Transmission Expansion Advisory Committee: AEP Supplemental Projects

December 1, 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
Red Arrow Customer

Need Number: AEP-2026-AP010

Process Stage: Need Meeting TEAC - 12/01/2026

Project Driver: *Customer Service*

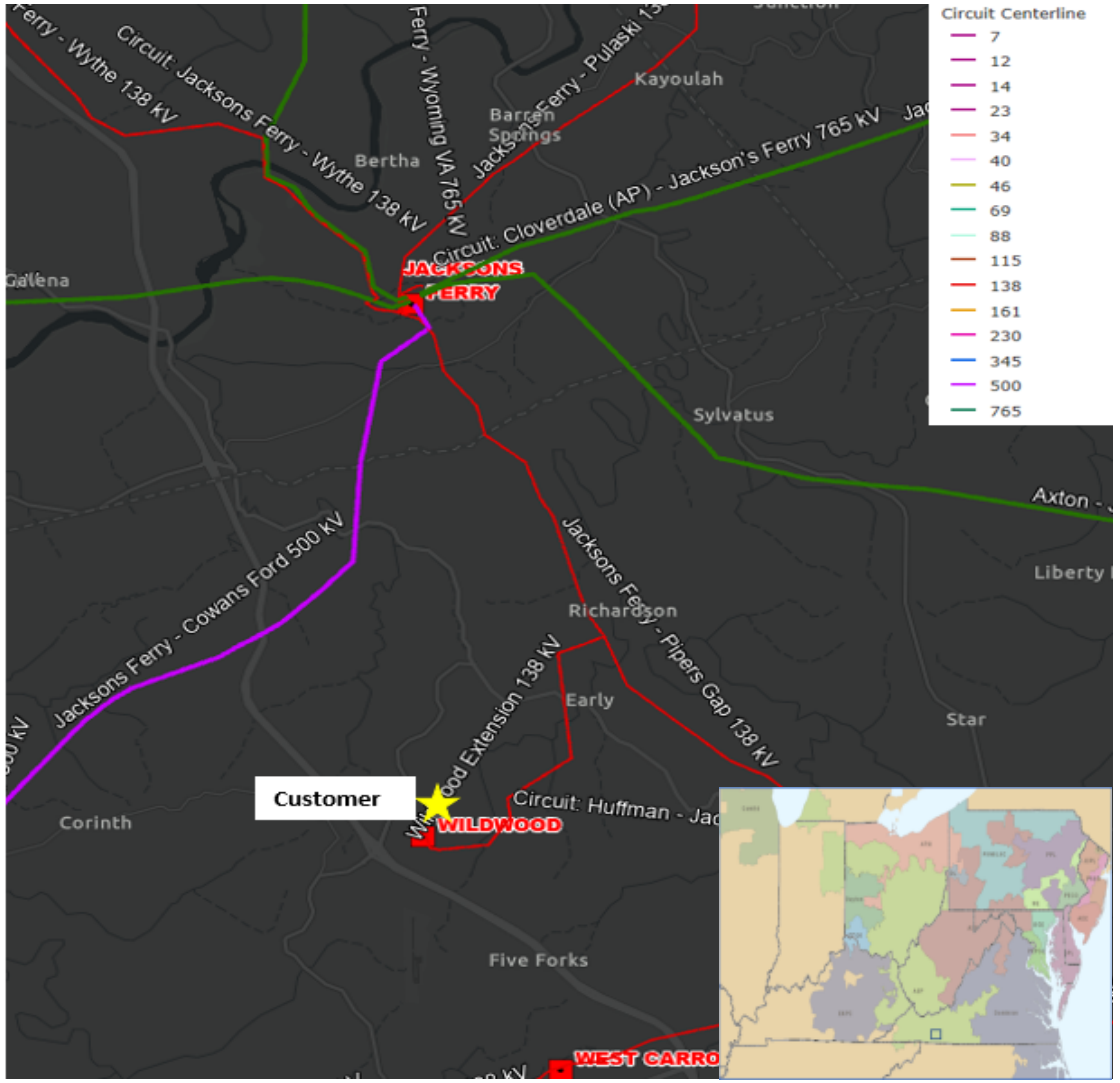
Specific Assumption References:

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

Problem Statement:

A customer has requested new service for 1000 MW in Carroll County, Virginia by 10/2030.

- Initial Load: 10 MW, Expected Date: 10/2029
- Total Load: 1,000 MW, Expected Date: 10/2030



AEP Transmission Zone M-3 Process
Tamarack

Need Number: AEP-2026-AP009

Process Stage: Need Meeting TEAC - 12/01/2026, 11/13/2026

Project Driver:

- *Customer Service*

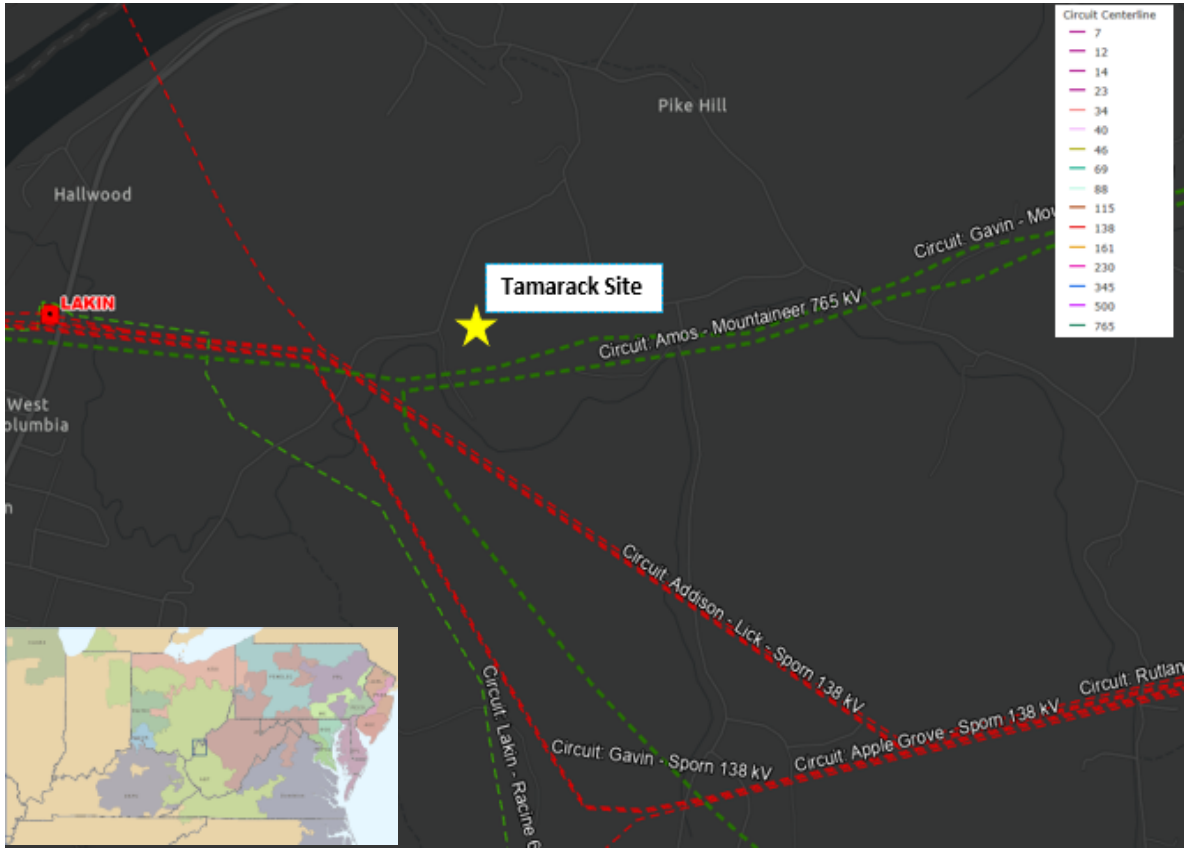
Specific Assumption References:

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

Problem Statement:

A customer has requested new service for 1080 MW in Mason County, West Virginia by 2/2029.

