Western Sub Regional RTEP:
AEP Supplemental Projects

February 14, 2025

Needs

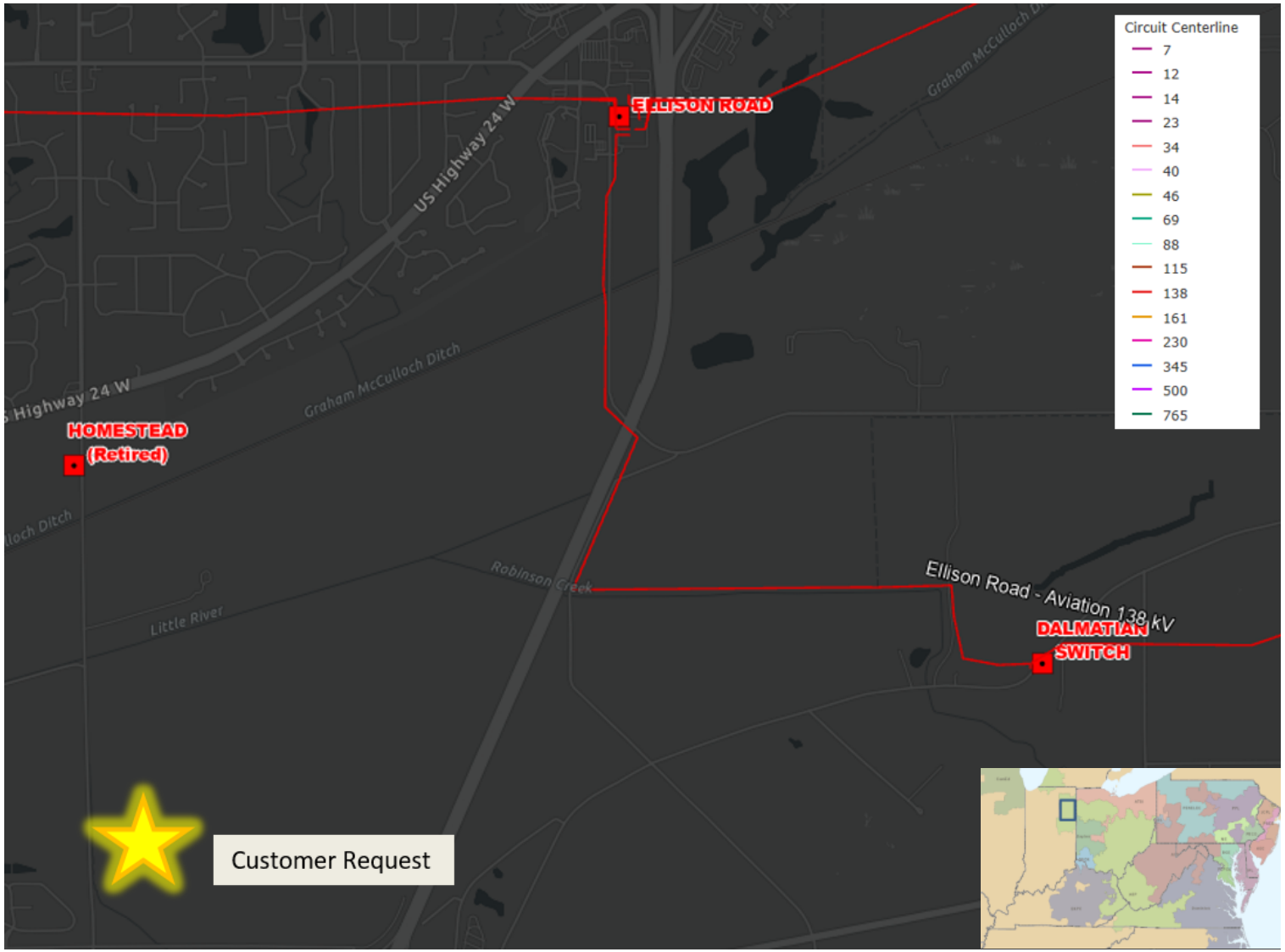
Stakeholders must submit any comments within 10 days of this meeting in order to provide time necessary to consider these comments prior to the next phase of the M-3 process

AEP Transmission Zone M-3 Process
Fort Wayne, IN

Need Number: AEP-2025-IM001
Process Stage: Needs Meeting: 2/14/2025
Supplemental Project Driver: Customer Service

Specific Assumption Reference: AEP Interconnection Guidelines (AEP Assumptions Slide 12)

Problem Statement:
WVPA has requested a new delivery point for a peak load of 17MW in Fort Wayne, Indiana with a requested service date of 12/2027.

