

Submission of Supplemental Projects for Inclusion in the Local Plan

Dayton Local Plan-2023

Need Number: Dayton-2021-010

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan 2/7/2023

Previously Presented: Need Meeting 08/16/2021

Solution Meeting 08/19/2022

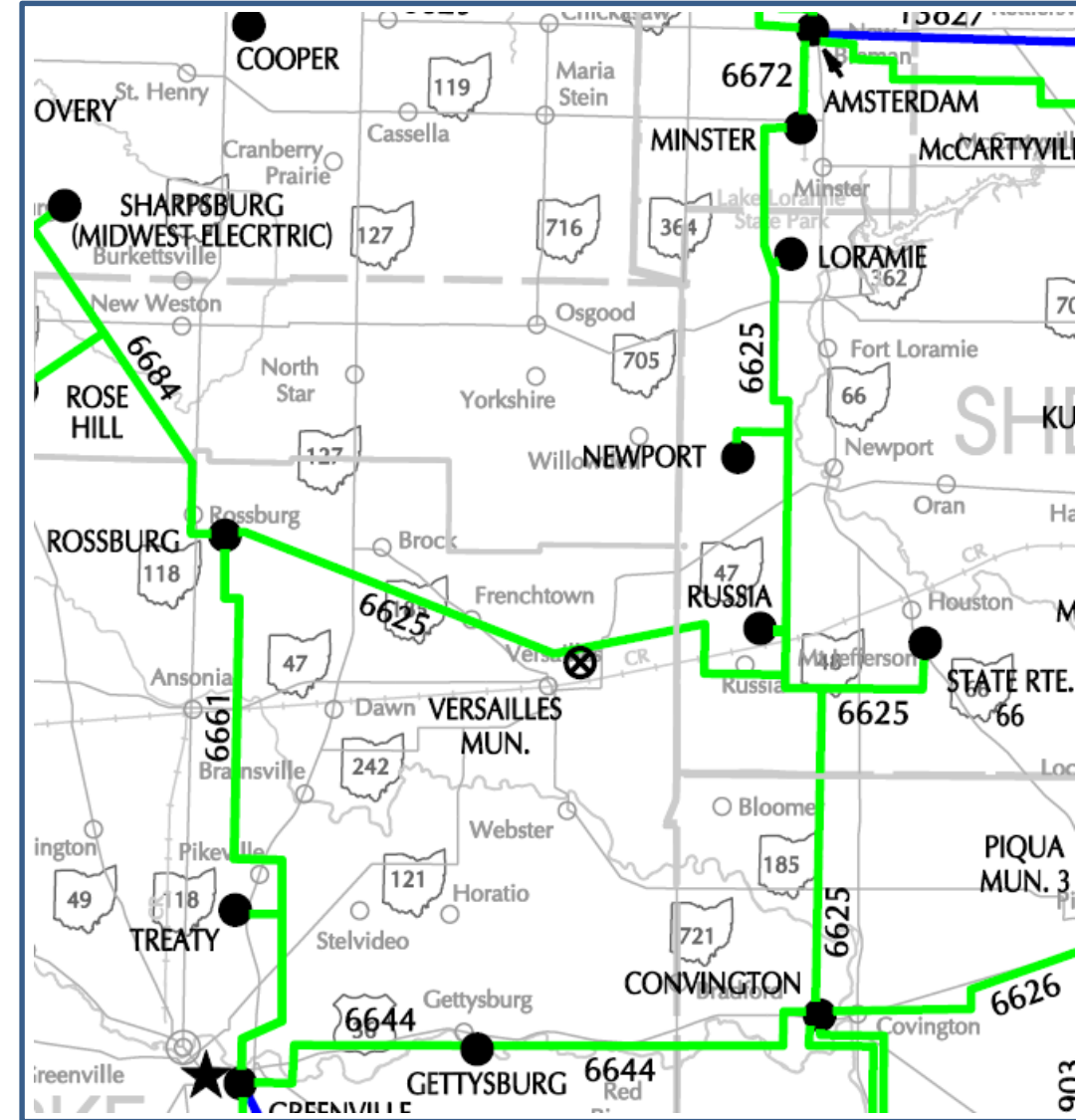
Project Driver: Requested Customer Upgrade, Operational Performance

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

Problem Statement:

- The Village of Versailles has requested additional sectionalizing improvements to improve local delivery point reliability. Currently Versailles' peak load totals to 16.5MWs and is served via two-way 69kV MOABs switch arrangement.
- Presently, Versailles is the largest served via the 42-mile 69kV transmission circuit and are projected to increase to 17.6 MWs by 2025.
- Also, Buckeye Electric cooperatives served at Newport (peak load of 6.3MWs) and St. Rt. 66 (peak load of 6.2MWs) have delivery points along this line.
- AES Ohio serves distribution via the Loramie (peak load of 8.5MWs) and Russia (peak load of 3.2MWs) Substations.
- The existing 42 mile 69kV transmission line (6625) from Covington-Minster-Rosburg was constructed using wood pole, cross-arm and brace design in 1971. This line provides transmission and distribution level service to 6 different substations serving nearly 7,000 customers in Darke, Mercer, Miami, and Shelby Counties in Ohio and totaling approximately 40MWs of load.
- Since 2016, the line has experienced 41 outages (11 permanent and 30 momentary), with a total outage duration of ~6,400 minutes. A vast majority of the permanent outages were equipment related issues while most of the momentary outages have been the result of weather.
- Additionally, in 2020 AES Ohio committed to a local area upgrade (Russia 4-breaker ring: S2254). This project also targets to minimize impacts associated with 6625 circuit outages by splitting the 42 miles 69kV circuit into three 69kV circuits:
 - Rosburg – Versailles - Russia: 12.0 miles
 - Minster – Russia: 13.0 miles
 - Covington – Russia: 17 miles
- There is a need here to further evaluate the condition and sectionalizing improvements along 6625 after the Russia 4-breaker ring is complete in 2023 for more localized sections of this line where cross-arm and tap design is prevalent.

