Western Sub Regional RTEP:
AEP Supplemental Projects

June 17, 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

AEP Transmission Zone M-3 Process
Hillsboro, OH/Wildcat, OH

Need Number: AEP-2026-OH021

Process Stage: Need Meeting 06/17/2026

Project Driver: Equipment Condition/Performance/Risk

Specific Assumption References:

AEP Guidelines for Transmission Owner Identified Needs (AEP Assumptio ns Slide 13)

Problem Statement:

Hillsboro-Maysville 138kV Line

The Hillsboro - Maysville line asset is 12.39 miles long originally constructed in 1951. The line consists primarily of original single circuit wood pole structures with original vintage 477KCM ACSR 26/7 Hawk conductor and is made up of the Kenton (LGE-KU)-Sardinia 138kV and Sardinia-Wildcat 138kV circuits. From 2019 to 2025 there has been 1 permanent outage on the Kenton (LGE-KU) - Sardinia 138kV circuit. Over the same timeframe, there have been 2 permanent outages on the Sardinia - Wildcat 138kV circuit. As of 2025, there are 54 structures with at least one open structural condition, which relates to 21% of the structures on the line. Structure condition causes: broken crossarms, rot top on crossarms, damaged poles, rot top on poles, woodpecker damage, and broken X-braces. The Transmission Line Engineering assessment determined the insulators and the shielding is inadequate for current AEP standards, which can lead to poor lightning performance and flashover events.

