

Western Sub Regional RTEP: AEP Supplemental Projects

August 14, 2026

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 Kepler Delivery Point

Need Number: AEP-2026-OH033

Process Stage: Need Meeting 08/14/2026

Project Driver: Customer Service

Specific Assumption References:

AEP Connection Requirements for the AEP Transmission System (AEP Assumptions Slide 12)

Problem Statement:

A customer has requested 176 MW load in Monroe Township in Licking County, OH with future expansion potential up to 690 MW. The requested in service date is Q4 2030.





AEP Transmission Zone M-3 Process Upper Sandusky

Need Number: AEP-2026-OH029

Process Stage: Need Meeting 08/14/2026

Project Driver: Equipment Condition/Performance/Risk

Specific Assumption References:

AEP Guidelines for Transmission Owner Identified Needs (AEP Assumptions Slide 13 and 14)

Problem Statement:

Upper Sandusky 69kV Station:

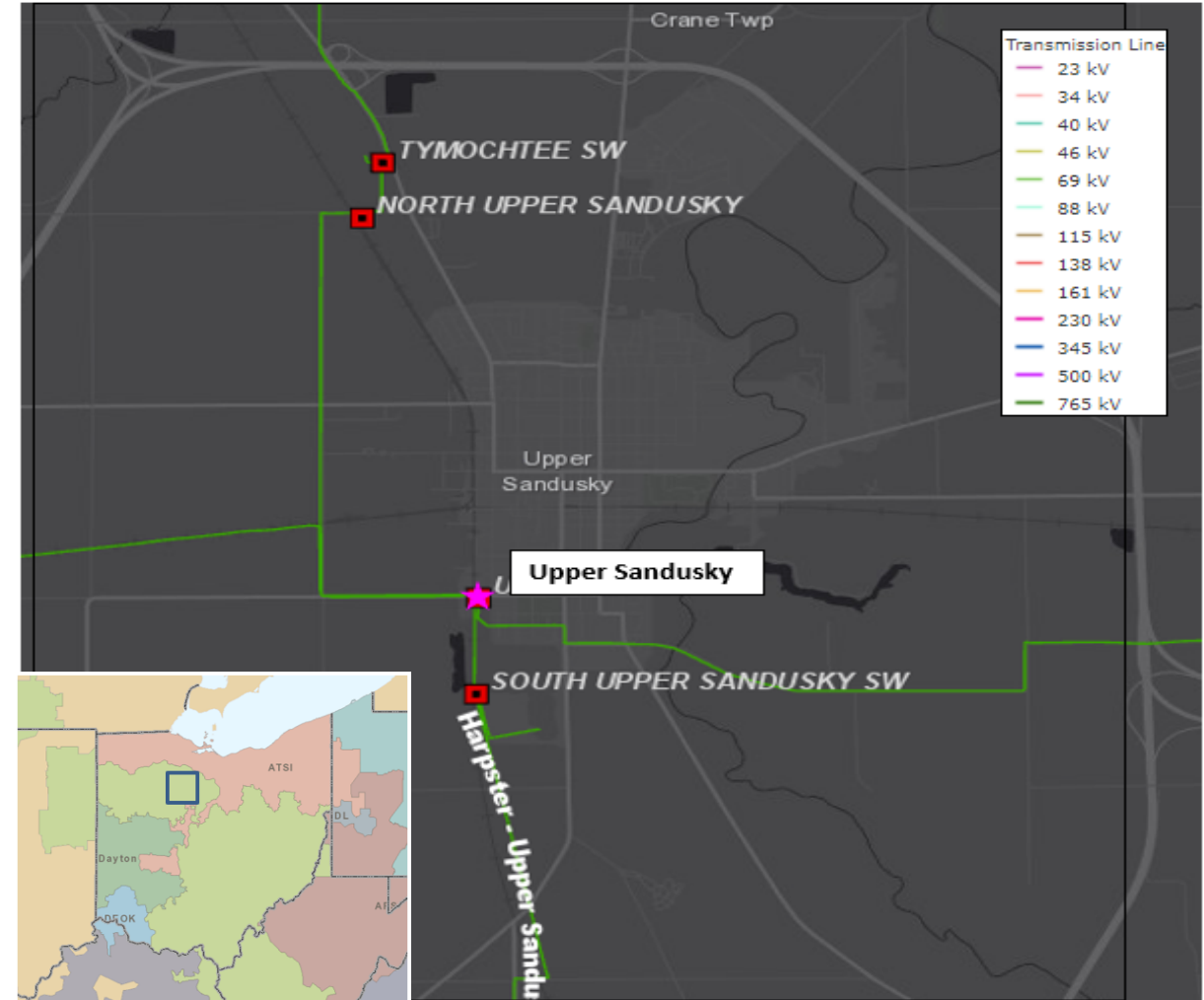
Equipment Material Condition, Performance and Risk

