Western Sub Regional RTEP:
AEP Supplemental Projects

October 17, 2025

Needs

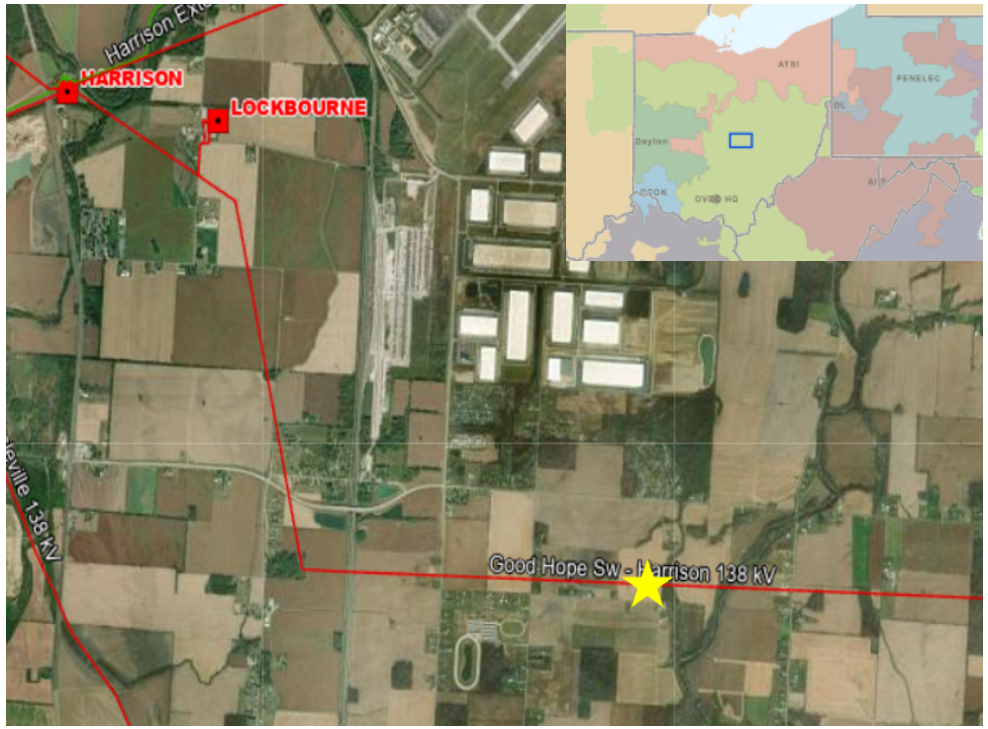
Stakeholders must submit any comments within 10 days of this meeting in order to provide time necessary to consider these comments prior to the next phase of the M-3 process

AEP Transmission Zone M-3 Process
Pickaway County, OH

Need change: The changes are highlighted in red below.

Need Number: AEP-2025-OH010
Process Stage: Need Meeting 10/17/2025
Previously presented: Need Meeting 07/18/2025
Project Driver: Customer Service
Specific Assumption References:
AEP Connection Requirements for the AEP Transmission System (AEP Assumptions Slide 12)

Problem Statement:
A customer has requested 138 kV transmission delivery to a site in Pickaway County, OH. The site is North of the AEP owned Lockbourne – Good Hope SW 138 kV section of the Lockbourne – Lemaster 138 kV circuit. An initial demand of 12.1MW by 02/2026 has been requested. The ultimate demand at this delivery point is expected to be 135 MW.