AEP Transmission Zone M-3 Process
Wagenhals, OH

Need Number: AEP-2026-OH024

Process Stage: Need Meeting 06/17/2026

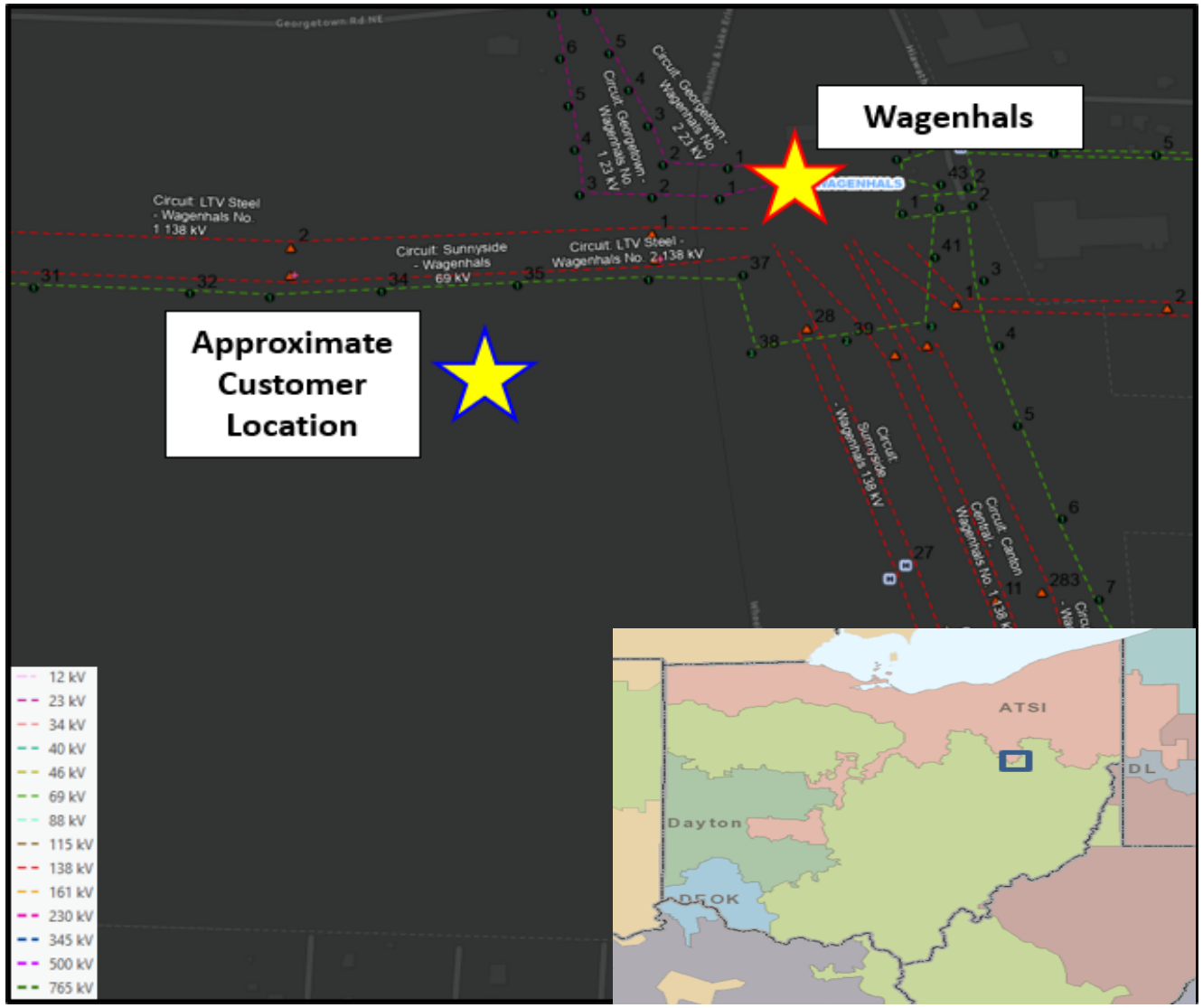
Project Driver: Customer Service

Specific Assumption References:

AEP Connection Requirements for the AEP Transmission System (AEP Assumptions Slide 12)

Problem Statement:

A customer has requested service to a new site in Canton Ohio, just west of AEP's Wagenhals 138 kV
Station. The initial load at this site is anticipated to be 162 MW by 10/30/2028. The ultimate peak load at the site is expe cted to be 324 MW by 10/30/2032.



AEP Transmission Zone M-3 Process
Torrey, OH

Need Number: AEP-2026-OH025

Process Stage: Need Meeting 06/17/2026

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

Specific Assumption References:

Specific Assumption Reference: AEP Guidelines for Transmission Owner Identified Needs (AEP Assumptions Slide 13-14)

Problem Statement:

Torrey Station
Equipment Condition/Performance/Risk:

<u>23 kV Circuit Breakers BB, F, G, J, L, O, Q, & Z</u>

Breaker Age:

1953: BB, F, G, J, O, & Q

1957: L & Z

Interrupting Medium: (Oil)

Additional Information: These breakers are oil filled without oil containment; oil filled breakers have much more maintenance required due to oil handling that their modern, SF6 counterparts do not require. Spare parts are no longer manufactured; components are often taken from out of service units with remaining usable parts.

<u>138/23/12kV Transformer Bank 1 Phases 1, 2 & 3:</u>

Age: 1938

This unit has failed and is not currently energized

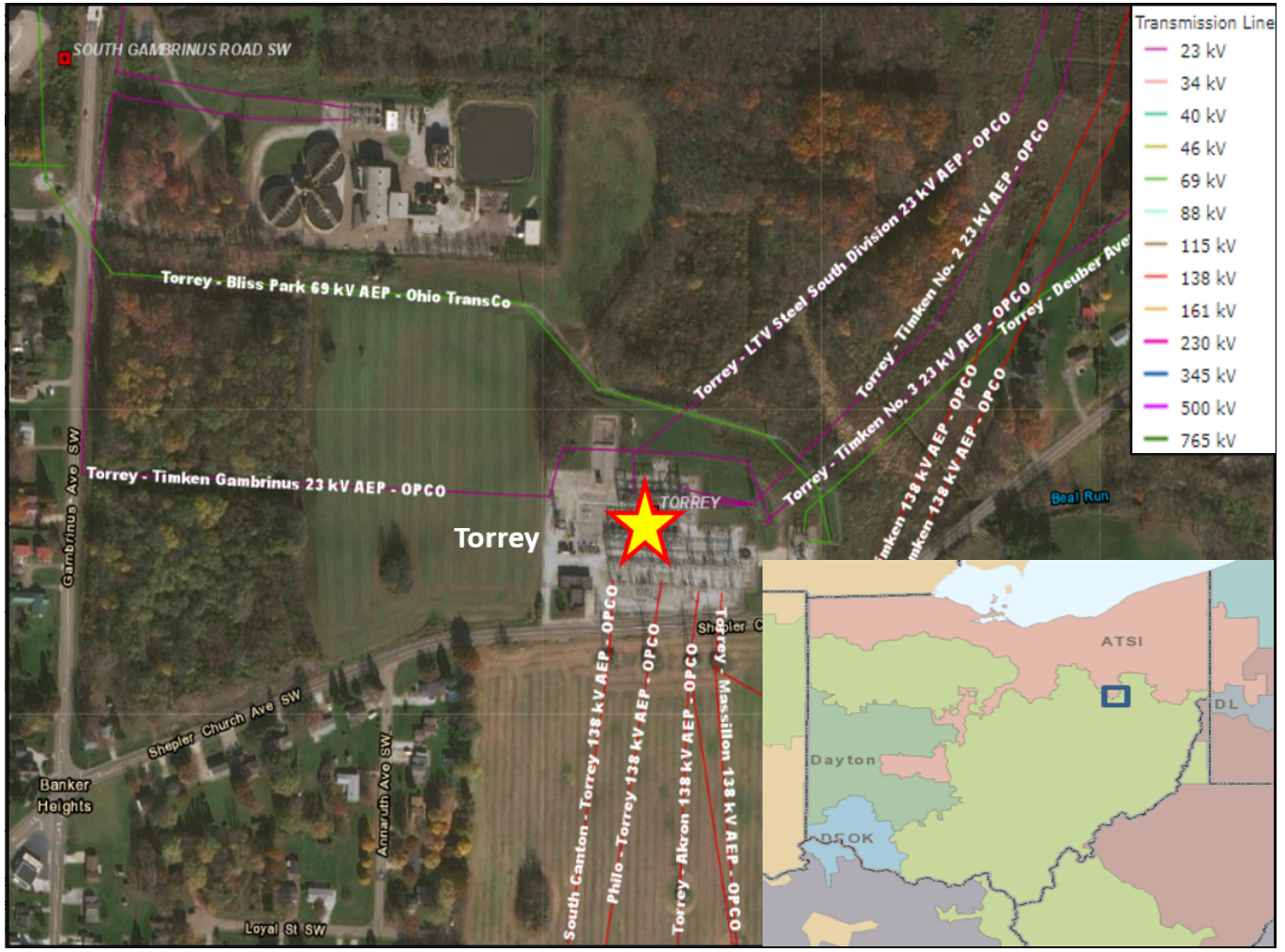
<u>138/23/12kV Transformer Bank 2 Phases 1, 2 & 3:</u>

