Subregional RTEP Committee - Western
Dayton Supplemental Projects

September 19th, 2025

Solutions

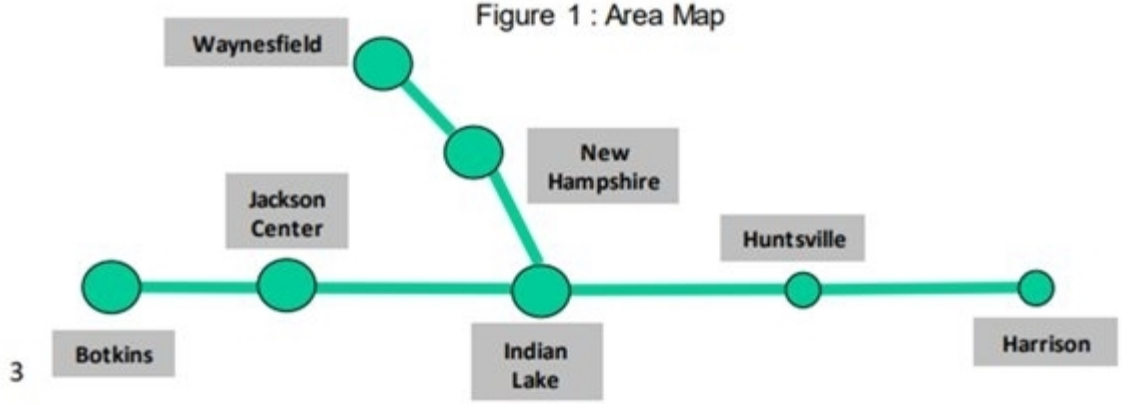
Stakeholders must submit any comments within 10 days of this meeting in order to provide time necessary to consider these comments prior to the next phase of the M-3 process

Need Number: Dayton-2021-004
Previously Presented: Need Meeting 5/21/2021
Process Stage: Solution Meeting 9/19/2025
Project Driver: Customer Service; Operational Flexibility and Efficiency
Specific Assumption Reference:
Dayton Local Plan Assumptions (Slide 5)

Problem Statement:

- AES Ohio Distribution has requested a new 69kV delivery point to provide a new source on the North side of Indian Lake. The new source will help ensure load developing on the North side lake can be reliably served
- Indian Lake –Waynesfield 33kV circuit
  - The Line was primarily constructed in the 1930s with wooden cross arm construction and is located near railroad ROW which makes access challenging during outage restoration
  - Over the last three years, the 10.3 mile Indian Lake – Waynesfield 33kV circuit has experienced 17 forced outages
    - 8 permanent outages were primarily caused by insulator, cross arm, primary wire, station equipment, pole failure, and a tree from outside the ROW.
    - 9 momentary outages were primarily caused by lightning, animals, galloping and insulator flashover.
  - The currently line serves two existing delivery points , New Hampshire (AES Ohio) and Wanesfield Municipal Electric.
  - 33kV systems are not standard on the AES Ohio system and spare/replacement parts are limited since this is one of the last remaining 33kV facilities on the system.

