

Submission of Supplemental Projects for Inclusion in the Local Plan

DEOK Local Plan - 2026

Need Number: DEOK-2024-007

Previously Presented: Need Meeting 09/24/2024, Solution Meeting 04/11/2025

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan 09/18/2025

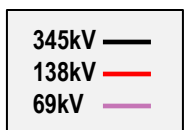
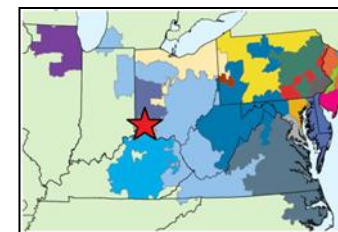
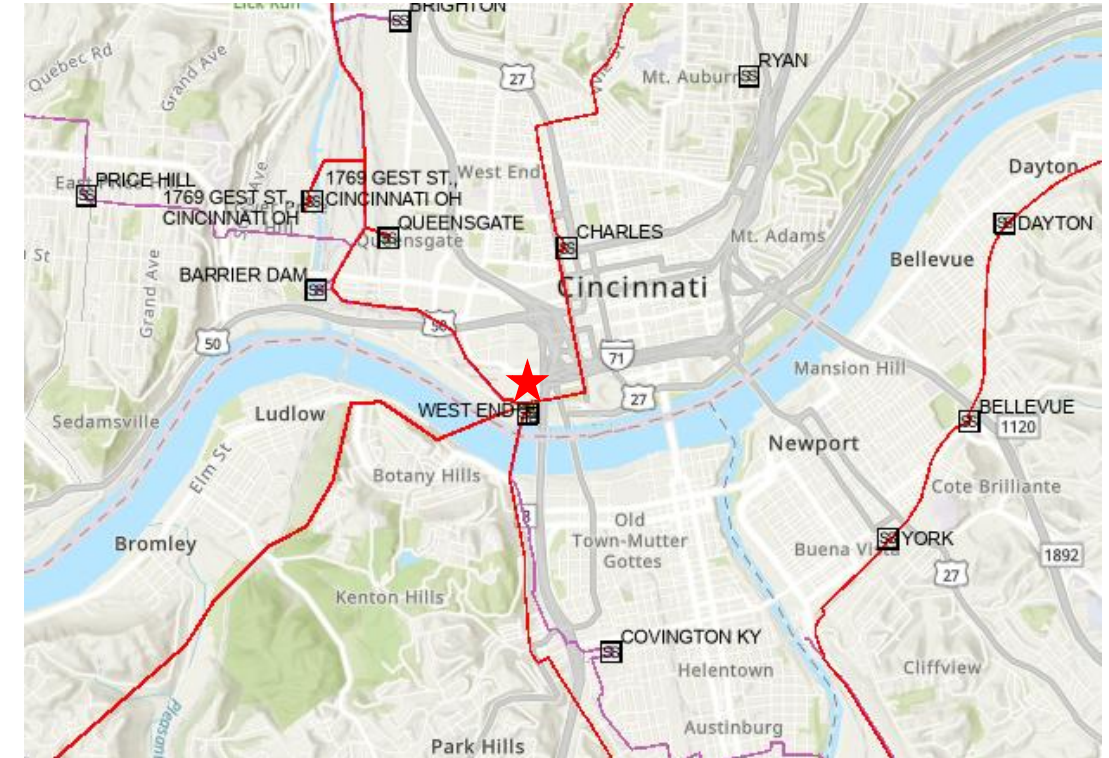
Project Driver: Customer Service

Specific Assumption Reference:

Duke Energy Ohio & Kentucky Local Planning Assumptions slide 6

Problem Statement:

Duke Energy Distribution has requested a new delivery point near Mehring Way in Cincinnati. The adjacent West End distribution substation supplies the downtown Cincinnati network and is being rebuilt. Radial feeders will be moved to buses in this new location to isolate them from the network feeders, increasing the reliability and voltage/VAR management of the downtown Cincinnati network.



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Project Driver: Customer Service

Specific Assumption Reference:

Duke Energy Ohio & Kentucky Local Planning Assumptions slide 6

Solution:

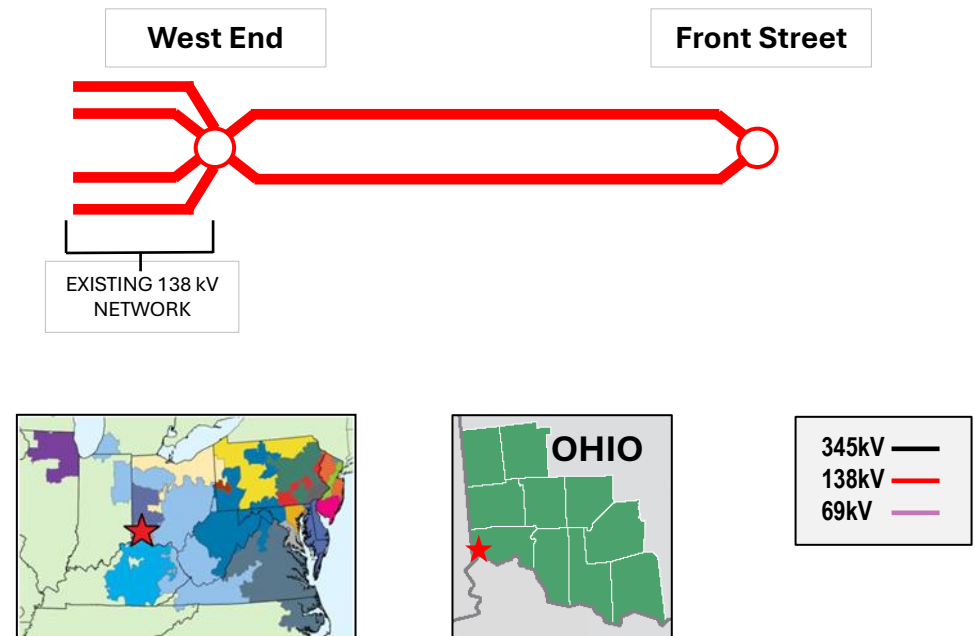
Build a new 138 kV, 6-breaker ring bus substation named Front Street. Connect Front Street to West End with two feeders landing in non-adjacent positions, acting as a loop. In the remaining four positions install 138/13 kV, 33 MVA transformers to support four independent distribution bus sections each connecting three feeders and two switched 3.6 MVAR capacitors. At West End, install four 138 kV circuit breakers to create positions for the two feeders to Front. The feeders are each approximately 350 feet long, will be constructed of 954 ACSS conductor, and have capacities of 301/301 MVA summer, 378/378 MVA winter (**s3703.1**).

Estimated Transmission Cost: \$41,915,473

Proposed In-Service Date: 01/22/2030

Supplemental Project ID: s3703.1

Project Status: In Construction



Need Number: DEOK-2024-008

Previously Presented: Need Meeting 12/13/2024, Solution Meeting 03/14/2025

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan 03/18/2026

Project Driver: Other

Specific Assumption Reference:

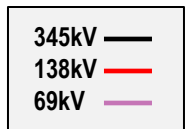
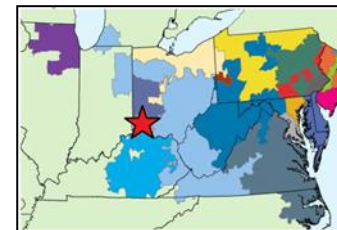
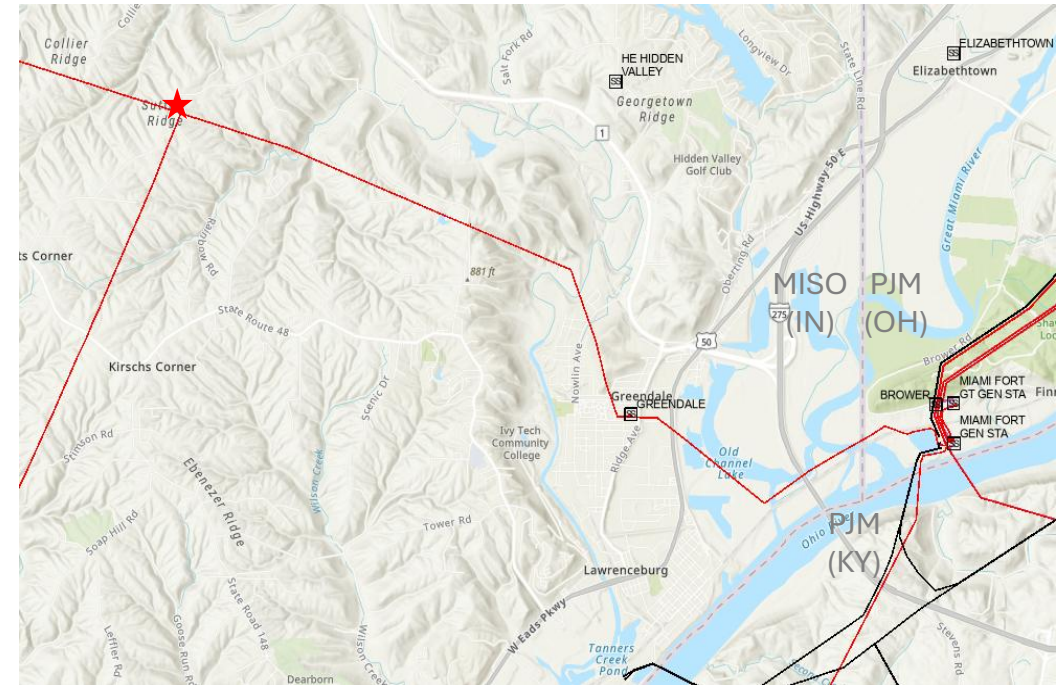
Duke Energy Ohio & Kentucky Local Planning Assumptions slide 11