AEP Transmission Zone M-3 Process
East Tiffin, OH/Mousey Switch, OH

Need Number: AEP-2025-OH024

Process Stage: Need Meeting 10/17/2025

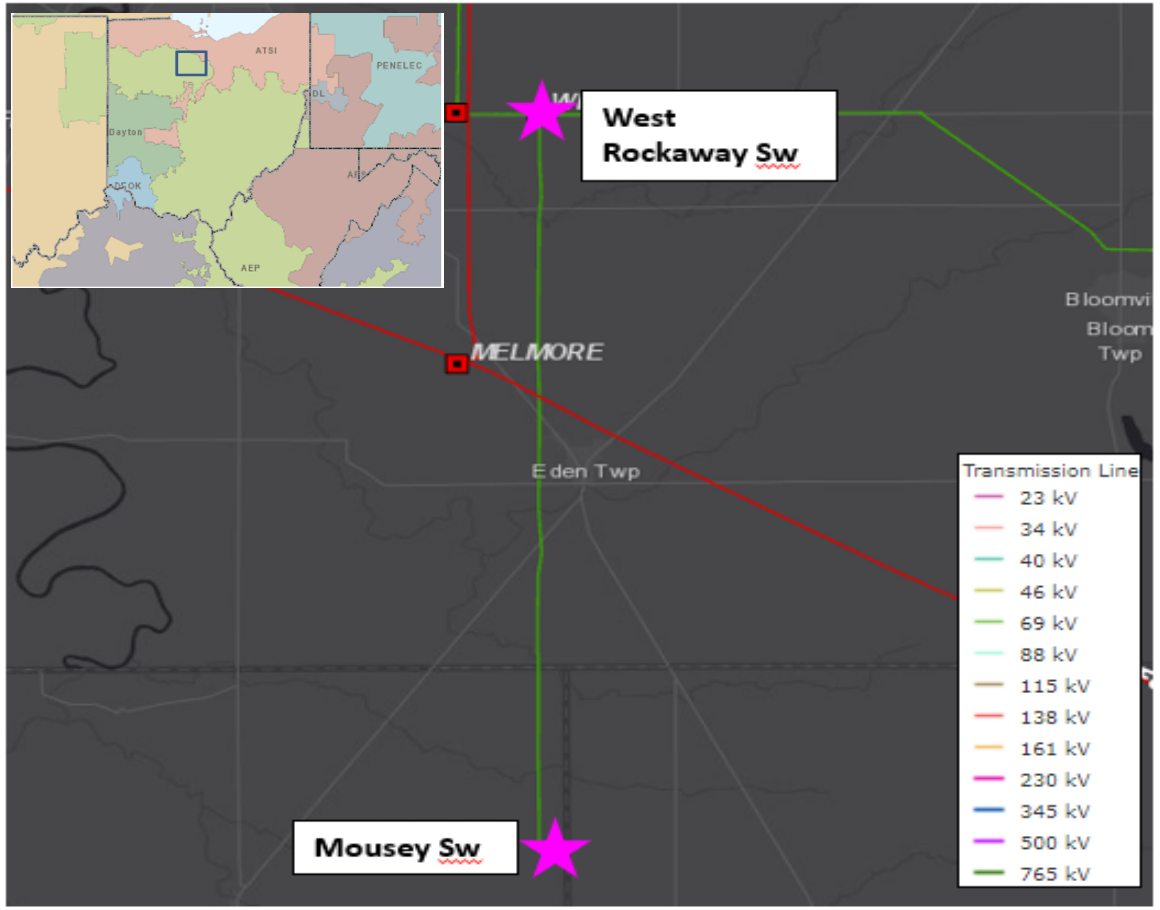
Project Driver: Equipment Condition/Performance/Risk

Specific Assumption References:

AEP Guidelines for Transmission Owner Identified Needs (AEP Assumptions Slide 13)

Problem Statement:

The West Rockaway - North Central Co-op 69kV line is 8 miles long and primarily consists of wood pole structures with vertical insulators, originally installed in 1960 with 1/0 ACSR 6/1 conductor. Currently, there are 13 structures with at least one open condition, which relates to 12.5% of the structures on the circuit. Of these structures, there are 14 structure based open conditions, and 9 ground lead wire related open conditions. There have also been 13 momentary and 9 permanent outages since 2017 which has resulted in an average outage duration of 57.38 hours.



