

# Sub Regional RTEP Committee: Western Dayton Supplemental Projects

April 21, 2023

# Changes to the Existing Supplemental Projects

**S2695** : Need Number: Dayton-2021-011 - Needs Meeting 12/17/2021, Solutions Meeting 2/18/2022, posted to 2022 Dayton Local Plan

**Scope change and reasons:**

➤ **Octa Substation**

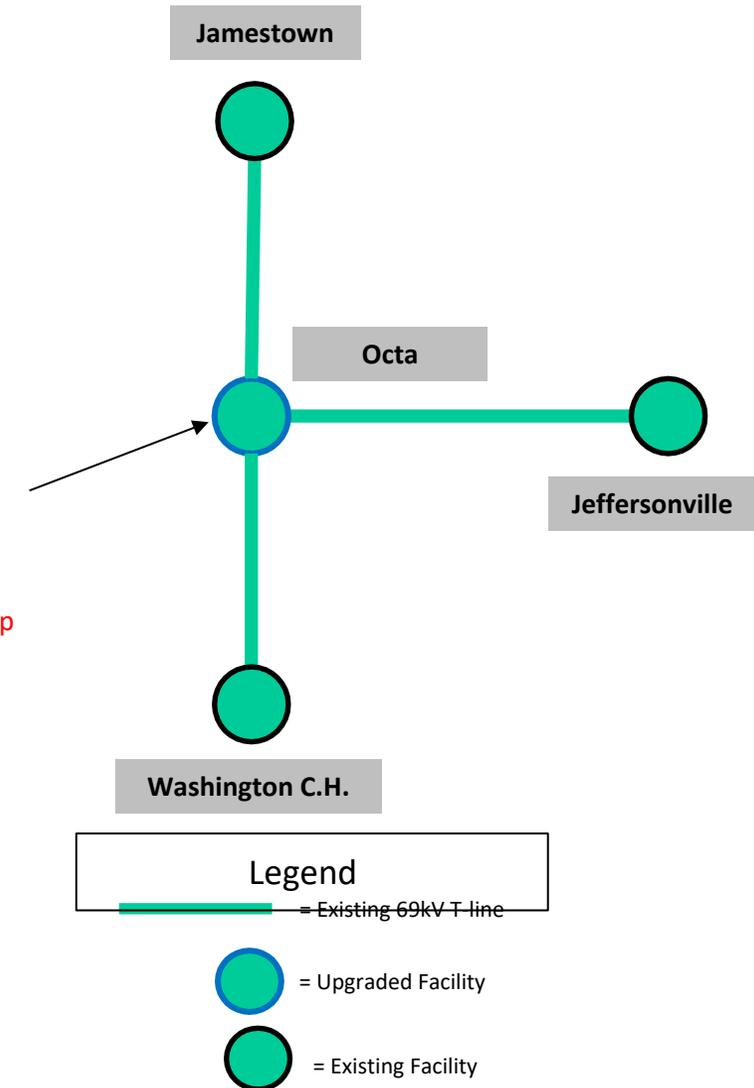
- A new 69/12kV transformer will be installed at Octa Substation and terminated into a new 69kV breaker position. This will expand Octa Substation from a three breaker 69kV ring bus to a four breaker 69kV ring bus. This transformer will create a new delivery point for AES Ohio distribution. This delivery point will provide capacity and switching flexibility, particularly at the Washington Courthouse and Jeffersonville substations, ensuring load can be restored under contingency conditions.
- **Install a 30MW cap bank to support the voltage profile and improve operational flexibility due to area development and the large load addition in Jeffersonville**

➤ **Estimated cost** :- ~~\$310K~~ **\$0.71M**

➤ **Projected In-Service:** ~~12/31/2023~~ **06/30/2026**

➤ **Project Status:** Engineering

- Addition of a 69/12kV transformer and circuit breaker at Octa Substation
- **Addition of a 30MW cap bank**



# 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

- **Need Number:** Dayton-2023-003
- **Process Stage:** Needs Meeting 4/21/2023
- **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.