69kV breakers F,G and A are oil type breakers. These breakers are 1957 (F,G) and 1970 (A) vintage respectively and have all exceeded the manufacturer's recommended number of fault operations. These breakers are oil filled without oil containment; which have much more maintenance required due to oil handling than their modern, SF6 counterparts do not require. These types also have limited vendor support and lack spare parts.

69kV switcher AA is a 1994 vintage SF6 type circuit switcher. This type has an extensive history of malfunction events, such as gas loss, interrupter failures, operating mechanism failures, and trip or reclose failures.

The station also has issues with cracked foundations on some of the lattice structures as well as cap and pin insulators installed on the 69kV bus which are prone to failure due to corrosion and porcelain punctures.

Of the 51 relays at the station, 48 need replacement. There are 46 electromechanical and 2 static type of relays. These types of relays have significant limitations regarding fault data collection and retention in comparison with IED type relays.





AEP Transmission Zone M-3 Process Robb Avenue Circuit Breaker C & D 34.5kV

Need Number: AEP-2026-OH028

Process Stage: Need Meeting 08/14/2026

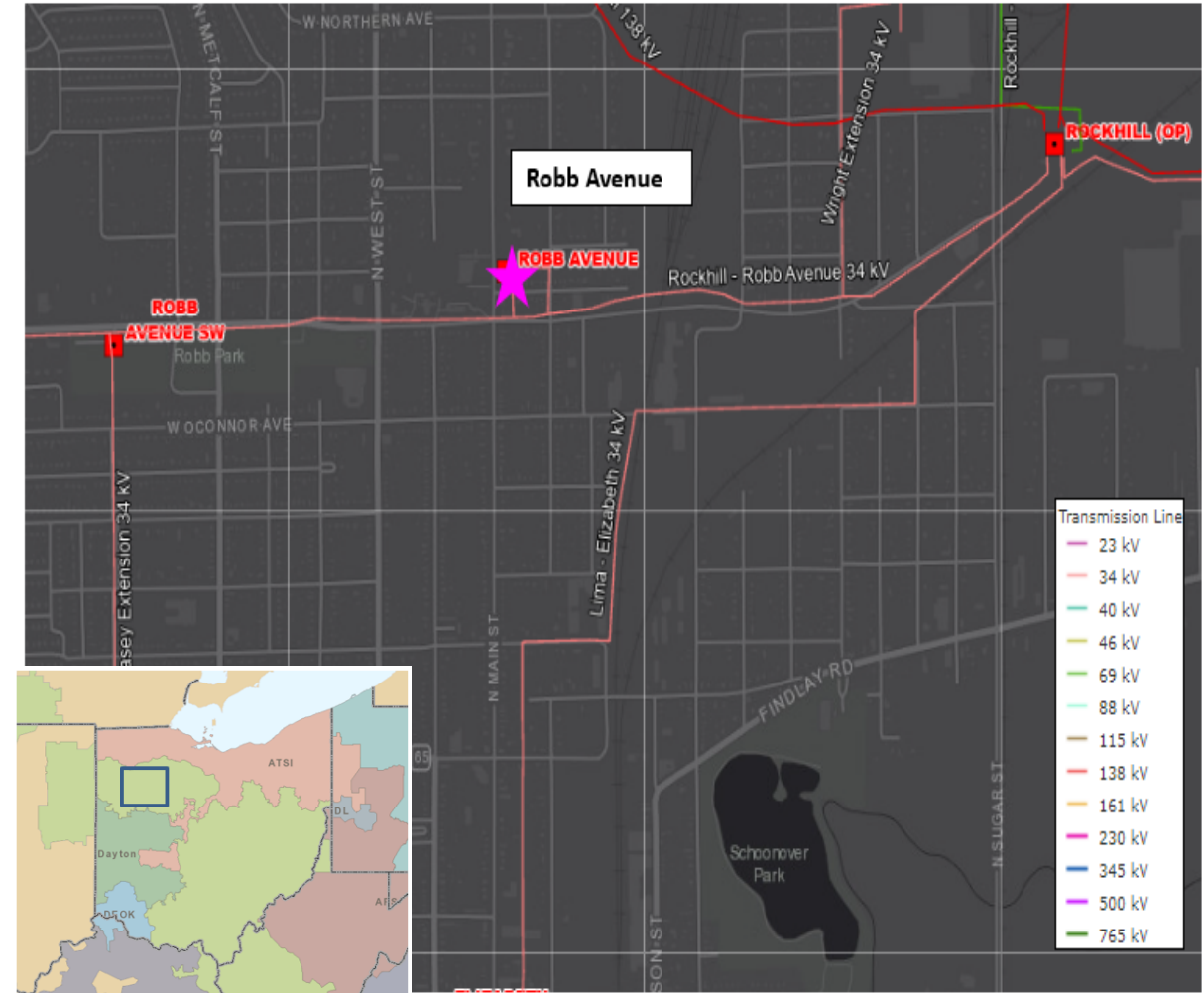
Project Driver: Equipment Condition/Performance/Risk

