

Subregional RTEP Committee – Western FirstEnergy Supplemental Projects

June 16, 2023

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

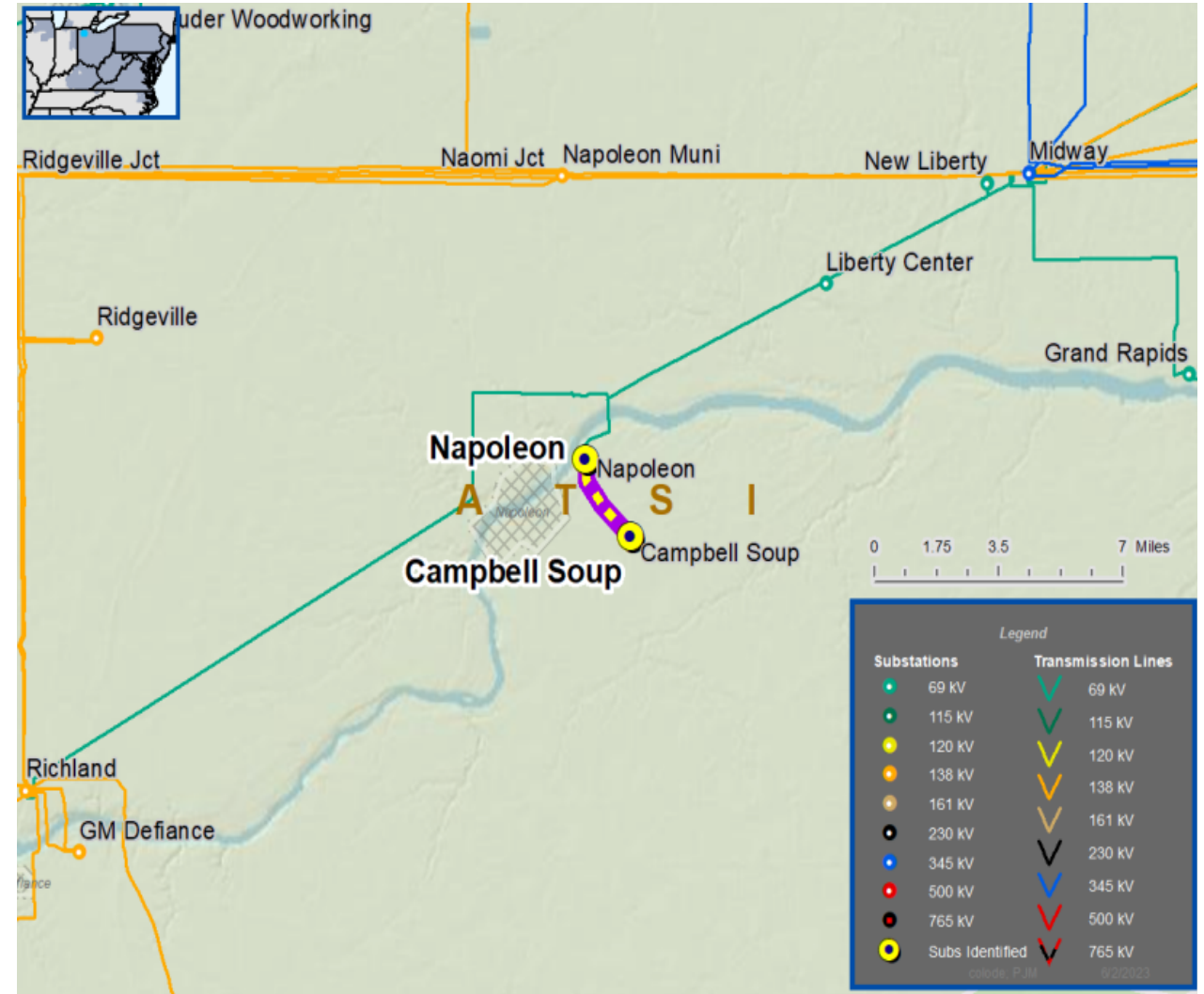
Need Number: ATSI-2023-007
Process Stage: Need Meeting – 06/16/2023

Supplemental Project Driver(s):
Customer Service

Specific Assumption Reference(s):
 New customer connection request will be evaluated per FirstEnergy’s “Requirements for Transmission Connected Facilities” document and “Transmission Planning Criteria” document.

Problem Statement
 Customer Connection – Customer is requesting to retire an existing 69 kV delivery point on the Napoleon – Campbell Soup 69 kV Line. In addition, the customer is requesting a new 69 kV delivery point along the same transmission line to replace the retired delivery point which will have an anticipated load of 25 MVA.