Problem Statement:

MISO's Long Range Transmission Planning process (LRTP) has identified reliability and economic needs in its Midwest region. Facilities to address these needs can be found in the 2024 MISO Transmission Expansion Plan (MTEP24) Appendix A, LRTP Tranche 2.1 projects. MISO's Facility Descriptions include impacts in the DEOK zone:

- A new Sutton Ridge-Miami Fort 138kV circuit that has a minimum summer emergency rating of 478 MVA
- A new 138 kV breaker position at Miami Fort that has a minimum summer emergency rating of 478 MVA

MISOs expected in-service date is 6/1/2032.





DEOK Transmission Zone M-3 Process Sutton Ridge-Miami Fort

Need Number: DEOK-2024-008

Previously Presented: Need Meeting 12/13/2024, Solution Meeting 03/14/2025

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan 03/18/2026

Project Driver: Other

Specific Assumption Reference:

Duke Energy Ohio & Kentucky Local Planning Assumptions slide 11

Potential Solution:

Duke Energy Ohio and Kentucky's line work is limited to sections between Miami Fort substation and the Ohio/Indiana State border, approximately one mile in circuit length. Replace the single circuit structures on the Miami Fort-Greendale 138 kV circuit with dual-circuit structures. Replace the existing Miami Fort-Greendale conductor with 954 ACSS. Install 954 ACSS for the new circuit to Sutton Ridge. Install a 138 kV, 2000A, 63kA circuit breaker with two 2000A disconnects and three metering class CCVTs to connect the new Sutton Ridge circuit. The new ratings for both circuits will be 480/480 MVA summer, 520/520 MVA winter (**s3806.1**).

Alternatives: Alternatives considered as part of MISO LRTP process: [MTEP24 Chapter 2 – Regional Long Range Transmission Planning658124.pdf](#).