Specific Assumption References:

AEP Guidelines for Transmission Owner Identified Needs (AEP Assumptions Slide 13 and 14)

Problem Statement:

Robb Avenue 34.5kV station: The two 34.5kV transmission owned circuit breakers, CB-C and D, are FK type, oil filled breakers. These breakers are of 1952 vintage. These breakers are oil filled without oil containment; oil filled breakers have much more maintenance required due to oil handling that their modern, SF6 counterparts do not require. Circuit breaker C has exceeded the manufacturer's recommended number of fault operations. Each of these fault operations is likely not at the full fault current rating of the circuit breakers, but with each fault operation of any magnitude comes accelerated aging. The manufacturer provides no support for this fleet of circuit breakers and spare parts are increasingly more difficult to obtain; components are often taken from out of service units with remaining usable parts. A common failure mode documented in AEP malfunction records are compressor failures and valve defects, which cause low pressure and oil leaks. Another failure mode includes trip or reclose failures, caused primarily by spring latching and charging motor component failures. In addition, the vacuum oil and oil breakers have a lot of oil contamination from aging gaskets allowing moisture and other particle ingress.





AEP Transmission Zone M-3 Process

Rockhill Transformers #1 & #2

Need Number: AEP-2026-OH034

Process Stage: Need Meeting 08/14/2026

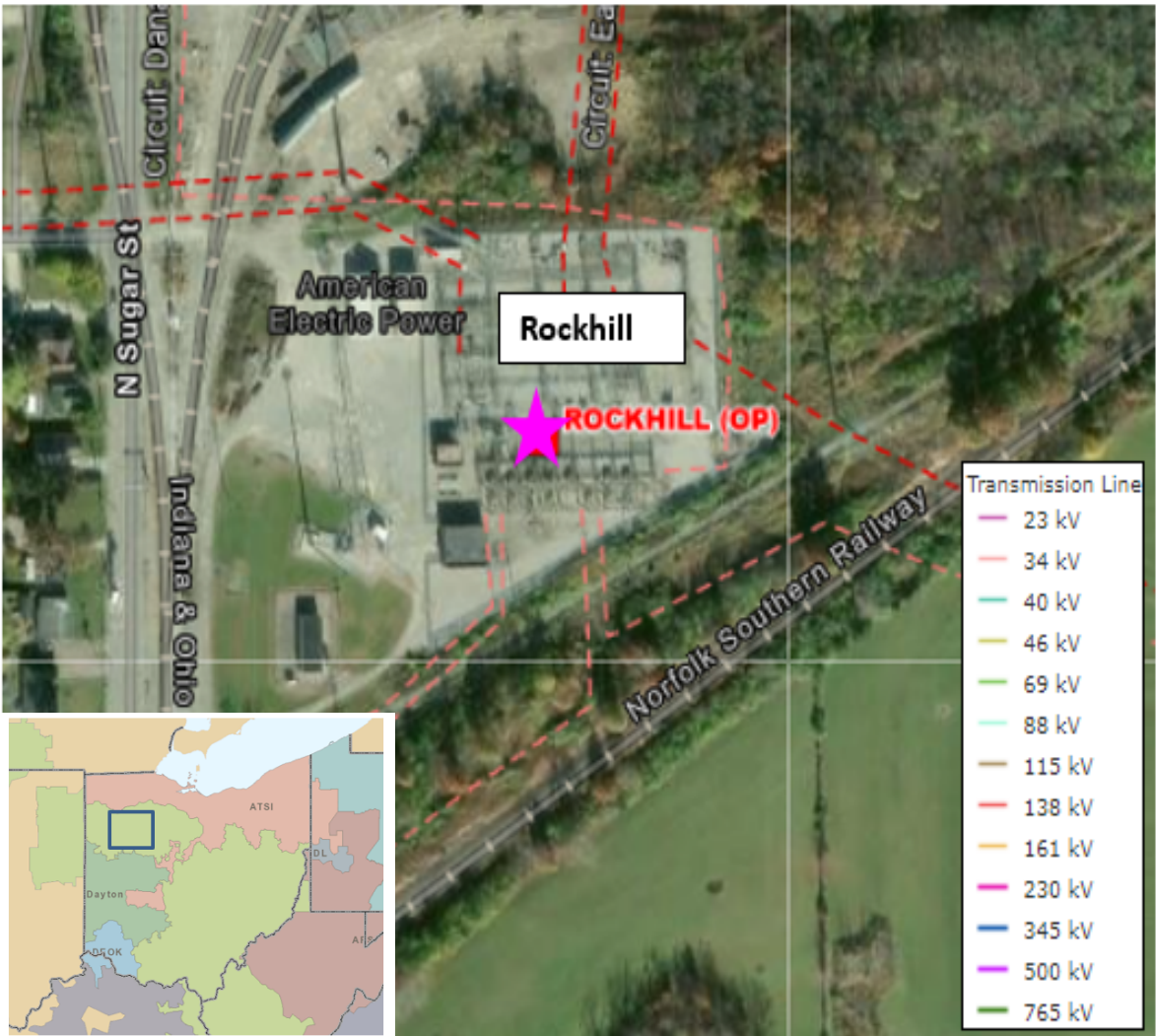
Project Driver: Equipment Condition/Performance/Risk

Specific Assumption References:
 AEP Guidelines for Transmission Owner Identified Needs (AEP Assumptions Slide 13)

Problem Statement:

Station: Rockhill OP

Transformers: Transformers 1 & 2 are 1940s vintage 3-single phase 138/34.5/11kV units. Transformer 1 has failed in the field and is currently out of service. Transformer 2 bank has elevated levels of Carbon Dioxide present in the oil and is showing signs of thermal degradation of the windings, reducing the dielectric strength of the oil and its ability to withstand faults.



