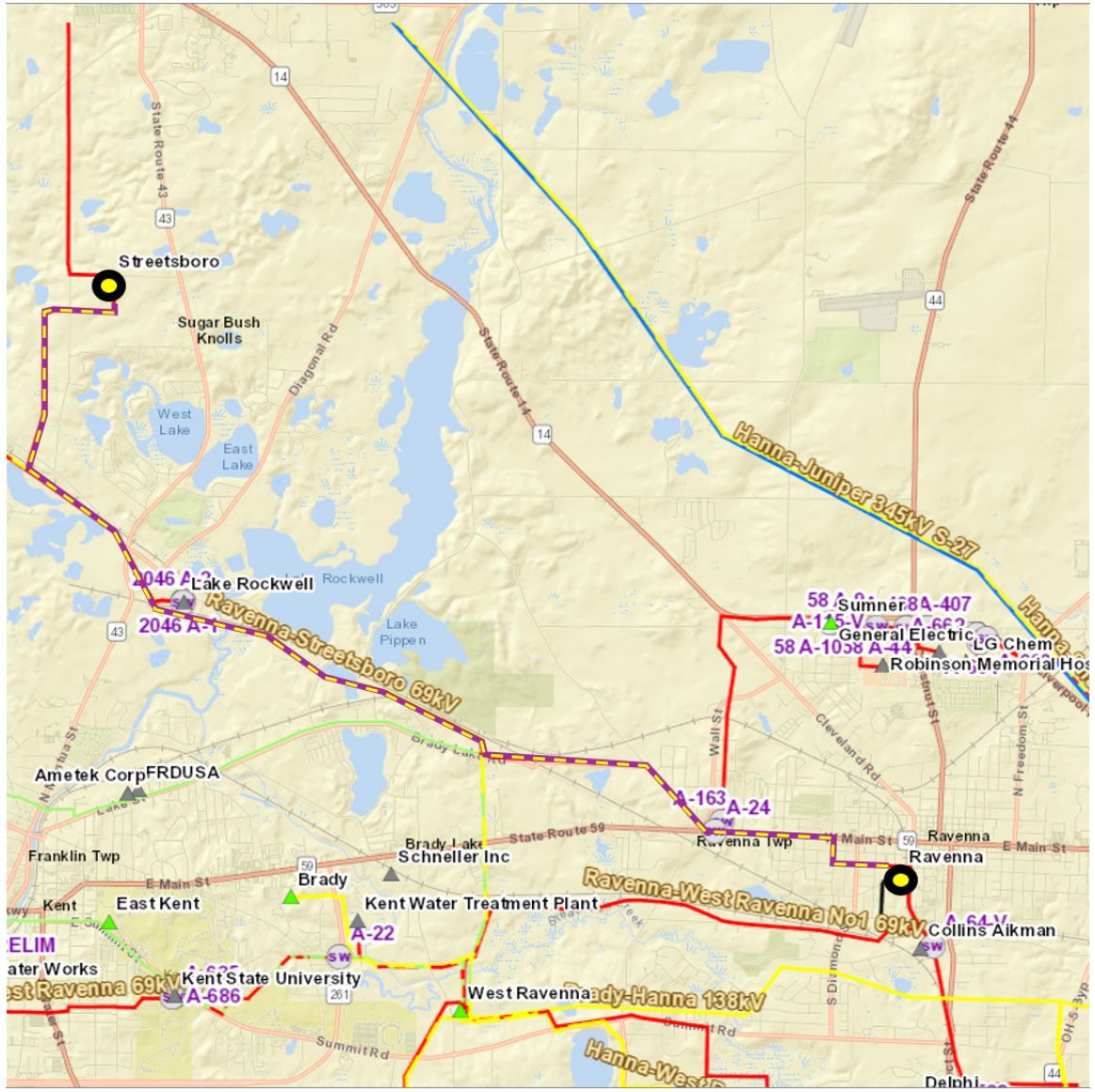
- System reliability and performance
- Load at risk in planning and operational scenarios
- Age/condition of transmission line conductors and hardware
- Reliability of Non-Bulk Electric System (Non-BES) Facilities
- Transmission line with high loading

Problem Statement:

A loss of the West Ravenna Substation 69 kV bus causes thermal loading of 120% of the Ravenna - Streetsboro 69 kV Line Summer Emergency rating (54 MVA) in the 2025 Series 2030 RTEP Summer Case. This contingency impacts approximately 60 MW of load and 13,700 customers.