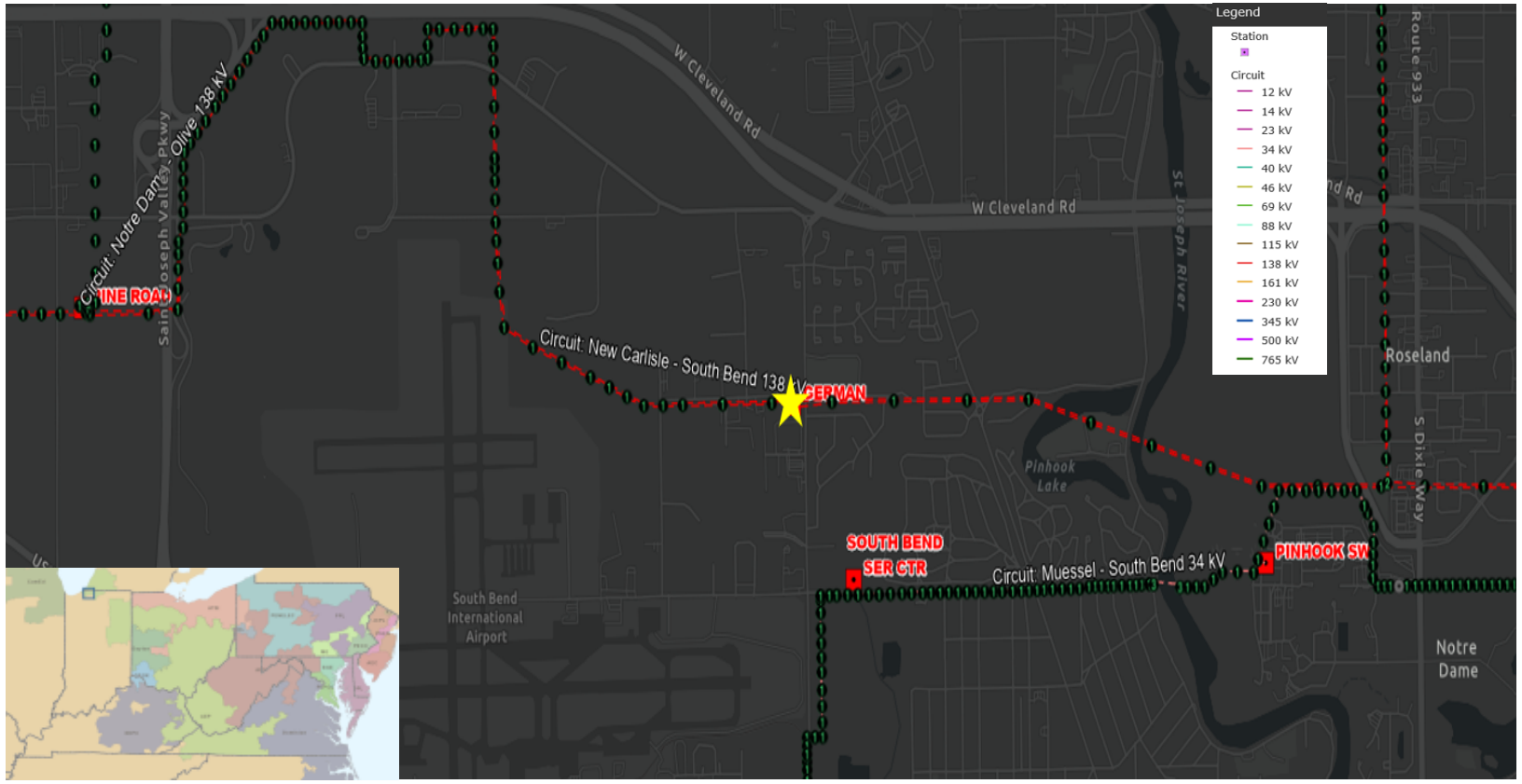


AEP Transmission Zone M-3 Process
Green, IN

Need Number: AEP-2025-IM002
Process Stage: Needs Meeting: 2/14/2025
Supplemental Project Driver: Equipment Condition/Performance/Risk

Specific Assumption Reference: AEP Connection Requirements for the AEP Transmission System (AEP Assumptions Slide 12)

Problem Statement:
I&M Distribution is requesting upgrades to T1 at German station due to its condition, performance, and risk. Transformer T1 at German station is a 1970s vintage transformer and has developed oil leaks at the low side bushing and radiators. Elevated levels of CO2 and Ethylene indicate excessive decomposition of the paper insulating materials, which impairs the unit's ability to withstand through fault events.