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 Kiwi 138kV Delivery Point

Need Number: AEP-2025-OH026

Process Stage: Solution Meeting 08/14/2026

Previously Presented: Need Meeting 11/14/2025

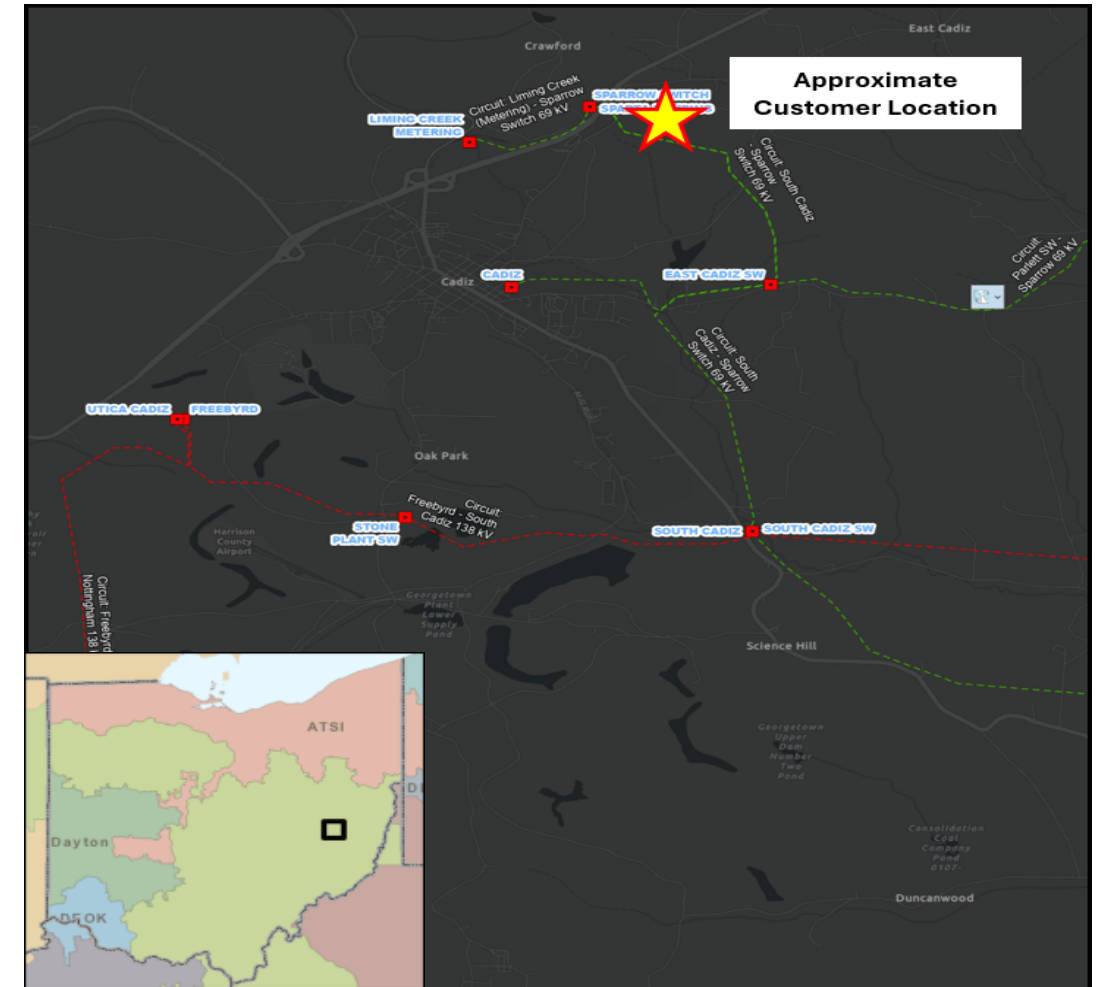
Project Driver: Customer Service

Specific Assumption References:

AEP Connection Requirements for the AEP Transmission System (AEP Assumptions Slide 12)

Problem Statement:

A customer has requested service to a new site in Cadiz Ohio, east of AEP's Sparrow 69kV Switch. The initial load at this site is anticipated to be 61 MW by 10/01/2028. The ultimate peak load at the site is expected to be 140 MW by 10/01/2030. The customer has also requested temporary service for 15 MW.