Requested In-Service Date:
 03/31/2024



Need Number: ATSI-2023-010
Process Stage: Need Meeting – 06/16/2023

Supplemental Project Driver(s):
Operational Flexibility and Efficiency
Equipment Material Condition, Performance and Risk
Infrastructure Resilience

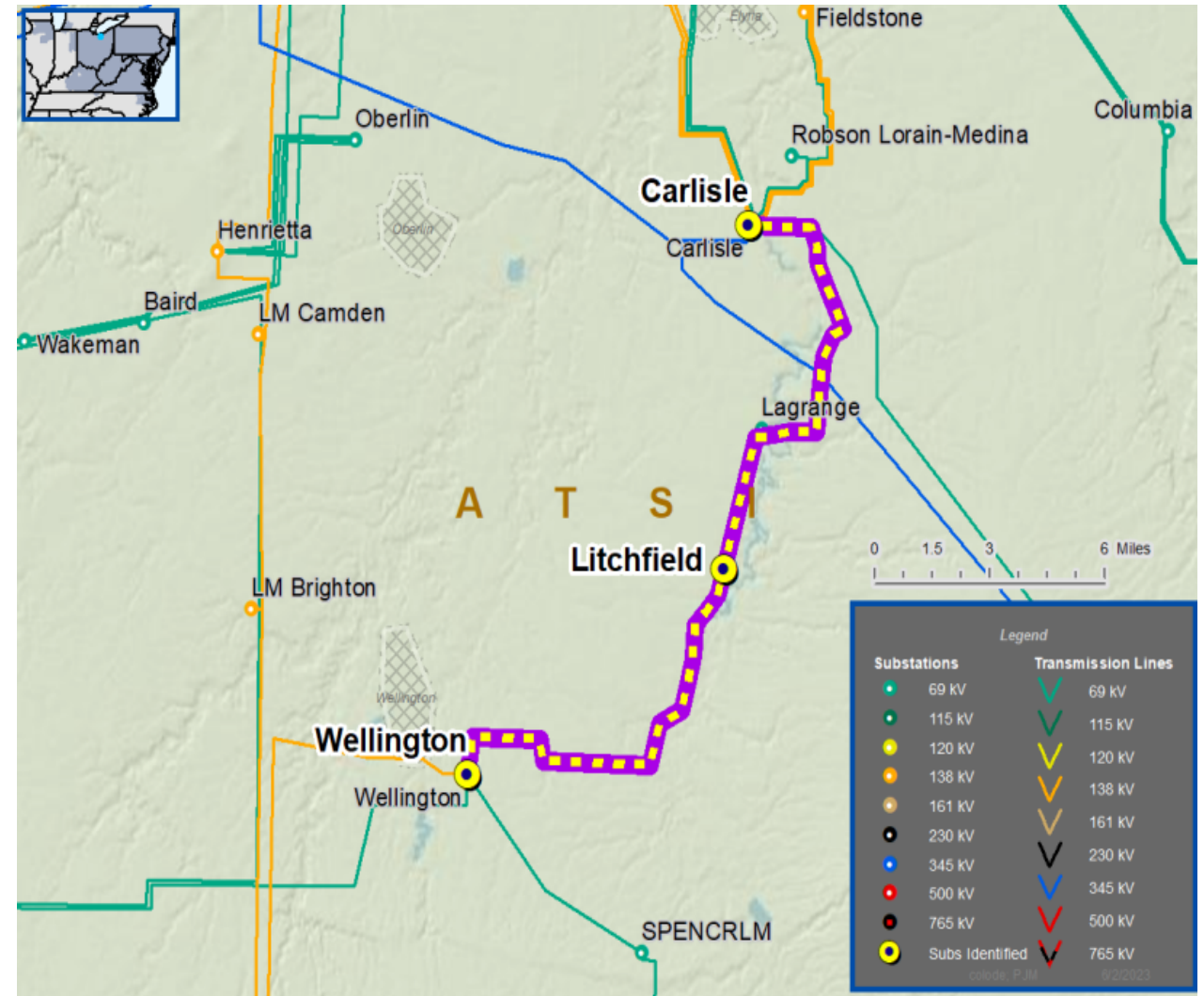
Specific Assumption Reference(s):

Global Considerations

- System reliability and performance
- Load at risk in planning and operational scenarios
- Age/condition of transmission line conductor, hardware and structures
- Negatively impact customer outage frequency and/or duration

