Subregional RTEP Committee – Western
FirstEnergy Supplemental Projects

February 14, 2025

Changes to the Existing Projects

ATSI Transmission Zone M-3 Process
Ellsworth Substation – s1952 Scope Change

s1952: Originally presented in 01/14/2019 and 03/25/2019 SRRTEP Western meetings and re-presented in 04/19/2024 SRRTEP Western meetings.

Changes are marked in red

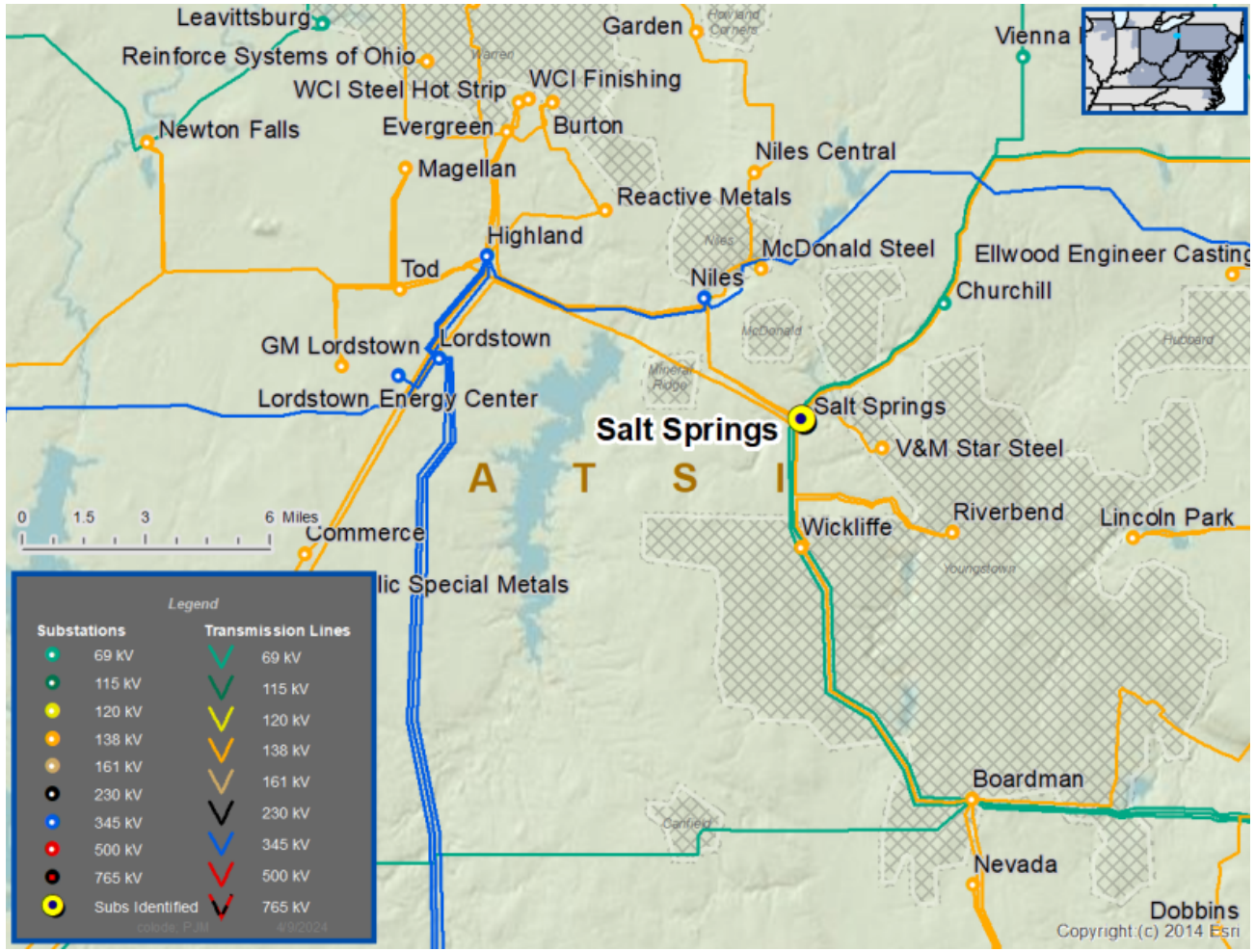
Project Driver(s):
Operational Flexibility and Efficiency
Infrastructure Resilience

Specific Assumption Reference(s)
Global Considerations
- System reliability and performance
- Reliability of Non-Bulk Electric System (Non-BES) facilities
- Load and risk in planning and operational scenarios

Problem Statement
Kimberly Area 69 kV system
The Kimberly Substation is served from a 3.6-mile radial transmission line from Salt Springs Substation with 19 MW and 5,500 customers at risk.