- Initial Load: 96 MW, Expected Date: 02/2029
- Total Load: 1,080 MW, Expected Date: 09/2031



AEP Transmission Zone M-3 Process
Project Nutella

Need Number: AEP-2024-IM015

Process Stage: Need Meeting TEAC - 12/01/2026, 10/08/2024

Project Driver:

- *Customer Service*

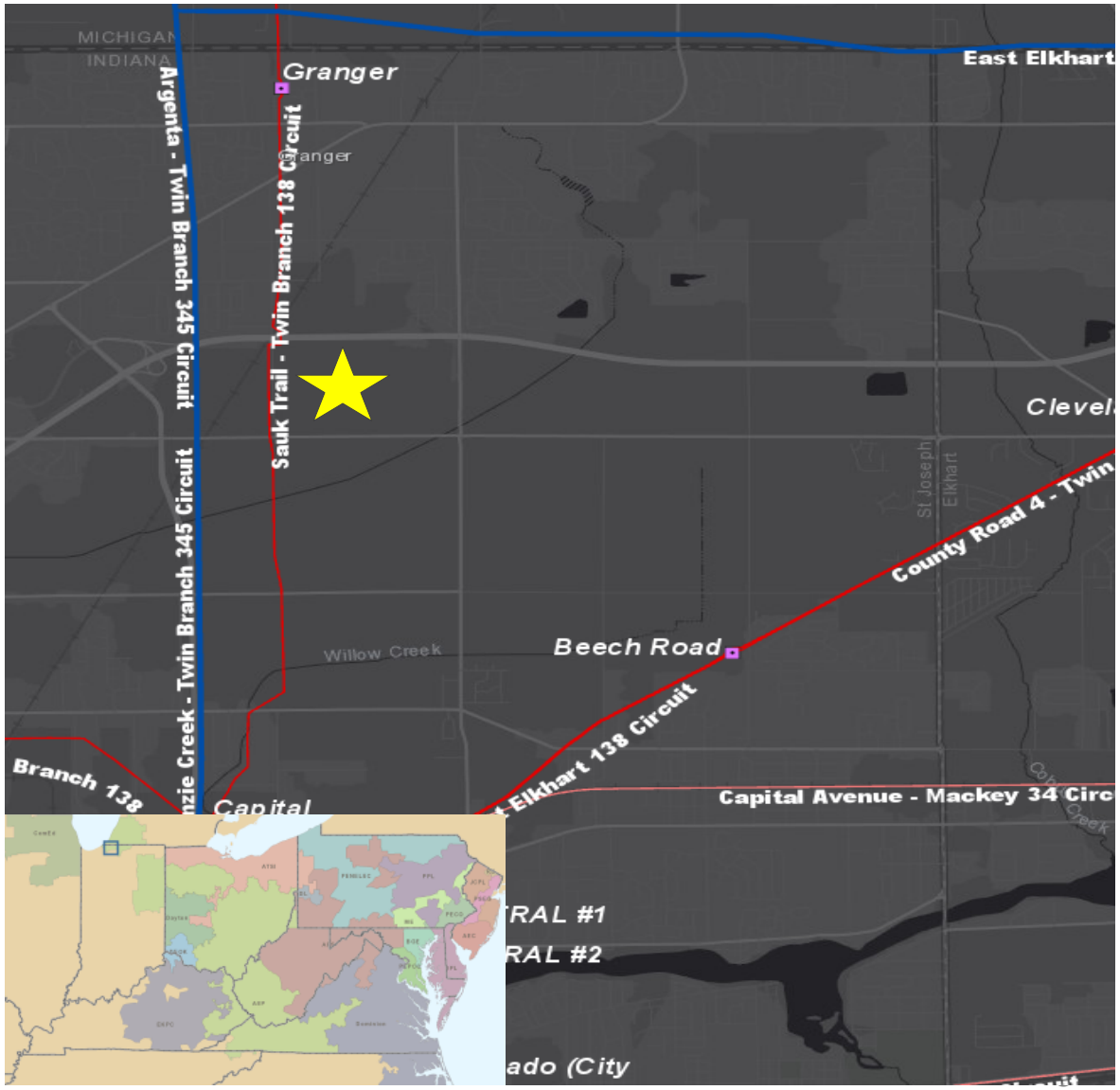
Specific Assumption References:

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

Problem Statement:

A customer has requested new service for a 852MW data center in the Granger, IN area. Requested in service date: 300MW by 12/31/2027, 852MW by 7/31/2029

- Initial Load: 300 MW, Expected Date: 12/2027
- Total Load: 852 MW, Expected Date: 07/2029



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
Flatlick Breaker Replacement

Need Number: AEP-2026-OH022

Process Stage: Solution Meeting TEAC - 12/01/2026

Previously Presented: Need Meeting TEAC - 06/02/2026

Project Driver:

- *Equipment Condition/Performance/Risk*

Specific Assumption References:

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

Problem Statement:

<u>Flatlick 765kV Station:</u>

765kV Circuit Breakers A, B, C & D were put in service in 2002. This breaker type is known for operational issues associated with the hydraulic system which is prone to moisture ingress which leads to unreliable operation and unequal pole tripping.

765kV breaker 'A' has several issues with the hydraulic pump/hose, accumulator, and filter issues.

765kV breaker 'B' has had SF6 leaks as well as closing issues. This unit also had a complete hydraulic unit replacement and replaced pump timing relay.

765kV breaker 'C' has several issues with the hydraulic motor and pump not operating properly.



AEP Transmission Zone M-3 Process
Flatlick Breaker Replacement

Need Number: AEP-2026-OH022

Problem Statement: Continued from previous slide...

765kV breaker 'D' has had a SF6 leaks as well as a hydraulic leak.