Age: 1941

The presence of Ethane, along with the indication of overheating faults indicate decomposition of the paper insulation that impairs the unit's ability to withstand future short circuit or through fault events due to the state of the paper insulation.

<u>Other:</u>

Currently, 112 of the 132 relays (85% of all station relays) are in need of replacement. There are 85 of the electromechanical type and 22 static types which have significant limitations with regards to fault data collection and retention. In addition, these relays lack vendor support. There are also 4 microprocessor relays commissioned between 1997 and 2002 that have firmware that is unsupported. The 1940's 23kV bus work is within reaching distance, presenting a safety hazard to field crews, and has cap-and-pin insulators throughout.



AEP Transmission Zone M-3 Process
Torrey, OH

Need Number: AEP-2026-OH025

Process Stage: Need Meeting 06/17/2026

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

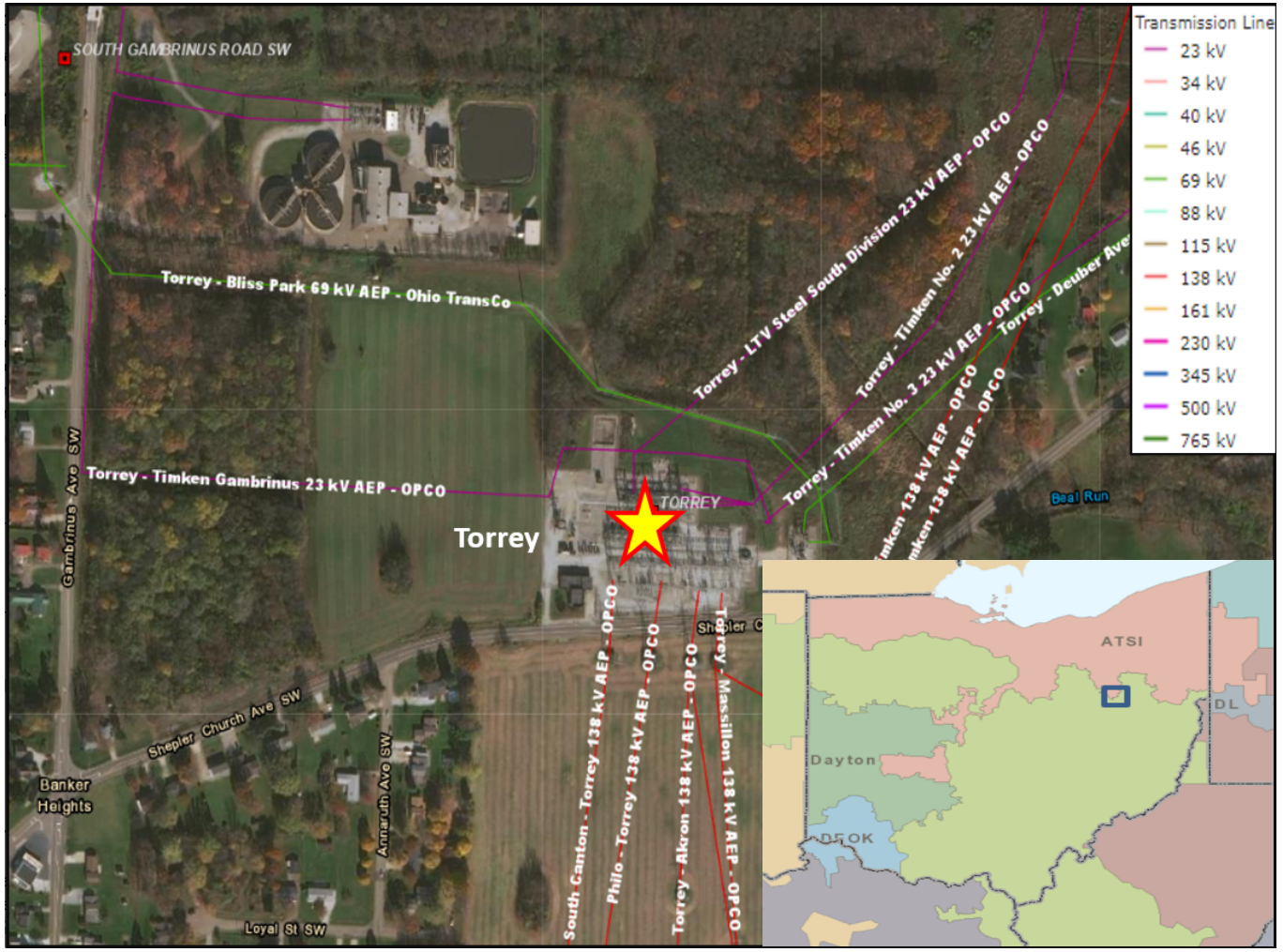
Specific Assumption References:

Specific Assumption Reference: AEP Guidelines for Transmission Owner Identified Needs (AEP Assumptions Slide 13-14)

Problem Statement (continue):

Operational Flexibility and Efficiency:

The 138-69 kV transformer #4 only has a high-side MOAB switch for protection, which causes the entire 138kV bus #1 to be outaged for a transformer fault (3 additional facilities taken out of service). The 138-23kV sub-transmission transformers also do not have high-side fault-interrupting devices. Due to the lack of circuit breakers at the station, there are four overlapping zones of protection on 138 kV bus #1 (138kV bus, 138-69kV transformer, 69kV bus, and 138-23kV transformer). These dissimilar zones of protection can cause over tripping and mis-operations, due to the complex protection scheme and large number of devices required to detect and isolate a fault. Similarly, 138 kV bus #2 has two overlapping protection zones.



AEP Transmission Zone M-3 Process
Mound, OH/Marion, OH

Need Number: AEP-2026-OH026

Process Stage: Need Meeting 06/17/2026

Project Driver: Customer Service

Specific Assumption References:

AEP Connection Requirements for the AEP Transmission System (AEP Assumptions Slide 12)

Problem Statement:

AEP OH Distribution has requested a new delivery point south of the existing Mound Street station. Peak demand is expected to be 15 MVA with a requested date of 12/31/2030.

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
Lancaster, OH

Need Number: AEP-2024-OH031

Process Stage: Solution Meeting SRRTEP-W - 06/17/2026

Previously Presented: Need Meeting 02/16/2024

Project Driver: Equipment Condition/Performance/Risk

Specific Assumption Reference: AEP Guidelines for Transmission Owner Identified Needs (AEP Assumptions Slide 13)

Problem Statement:

Line Name: West Lancaster - Anchor Hocking 69 kV Line

- Original Install Date (Age): 1941
- Length of Line: 1.29 miles
- Total structure count: 39 of Pole Wood
  - Wood: 28 from 1940s, 1 from 1950s, 2 from 1960s, 1 from 1974, 2 from 1980s, 2 from 1994, and 3 from 2015.
- Conductor Type: 1.62 miles of 3/0 copper from 1941.
- **Outage History**
  - Anchor Hocking - West Lancaster 69 kV circuit
    - From 2017 , there has been 1 permanent outage on the Anchor Hocking – West Lancaster 69kV Circuit. The permanent outage was due to a station insulator, resulting in 3.92 hours of circuit outage time.

Open Conditions:

- Currently, there are 18 structures with at least one open structural condition, which relates to 46% of the structures on the line. There are currently 32 structural open conditions, specifically affecting the crossarms, poles, knee braces, and a push pole including burnt, insect damaged, loose, rot heart, rot pocket, rot top, split, and woodpecker damaged conditions. There are currently 9 open hardware conditions related to broken or missing guys, molding, and an insulator. There is currently 1 open grounding condition related to a broken ground lead wire.