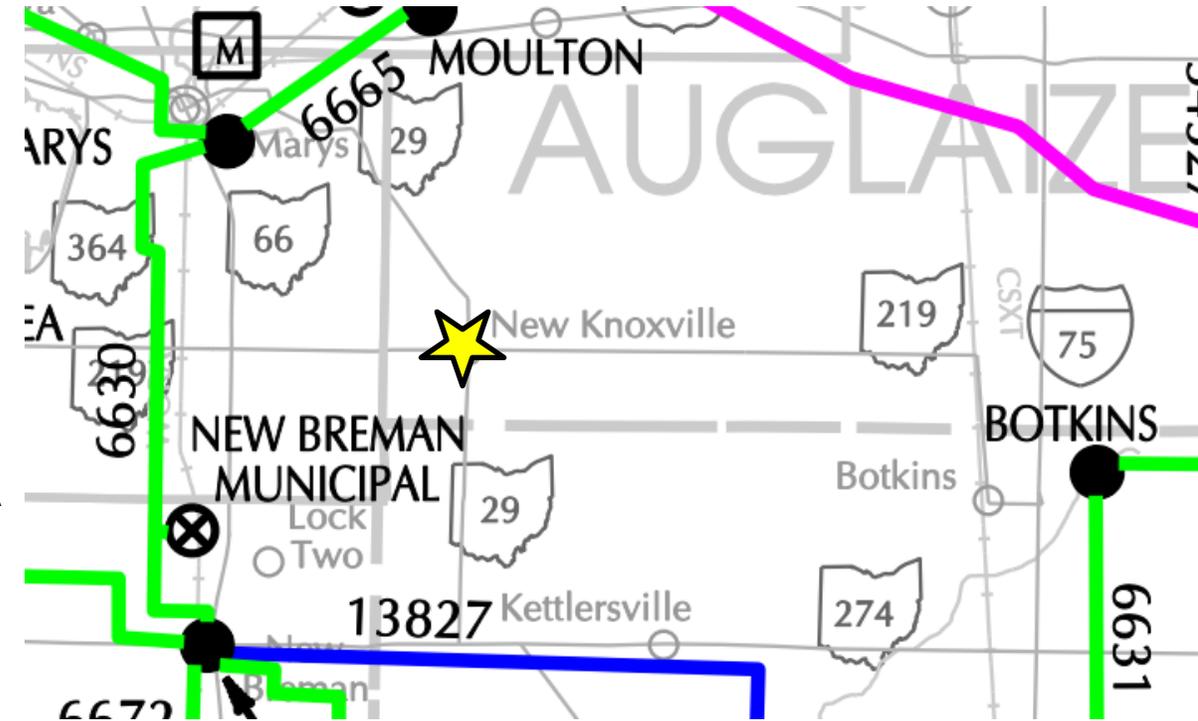
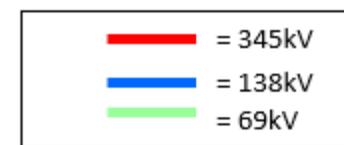