Model: 2021 RTEP Series, 2026 Summer Case



Need Number: Dayton-2021-010

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan 2/7/2023

Previously Presented: Need Meeting 08/16/2021

Solution Meeting 08/19/2022

Project Driver: Requested Customer Upgrade, Operational Performance

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

Proposed solution:

Russia – Minster 69kV Line Rebuild: Rebuild and reconductor the 13-mile 69kV line from Russia – Minster utilizing 1351 AAC conductor and ductile iron poles. This project will directly improve one of the worst performing circuits in the AES Ohio footprint. This rebuild along with other area improvements will greatly reduce both permanent and momentary outages to the co-op delivery points along this line and will help improve the reliability area by reinforcing this important south to north 69kV corridor on the AES Ohio system. **(S2809.1)**

Estimated Transmission Cost: \$18.2M, ISD 12/31/2026

Russia – Covington 69kV Line Rebuild: Rebuild and reconductor the 14-mile 69kV line from Russia - Covington. Like above, this project will reinforce a historic poor performing circuit and reduce permanent and momentary outages to customers served in this area. Replacing the wood pole cross-arm and brace design with ductile iron poles will significantly improve reliability for the customers served from this line. **(S2809.2)**

Estimated Transmission Cost: \$19.6M, ISD 6/1/2027

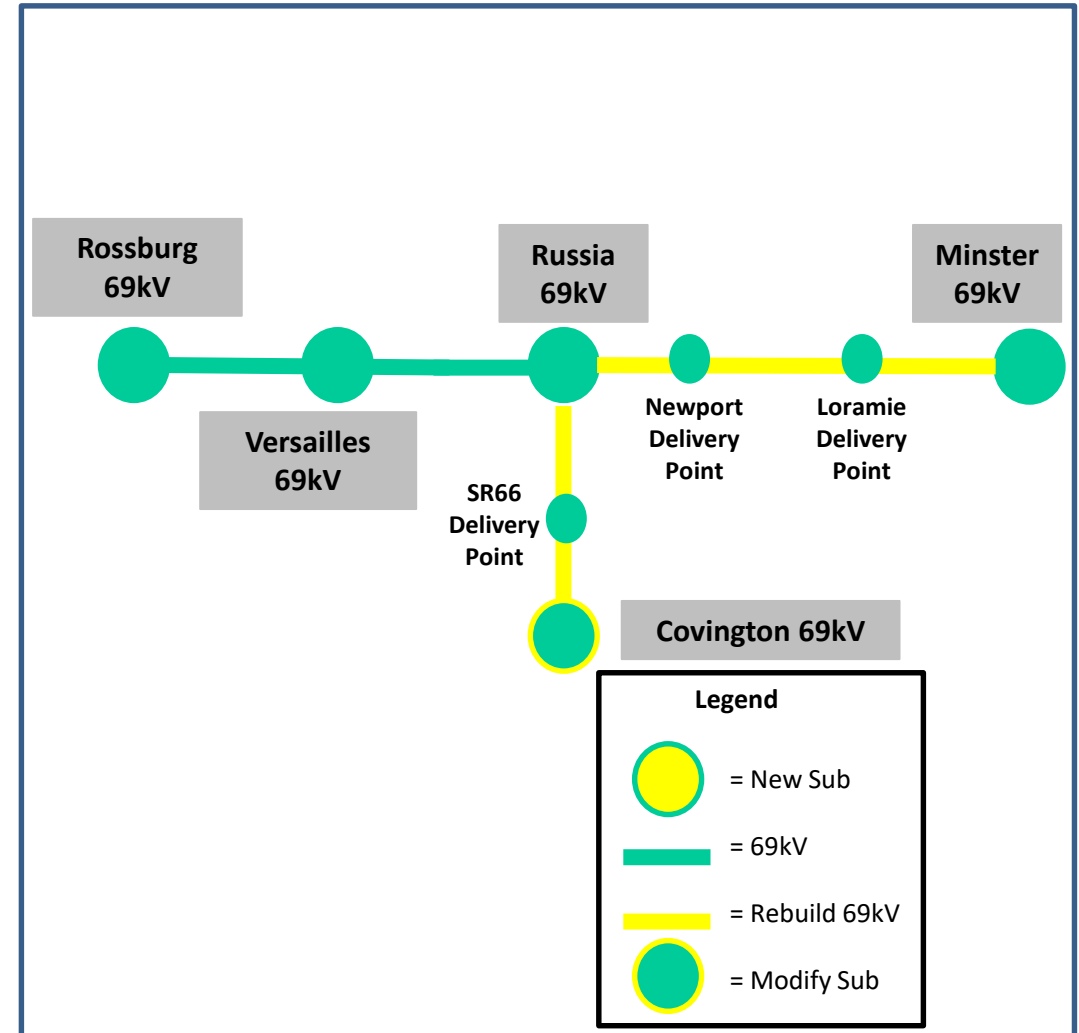
Covington Substation: Replace 5 - 1940's era oil breakers, relaying, and establish another 69kV bus tie for operational flexibility. These breakers have experienced operational issues and should also be replaced at the time of the rebuild to ensure modern relaying is in place which will also help improve area reliability. **(S2809.3)**

Estimated Transmission Cost: \$3M, ISD 6/1/2027

Total Estimated Transmission Cost: \$40.8M

Project Status: Conceptual

Supplemental Project ID: S2809.1-.3



Revision History

1/20/2023 – V1 –Added Slides #1-2, S2809.1-.3