AEP Transmission Zone M-3 Process
Abert, VA

Need Number: AEP-2025-AP007

Process Stage: Need Meeting 10/17/2025

Project Driver: Equipment Condition/Performance/Risk

Specific Assumption References:

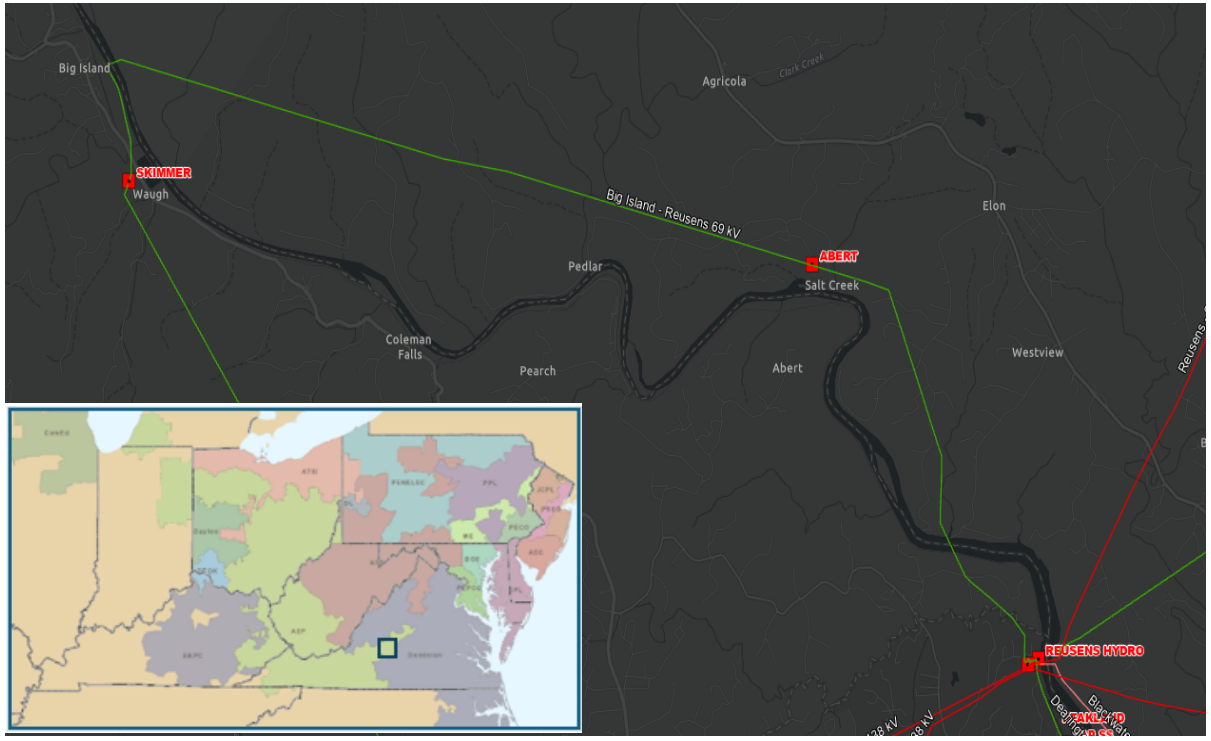
AEP Guidelines for Transmission Owner Identified Needs (AEP Assumption Slide 12)

Problem Statement:

Abert Station:

69 kV Cap Bank Circuit Switcher AA is a 2030-69 type, SF6 filled switcher that is 1989 vintage. This switcher is in poor health and this family of switchers is prone to malfunction. Performing maintenance on the capacitor bank can be difficult due to the limited access around the associated equipment. The 69 kV capacitor bank is also physically close to the 12kV Bay which complicates maintenance activities and outages.

The 69kV MOABs W, and Y switches and motor mechanisms are obsolete and there is no ability to procure spare parts. These MOABs are installed as a guyed wood pole within the station yard which limits access for maintenance and work within the station yard.