AEP Transmission Zone M-3 Process Kiwi 138kV Delivery Point

Need number(s): AEP-2025-OH026

Process Stage: Solution Meeting 08/14/2026

Proposed Solution:

Kiwi 138 kV

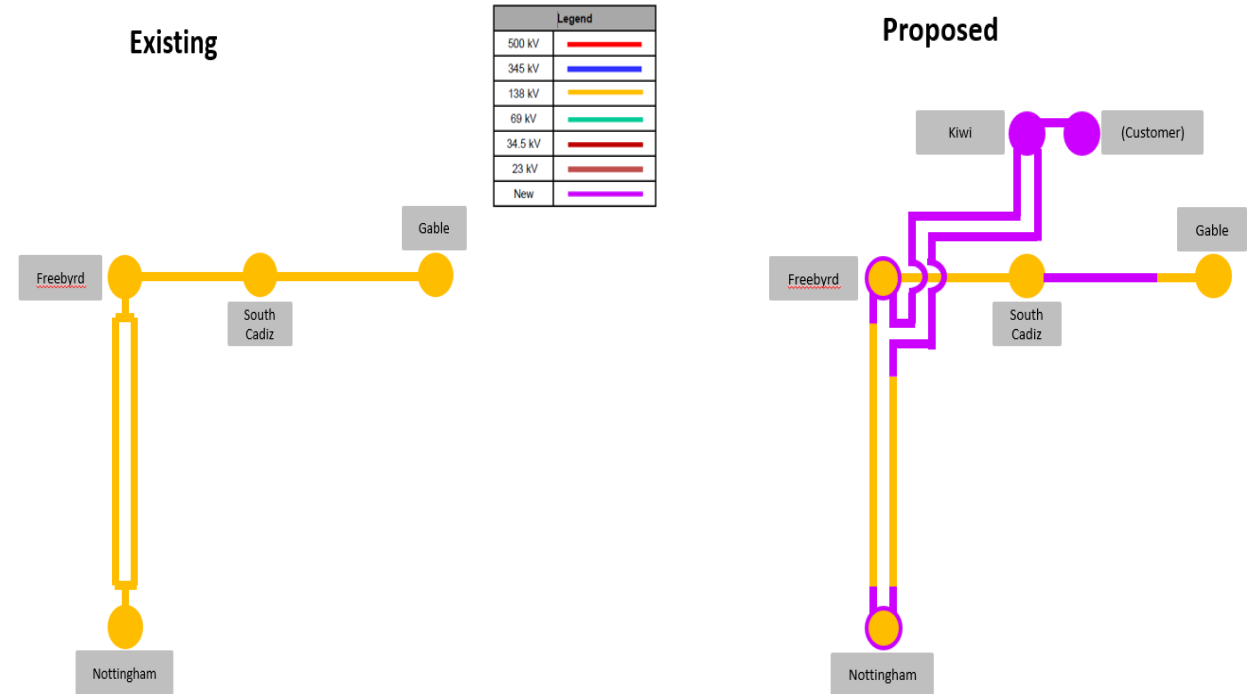
- Construct a greenfield breaker and a half station operated as a ring bus with (3) 138 kV 3000A 40 kA circuit breakers. Install (1) 15.4 MVAR Cap bank with a 3000A 40kA circuit breaker.
- Estimated Cost: \$14.217 M

Kiwi Extension 138 kV

- Construct a greenfield ~6.85 mile double circuit line between the greenfield Kiwi station and the existing 6-wired Nottingham - Freebyrd 138 kV line utilizing 1033.5 KCM 54/7 ACSR Curlew conductor (SE 411)
- Estimated Cost: \$39.693 M

Nottingham - Freebyrd 138 kV

- To accommodate the greenfield Kiwi Extension cut in, the partially 6-wired line between STR 1 and STR 27 will be converted fully to double circuit. To convert this to double circuit two single circuit portions of line will be constructed, ~0.41 mile long section from Freebyrd station to Str 27 and a ~0.16 mile long section from Nottingham station to Str. 1. This line will utilize 1033.5 KCM 54/7 ACSR Curlew conductor (SE 411)
- Estimated Cost: \$8.131 M





AEP Transmission Zone M-3 Process

Kiwi 138kV Delivery Point

Need number(s): AEP-2025-OH026

Proposed Solution: Continued from previous slide...