Network Radial Lines

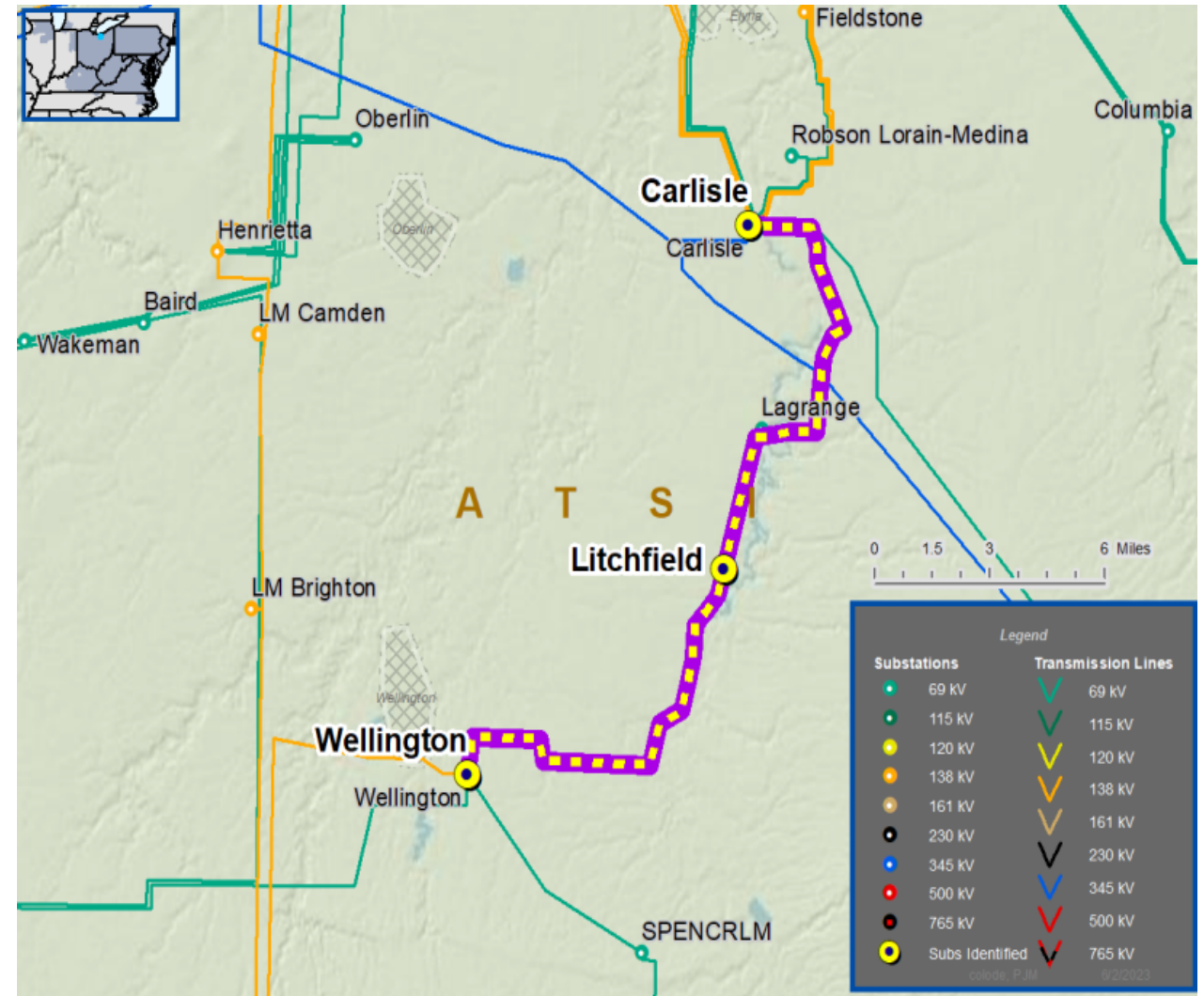
- Load at risk and/or customers affected
- Proximity to other networked facilities
- Reconductor/Rebuild Transmission Lines
- Build New Transmission Line



Need Number: ATSI-2023-010
Process Stage: Need Meeting – 06/16/2023

Problem Statement:

- Litchfield Substation is located on the Carlisle – Wellington 69 kV Line via a radial tap line of approximately 6.3 miles.
- The substation serves approximately 7.1 MW of load and approximately 2,000 customers with no alternative feed.
- A CVI inspection identified that 22 of the 87 structures on the tap line have defects noted with decay and sound test failures. Also, all 87 structures are greater than 40 years old.
- The Carlisle –Wellington 69 kV Line is approximately 29 miles and since 2017 has experienced sixteen total outages: seven momentary and nine sustained outages with average sustained outage duration of 29 minutes.
 - In 2021 and 2020, the Litchfield Substation experienced two extended sustained outages, approximately 12 hours and one (1) hour, respectively due to weather related events.
- A forced or maintenance outage on the tapped line would require the outage of the Litchfield Substation for an extended period.
- The Carlisle-Wellington 69 kV Line is being rehabbed/rebuilt under ATSI-2018-018 (s1803). However, the Litchfield radial tap line was excluded from the scope of ATSI-2018-018 due to lack of an alternate feed to Litchfield and constructability challenges.