AEP Transmission Zone M-3 Process
West Lancaster, OH

Need Number: AEP-2024-OH044

Process Stage: Solution Meeting SRRTEP-W - 06/17/2026

Previously Presented: Need Meeting 10/18/2024

Supplemental Project Driver: Equipment Condition/Performance/Risk

Specific Assumption Reference: AEP Guidelines for Transmission Owner Identified Needs (AEP Assumptions Slide 13)

Problem Statement:

Line Name: West Lancaster - Memorial Drive 69 kV Line

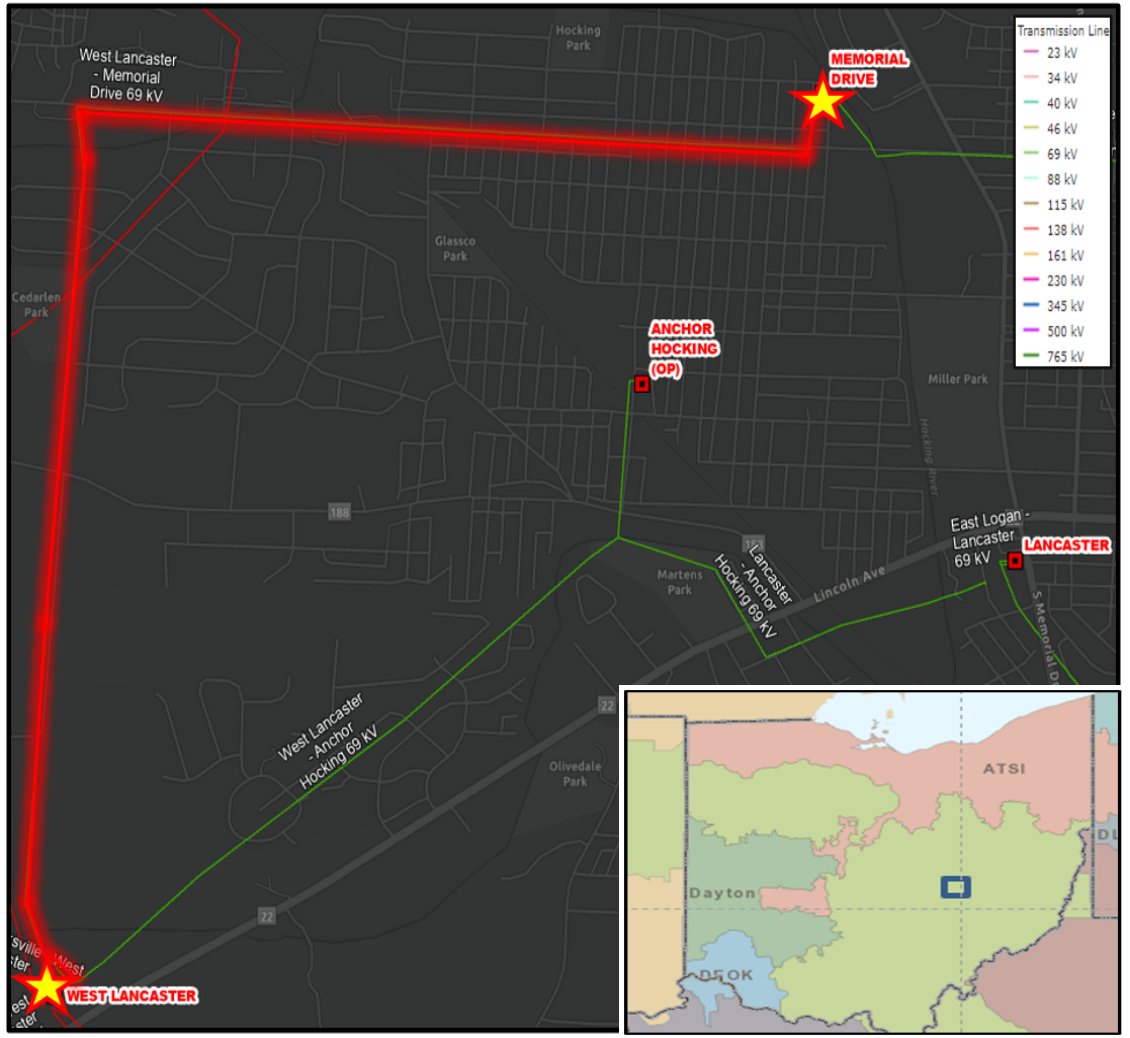
- Original Install Date (Age): 1962
- Length of Line: 3.12 miles
- Total structure count: 66 Wood Poles (49 from 1962, 1 from 1967, 1 from 1969, 11 from 1970s, and 4 from 1999.)
- Conductor Type: 3.12 miles of 336.4 kCM ACSR 30/7 (Oriole) from 1963.