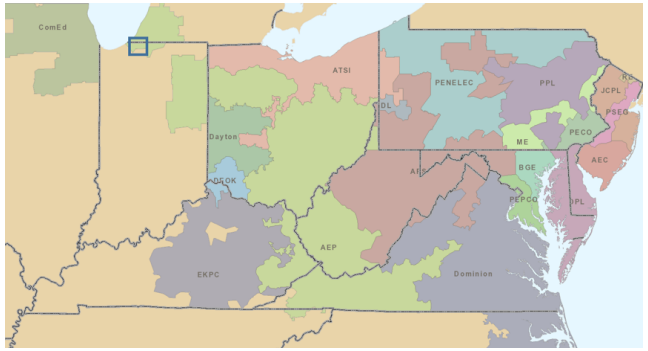
AEP Transmission Zone M-3 Process
Elcona Tap, IN

Need Number: AEP-2025-IM003
Process Stage: Needs Meeting: 2/14/2025
Supplemental Project Driver: Operational Flexibility and Efficiency

Specific Assumption Reference: AEP Connection Requirements for the AEP Transmission System (AEP Assumptions Slide 12)

Problem Statement:
I&M Distribution is requesting configuration changes at Elcona station, which is served via a radial line. Elcona station has no load transfer capability to adjacent stations. Performing any sort of maintenance on the Elcona Tap 138kV line or Elcona Tap 138kV Switch requires any loads served out of Elcona to be dropped. This leaves 12 MVA of load at risk unable to be recovered.

Critical loads served by Elcona include The Center for Hospice and City Elkhart Wastewater Lift Station.

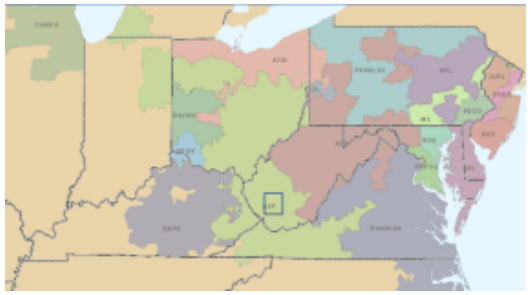


AEP Transmission Zone M-3 Process
Fayette County, WV

Need Number: AEP-2025-AP004
Process Stage: Needs Meeting: 2/14/2025
Supplemental Project Driver: Customer Service

Specific Assumption Reference: AEP Guidelines for Transmission Owner Identified Needs (AEP Assumptions Slide 12)
Problem Statement:
A new customer requested a new transmission delivery point in 2025 near Pax, WV.