Need Number: ATSI-2023-011
Process Stage: Need Meeting – 6/16/2023

Supplemental Project Driver(s):

Operational Flexibility and Efficiency
Equipment Material Condition, Performance and Risk
Infrastructure Resilience

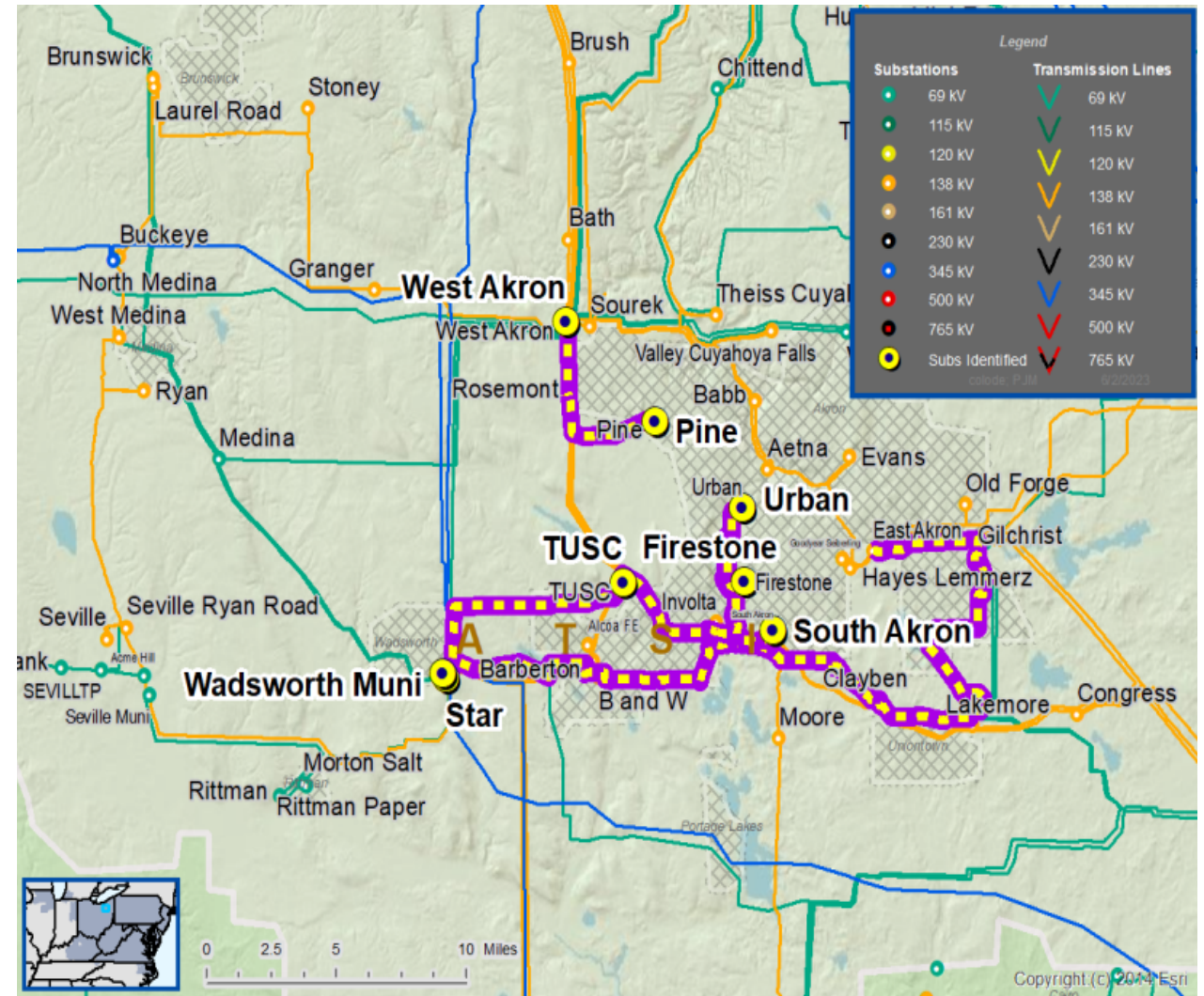
Specific Assumption Reference(s):