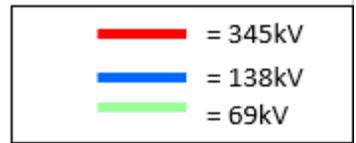
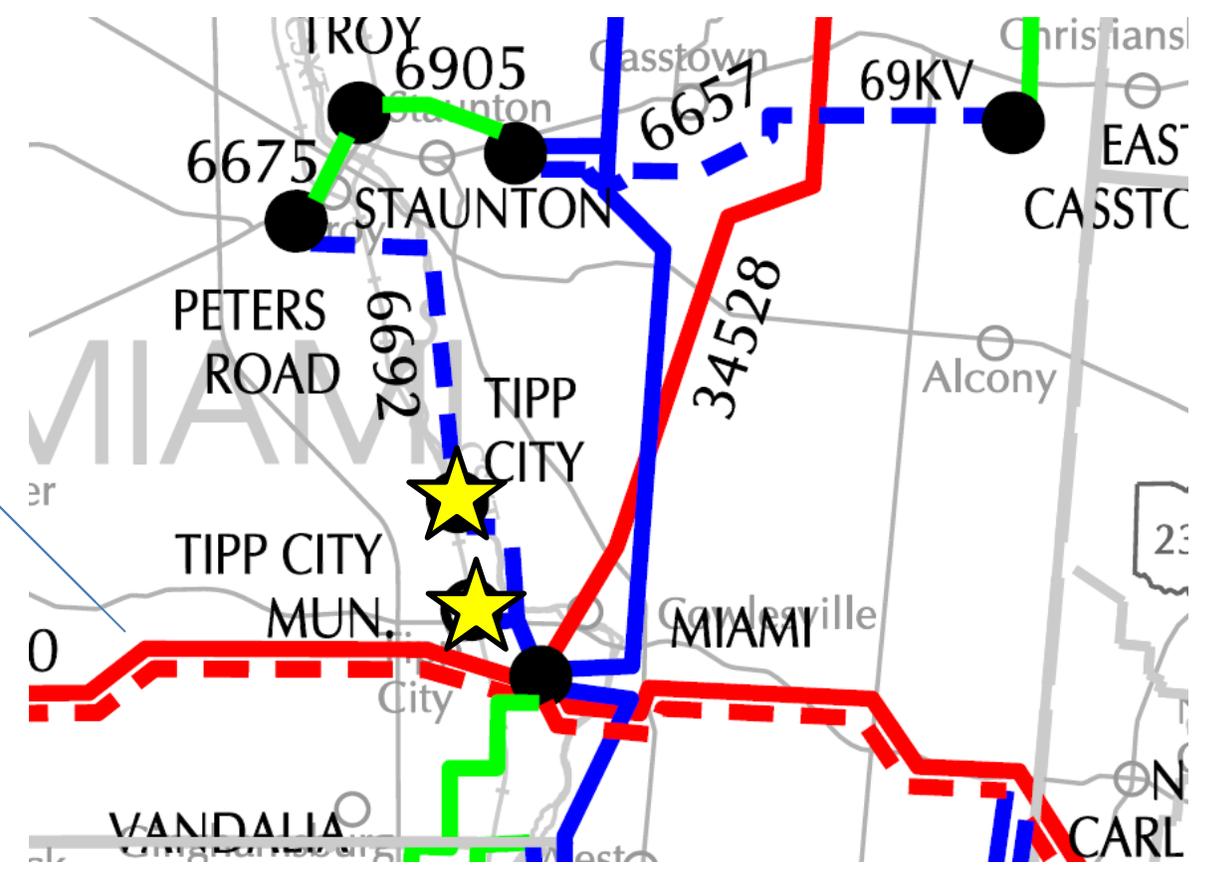
Figure 1 : Area Map



- **Need Number:** Dayton-2023-004
- **Process Stage:** Need Meeting 04/21/2023
- **Project Driver:** Operational Flexibility and Efficiency
- **Specific Assumption Reference:** Dayton Local Plan Assumptions (Slide 5)

• **Problem Statement:**

- The existing 6692 Miami – Peters Road 69kV transmission line currently serves three tapped loads: Tipp City Municipal (35MW currently with potential to increase to 40MW in the future), Tipp City AES Ohio (6MW) and Peters Rd AES Ohio (14MW).
- A fault occurring anywhere on this line will result in both loads and a transformer at Peters Road tripping. Tipp City municipal has requested an upgrade to remedy this issue.
- 6692 is an 8.2 mile wood pole construction line built in 1970. The line has experienced 6 outages over the past 10 years.