Estimated Transmission Cost: \$5.3M*

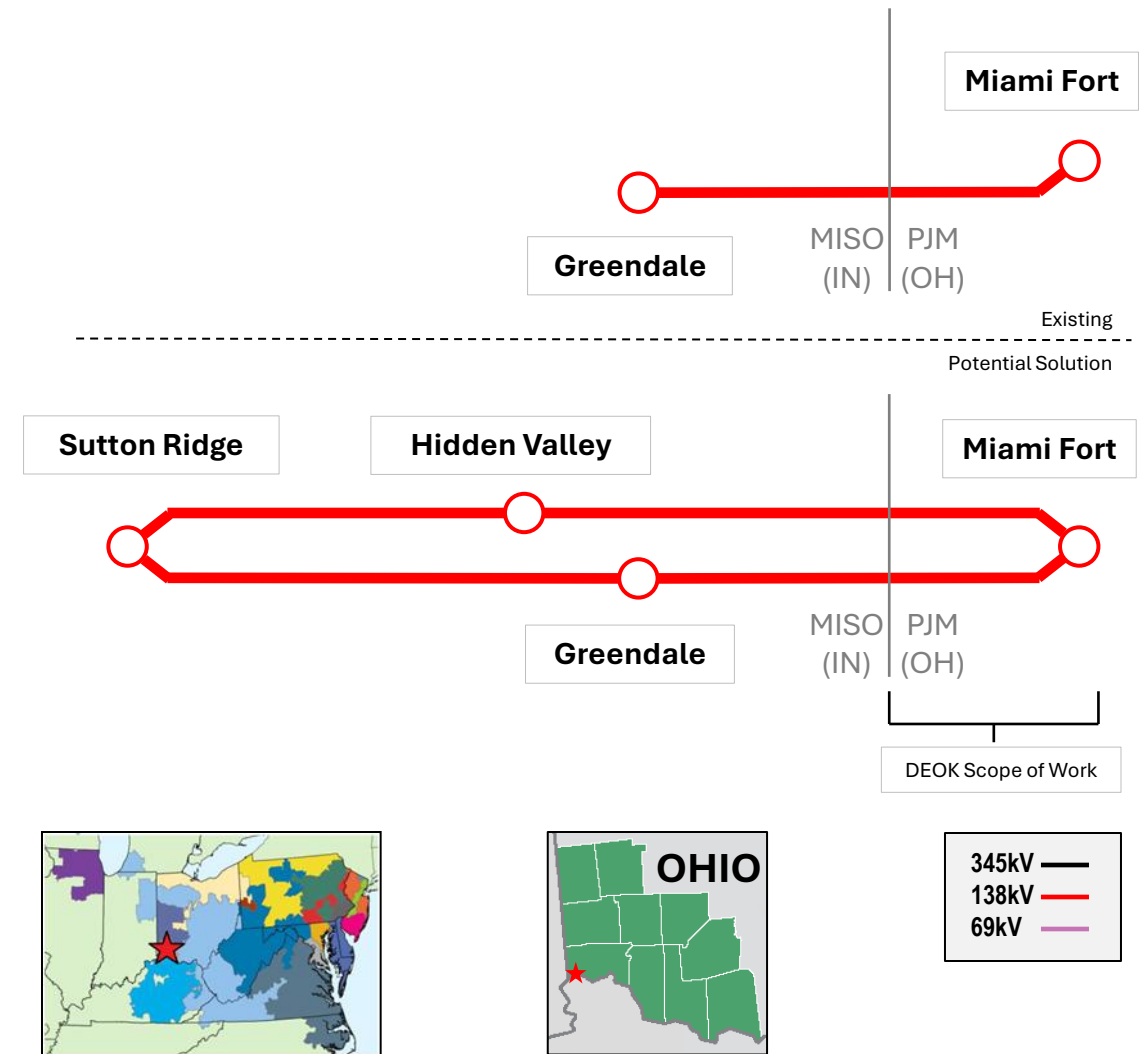
Proposed In-Service Date: 6/1/2032

Supplemental Project ID: s3806.1

Project Status: Scoping

Model: MISO's LRTP_TR2_2032_v5.1

*[MISO Tranche 2.1 Appendix A](#) cost. 100% will be allocated to MISO customers.



Need Number: DEOK-2025-001

Previously Presented: Need Meeting 01/17/2025, Solution Meeting 02/14/2025, 03/14/2025

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan 06/18/2026

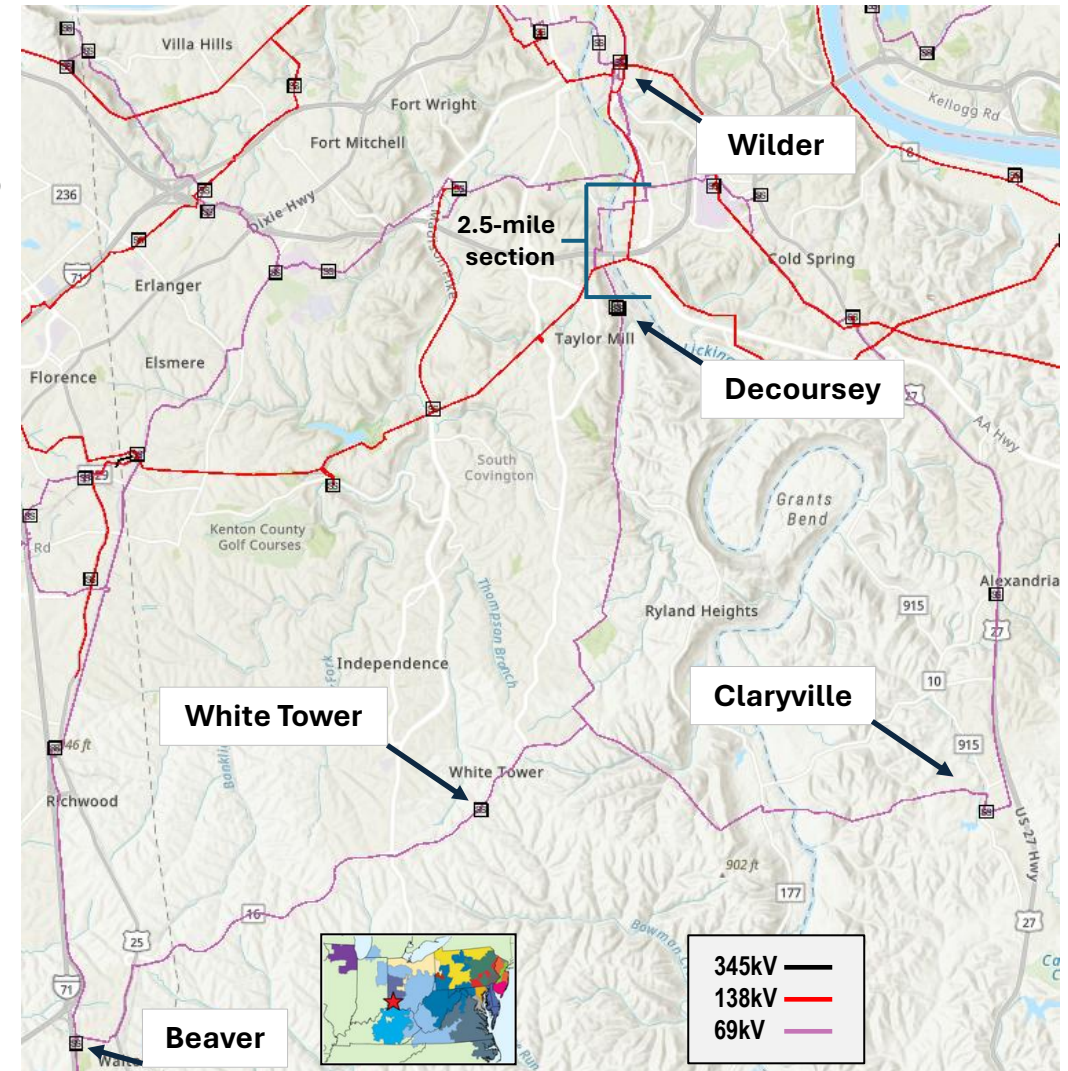
Project Driver: Equipment Condition, Performance and Risk