Global Considerations

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

Add/Expand Bus Configuration

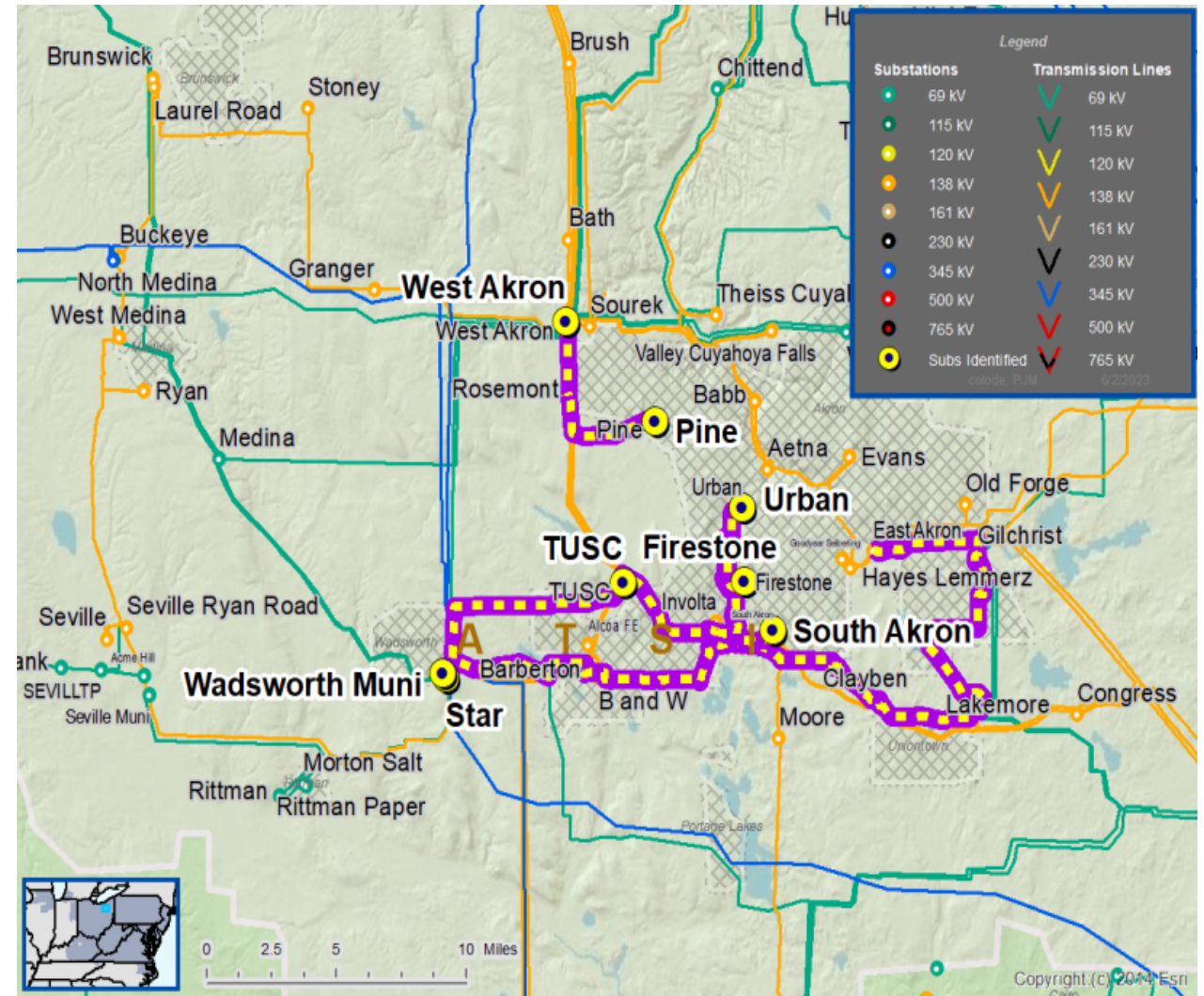
- Loss of substation bus adversely impacts transmission system performance
- Eliminate simultaneous outages to multiple networked elements under N-1 analysis
- Accommodate future transmission facilities
- Capability to perform system maintenance



Need Number: ATSI-2023-011
Process Stage: Need Meeting – 6/16/2023

Problem Statement:

- An N-1-1 outage will result in approximately 29,100 customers at risk and cause a consequential load loss of approximately 119 MW.
- An N-1-1 outage will result in approximately 9,360 customers at risk and cause a consequential load loss of approximately 38 MW and cause a backfeed condition from the Akron 23 kV system.
- Since 2014, the following lines have a combined total of seven momentary outages and six sustained outages:
 - Star - Urban 138 kV Line experienced three outages: 1 momentary. 2 sustained
 - Star - Wadsworth 138 kV Line experienced two outages: 1 momentary. 1 sustained
 - Pine - West Akron 138 kV Line experienced one outage: 0 momentary. 1 sustained
 - Star – Tusc 138 kV Line experienced no outages
 - Firestone - South Akron 138 kV Line experienced one outage: 0 momentary, 1 sustained
 - Firestone - Urban 138 kV Line experienced six outages: 5 momentary, 1 sustained