The Ravenna – Streetsboro 69 kV Line has experienced one unscheduled outage since 2020.

Approx. 1.8 miles of the Ravenna-Lake Rockwell section from was installed in 1962 with 3/0 ACSR conductor. Existing Ratings: 45 / 54 / 51 / 65 MVA (SN/SE/WN/WE).



ATSI Transmission Zone M-3 Process
Ironville-Locust 69 kV Line

Need Number: ATSI-2025-029

Process Stage: Need Meeting - SRRTEP-W - 10/17/2025

Project Driver:

Equipment Condition/Performance/Risk

Specific Assumption Reference:

System Performance Global Factors

- System reliability and performance
- Substation/line equipment limits

Line Condition Rebuild/Replacement

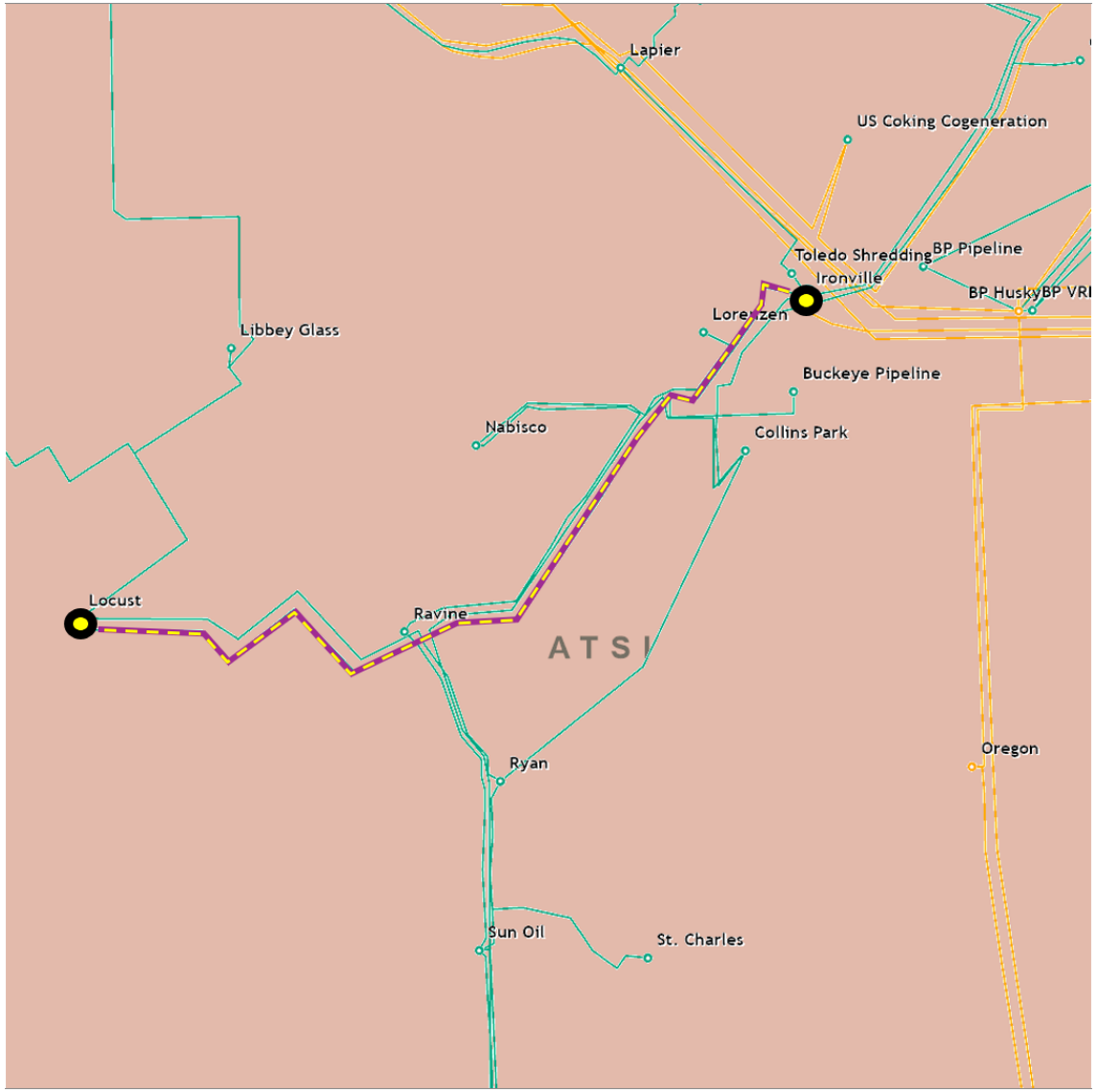
- Age/condition of wood pole transmission line structures