Specific Assumption Reference:

Duke Energy Ohio & Kentucky Local Planning Assumptions slides 7-8

Problem Statement:

A section of 69 kV circuit from Wilder to Decoursey is in deteriorating condition. This circuit is breaker connected at Wilder and feeds through switch connected buses at Decoursey and White Tower terminating at open switches in Beaver and Claryville. It supports a total of 85 MVA at these substations. The 2.5-mile section was originally constructed in 1965 and includes 69 single wood poles, wooden crossarms, and post insulators supporting 477 ACSR conductor. On inspection 10% of structures were rejected and an additional 25 were found to have defects. In the last five years there have been ten momentary and six permanent outages totaling 51,224 CMI, with the average outage lasting 221 minutes. 13,028 customers are at risk.





DEOK Transmission Zone M-3 Process Wilder-Decoursey

Need Number: DEOK-2025-001

Previously Presented: Need Meeting 01/17/2025, Solution Meeting 02/14/2025, 03/14/2025

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan 06/18/2026

Project Driver: Equipment Condition, Performance and Risk

Specific Assumption Reference:

Duke Energy Ohio & Kentucky Local Planning Assumptions slides 7-8

Potential Solution:

Rebuild the 2.5-mile section with 954ACSR conductor, 64 steel poles and two hybrid poles for a river and railroad crossing. The ratings for this section will increase to 150/150/150 MVA summer, 189/189/189 MVA winter (**s3868.1**).

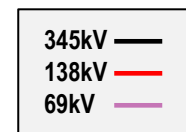
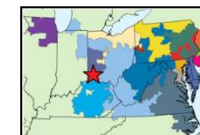
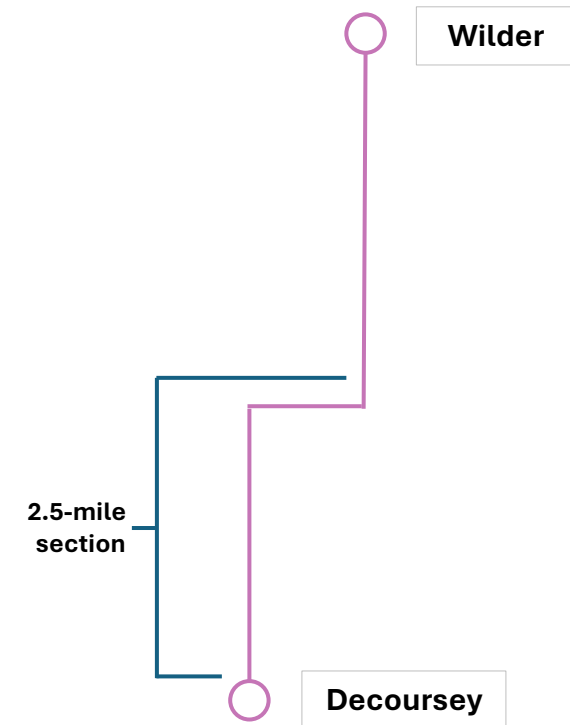
Estimated Transmission Cost: \$7,210,650

Proposed In-Service Date: 10/19/2027

Supplemental Project ID: s3863.1

Project Status: Engineering

Model: 2024 RTEP



Need Number: DEOK-2026-002

Previously Presented: Need Meeting 04/15/2026, Solution Meeting 05/15/2026

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan 09/15/2026

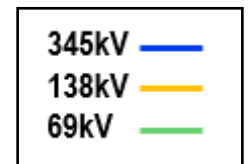
Project Drivers: Equipment Condition, Performance and Risk; Operational Flexibility and Efficiency

Specific Assumption References:

Duke Energy Ohio & Kentucky Local Planning Assumptions slides 7, 8, 9

Problem Statement:

The 138 kV Mt. Healthy substation is a 53-year-old T-D manual switching station located on an approximately 7.9-mile 138 kV circuit between Mapleknoll and Finneytown substations. Mt. Healthy substation serves 9,935 customers via two 138/13.2 kV transformer banks. Due to being a manual switching station with no ATO scheme protection, a line fault on the Mapleknoll – Mt. Healthy or Mt. Healthy – Finneytown circuits will result in an outage for all customers served by Mt. Healthy substation. Additionally, several devices on the substation are approaching the end of their useful life and are due to be replaced, including electromechanical or solid-state relays and RTUs.