AEP Transmission Zone M-3 Process
Flatlick Breaker Replacement

Need Number: AEP-2026-OH022

Process Stage: Solution Meeting TEAC - 12/01/2026

Proposed Solution:

Flatlick 765kV Station

- Flatlick 765kV Station:

- Replace breakers A,B,C and D with modern 765kV, 5000A, 63kA units and associated equipment.
- Estimated Cost: $28.964 M

Gavin

- Replace Wave traps at Gavin 765kV substation for relay coordination towards Flatlick
- Estimated Cost: $1.275 M

Ratings MVA (SN/SE/WN/WE):

Flatlick 765kV Station

- *Gavin 765-Flatlick 765 765 kV Line*
  - Before Proposed Solution: 4047/4571/4484/4961
  - After Proposed Solution: 6196/6903/7473/8268
- *A 765 kV Breaker*
  - Before Proposed Solution: 63 kA
  - After Proposed Solution: 63 kA

Bubble Diagram



Legend	
765 kV	
345 kV	
138 kV	
69 kV	
34.5 kV	
23 kV	
New	

AEP Transmission Zone M-3 Process
Flatlick Breaker Replacement

Need Number: AEP-2026-OH022

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

- *B 765 kV Breaker*
  - Before Proposed Solution: 63 kA
  - After Proposed Solution: 63 kA
- *C 765 kV Breaker*
  - Before Proposed Solution: 63 kA
  - After Proposed Solution: 63 kA
- *D 765 kV Breaker*
  - Before Proposed Solution: 63 kA
  - After Proposed Solution: 63 kA

Gavin

Alternatives Considered:

Considering the limited scope and availability of space in the station, no other viable alternatives were identified. With the known issues associated with these breaker types, replacing them will reduce ongoing maintenance and repair costs.

Transmission Cost Estimate: $30.239 M

Projected In-Service: 11/12/2029

Project Status: Scoping

Model: 2030 RTEP

Bubble Diagram



Legend	
765 kV	
345 kV	
138 kV	
69 kV	
34.5 kV	
23 kV	
New	

AEP Transmission Zone M-3 Process
Venator Station

Need Number: AEP-2026-AP007

Process Stage: Solution Meeting TEAC - 12/01/2026

Previously Presented: Need Meeting TEAC - 07/07/2026

Project Driver:

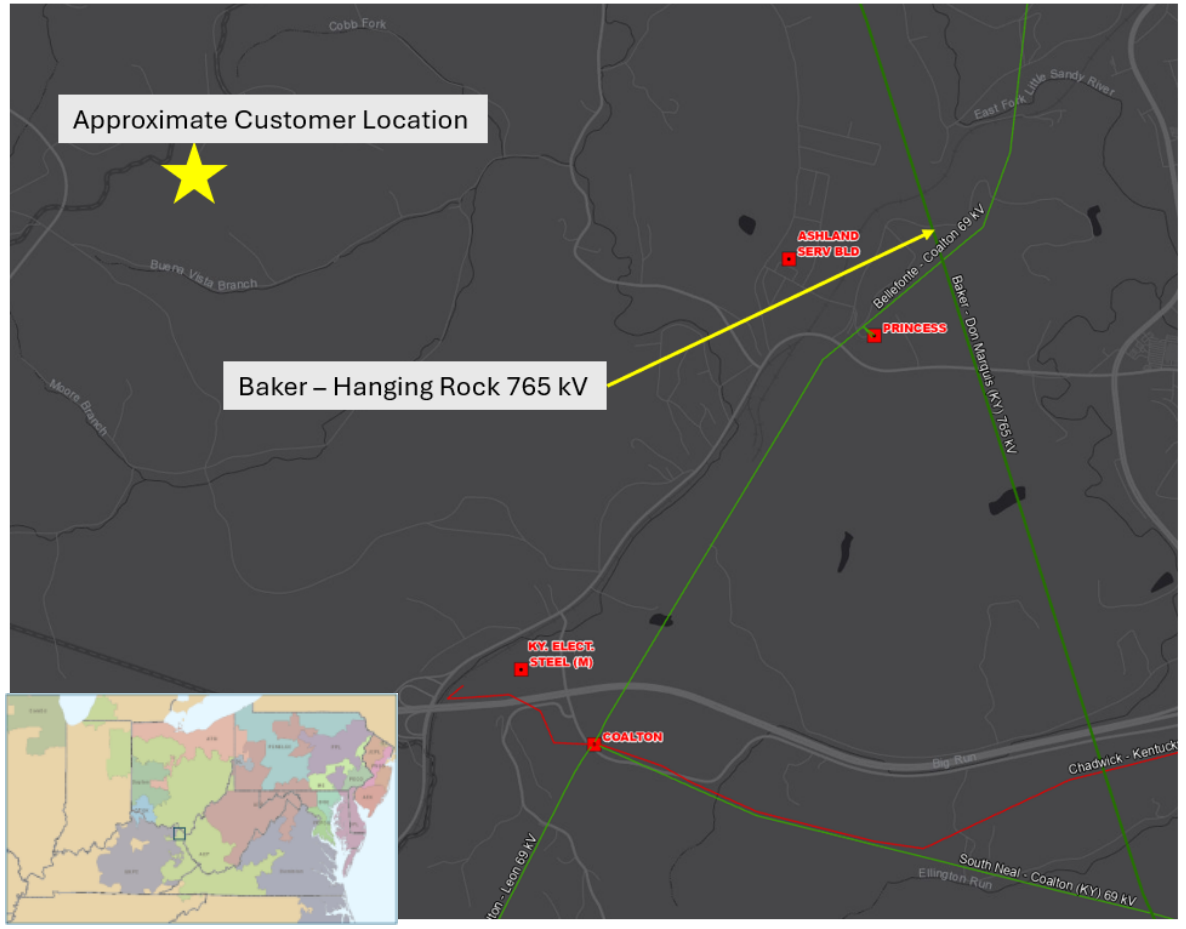
- *Customer Service*

Specific Assumption References:

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

Problem Statement:

A customer has request new service for 1000 MW in Boyd County, Kentucky by Q4 of 2028.



AEP Transmission Zone M-3 Process
Venator Station

Need Number: AEP-2026-AP007

Process Stage: Solution Meeting TEAC - 12/01/2026

Proposed Solution:

Venator Station

- Install four 765 kV Circuit Breakers in a breaker and a half configuration (operated as a ring bus). Install two 765/345 kV 2250 MVA transformers with a shared switchable spare. Install a 345 kV Circuit Breaker on the low side of each transformer. Install 345 kV metering on each customer feed.
- Estimated Cost: $285 M

Venator 765 kV Extension No. 1

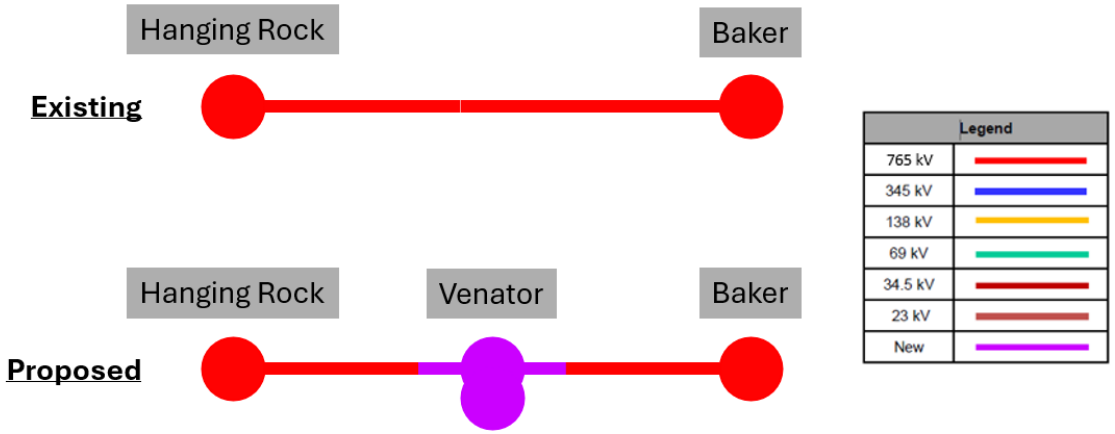
- Build approximately 0.7 miles of 765 kV line from the existing Baker - Hanging Rock 765 kV line to Venator Station.
- Estimated Cost: $3.85 M