Problem Statement:

The Ironville-Locust 69 kV Line was constructed over 48 years ago and is approaching end of life. It is 5.5 miles long with wood pole transmission structures.

Recent inspections indicate the line is exhibiting deterioration resulting in increased maintenance costs. Inspection findings include visual degradation of most insulators and hardware.

The majority of conductor on this line is past its expected life span of 40-60 years. 0.34 miles of conductor was installed in 1920 , 0.25 miles was installed in 1960 , and 1.39 miles was installed in 1977.



ATSI Transmission Zone M-3 Process
Clark - North Hampton 69 kV Line

Need Number: ATSI-2025-030

Process Stage: Need Meeting - SRRTEP-W - 10/17/2025

Project Driver:

Customer Service

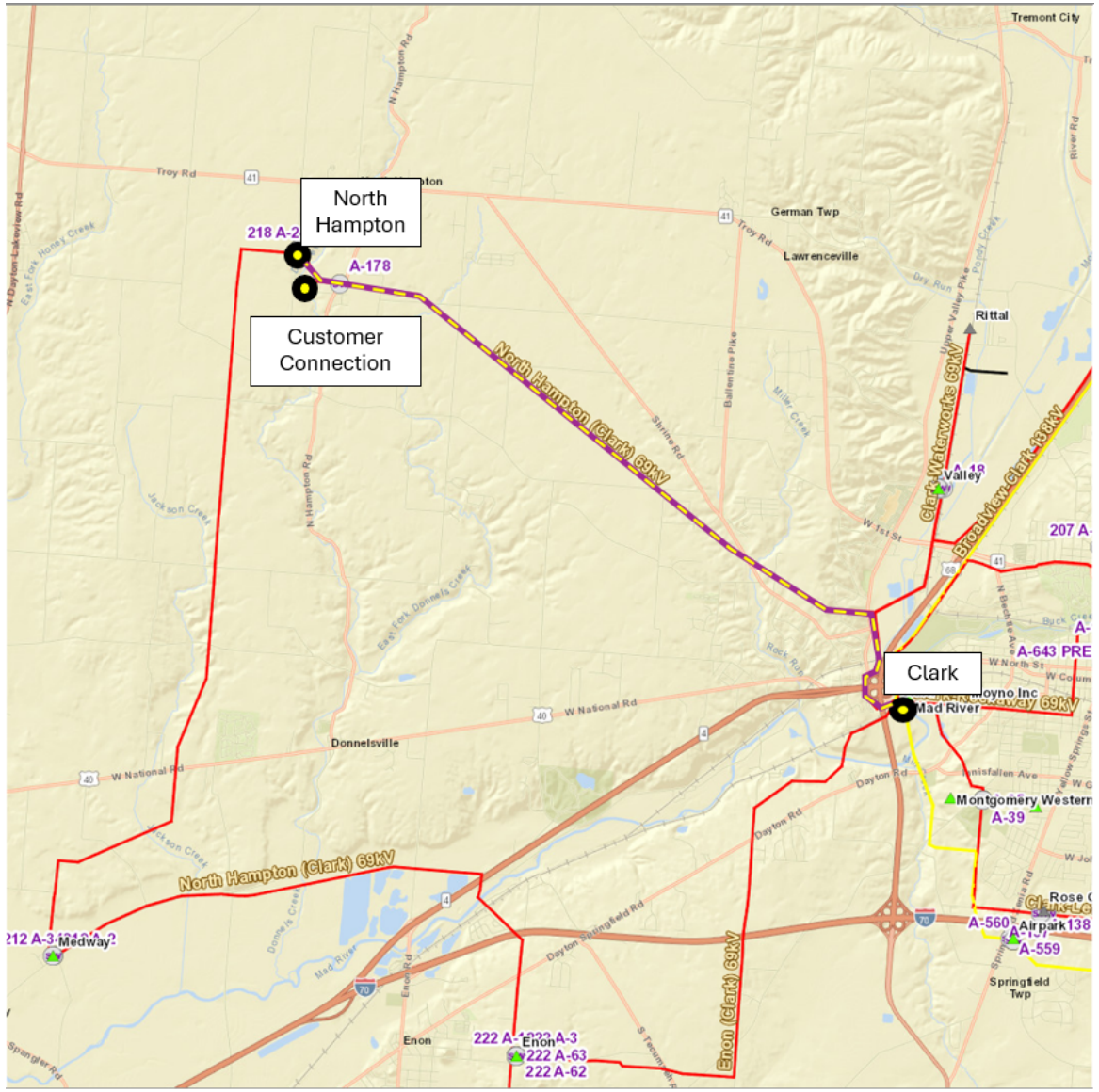
Specific Assumption Reference:

New wholesale connection request will be evaluated based on FirstEnergy's "Requirements for Transmission Connected Facilities" document and FirstEnergy's "Transmission Planning Criteria" document.

Problem Statement:

New Wholesale Connection – A customer has requested a new 69 kV delivery point near the North Hampton (Clark) 69 kV Line. The anticipated load of the new customer connection is 14 MVA. The request is approximately 5.3 miles from North Hampton Substation.

Requested in-service date is 6/1/2028.



ATSI Transmission Zone M-3 Process
London - Tangy 138 kV Line

Need Number: ATSI-2025-031

Process Stage: Need Meeting - SRRTEP-W - 10/17/2025

Project Driver:

Customer Service

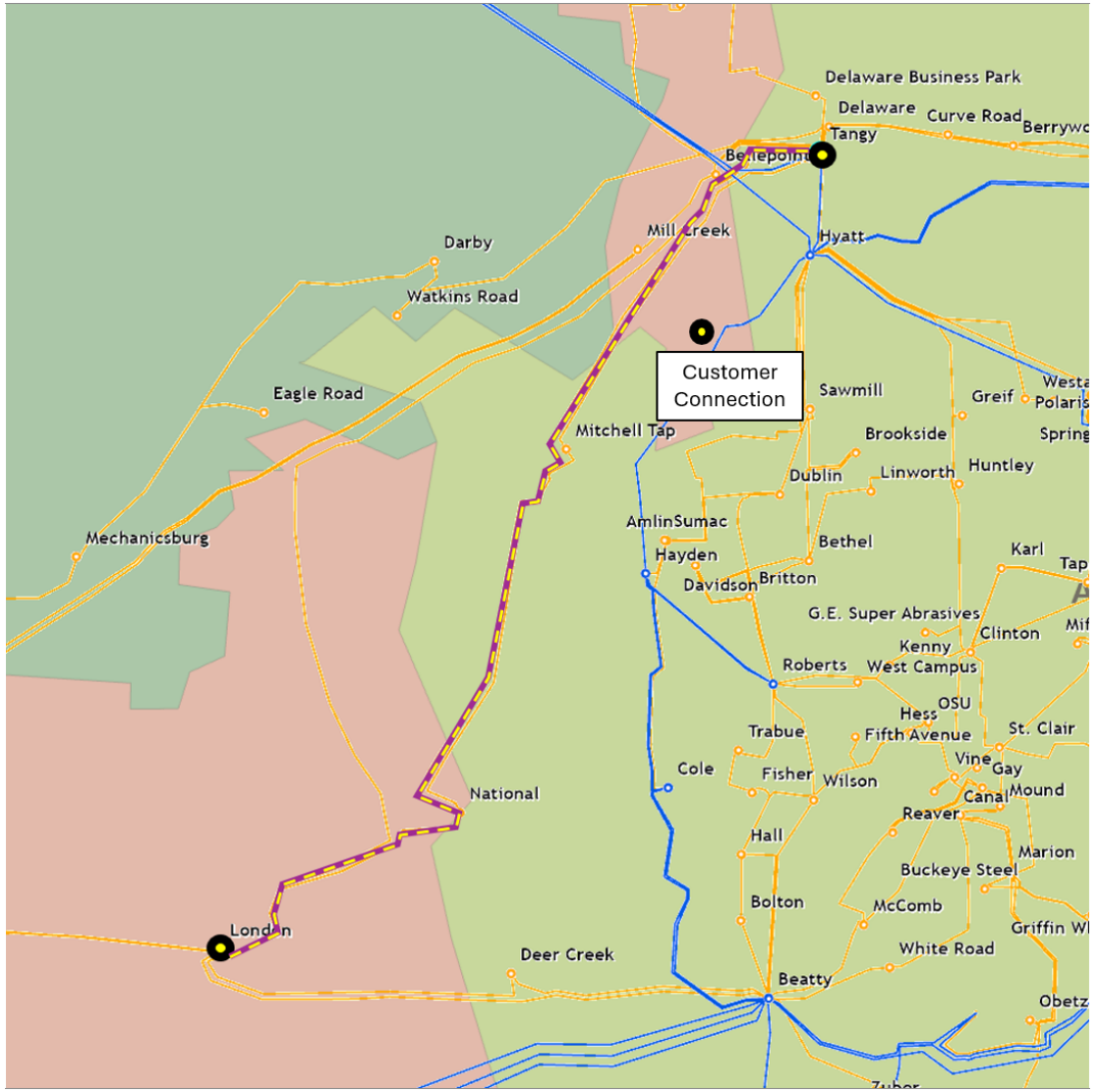
Specific Assumption Reference:

New customer connection request will be evaluated based on FirstEnergy's "Requirements for Transmission Connected Facilities" document and FirstEnergy's "Transmission Planning Criteria" document.

Problem Statement:

New Customer Connection – A Customer has requested a new 138 kV delivery point near the London - Tangy 138 kV Line. The anticipated load of the new customer connection is 12 MVA and the anticipated generation is 7.5 MW. The request is 3.3 miles from the London - Tangy 138 kV Line.

Requested in-service date is 8/16/2027.



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

ATSI Transmission Zone M-3 Process
Carlisle - Johnson 138 kV Line

Need Number: ATSI-2025-025

Process Stage: Solution Meeting - SRRTEP-W - 10/17/2025

Previously Presented: Need Meeting - SRRTEP-W - 09/19/2025

Project Driver:

Customer Service

Specific Assumption Reference:

New customer connection request will be evaluated based on FirstEnergy's "Requirements for Transmission Connected Facilities" document and FirstEnergy's "Transmission Planning Criteria" document.

Problem Statement:

New Customer Connection – A customer requested a new 138 kV delivery point near the Carlisle – Johnson 138 kV Line. The anticipated load of the new customer connection is 12 MVA. The request is 1.3 miles from the Carlisle – Johnson 138 kV Line.