Outage History:

– East Lancaster – Ralston – West Lancaster 69 kV circuit: From 2015, there have been 4 permanent outages and 13 momentary outages.

Open Conditions:

- Currently, there are 17 structures with at least one open condition, which relates to 26% of the structures on this line.
- The entire line was inspected by a ground crew who completed a comprehensive walking inspection. The following conditions were reported: 15 broken moldings, 4 structures with heart rot, 3 structures with shell rot, multiple structures with grounding missing, 2 structures with woodpecker holes, 5 structures with pole damage, 1 bent structure and 1 conductor with broken strands.



AEP Transmission Zone M-3 Process
West Lancaster, OH/South Baltimore, OH

Need number(s): AEP-2024-OH031, AEP-2024-OH044

Process Stage: Solution Meeting SRRTEP-W - 06/17/2026

Proposed Solution:

West Lancaster - Anchor Hocking 69kV Line: Retire 1.3 miles of 69kV line from West Lancaster to Anchor Hocking station. Rebuild 3.2 miles of 69kV line from West Lancaster to Anchor Hocking stations. 2 miles of the rebuild will be double circuit that includes the West Lancaster - Memorial Drive 69kV line. The remaining 1.2 miles will be single circuit line before entering Anchor Hocking station. . Estimated Cost: $20.7 M

West Lancaster - Memorial Drive 69kV Line: Retire 3.0 miles of 69kV line from West Lancaster to Memorial Drive station. Build 1.4 miles of greenfield single circuit 69kV line from where the West Lancaster - Anchor Hocking and West Lancaster - Memorial Drive lines were double circuit.. Estimated Cost: $11.1 M

Memorial Drive Switching Structure: Replace the existing Memorial Drive phase over phase switching structure.. Estimated Cost: $0.697 M

West Lancaster - South Baltimore 138kV Line: Raising four 138kV line structures due to two crossings of the 69kV double circuit rebuild.. Estimated Cost: $1.1 M

West Lancaster Station: Setting updates to support the 69kV line rebuild. Estimated Cost: $0.05 M

Anchor Hocking Station: Replace the bus conductor on bus #1 and #2. Replace the station fence and update relay settings.. Estimated Cost: $0.205 M

Transmission Cost Estimate: $33.852 M

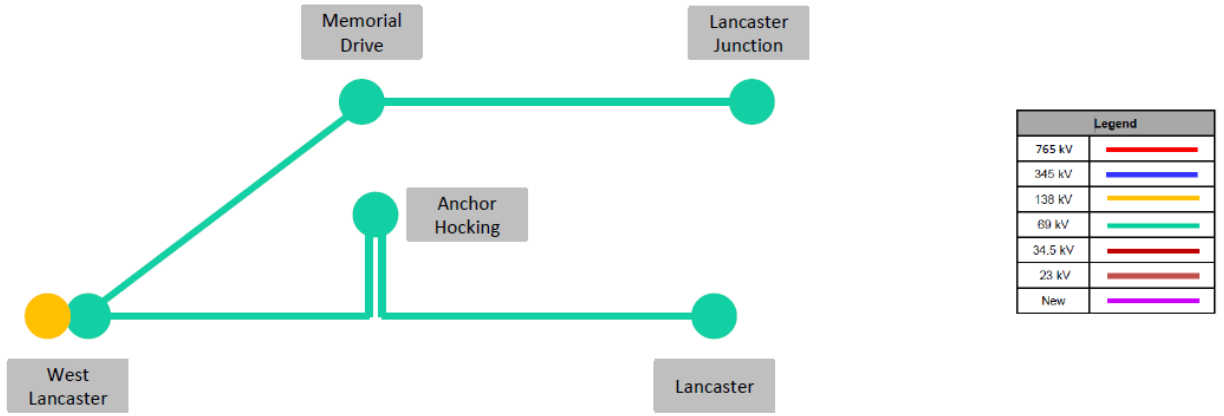
Alternatives Considered:

Rebuild all of the 69kV lines on current ROW/centerline. This option was not preferred due to the location of the existing towers and route through residential neighborhoods which limits access for construction.
A full greenfield rebuild was also considered; however, due the locations of the substations involved and difficulty of building greenfield through the neighborhoods to those stations it was not chosen. Costs for this option were also estimated to be higher due to ROW acquisition and would have a high risk of proceeding to condemnation.
Both the full rebuild and full greenfield options have similar costs to the proposed solution.