Venator 765 kV Extension No. 2

- Build approximately 1.1 miles of 765 kV line from the existing Baker - Hanging Rock 765 kV line to Venator Station.
- Estimated Cost: $3.85 M

Customer Feed No. 1

- Build approximately 2.8 mile of 345 kV between Venator Station and customer delivery point.



AEP Transmission Zone M-3 Process
Venator Station

Need Number: AEP-2026-AP007

Proposed Solution: Continued from previous slide...

- Estimated Cost: $15.75 M

Customer Feed No. 2

- Build approximately 2.7 mile of 345 kV between Venator Station and customer delivery point.
- Estimated Cost: $15.75 M

Ratings MVA (SN/SE/WN/WE):

Venator Station

Venator 765 kV Extension No. 1

- Before Proposed Solution: N/A
- After Proposed Solution: 5395/5523/5978/6614

Venator 765 kV Extension No. 2

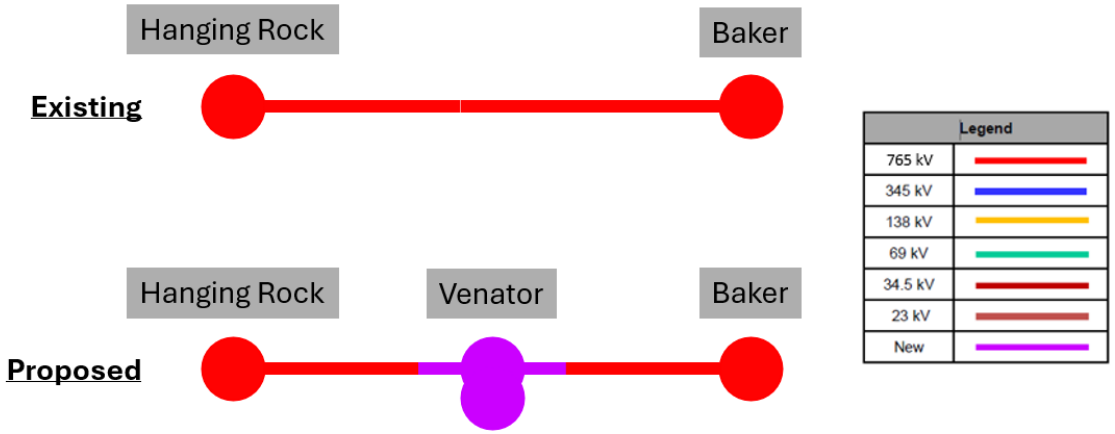
- Before Proposed Solution: N/A
- After Proposed Solution: 4047/4571/4484/4961

Customer Feed No. 1

- Before Proposed Solution: N/A
- After Proposed Solution: 2490/2490/2781/2781

Customer Feed No. 2

- Before Proposed Solution: N/A
- After Proposed Solution: 2490/2490/2781/2781



AEP Transmission Zone M-3 Process
Venator Station

Need Number: AEP-2026-AP007

Continued from previous slide...

Alternatives Considered:

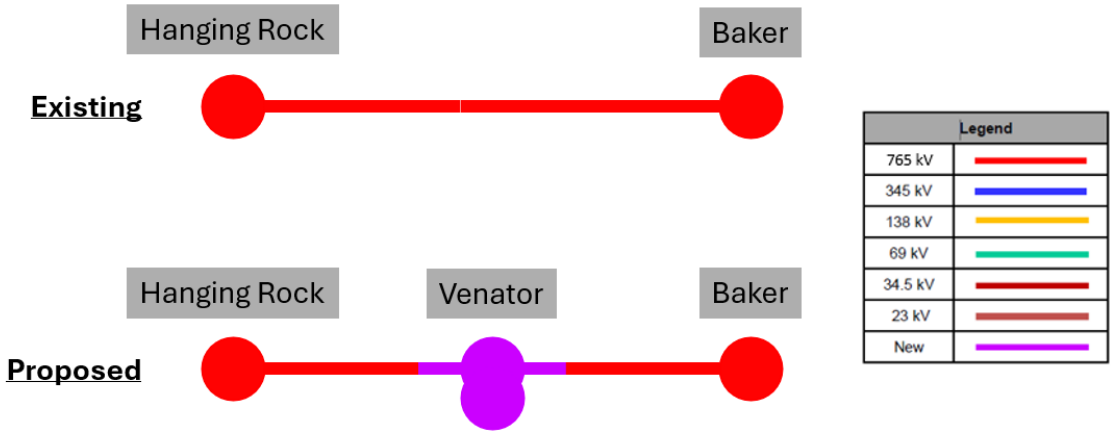
Considering the location and amount of load requested, no other viable transmission alternatives were identified. The underlying 138 kV network cannot serve this load without EHV support. The next closes EHV source is many miles away as compared to the proposed 765 kV solution.

Transmission Cost Estimate: $324.2 M

Projected In-Service: 10/22/2028

Project Status: Scoping

Model: 2030 RTEP



AEP Transmission Zone M-3 Process
Razzler Customer Delivery

Need Number: AEP-2025-OH014

Process Stage: Solution Meeting TEAC - 12/01/2026

Previously Presented: Need Meeting TEAC - 08/05/2025

Project Driver:

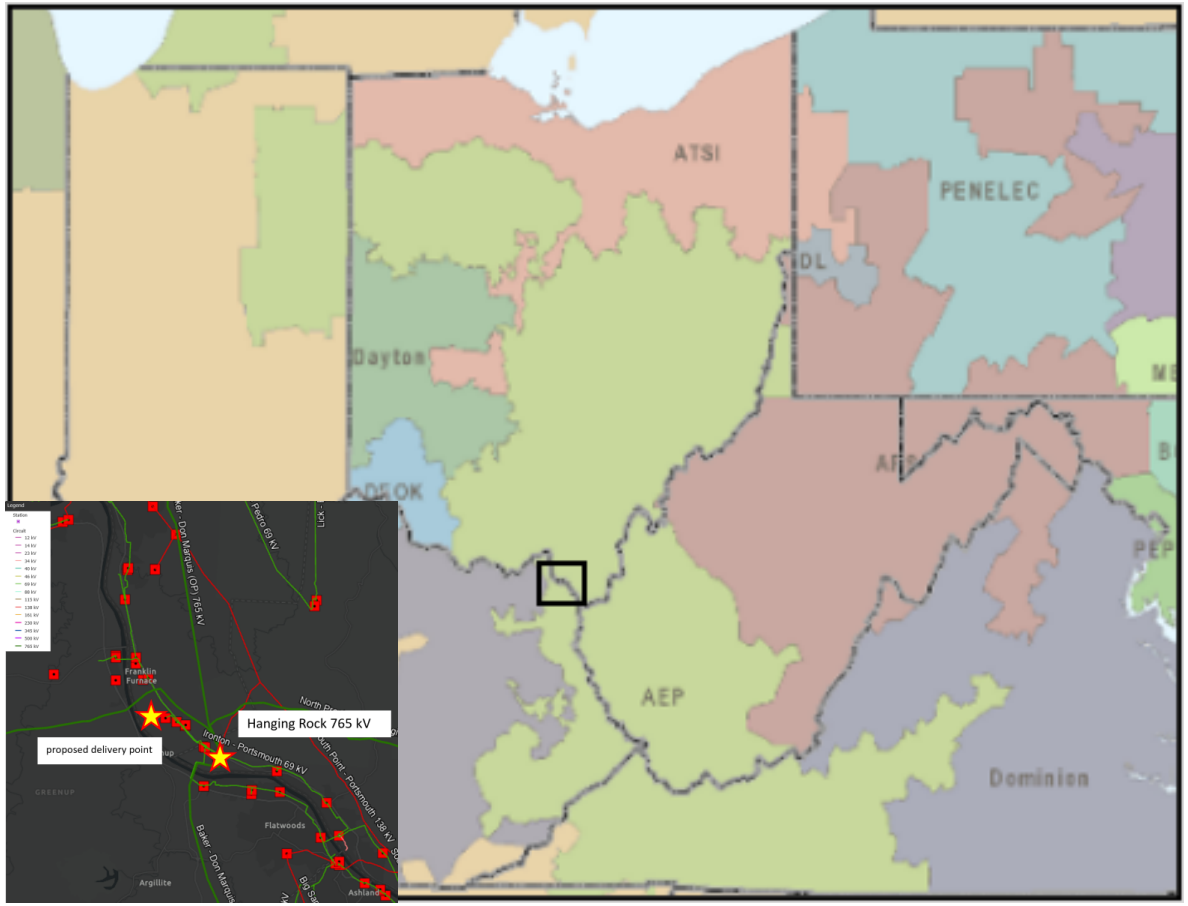
- *Customer Service*

Specific Assumption References:

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

Problem Statement:

A Customer has requested 345 kV transmission service at a site near AEP's existing Hanging Rock station in Scioto County, OH. Peak demand at the delivery point will be 1000MW. Customer requested in-service date is 05/01/2029.



AEP Transmission Zone M-3 Process
Razzler Customer Delivery

Need Number: AEP-2026-OH043

Process Stage: Solution Meeting TEAC - 12/01/2026

Previously Presented: Need Meeting SRRTEP-W - 10/16/2026

Project Driver:

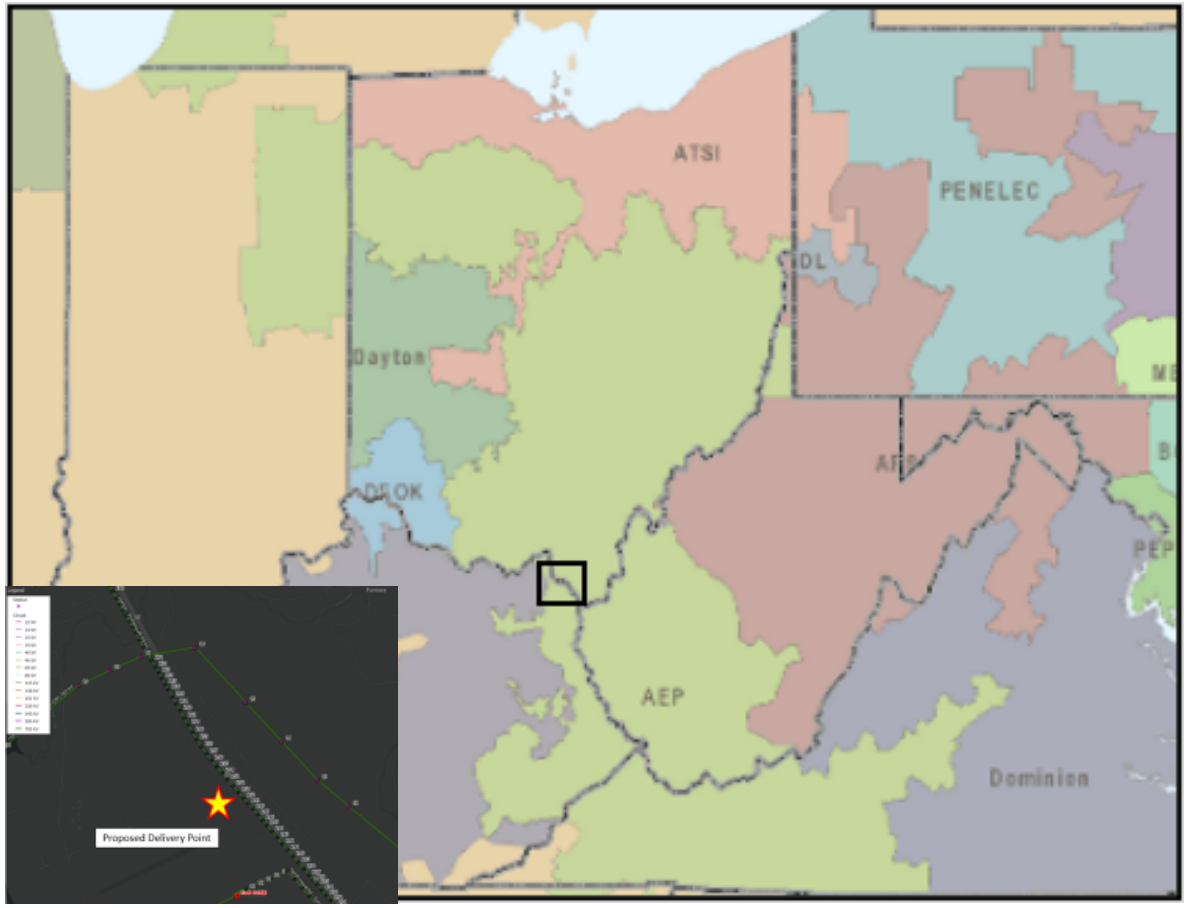
- *Customer Service*

Specific Assumption References:

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

Problem Statement:

A Customer has requested 69kV transmission service for 20 MW in Franklin Furnace, OH. The customer's ultimate load is 20MW and has asked to be in service by 3/31/2028.