ATSI Transmission Zone M-3 Process
Carlisle - Johnson 138 kV Line

Need Number: ATSI-2025-025

Process Stage: Solution Meeting - SRRTEP-W - 10/17/2025

Proposed Solution:

Carlisle - Johnson 138 kV Line - 138 kV Transmission Line Tap

- Install two main-line switches and one tap switch
- Construct approximately 1.3 miles of 138 kV transmission line
- Adjust relay settings at Carlisle and Johnson substations
- Install revenue metering

Alternatives Considered:

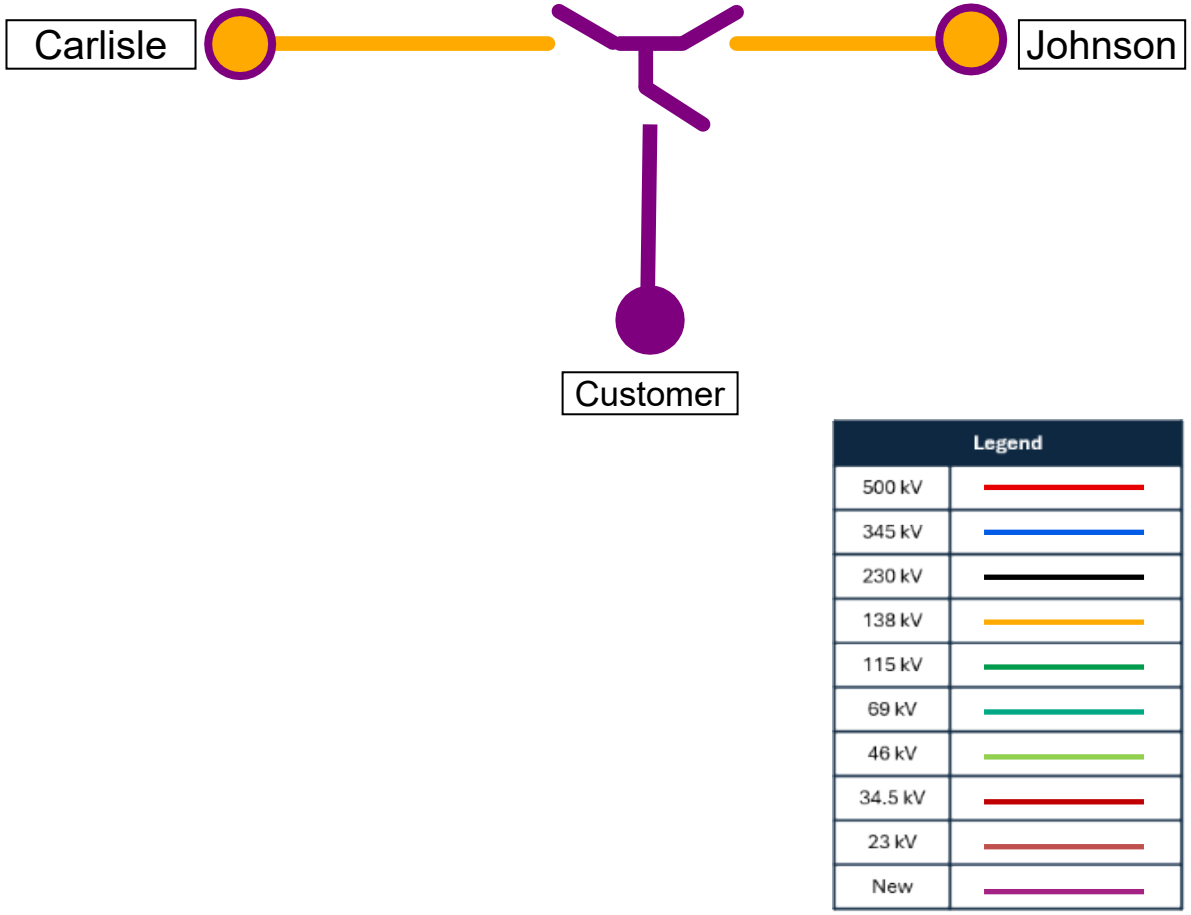
No reasonable alternatives to meet the customer's request near the Carlisle - Johnson 138 kV Line.

Estimated Project Cost: $2.08M

Projected In-Service: 10/27/2027

Project Status: Conceptual

Model: 2023 RTEP - 2028 Summer 50/50 Case



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

10/07/2025– V1 – Original version posted to pjm.com