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

AEP Transmission Zone M-3 Process
East Leipsic, OH

Need Number: AEP-2025-OH011

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

Previously Presented: Need Meeting 07/18/2025

Project Driver: Equipment Condition/Performance/Risk, Operational Flexibility and Efficiency

Specific Assumption References:

AEP Guidelines for Transmission Owner Identified Needs (AEP Assumptions Slide 13 and 14)

Problem Statement:

Station: East Leipsic 138kV

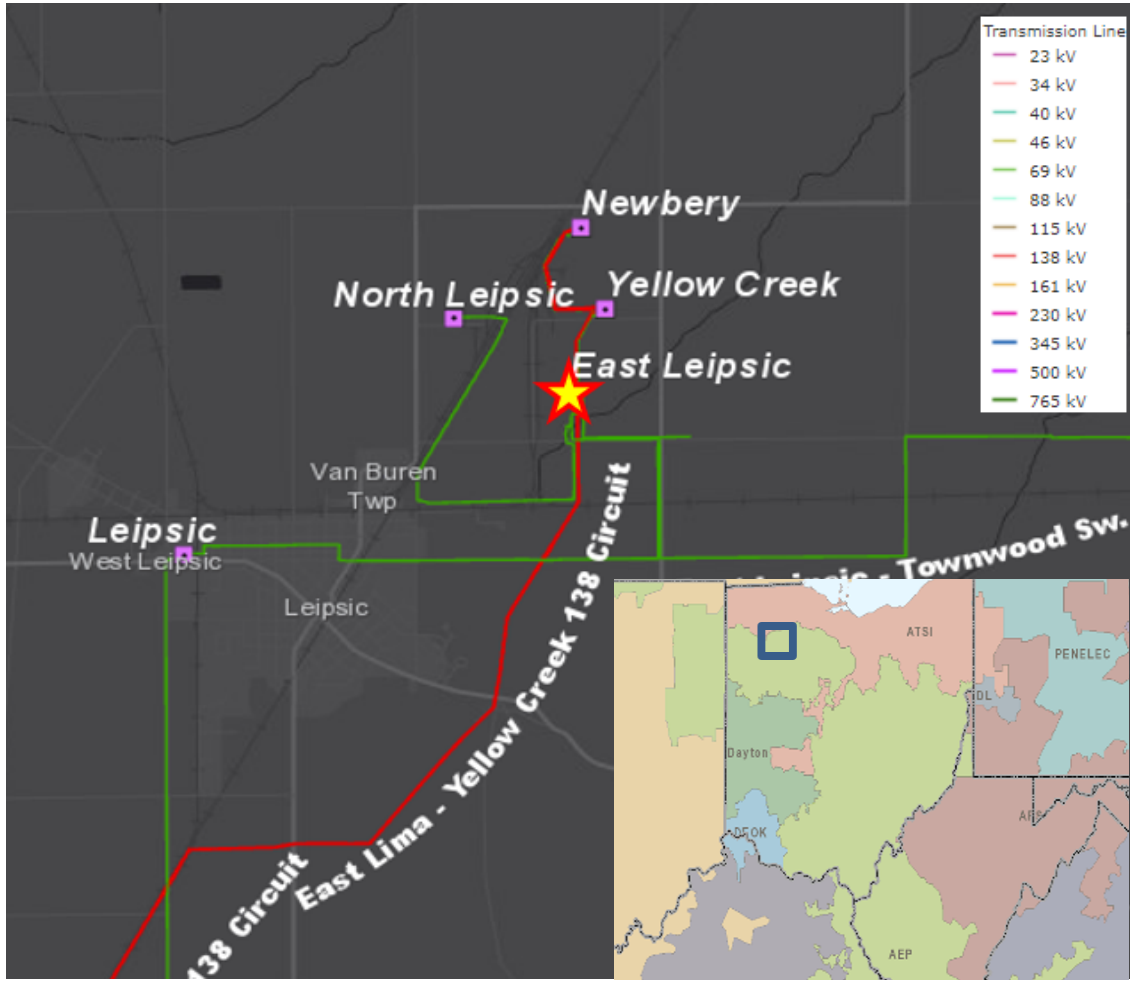
Transformer: Transformer 3 is a 1959 vintage 138/69kV unit. The transformer has elevated levels of carbon monoxide, carbon dioxide, methane and ethane indicating excessive decomposition of the paper insulating material which impacts the unit's ability to withstand future short circuit or through fault events.