Figure 1 : Area Map



Model: 2022 RTEP Series, 2027 Summer Case

Need Number: Dayton-2021-004

Previously Presented: Need Presented, 5/21/2021

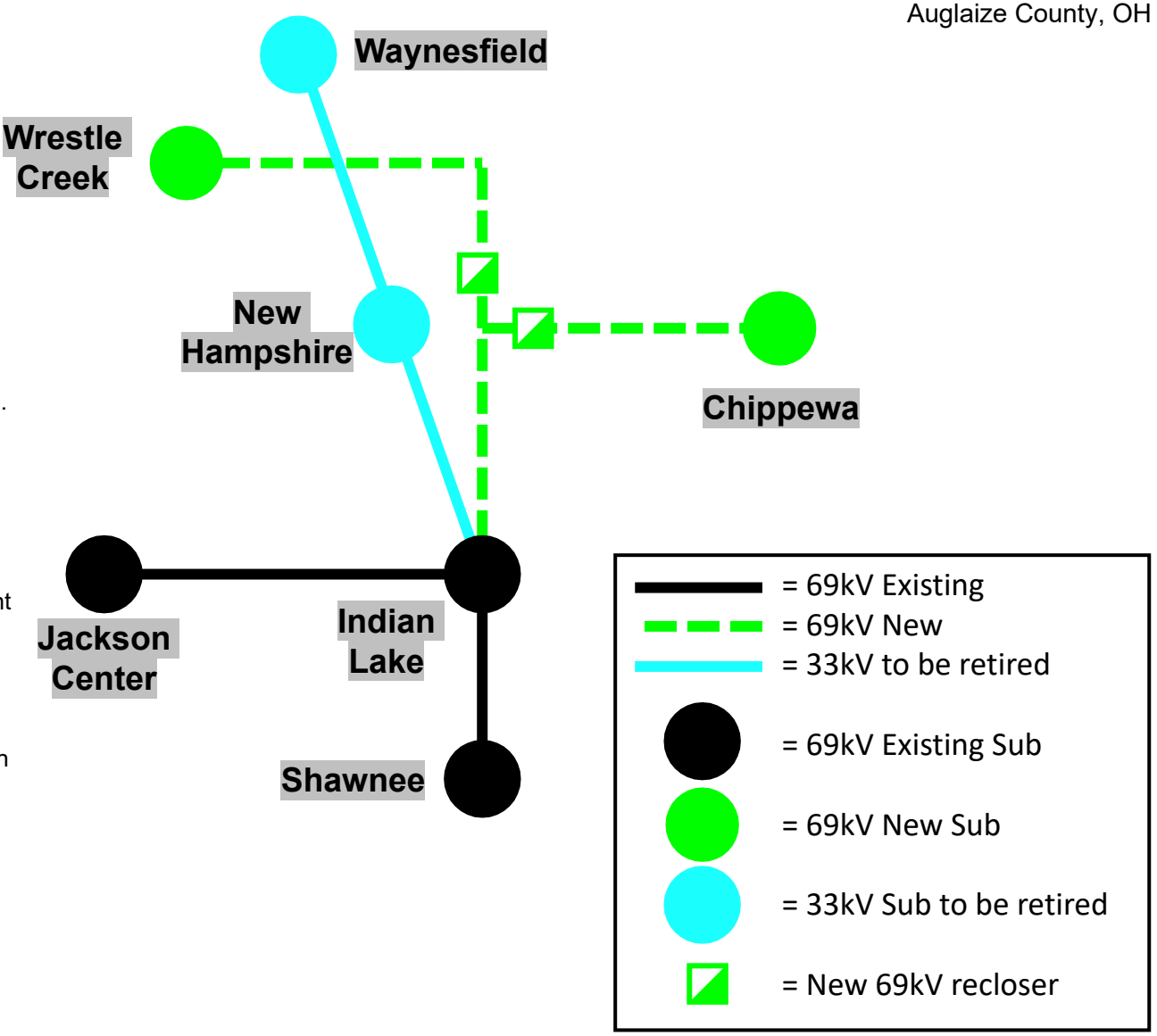
Process Stage: Solution Meeting, 9/19/2025

Project Driver: Customer Service; Operational Flexibility and Efficiency

Specific Assumption Reference: Dayton Local Plan Assumptions

Selected Solution:

- **Phase 1:**
  - Add 69kV, single straight bus substation “Chippewa” with one 69kV/12kV 30MVA transformer.
  - Add an additional 69kV breaker position at Indian Lakesubstation
  - Construct New 13 Miles Single Circuit T-Line using 795 ACSR from Chippewa to Indian Lake.
  - Estimated Cost : $29.0M, ISD 12/31/2027
- **Phase 2.1:**
  - Add 69kV, single straight bus substation “Wrestle Creek” with one 69kV/12kV 30MVA transformer.
  - Construct New 8 Miles Single Circuit T-Line using 795 ACSR from Wrestle Creek to Tap Point and Install 2 69kV Reclosers.
  - Estimated Cost : $22.2M, ISD 4/31/2029
- **Phase 2.2:**
  - Add a second 69kV bus to Indian Lake and convert to double breaker double bus configuration
  - Retire 33kV system
  - Estimated Cost : $10.1, ISD 4/31/2030
- **Total Estimated Transmission Cost :** $61.3M
- **Projected In-Service:** 4/31/2030
- **Project Status:** Conceptual
- **Alternatives Considered:**
  - New 69kV tie line North to AEP. Not selected due to high cost.



Model: 2024 RTEP Series

- **Need Number:** Dayton-2023-003
- **Previously Presented:** Needs Presented 4/21/2023
- **Process Stage:** Solutions meeting 9/19/2025
- **Project Driver:** Customer Service, Operational Flexibility and Efficiency
- **Specific Assumption Reference:** Dayton Local Plan Assumptions (Slide 5)

- **Problem Statement:**

➢ AES Ohio transmission has received multiple customer requests for a transmission delivery point in the vicinity of New Knoxville

➢ AES Ohio's Botkins substation currently serves over 2300 customers with ~16MW of peak load. A breaker failure at Botkins today can cause a loss of both transformers, resulting in a temporary loss of all 16MW of load. Between the two transformers at Botkins, we have seen a total of 35 momentary and 13 permanent outages over the past 5 years.

➢ The 8-mile, 6930-transmission circuit from Jackson Center to Botkins was built in 1955 with a wood pole crossarm design.