Need Number: ATSI-2023-012
Process Stage: Need Meeting – 6/16/2023

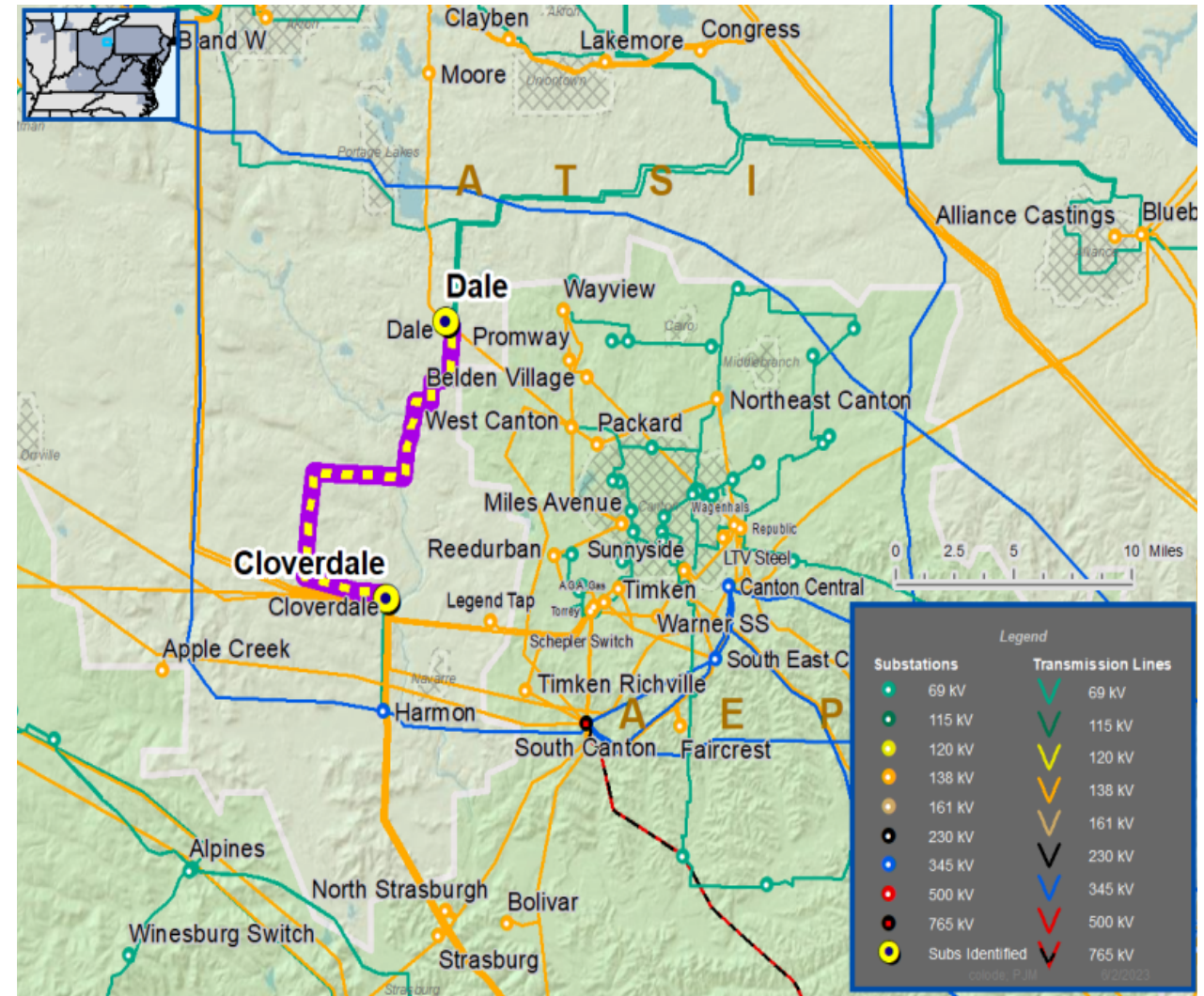
Supplemental Project Driver(s):
Operational Flexibility and Efficiency
Equipment Material Condition, Performance and Risk
Infrastructure Resilience

Specific Assumption Reference(s):

- 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 Cloverdale – Dale #2 69 kV Line is 14.74 miles and serves seven (7) delivery points
- A line fault will cause approximately 82 MW consequential loss of load and approximately 18,000 customers at risk
- Since 2015, the Cloverdale – Dale #2 69 kV Line has experienced a total of five (5) momentary outages and ten (10) sustained outages.