DEOK Transmission Zone M-3 Process Mt. Healthy Substation Rebuild

Need Number: DEOK-2026-002

Previously Presented: Need Meeting 04/15/2026, Solution Meeting 05/15/2026

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan 09/15/2026

Proposed Solution:

Mt. Healthy Substation: Replace necessary existing foundations, structures and devices to accommodate installation of a new four-position ring bus configuration. This includes the installation of: four 138 kV, 2000 A, 40 kA circuit breakers; two 138 kV, 2000 A wave traps; eight 138 kV CCVT's; six 138 kV lightning arresters; two 138 kV 2000 A motor operated line disconnect switches; and six 138 kV 2000 A breaker disconnect switches (**s3910.1**).

Estimated Transmission Cost: \$6.5M

Finneytown Substation: Install two 138 kV CCVT's, two relays, and necessary conduits to create ATO scheme on Finneytown – Mt. Healthy and Finneytown – Terminal circuits (**s3910.2**).

Estimated Transmission Cost: \$1.05M

Mapleknoll Substation: Install two 138 kV CCVT's, two relays, and necessary conduits to create ATO scheme on Mapleknoll – Mt. Healthy and Mapleknoll – Willey circuits (**s3910.3**).

Estimated Transmission Cost: \$1.05M

Alternatives Considered: N/A

Total Estimated Transmission Cost: \$8.6M

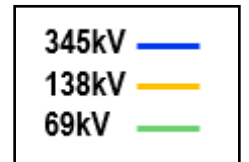
Proposed In-Service Date: 05/07/2029

Supplemental Project ID: s3910.1 - .3

Project Status: Engineering

Model: 2025 RTEP

**Bubble Diagram Not Applicable
Station Modifications Only**



Need Number: DEOK-2026-004

Previously Presented: Need Meeting 07/07/2026, Solution Meeting 08/04/2026

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan 09/15/2026

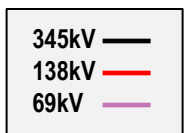
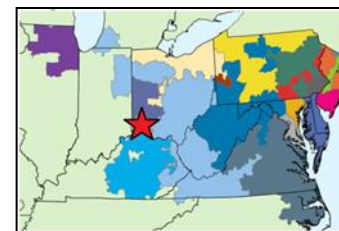
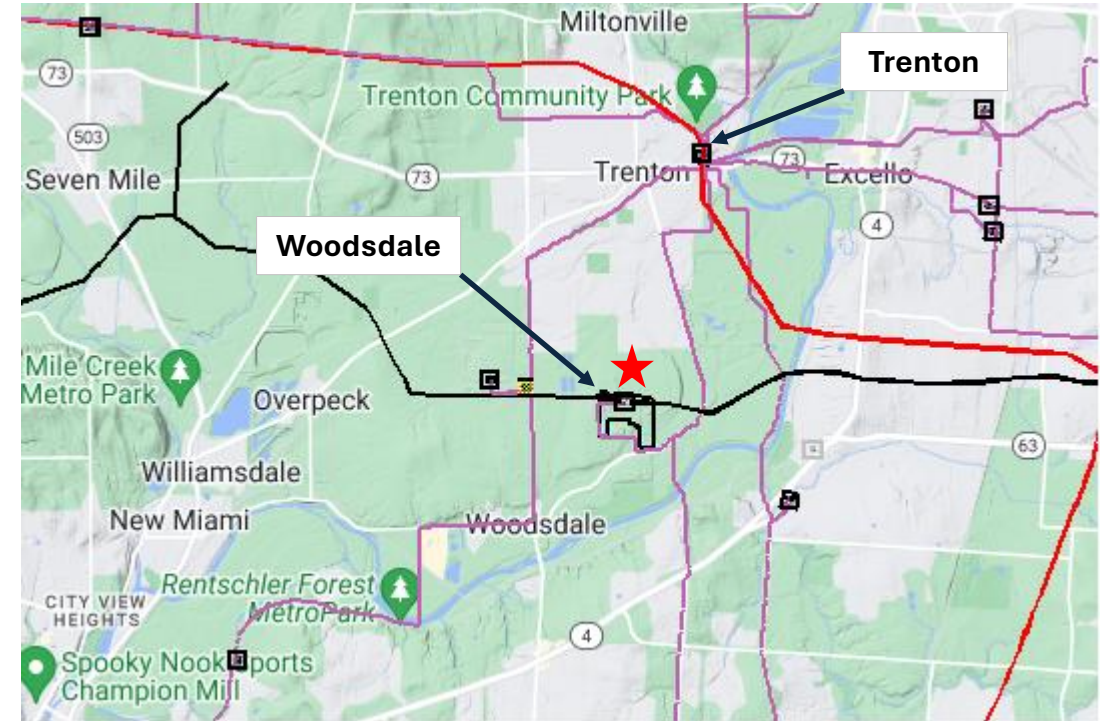
Project Driver: Customer Service