Projected Peak Load: 7.5 MW

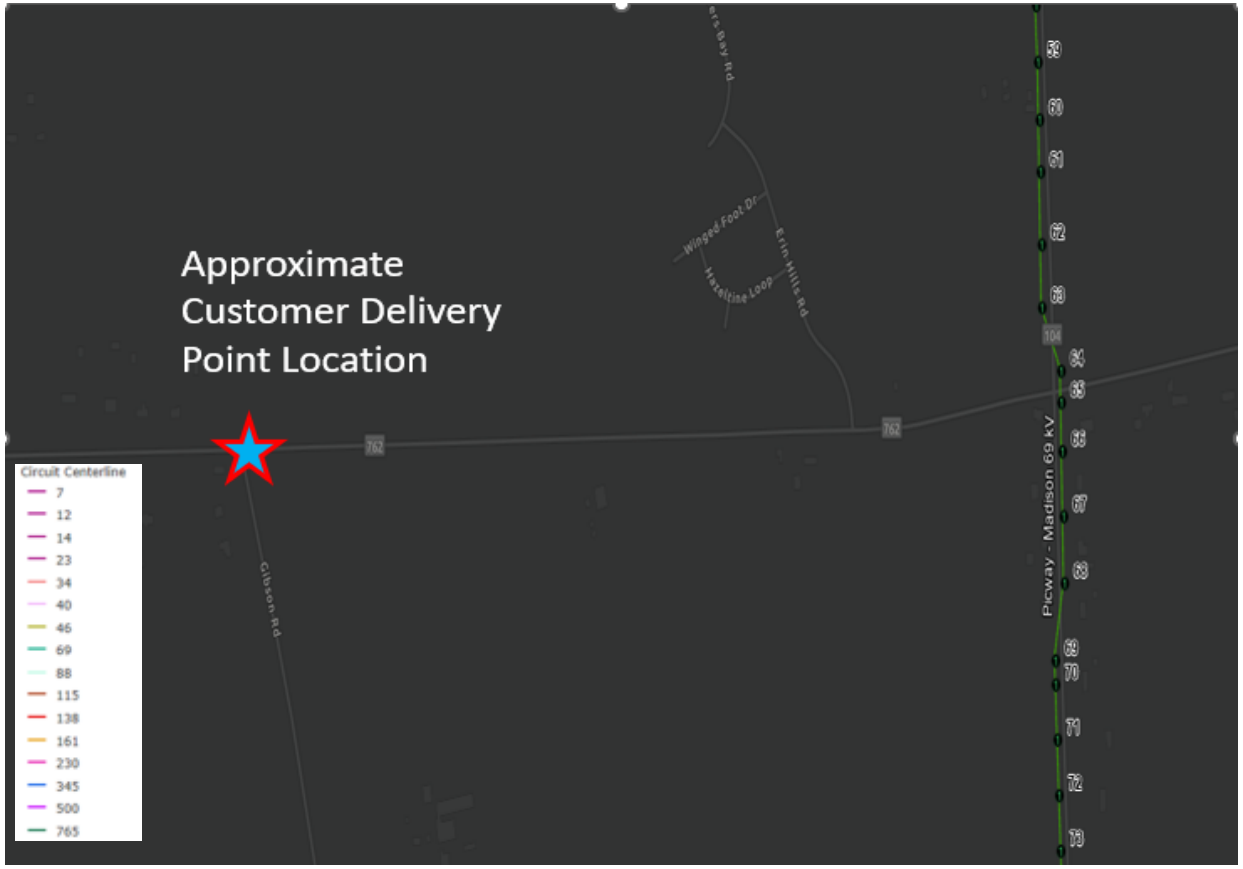


AEP Transmission Zone M-3 Process
Harrison, OH/Madison, OH

Need Number: AEP-2025-OH001
Process Stage: Needs Meeting: 2/14/2025
Supplemental Project Driver: Customer Service

Specific Assumption Reference: AEP Connection Requirements for the AEP Transmission System (AEP Assumptions Slide 12)

Problem Statement:
Buckeye Power has requested a new 69kV delivery point in Pickaway County Ohio on behalf of South-Central Power Company, Inc. The projected demand at the delivery point at initial in-service is 10.0 MW with an ultimate capacity of up to 17.5 MW. The requested in-service date is 12/2026.



AEP Transmission Zone M-3 Process
Lazelle, OH/Bush, OH

Need Number: AEP-2025-OH002
Process Stage: Needs Meeting: 2/14/2025
Supplemental Project Driver: Customer Service, Operational Flexibility and Efficiency

Specific Assumption Reference: AEP Guidelines for Transmission Owner Identified Needs (AEP Assumptions Slide 12 & 14)

Problem Statement:
A customer is served via a ~0.44 mi radial hard tap from the ~2.93 mi Busch Switch – Lazelle 69 kV Circuit, with no line sectionalizing switches present. The hard tap limits operational capabilities in the area; it's difficult to coordinate maintenance efforts because the T-line cannot be removed from service without a customer outage. Hard taps are a legacy customer connection option that are gradually being eliminated from the transmission system, due to their customer inconveniences and lower reliability.