Solution

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-2023-003
Process Stage: Solution Meeting –6/16/2023
Previously Presented: Need Meeting – 4/21/2023

Project Driver(s):
Customer Service

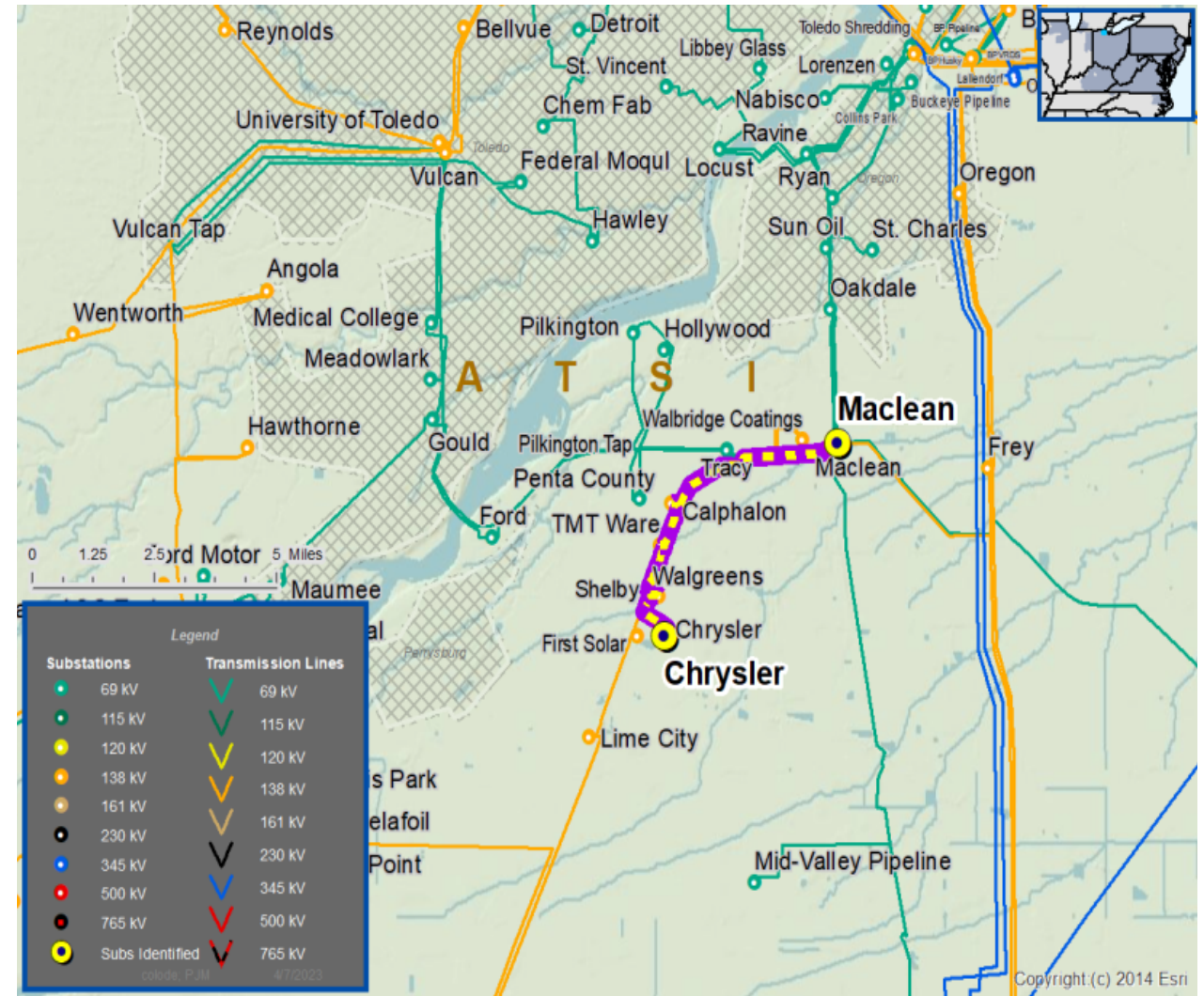
Specific Assumption Reference(s)

New customer connection request will be evaluated per FirstEnergy’s “Requirements for Transmission Connected Facilities” document and “Transmission Planning Criteria” document.