Specific Assumption Reference:

Duke Energy Ohio & Kentucky Local Planning Assumptions slide 6

Problem Statement:

The customer for Need DEOK-2024-006 (**s3601.1**) had proposed 500 MW load near Trenton in Butler County, OH. This customer plans to further add 300 MW load in 2028 at the same location.



Need Number: DEOK-2026-004

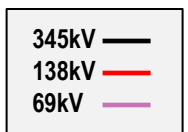
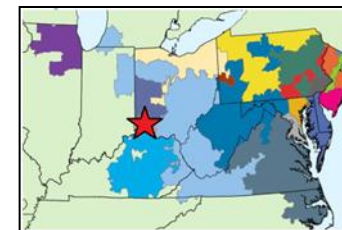
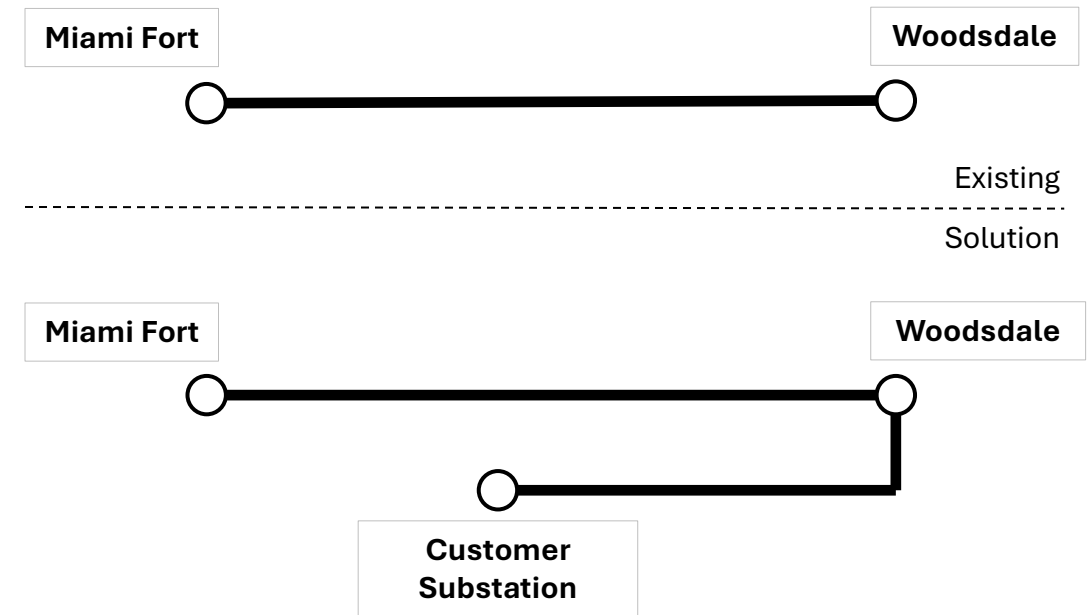
Previously Presented: Need Meeting 07/07/2026, Solution Meeting 08/04/2026

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan 09/15/2026

Proposed Solution:

Woodsdale Substation: Install two new 345 kV, 4000 A, 50 kA interrupt circuit breakers in Woodsdale substation to connect a new circuit (**s3909.4**), approximately 1.0 mile of bundled 954 ACSR, from Woodsdale to the customer site. The new line will be rated 1509/1509 MVA Summer, 1894/1894 MVA Winter (**s3909.1**).

Estimated Transmission Cost: \$14.1M





DEOK Transmission Zone M-3 Process Customer Load Request

Need Number: DEOK-2026-004

Previously Presented: Need Meeting 07/07/2026, Solution Meeting 08/04/2026

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan 09/15/2026

Proposed Solution (cont.):

Pierce Substation: Install one new 345 kV, 3000 A, 50 kA interrupt circuit breaker in the 345 kV Pierce Substation (**s3909.5**) to connect a new 400 MVA 345/138 kV transformer (**s3909.3**).