Additionally, the contingency loss of the nearby Berlin Lake-Boardman 69 kV Line results in the loss of approximately 46 MW and 12,500 customers at four (4) transmission service points.

Reason for Revision (02/14/2025):
Clarify and add scope to construct the new Ellsworth – Kimberly 69 kV Line.



ATSI Transmission Zone M-3 Process
Ellsworth Substation – s1952 Scope Change

Proposed Solution:

- At Ellsworth Substation
  - Expand and reconfigure existing Ellsworth Substation to a new 69 kV four-breaker ring bus substation
  - Install associated line relaying and control
- Loop in the existing Berlin Lake – Boardman 69 kV Line into Ellsworth Substation creating two new circuits:
  - Berlin Lake – Ellsworth 69 kV Line (5.1 circuit miles)
  - Boardman – Ellsworth 69 kV Line (11.9 circuit miles)
- At Kimberly
  - Install two 69 kV SCADA controlled switches
- At Victoria Road
  - Install three 69 kV SCADA controlled switches
- Construct a new Ellsworth – Kimberly 69 kV Line (approximately 9.7 miles)

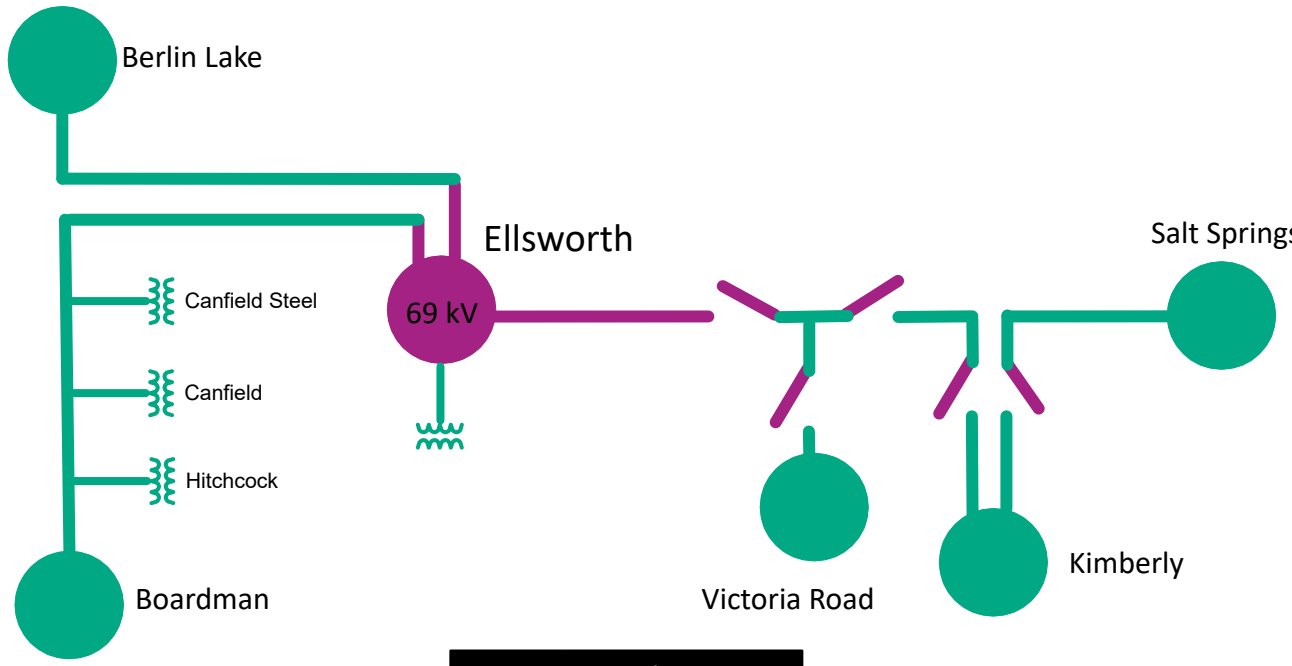
Transmission Line Ratings:

Berlin Lake – Ellsworth 69 kV Line
- Before Proposed Solution: N/A
- After Proposed Solution: 80 / 96 / 90 / 114 MVA (SN/SE/WN/WE)