AEP Transmission Zone M-3 Process
Greif, OH/Huntley, OH/Busch, OH/Lazelle, OH

Need Number: AEP-2025-OH003
Process Stage: Needs Meeting: 2/14/2025
Supplemental Project Driver: Equipment Condition/Performance/Risk
Specific Assumption Reference: AEP Guidelines for Transmission Owner Identified Needs (AEP Assumptions Slide 13)

Problem Statement:

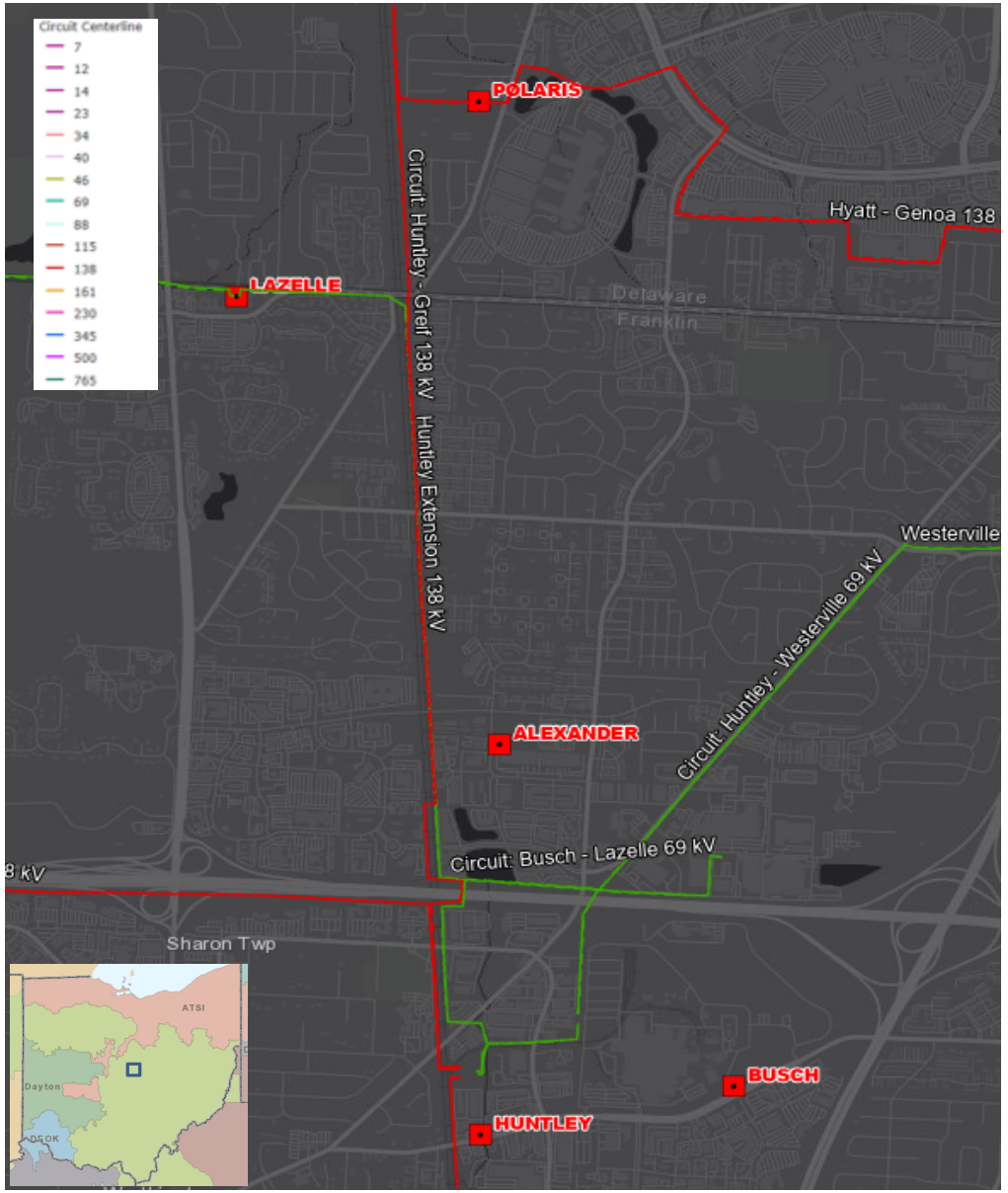
Huntley Extension 138kV:
The existing Huntley Extension 138 kV line was originally installed in 1977 and is approximately 2.57 miles long (~1.18 mi is single circuit 138 kV line and ~1.38 mi is double circuit 69 & 138 kV). The line utilizes a mixture of wood poles (41) and steel pole (9) structures with 636,000 CM ACSR 26/7 (Grosbeak) (138kV) & 336,400 CM ACSR 18/1 (Merlin) (69kV) conductor.