Circuit Switcher AA: Circuit switcher AA is a Mark V SF6 type switcher. These switchers have had numerous documented malfunctions across the AEP fleet and spare/replacement parts are not readily available.

Relays: Currently, 40 of the 47 relays (85% of all station relays) are in need of replacement. 27 of these are of the electromechanical type and 4 of these are of the static type which have significant limitations with regards to spare part availability and fault data collection and retention. 9 relays are microprocessor type outside of their life expectancy.

Operational Flexibility:

Due to lack of appropriate sectionalizing, transformers 3, 4, and the 69kV bus are in the same zone of protection. Overlapping and combined zones of protection present challenges in coordinating relay settings correctly and can lead to over-tripping or misoperations.



AEP Transmission Zone M-3 Process
East Leipsic, OH

Need number(s): AEP-2025-OH011

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

Proposed Solution:

East Leipsic 138/69/34.5kV Station Work: Replace transformer #3 with 138/69/34.5kV three winding 90MVA unit and install associated low side 69kV circuit breaker. Additionally, install high side 69kV circuit breaker on Transformer #4 and replace 138kV capacitor bank circuit switcher AA with circuit breaker, remove 138kV bus tie switch X3 and replace obsolete electro-mechanical, solid state and legacy microprocessor relays with IEDs and relocate to the control building. Retire older control house and add backup station service.. Estimated Cost: $10.624 M