AEP Transmission Zone M-3 Process
Razzler Customer Delivery

Need Number: AEP-2025-OH014, AEP-2026-OH043

Process Stage: Solution Meeting TEAC - 12/01/2026

Proposed Solution:

Razzler 765/345

- Construct greenfield 765kV/345kV Razzler station
- Five (5) 765 kV circuit breakers operated as a ring bus
- Two (2) 765kV/345kV 2250MVA transformers
- 765kV 300 MVAR reactor and circuit breaker towards Jefferson line
- One (1) +/- 300MVAR STATCOMs and associated transformer
- Ten (10) 345kV circuit breaker in a breaker-and-a-half configuration

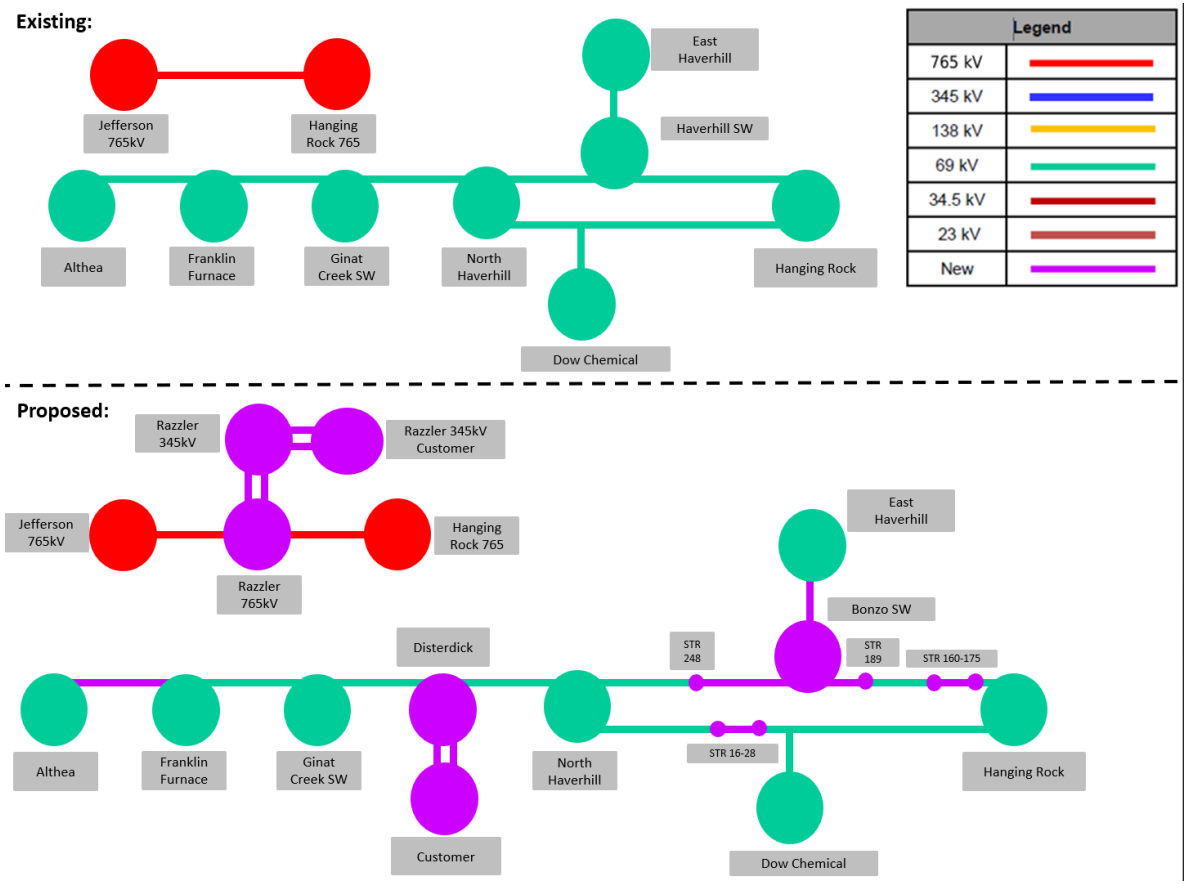
- Estimated Cost: $376.003 M

Hanging Rock - Jefferson Line work

- Cut into the Hanging Rock-Jefferson 765 kV line and bring both terminals into the new Razzler Station

- Estimated Cost: $9.821 M

Razzler 345kV Double Circuit Extension 1



AEP Transmission Zone M-3 Process
Razzler Customer Delivery

Need Number: AEP-2025-OH014, AEP-2026-OH043

Proposed Solution: Continued from previous slide...

- Extend ~1.25 mile 345kV extensions in Double Circuit configuration from Razzler 345kV to the Customer site (Dazzler)

- Estimated Cost: $11.969 M

Razzler 345kV Double Circuit Extension 2

- Extend ~1.25 mile 345kV double circuit extensions from Razzler 345kV to the Customer site (Dazzler)
- Estimated Cost: $12.628 M

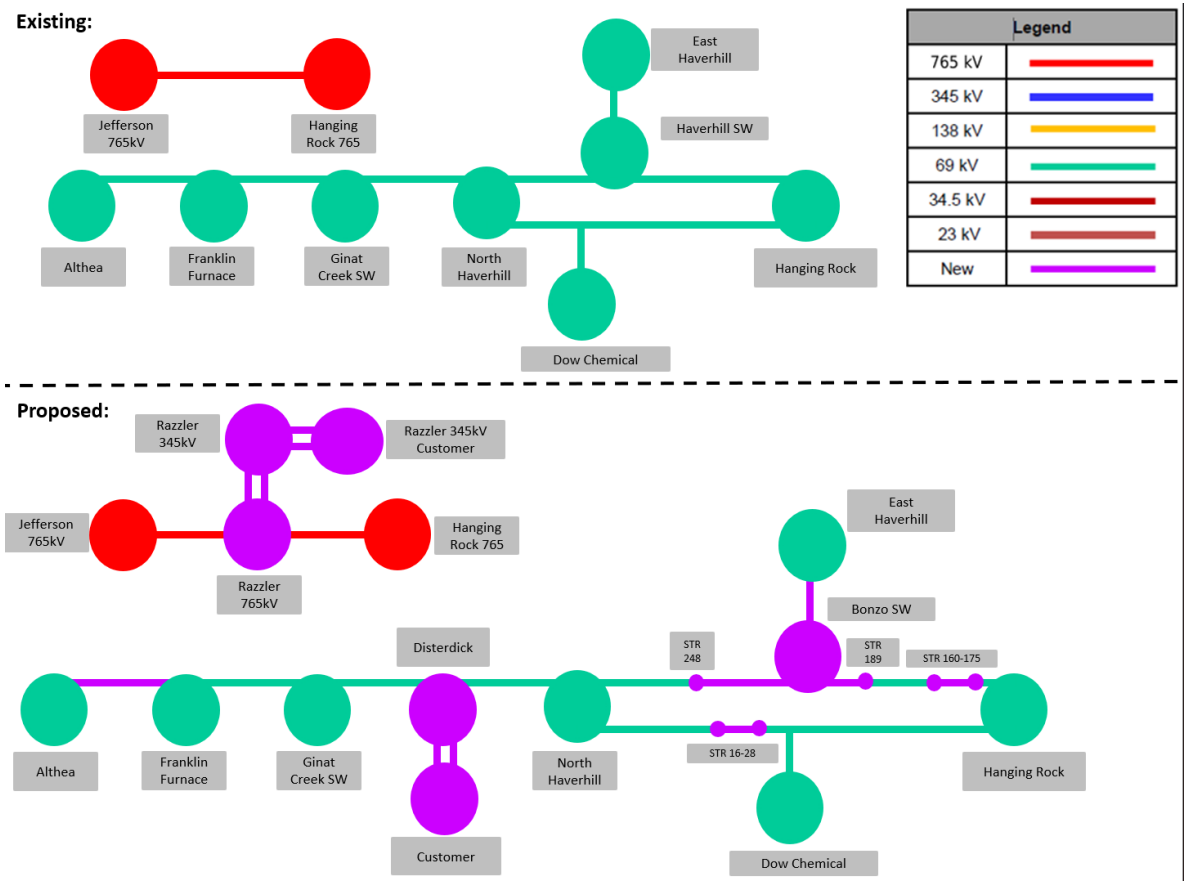
Ironton - Portsmouth

- Modifications to existing 69kV line to allow temporary load connection to the customer
- Estimated Cost:

Haverhill - East Haverhill

- Modifications to 69kV line to allow for temporary load connection to customer.

- With this modification, Bonzo Switch will replace Haverhill Switch
- Estimated Cost:



AEP Transmission Zone M-3 Process
Razzler Customer Delivery

Need Number: AEP-2025-OH014, AEP-2026-OH043

Proposed Solution: Continued from previous slide...

Hanging Rock

- Hanging Rock Intra Company Metering Removal
- Estimated Cost: $0.085 M

Disterdick 69kV Station

- Build a double box bay 69kV station with a bus tie breaker and line switches to serve approximately 18 MW of campus load
- Estimated Cost: $2.725 M

Disterdick 69kV Line Extensions

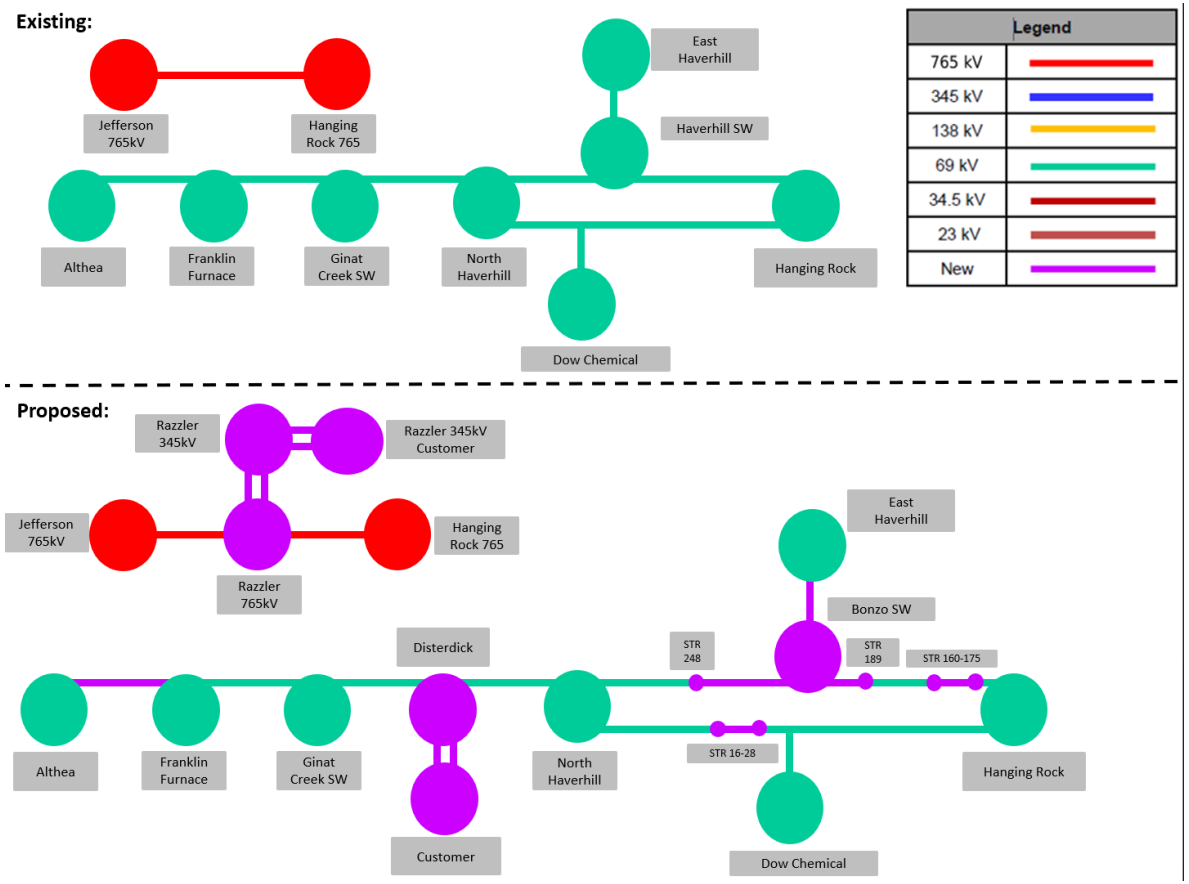
- Tap Existing 69kV Ironton - Portsmouth T-Line and construct 69kV extensions to the new 69kV Station

- Estimated Cost: $0.475 M

Bonzo Switch

- Replace Haverhill Switch with Bonzo Switch to accommodate necessary line work facilitating customer temporary service
- Estimated Cost:

Hanging Rock - North Haverhill



AEP Transmission Zone M-3 Process
Razzler Customer Delivery

Need Number: AEP-2025-OH014, AEP-2026-OH043

Proposed Solution: Continued from previous slide...

- Modifications to existing 69kV line to accommodate customers temporary service. Rebuild Structure 16-28
- Estimated Cost:

Althea - Franklin Furnace SW

- Rebuild From Franklin Furnace SW to Althea Station ~0.5 miles
- Estimated Cost: $3.234 M

Ratings MVA (SN/SE/WN/WE):

Razzler 765/345

Hanging Rock - Jefferson Line work

- Before Proposed Solution: 6066/6066/7666/7666
- After Proposed Solution: 6066/6066/7666/7666