Freebyrd 138 kV

- Expand the existing 6 breaker ring bus with (1) 138 kV 3000A 40 kA circuit breaker.
- Estimated Cost: \$9.524 M

Nottingham 138 kV

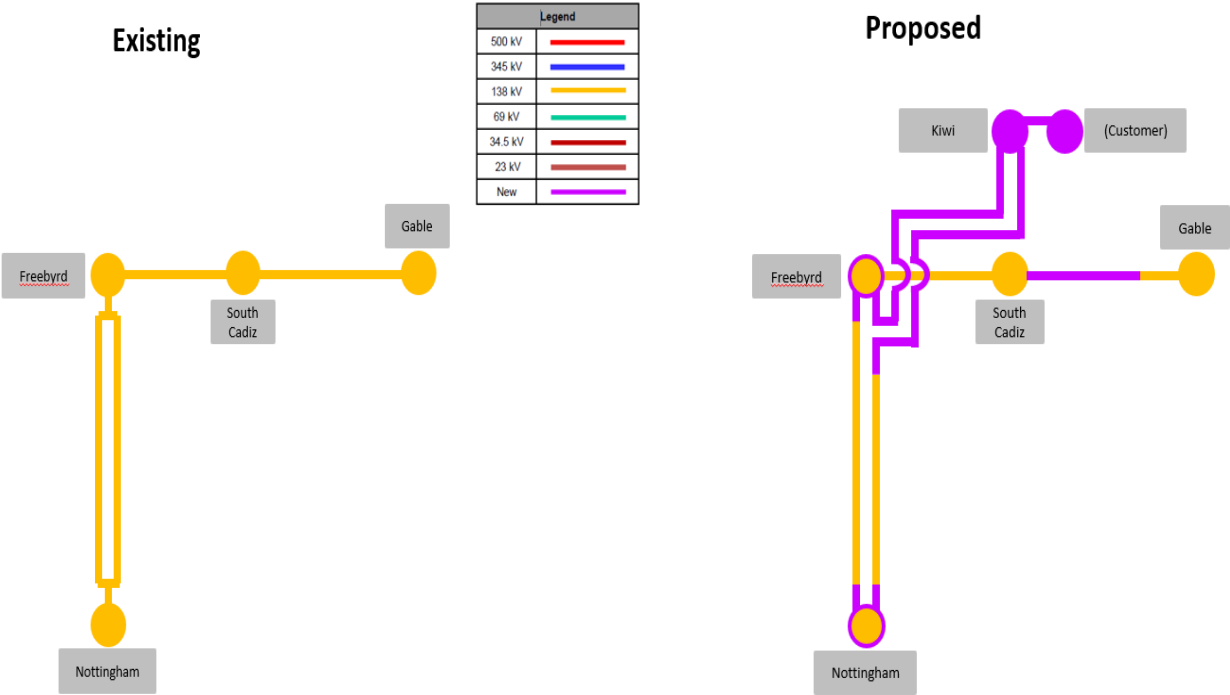
- Install (1) 138 kV 3000A 63 kA circuit breaker in an open breaker position on the "P" string.
- Estimated Cost: \$2.544 M

Kiwi Customer Feed 138 kV

- Construct a 0.45 mile tie between Kiwi station and the customers station utilizing 1033.5 KCM 59/7 ACSR Curlew conductor (SE 411).
- Estimated Cost: \$0.642 M

Gable - South Cadiz 138 kV

- Perform a ratings study and clearance mitigation on the ~11.10 miles of derated 477 kCM ACSR 26/6 Hawk conductor so that it can operate at MOT (SE 257) this conductor is between South Cadiz and STR. 11.
- Estimated Cost: \$3.541 M





AEP Transmission Zone M-3 Process Kiwi 138kV Delivery Point

Need number(s): AEP-2025-OH026

Ratings MVA (SN/SE/WN/WE): Continued from previous slide...