Circuit Historical Performance: Greif - Huntley (CSP) 138kV
From June 1, 2019 to June 30, 2024, there have been 5 momentary outages and 1 permanent outage on the Greif - Huntley (CSP) 138kV Circuit.

Circuit Historical Performance: Busch - Lazelle 69kV
From June 1, 2019 to June 30, 2024, there have been 2 momentary outages, 5 permanent outages on the Busch - Lazelle 69kV Circuit.

Open Conditions:
As of September 16, 2024, there are 5 structures with at least one open structural condition, which relates to 10% of the structures on the line. There are currently 5 open structural conditions related specifically affecting the poles and crossarms including Rot Pocket (1), Rot Top (2), and Split (2) conditions. There are currently 11 hardware related open condition specifically affecting guys, insulator, and molding including Damaged (1), Loose (1), and Missing (9) conditions.

Additional Information:
A recent engineering analysis identified 49% of the line structures are overloaded under the NESC heavy loading conditions. The overloaded structures parallel a railroad right of way.



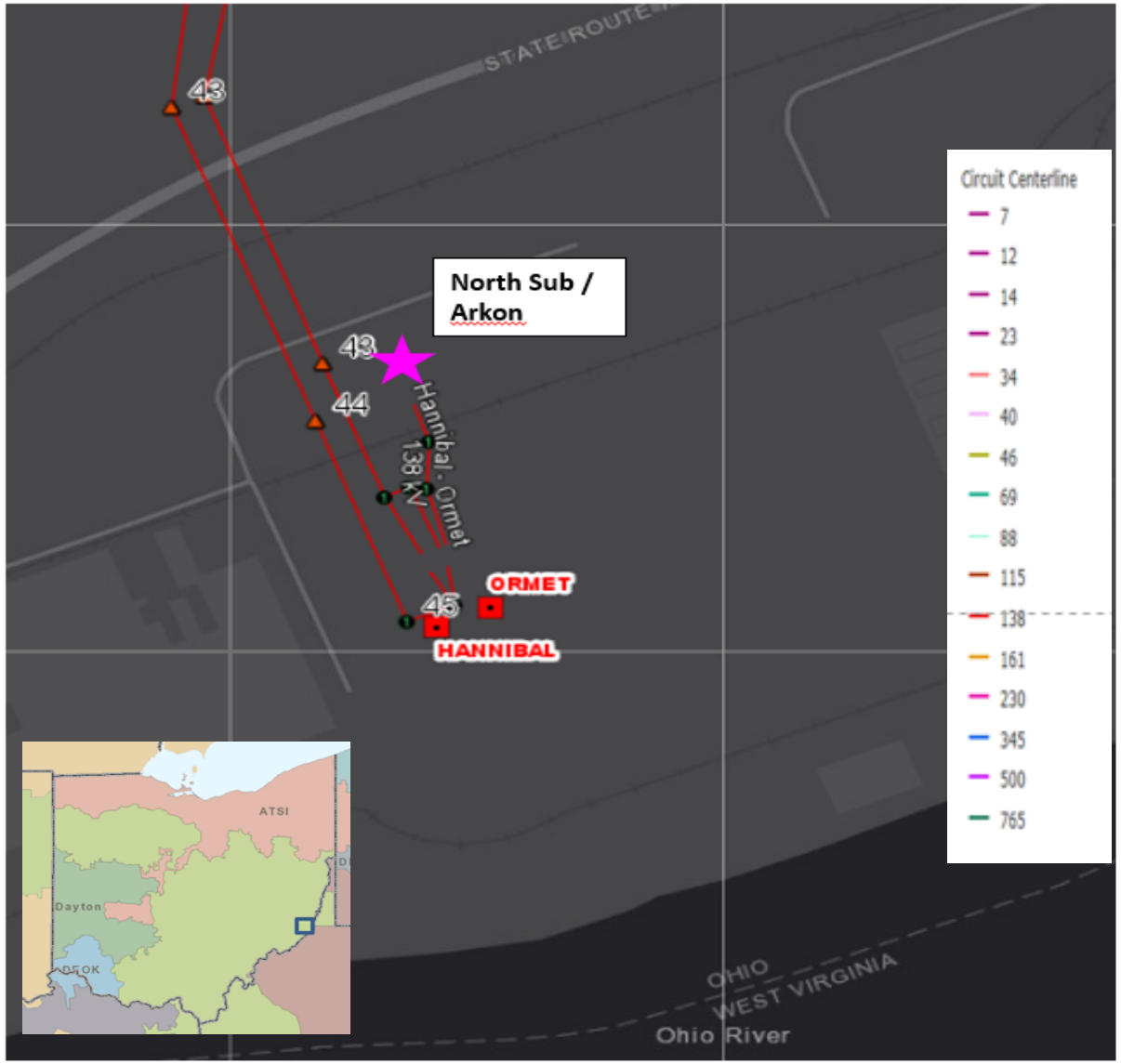
Solutions

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
Hannibal, OH

Need Number: AEP-2024-OH039
Process Stage: Solutions Meeting: 2/14/2025