# 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-2022-006

**Process Stage:** Need Meeting 9/16/2022

**Project Driver:** Customer Service

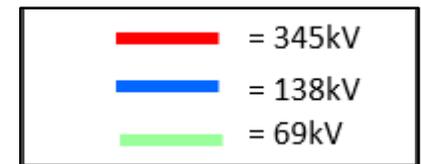
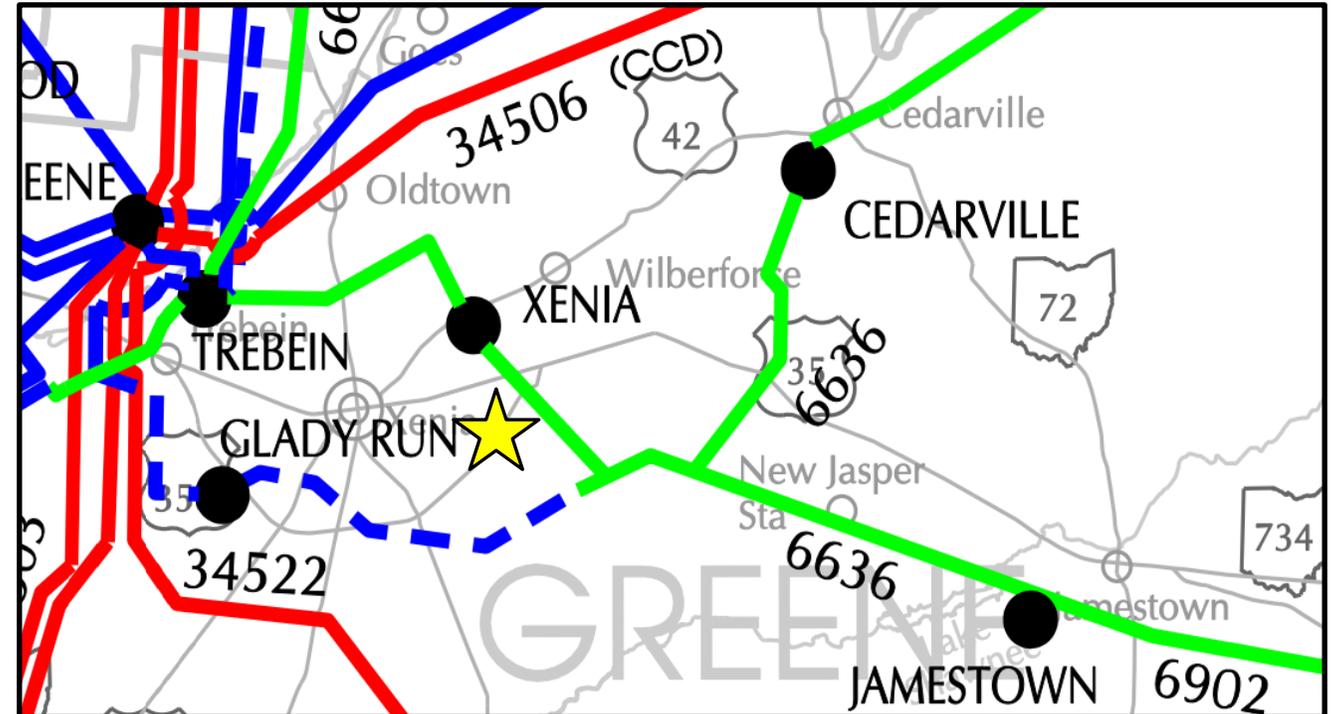
**Specific Assumption Reference:**

Dayton Local Plan Assumptions (Slide 5)

**Problem Statement:**

- AES has received a customer request to establish a new interconnect in the vicinity of Xenia substation
- Total MW load request, associated timelines & load totals

In-Service Date	Total New Connected Load
2022	1
2023	5.5
2026	11



**Model:** 2022 RTEP Series, 2027 Summer Case

**Need Number:** Dayton-2022-006

**Previously Presented:** Need Presented, 9/16/2022

**Process Stage:** Solution Meeting, 04/21/2023

**Project Driver:** Customer Service

**Specific Assumption Reference:** Dayton Local Plan Assumptions (Slide 5)

**Selected Solution:**

➤ **Customer Delivery Point Extension:**

- Establish a new 69kV delivery point with auto sectionalizing motor operated air brake switches, extend a 0.4-mile 69kV single circuit extension off the Xenia – Jasper 69kV transmission line.

Estimated Cost : \$1.1 M, ISD 12/31/2023

➤ **Jasper-Octa Reconductor:**

- Reconductor the 15.8-mile section of 2/0 conductor with 795 ACSR to improve capacity in the area. Inservice Date: Estimated cost:

Estimated Cost : \$6.0 M, ISD 12/31/2026

➤ **Total Estimated Transmission Cost : \$7.1 M**

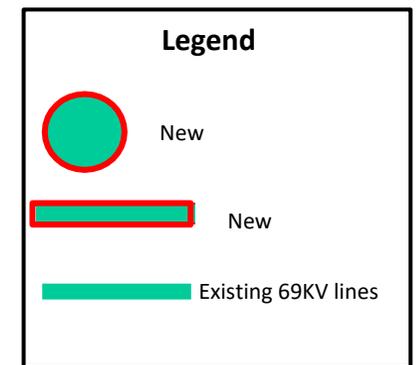
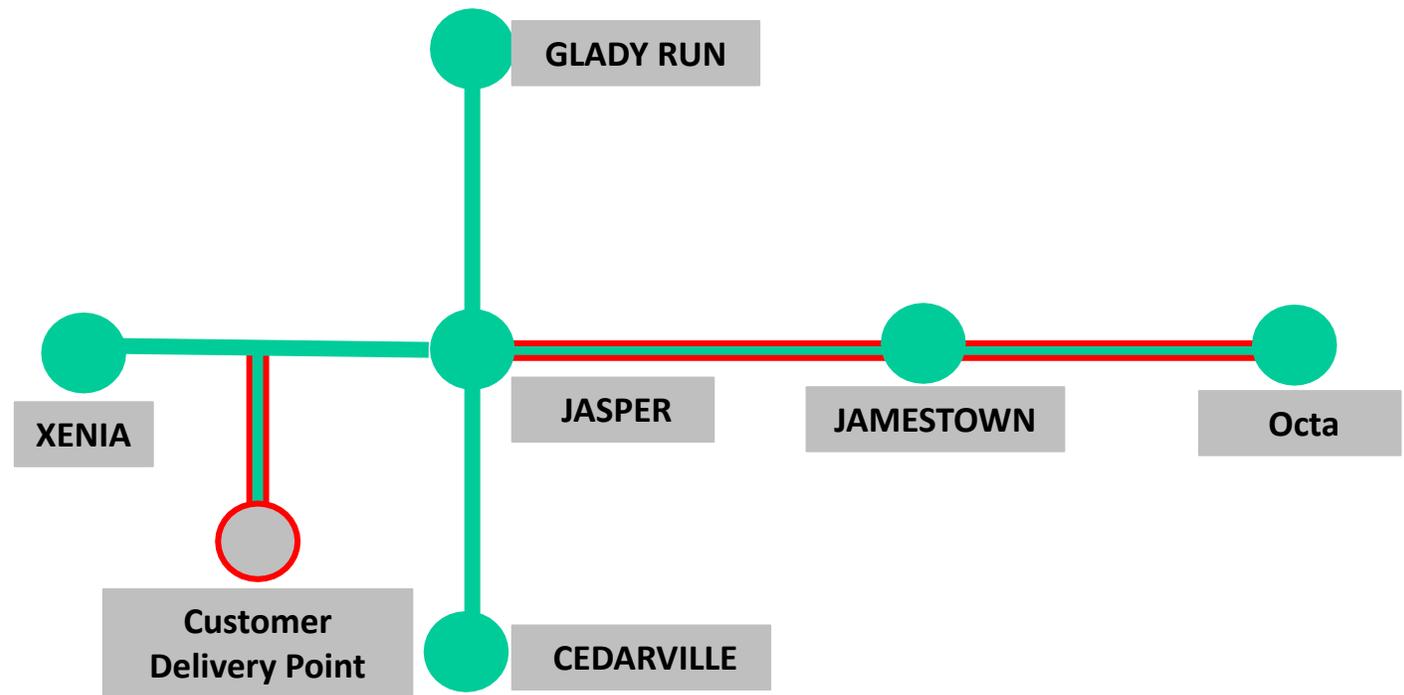
➤ **Projected In-Service:** 12/31/2026