➢ The 8.5 mile, 6630-transmission circuit from Amsterdam to St. Mary's was built in 1991 with a wood pole crossarm design.

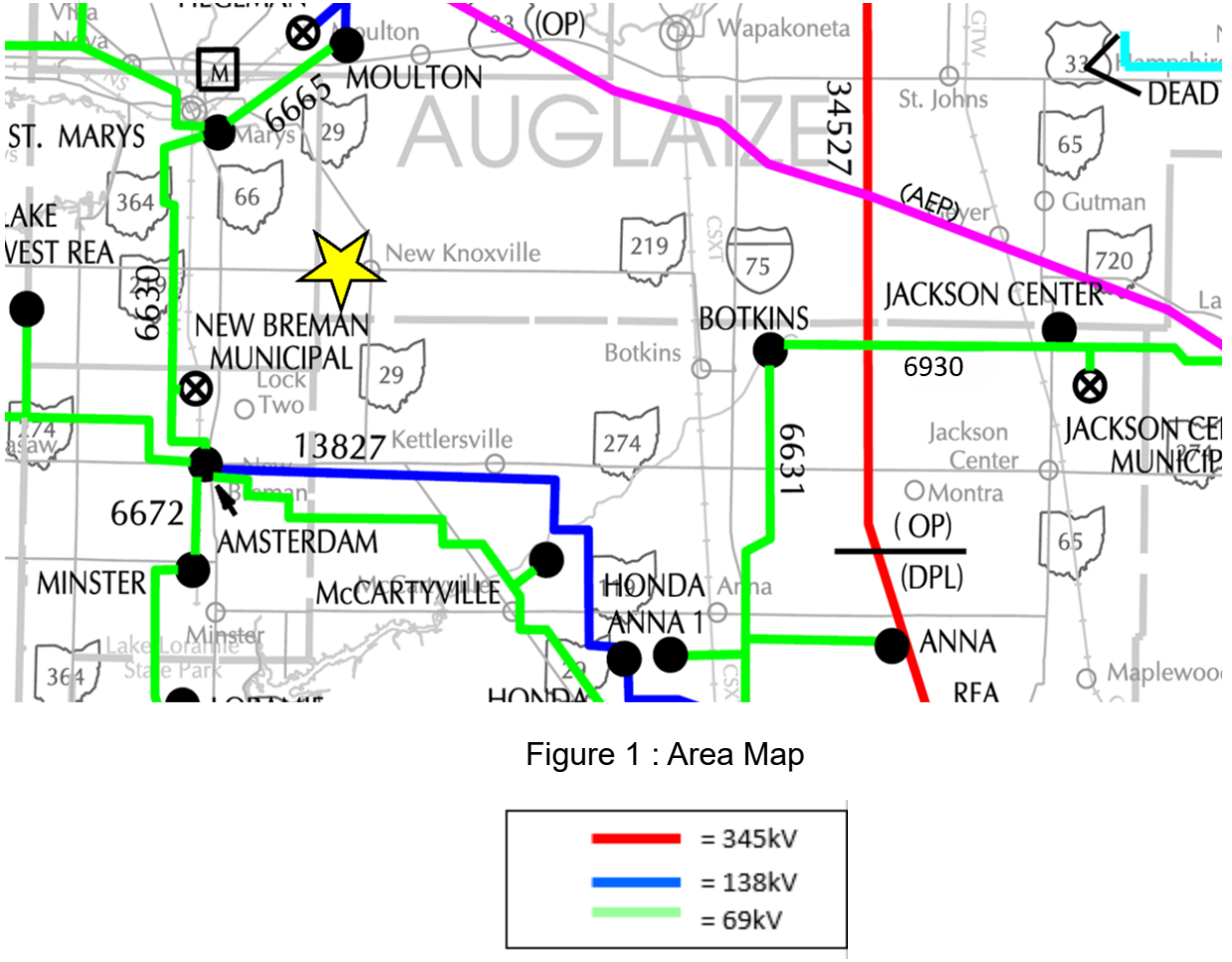


Figure 1 : Area Map

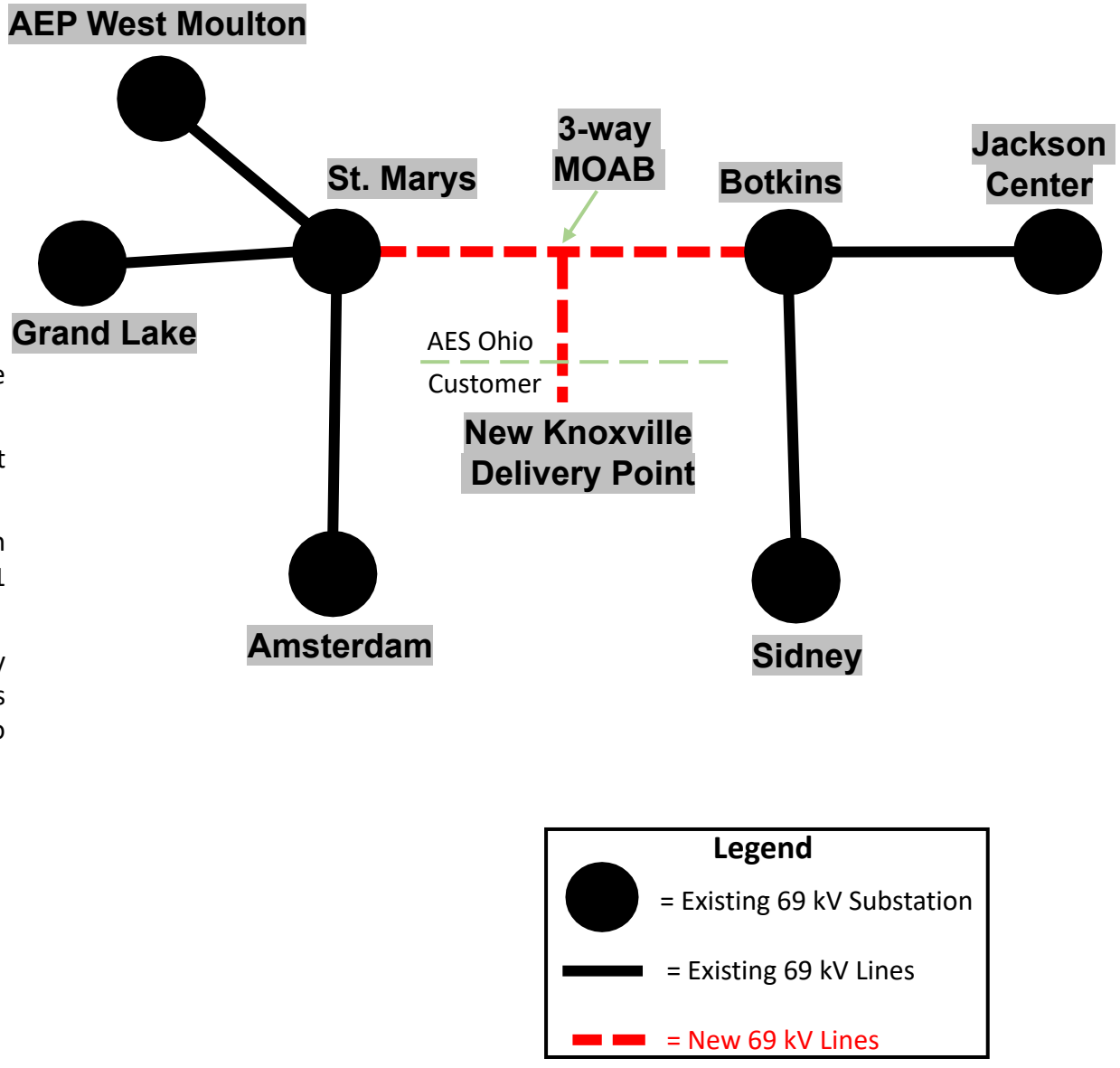
- **Need Number:** Dayton-2023-003
- **Previously Presented:** Needs Presented 4/21/2023
- **Process Stage:** Solutions meeting 9/19/2025
- **Project Driver:** Customer Service, Operational Flexibility and Efficiency
- **Specific Assumption Reference:** Dayton Local Plan Assumptions
- **Solution:**

➢ **St. Marys Substation:** Install 2 new 69 kV breakers at St. Marys substation to accommodate the new 69 kV line. **Estimated Cost:** $4 M

➢ **Botkins Substation:** Reconfigure Botkins 69 kV substation into breaker-and-a-half arrangement to accommodate the new 69 kV line. **Estimated Cost:** $13 M

➢ **St. Marys – Botkins:** Construct a new 16-mile 69 kV single circuit line from St. Marys substation to Botkins substation. New expected ratings, St. Marys 69 kV to Botkins 69 kV **SN:** 111 MVA, **SE:** 136 MVA **WN:** 153 MVA **WE:** 171 MVA. **Estimated Cost:** $25.6 M

➢ **New Knoxville Delivery Point:** Constructing three 69 kV MOAB switches with supervisory control, two with auto-sectionalizing capability, approximately 6.3 miles from the St. Marys substation to facilitate the New Knoxville Delivery Point. Approximately 0.25 miles from Tap to Delivery Point. . **Estimated Cost:** $0.6 M



- **Total Estimated Transmission Cost :** $ 43.2 M
- **Projected In-Service:** 06/2027
- **Project Status:** Conceptual

Model: 2024 RTEP Series

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

9/08/2025 – V1 – Original version posted to pjm.com