Projected In-Service: 12/01/2028

Project Status: Engineering

Model: 2024 RTEP model for 2029 Summer & Winter (50/50)



AEP Transmission Zone M-3 Process
Kenova, WV

Need Number: AEP-2026-AP004

Process Stage: Solution Meeting SRRTEP-W - 06/17/2026

Previously Presented: Need Meeting 05/15/2026

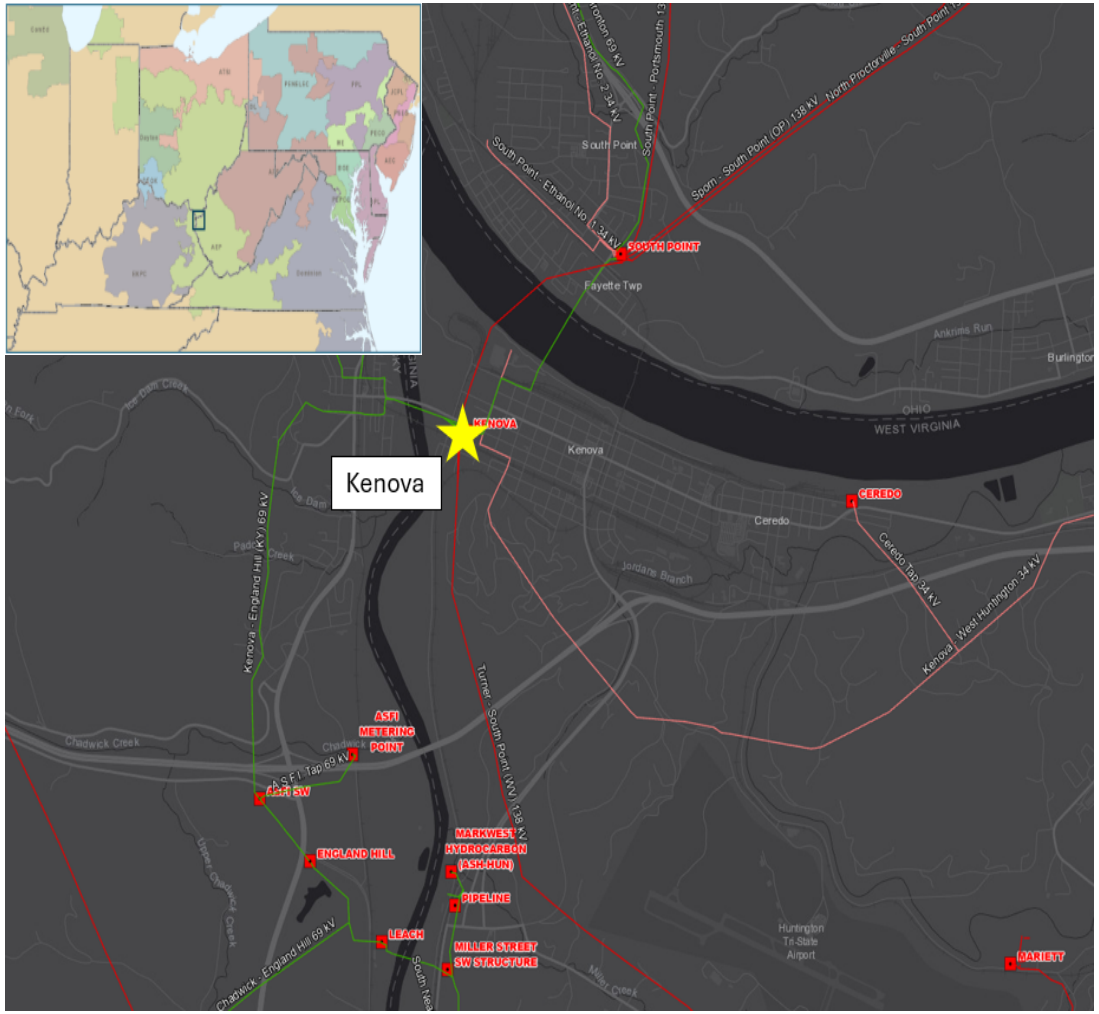
Project Driver: Customer Service

Specific Assumption References:

AEP Assumptions Slide 12

Problem Statement:

A customer request was received to investigate power quality issues caused by a fault at Kenova station, resulting in lost product and material. The customer experienced voltage issues when there was an outage on the 138/69 kV transformer at Kenova Substation. AEP determined that a contributing factor of the cause of the issue was lack of transformer protection at Kenova station.