Problem Statement

New Customer Connection – Customer has requested a new 138 kV delivery point near the Chrysler-Maclean 138 kV line. The anticipated load of the new customer connection is 30 MVA.

Requested in-service date is 10/01/2024.



Need Number: ATSI-2023-003
Process Stage: Solution Meeting –6/16/2023
Previously Presented: Need Meeting – 4/21/2023

Proposed Solution:

138 kV Transmission Line Tap

- Install three SCADA controlled transmission line switches
- Construct approximately 250 ft of transmission line using 954 45/7 ACSR from tap point to the customer substation

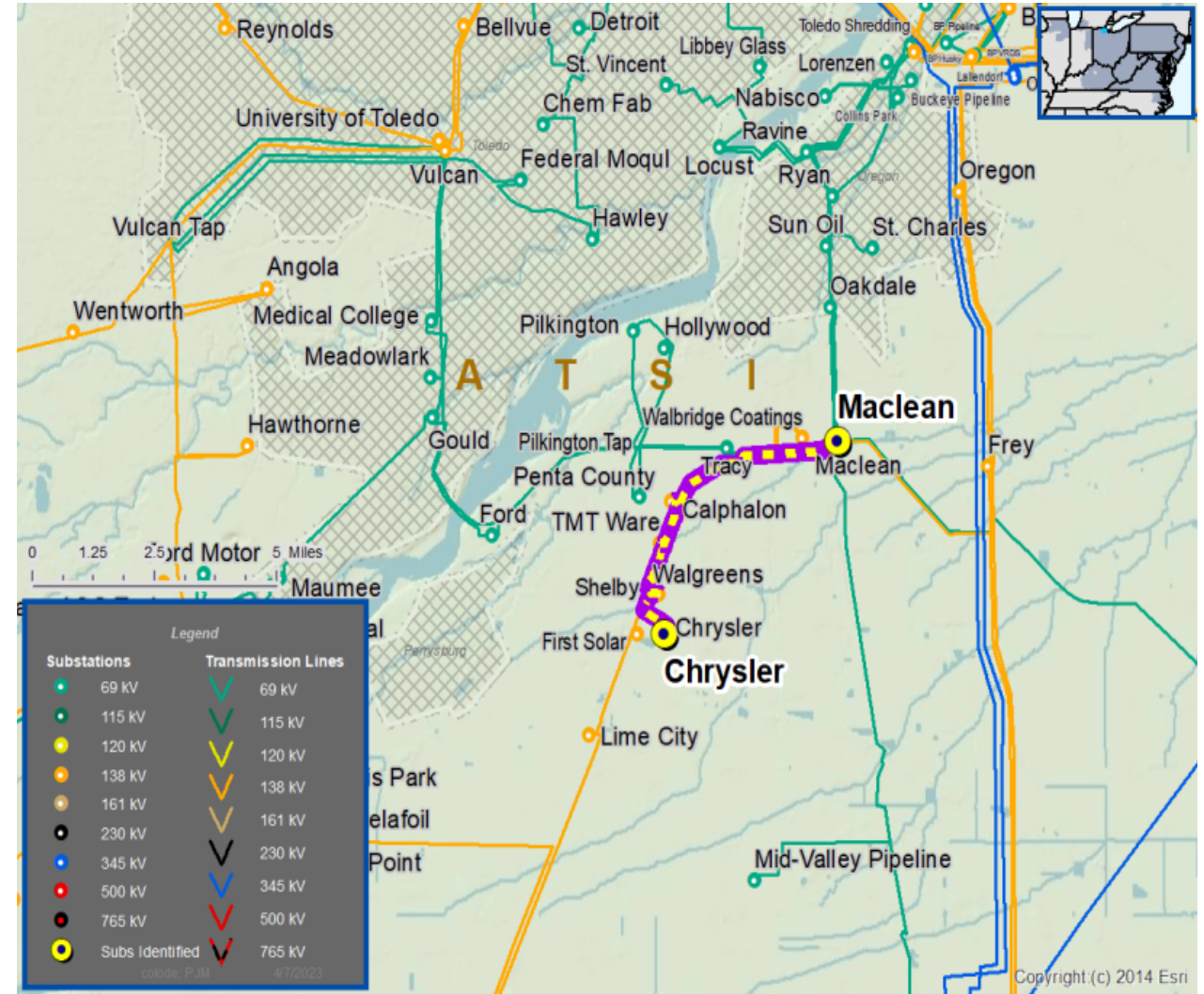
Alternatives Considered:

- No feasible alternatives to meet customer’s request

Estimated Project Cost: \$0.9M

Projected In-Service: 10/1/2024

Status: Engineering



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

6/xx/2023– V1 – Original version posted to pjm.com