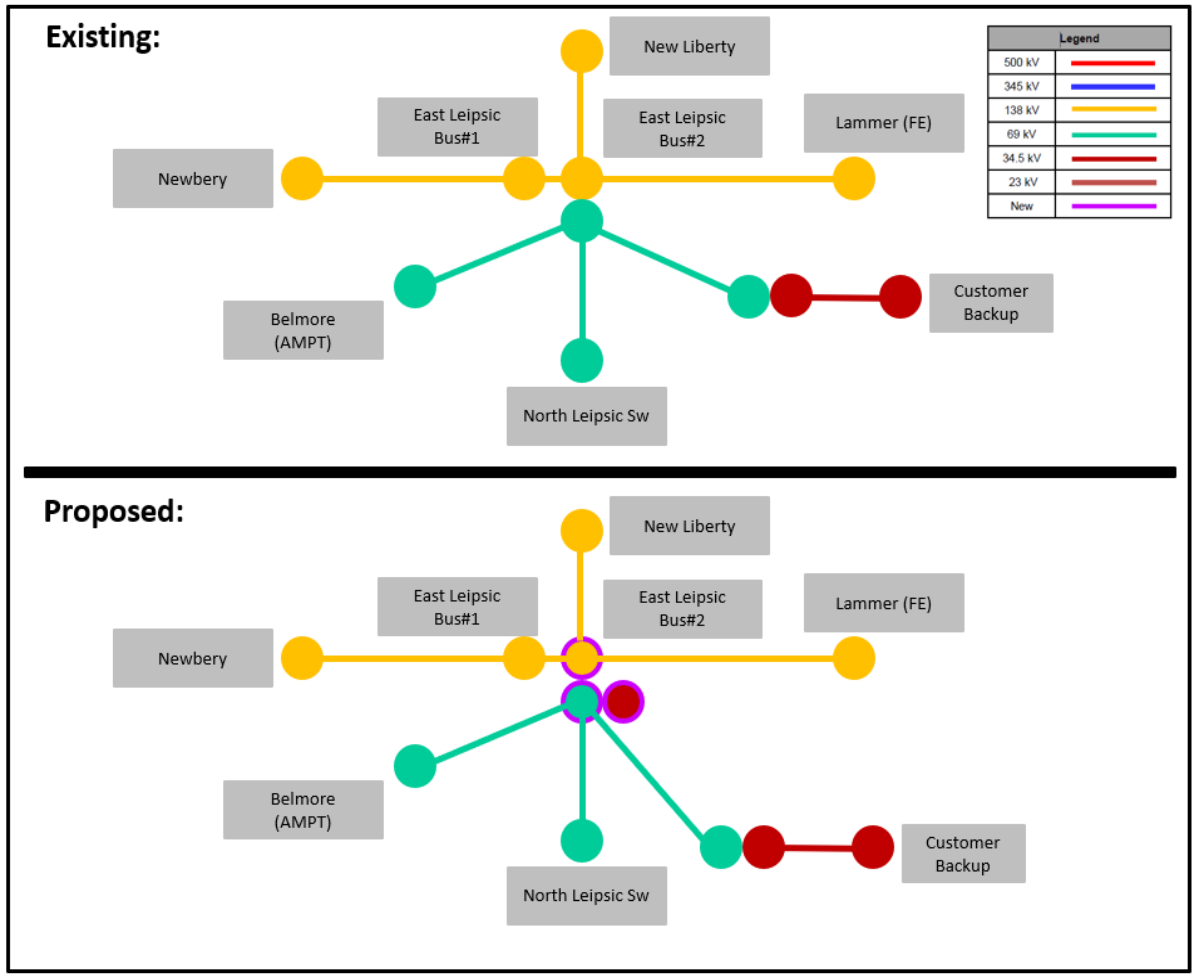
Transmission Cost Estimate: $10.624 M

Alternatives Considered:

Build a greenfield station to replace East Leipsic. Considering the space and outage availability within the existing station, this alternative was eliminated. Estimated cost: $30M

Projected In-Service: 11/01/2027

Project Status: Engineering



AEP Transmission Zone M-3 Process
Hicksville, OH

Need Number: AEP-2022-OH028

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

Previously Presented: Need Meeting 06/15/2022

Project Driver:

Equipment Material/Condition/Performance/Risk

Specific Assumption Reference:

AEP Guidelines for Transmission Owner Identified Needs (AEP Assumptions Slide 13)

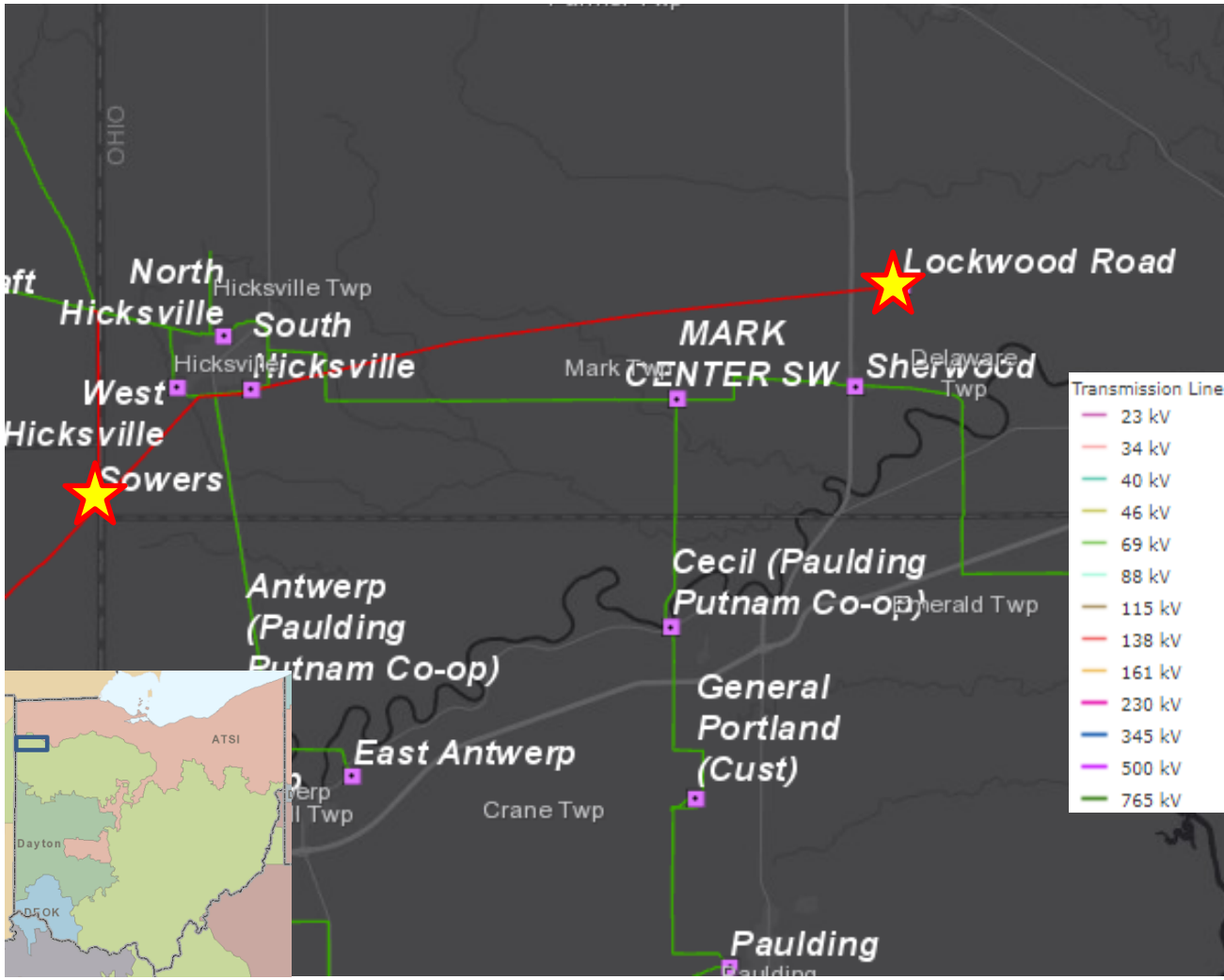
Problem Statement:

<u>Sowers – Lockwood Road 138kV Line:</u>

- Original Install Date: 1966
- Length of Line: 14.93 Miles
- Total Structure Count: 103
    - Wooden H frame structures, Steel H frame structures
    - Vertical ceramic insulators
- Conductor Type: 636 ACSR 26/7 (Grossbeak)
- Outage History: 5 Momentary and 3 Permanent outages – average duration of 10.4 hours, 46k CMI

The Sowers – Lockwood Road line does not meet 2017 NESC Grade B loading criteria. The line is grounded with butt wraps which does not meet current AEP standards. There are emerging issues due to the age of this line being at a point where the rate of the wood pole decay to heart rot is going to accelerate. The life expectancy of crossarms vs. the life expectancy of the poles is mismatched as well as knee and vee braces. Ground based inspections may fail to detect crossarm decay on the top side of the arms, which typically occurs prior to visible decay on the sides and bottom. Crossarm failure is often the first indication that decay was ever present.

Eight sample structures were further assessed by a ground crew. 87.5% of those structures had reported conditions, which included the following: four structures had bowing poles/crossarms, five structures had moderate deterioration of poles and crossarms, and one structure had significant deterioration of pole toppers.



AEP Transmission Zone M-3 Process
Lockwood Rd., OH/Sowers, IN/South Hicksville, OH/Sowers, IN/Lockwood Rd., OH

Need number(s): AEP-2022-OH028

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

Proposed Solution:

Sowers - Lockwood Road 138kV transmission line rebuild: Rebuild ~14.4 miles of Rob Park-Richland 138kV line asset from the Ohio border near Sowers station to Lockwood Road station. The rebuild will only include Structure 1 – 23 (3.0 miles) and structures 25-103 (11.4 miles). Telecom infrastructure (ADSS) will be installed in the area to support relaying and communication.. Estimated Cost: $35.808 M

Sowers Relay Settings: Update the relay settings on Sowers - Lockwood Rd circuit at Sowers station.. Estimated Cost: $0.1 M

Lockwood Road Relay Settings: Update the relay settings on Sowers - Lockwood Rd circuit at Lockwood Road station.. Estimated Cost: $0.1 M