Kiwi Extension 138 kV

- Before Proposed Solution: N/A
- After Proposed Solution: 295/411/373/461

Nottingham - Freebyrd 138 kV

- Before Proposed Solution: 295/411/373/461
- After Proposed Solution: 295/411/373/461

Kiwi Customer Feed 138 kV

- Before Proposed Solution: N/A
- After Proposed Solution: 295/411/373/461

Gable - South Cadiz 138 kV

- Before Proposed Solution: 185/185/234/234
- After Proposed Solution: 185/257/234/289

Alternatives Considered:

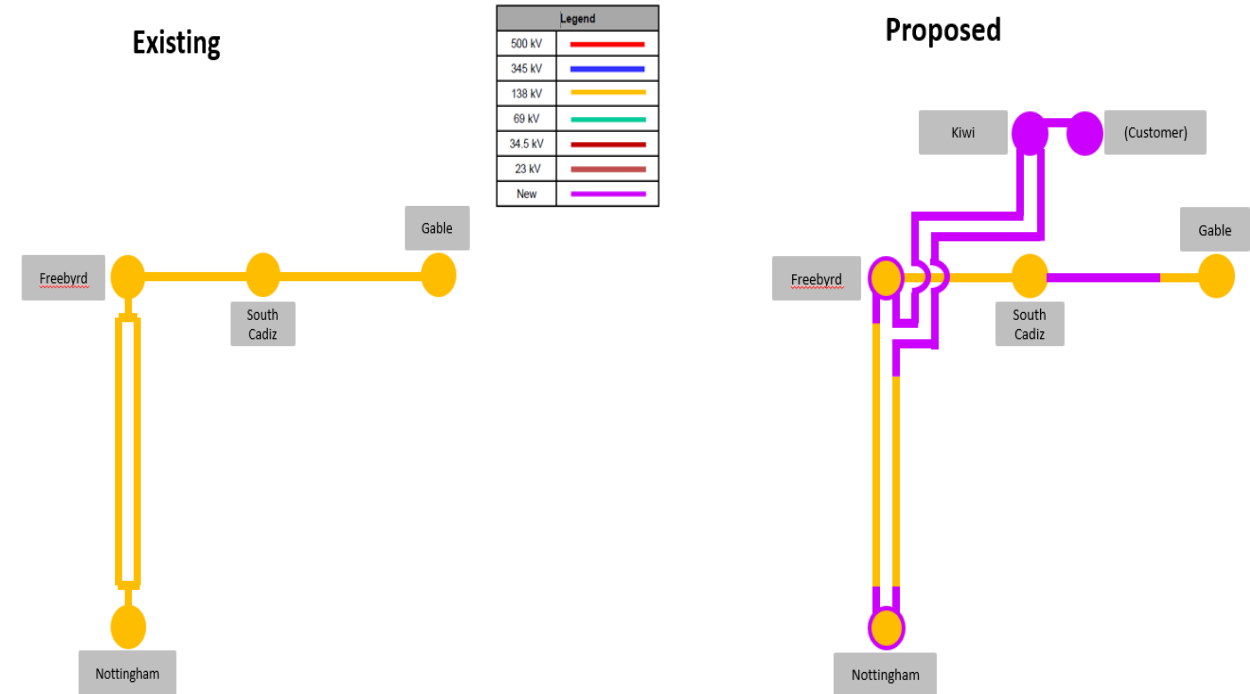
Considering the location of the customer facilities and timing of the request, no other viable transmission alternatives were identified.

Transmission Cost Estimate: \$78.292 M

Projected In-Service: 09/29/2028

Project Status: Engineering

Model: 2030 RTEP



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

08/04/2026– V1 – Original version posted to pjm.com