Estimated Transmission Cost: \$15M

Beckjord Substation: Install two 138 kV, 3000 A, 63 kA interrupt circuit breakers in Beckjord 138 kV substation (**s3909.6**) to connect approximately 0.3 miles of new 954 ACSR 45x7 bundled conductor (**s3909.2**). This conductor will be used to connect the low side of the new Pierce 345/138 kV transformer to the 138 kV Beckjord substation. This line will be rated 618/618 MVA summer and 757/757 MVA winter.

Estimated Transmission Cost: \$3.7M

Alternatives Considered: No alternatives were considered for this project.

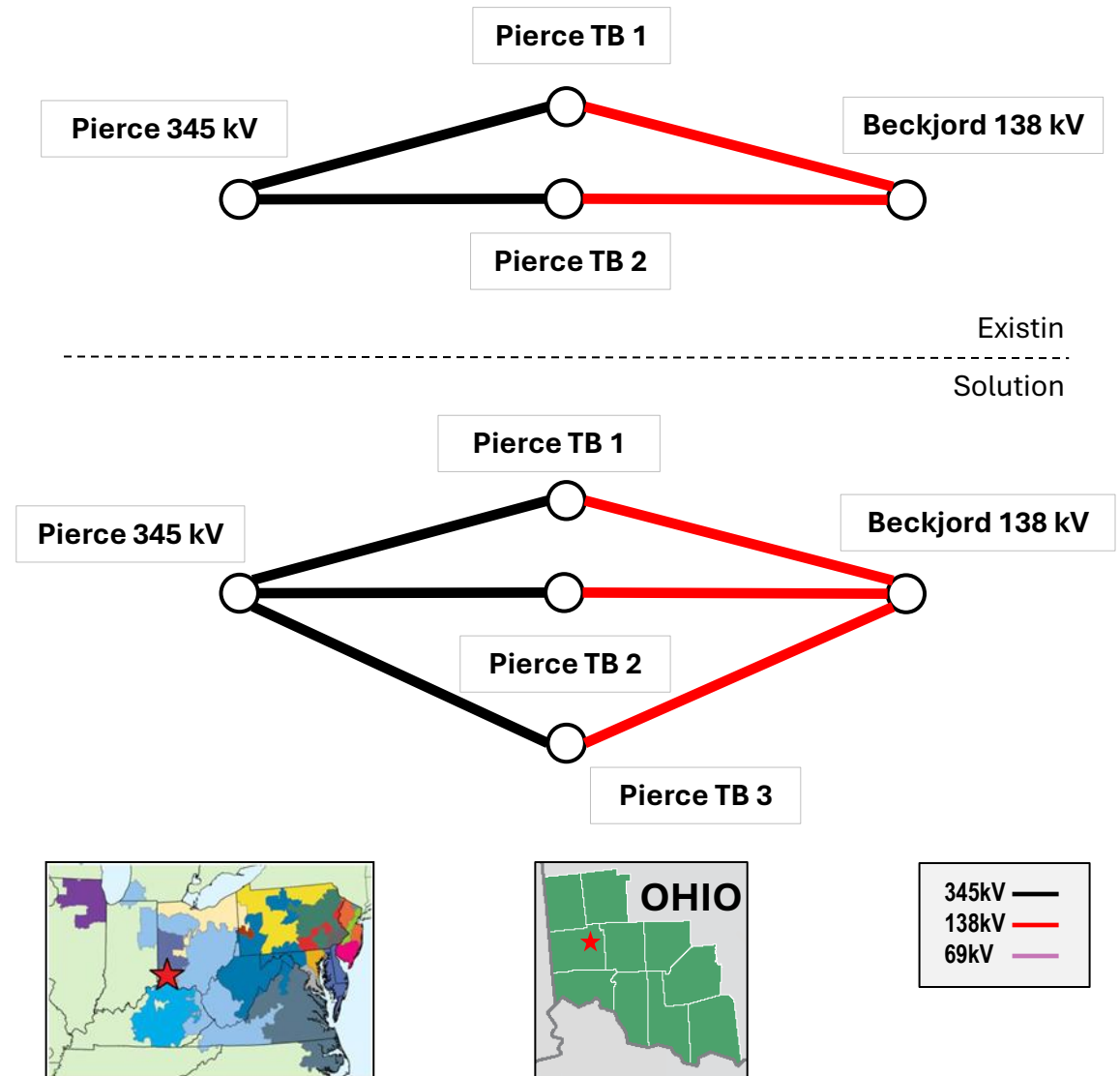
Total Estimated Transmission Cost: \$32.8M

Proposed In-Service Date: 06/01/2029

Supplemental Project ID: s3909.1 - .6

Project Status: Scoping

Model: 2025 RTEP



Revision History

9/25/2026 – V1 –Added all slides