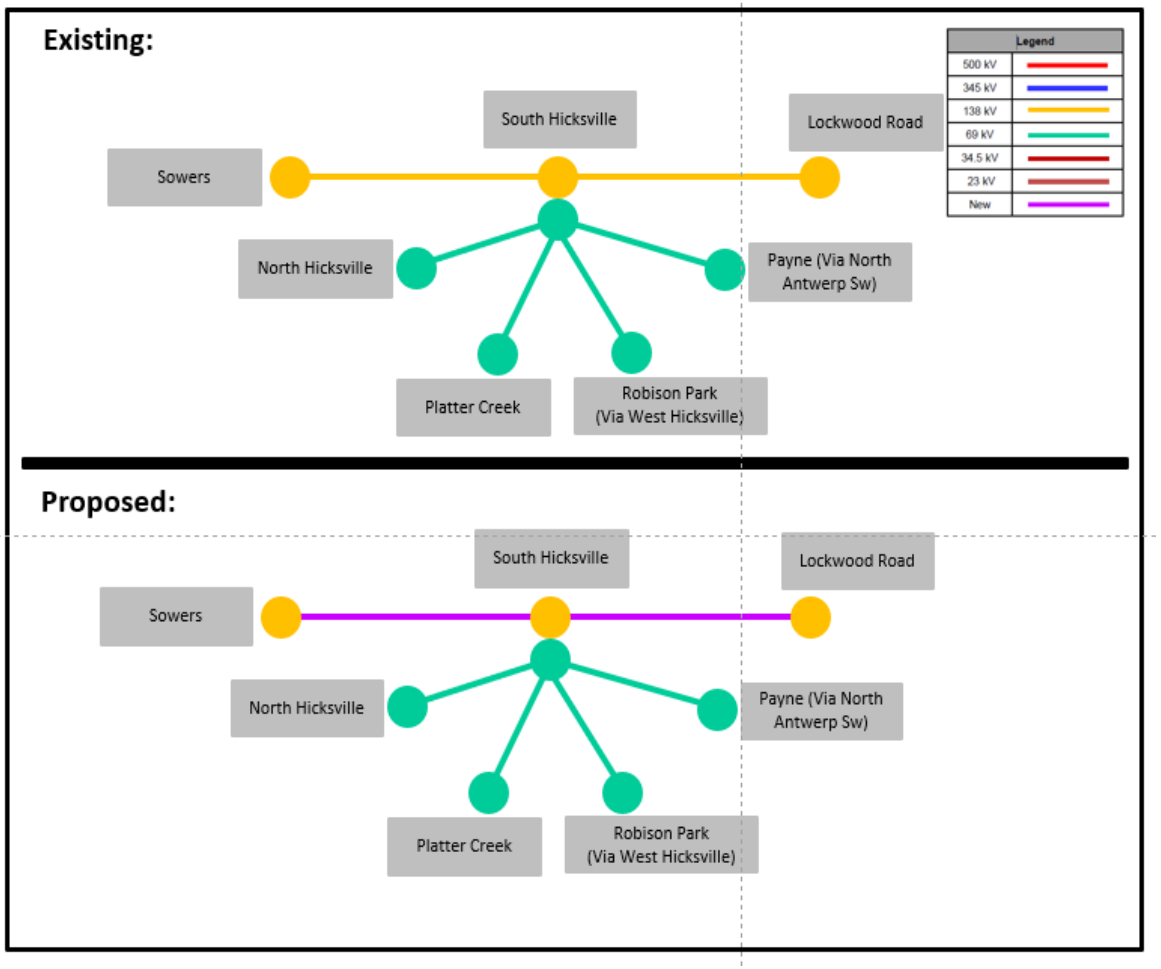
Transmission Cost Estimate: $36.008 M

Alternatives Considered:

Retire the Sowers - Lockwood Road 138kV transmission line asset; this is not a viable solution since the line serves the South Hicksville area and would affect the 69kV reliability. This line also serves as a major path between Indiana and Ohio to serve customers for both Ohio and I&M.

Projected In-Service: 04/26/2029

Project 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

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