➤ **Project Status:** Conceptual

➤ **Alternatives Considered:**

- Direct Feed from new breaker position at Xenia Substation - \$22.1M

**Model:** 2022 RTEP – 2027 Summer Case



**Need Number:** Dayton-2023-001

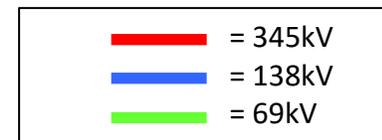
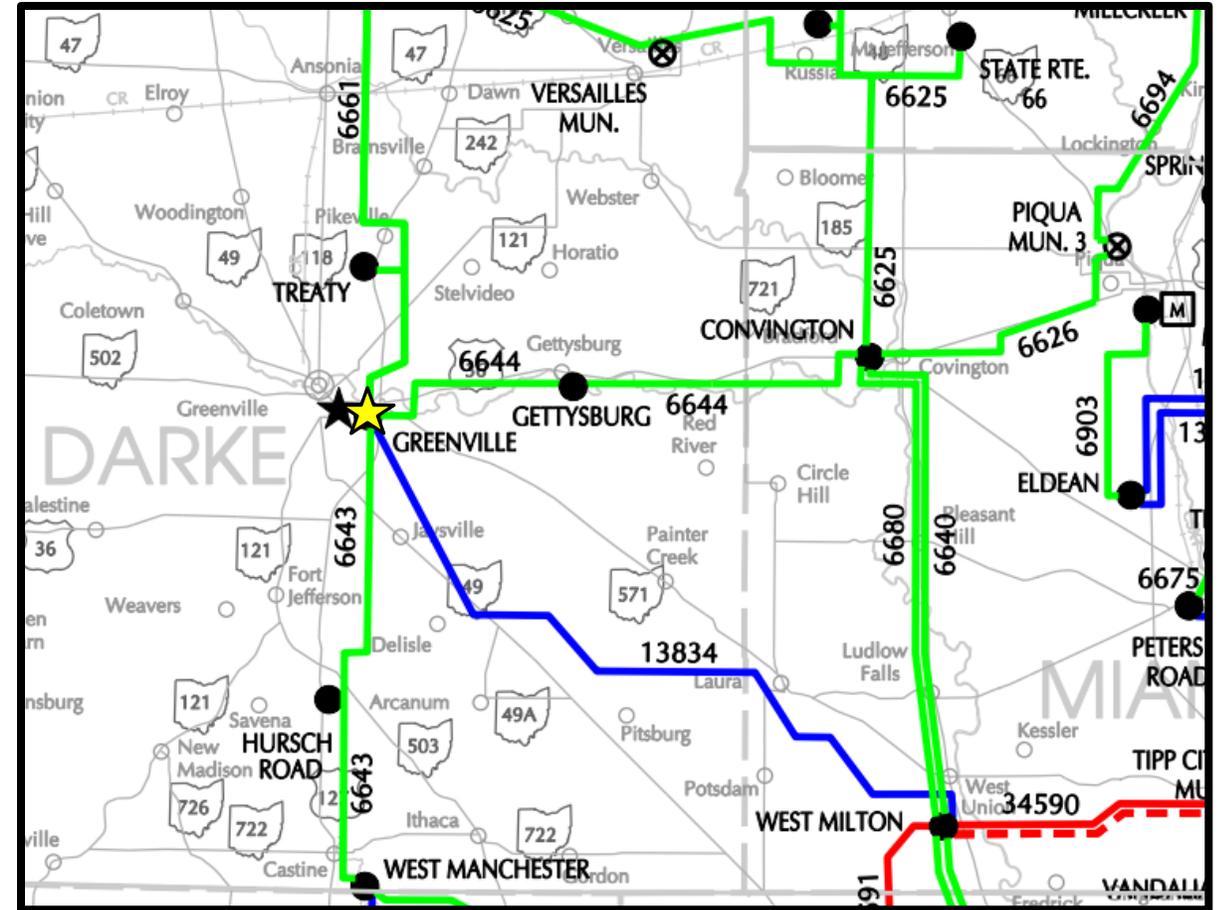
**Process Stage:** Need Meeting 2/17/2023

**Project Driver:** Operational Flexibility and Efficiency

**Specific Assumption Reference:** Dayton Local Plan Assumptions (Slide 5)

**Problem Statement:**

- Dayton and PJM planning have worked on local stability studies and identified an issue with the clearing time associated with certain Greenville 69kV circuit breakers.
- Critical clearing times for faults at Greenville 69kV resulting in additional loss of Greenville-West Milton 138kV and Greenville 69/12kV Bk-3 is approximately 6.5 cycles.
- The current breakers at Greenville are older oil breakers with a 7-cycle clearing time, Dayton's standard breaker is able to clear faults in 5 cycles.