AEP Transmission Zone M-3 Process
Kenova, WV

Need number(s): AEP-2026-AP004

Process Stage: Solution Meeting SRRTEP-W - 06/17/2026

Proposed Solution:

Kenova Breaker: Install a 69 kV 40 kA circuit breaker on the low side of the 138/69 kV transformer #8 at Kenova Substation.. Estimated Cost: $0.6 M

Transmission Cost Estimate: $0.6 M

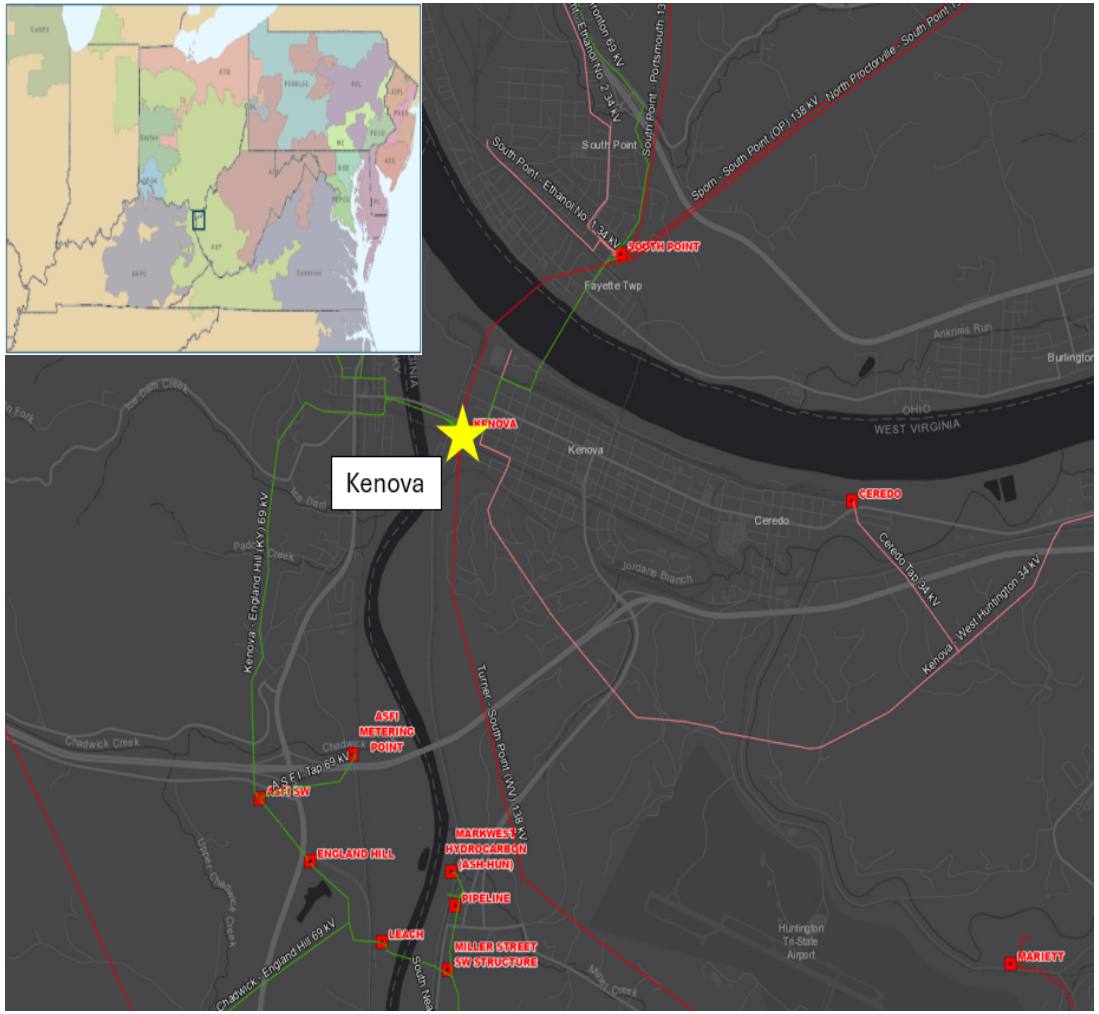
Alternatives Considered:

Considering the limited scope and availability of outages and space at Kenova station, no other transmission alternates were found to address the customer request.

Projected In-Service: 05/22/2026

Project Status: In Service

Model: 2024 RTEP model for 2029 Summer & Winter (50/50)



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

06/07/2026– V1 – Original version posted to pjm.com