Boardman – Ellsworth 69 kV Line
- Before Proposed Solution: N/A
- After Proposed Solution: 80 / 96 / 90 / 114 MVA (SN/SE/WN/WE)

Ellsworth – Kimberly 69 kV Line
- Before Proposed Solution: N/A
- After Proposed Solution: 111 / 134 / 125 / 159 MVA (SN/SE/WN/WE)

Estimated Project Cost: ~~$27 M~~ $36.3M



Legend	
500 kV	
345 kV	
230 kV	
138 kV	
115 kV	
69 kV	
46 kV	
34.5 kV	
23 kV	
New	

Continued on next slide…

ATSI Transmission Zone M-3 Process
Ellsworth Substation – s1952 Scope Change

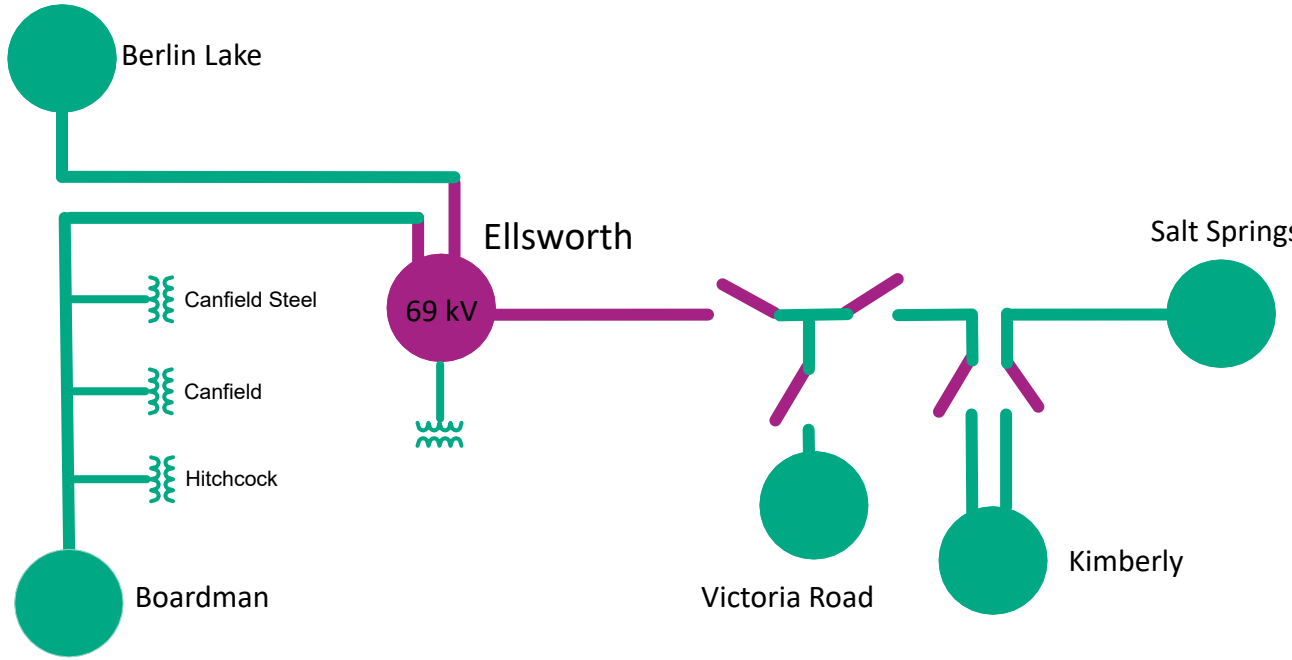
Alternatives Considered:

- ~~Install ring bus at Canfield substation (Space constrained)~~
- ~~Network Kimberly substation by building a new 69 kV line from Kimberly to Salt Springs substation~~

1. Install ring bus at Canfield Steel Substation (space constrained).
2. Construct a new 69 kV substation outside Canfield Steel Substation with new line loop. (previously proposed Weldon Substation and line build). This option was not selected due to the inability to acquire land to build the new substation. **Estimated Cost: $17.4M**
3. Reconfigure existing Kimberly Substation to a ring bus configuration. Build a new 69 kV line from Salt Springs Substation to Kimberly Substation. This option was not selected due to land and environmental constraints.

Project IS Date: 4/30/2027

Status: Pre-Engineering



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500 kV	
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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

02/10/2025– V1 – Original version posted to pjm.com