**Need Number:** Dayton-2023-001

**Previously Presented:** Need Presented, 2/17/2023

**Process Stage:** Solution Meeting, 04/21/2023

**Project Driver:** Operational Flexibility and Efficiency

**Specific Assumption Reference:** Dayton Local Plan Assumptions (Slide 5)

**Selected Solution:**

➤ **Breaker Replacement:**

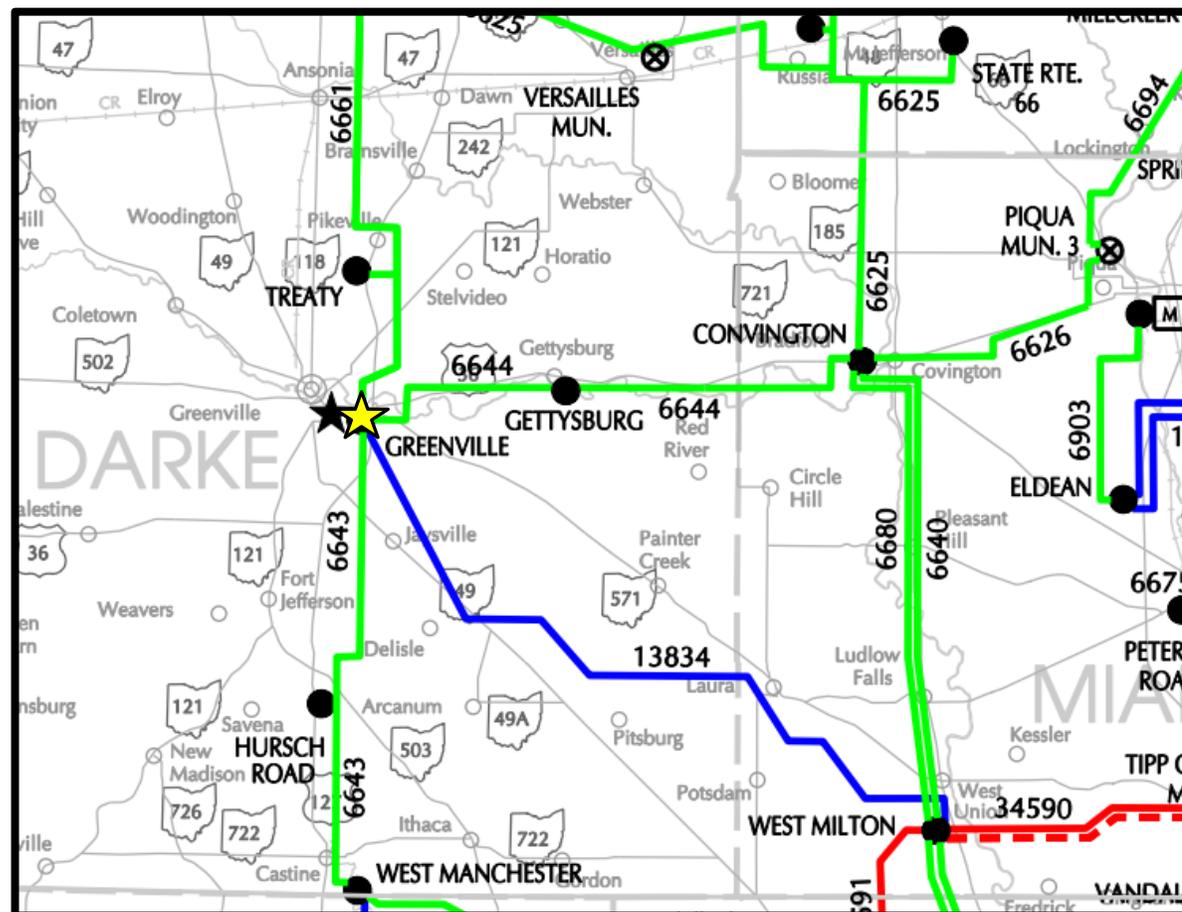
- Replace Greenville 69/12kV Bk-3 Breaker

➤ **Total Estimated cost :** \$350k

➤ **Projected In-Service:** 12/31/2025

➤ **Project Status:** Conceptual

➤ **Alternatives Considered:** No alternatives considered due minimal scope and cost of selected solution.



**Model:** 2022 RTEP – 2027 Summer Case

# 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

4/11/2022 – V1 – Original version posted to pjm.com