Previously Presented: Needs Meeting: 10/18/2024
Supplemental Project Driver: Customer Service
Specific Assumption Reference: AEP Connection Requirements for the AEP Transmission System (AEP Assumptions Slide 12)

Problem Statement:
A customer has requested an increase to their existing service out of AEP's Hannibal 138 kV station in Monroe County, OH. The anticipated increase in load is 100MW, bringing the customer's total load to 200 MW at the site. They have requested an in-service date of April 2025.



AEP Transmission Zone M-3 Process
Hannibal, OH

Need Number: AEP-2024-OH039
Process Stage: Solutions Meeting: 2/14/2025

Proposed Solution:

Hannibal - North Sub 138 kV: Reconductor the Hannibal - North Sub 138 kV circuit using 1033 ACSS 54/7 CURLEW to accommodate increased customer loading at North Sub Station. Estimated Cost: $0.392 M

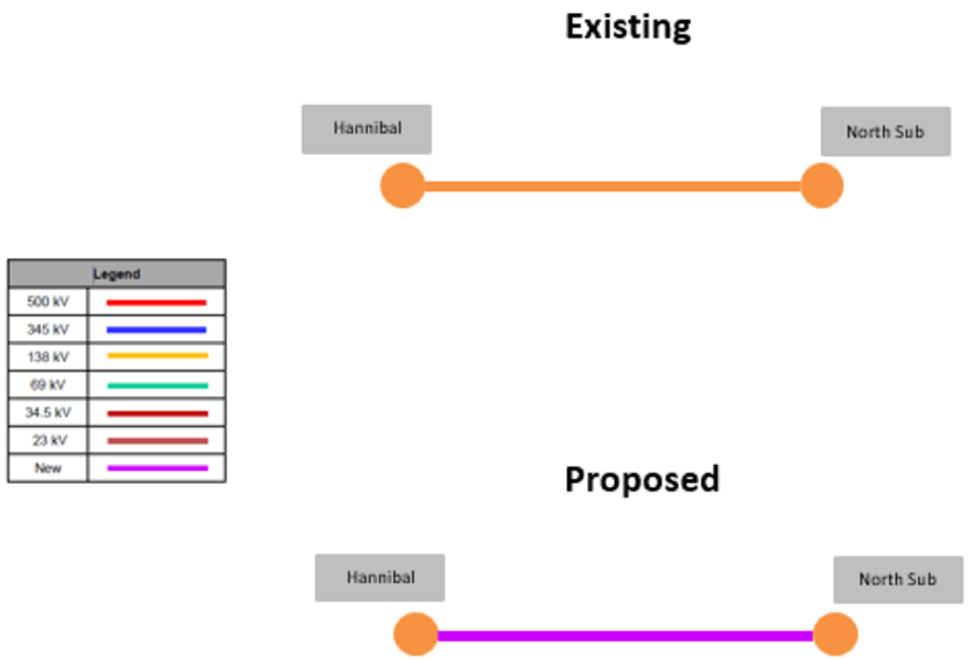
Transmission Cost Estimate: $0.392 M

Alternatives Considered:

Tap the Hannibal – Kammer 138 kV lines that run parallel to the site. This would require a new switching structure as well as additional station work at the customer owned North Substation to accommodate the feed.

Projected In-Service: 07/17/2025

Project Status: Scoping



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

2/4/2025– V1 – Original version posted to pjm.com