Razzler 345kV Double Circuit Extension 1

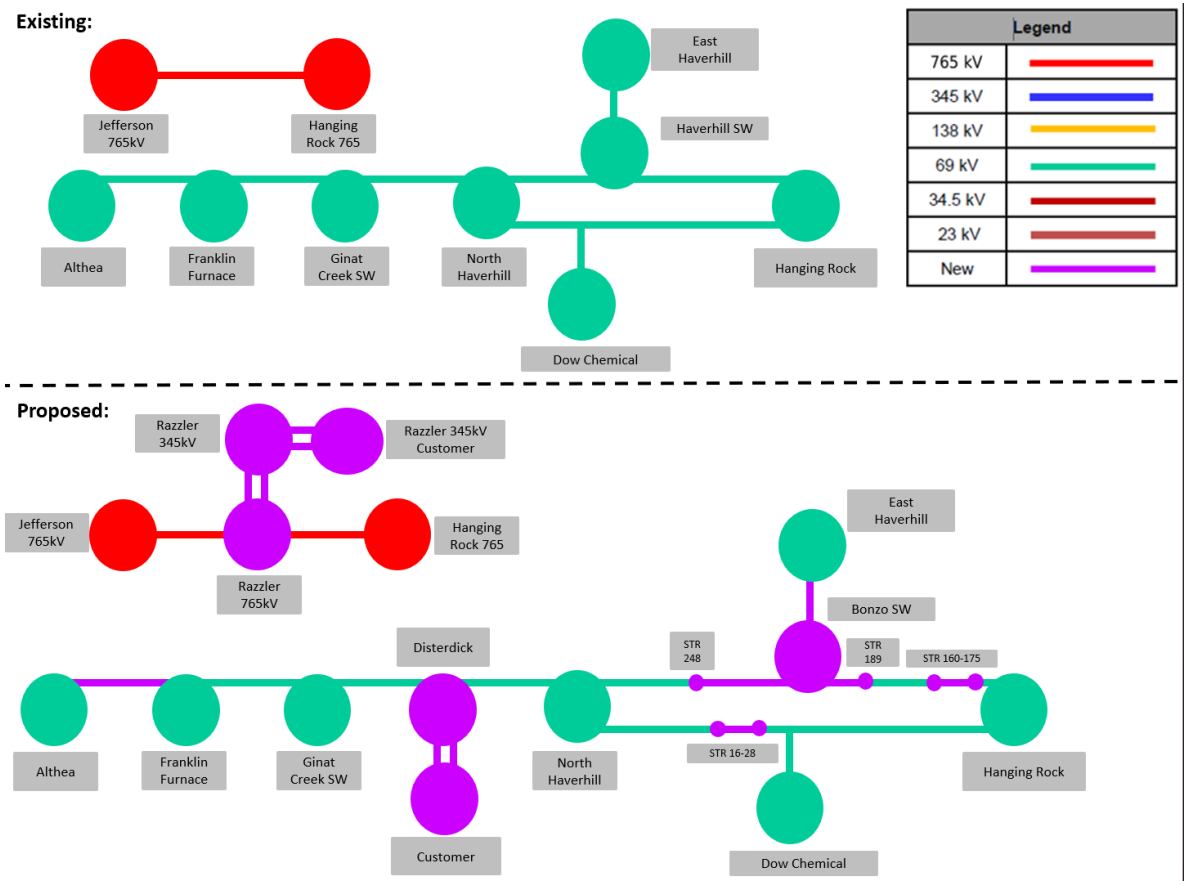
- Before Proposed Solution: N/A
- After Proposed Solution: 1385/1841/1750/2092

Razzler 345kV Double Circuit Extension 2

- Before Proposed Solution: N/A
- After Proposed Solution: 1385/1841/1750/2092

Ironton - Portsmouth

- Before Proposed Solution: 40/52/56/64



AEP Transmission Zone M-3 Process
Razzler Customer Delivery

Need Number: AEP-2025-OH014, AEP-2026-OH043

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

- After Proposed Solution: 100/100/126/126

Haverhill - East Haverhill

- Before Proposed Solution: 35/35/48/48
- After Proposed Solution: 102/142/129/160

Hanging Rock

Disterdick 69kV Station

Disterdick 69kV Line Extensions

- Before Proposed Solution: 110/125/139/152
- After Proposed Solution: 110/125/139/152

Bonzo Switch

Hanging Rock - North Haverhill

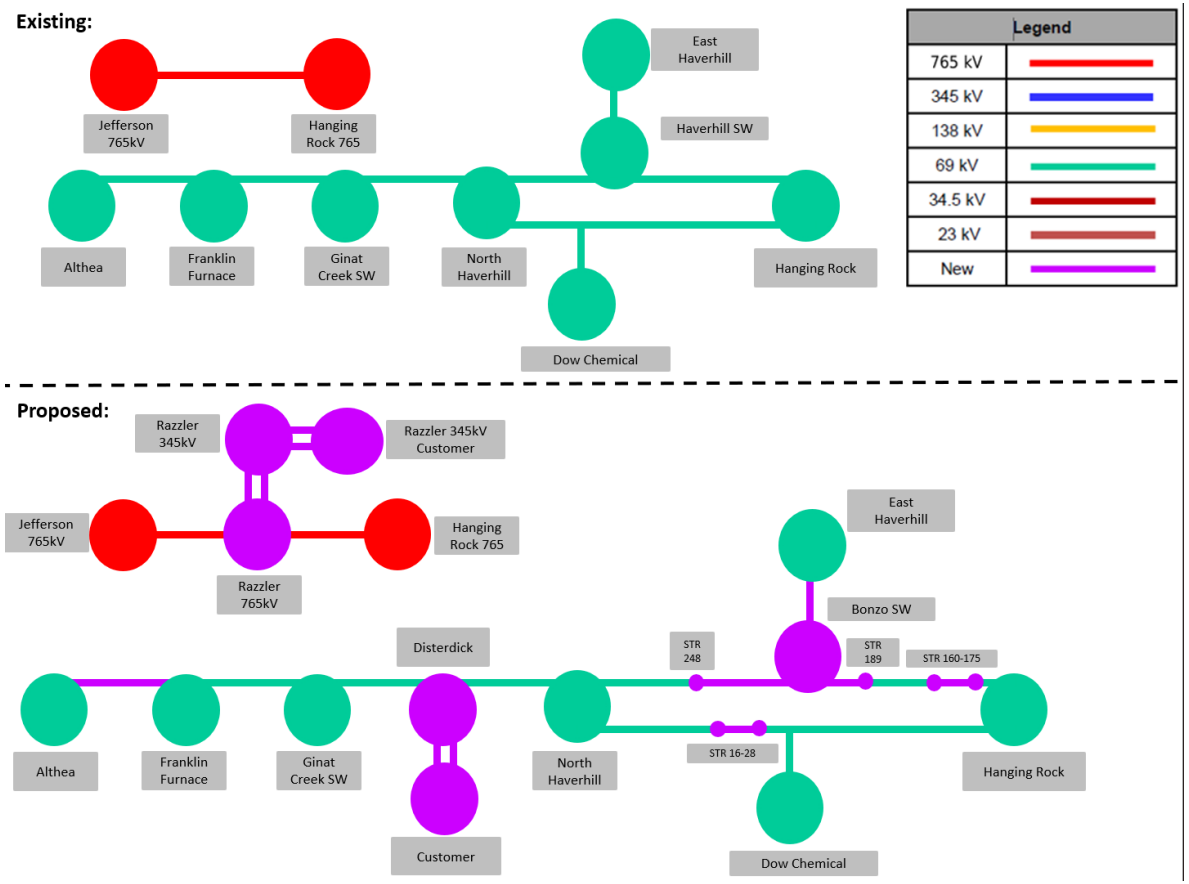
- Before Proposed Solution: 50/50/63/63
- After Proposed Solution: 68/86/90/103

Althea - Franklin Furnace SW

- Before Proposed Solution: 40/40/56/56
- After Proposed Solution: 123/163/156/186

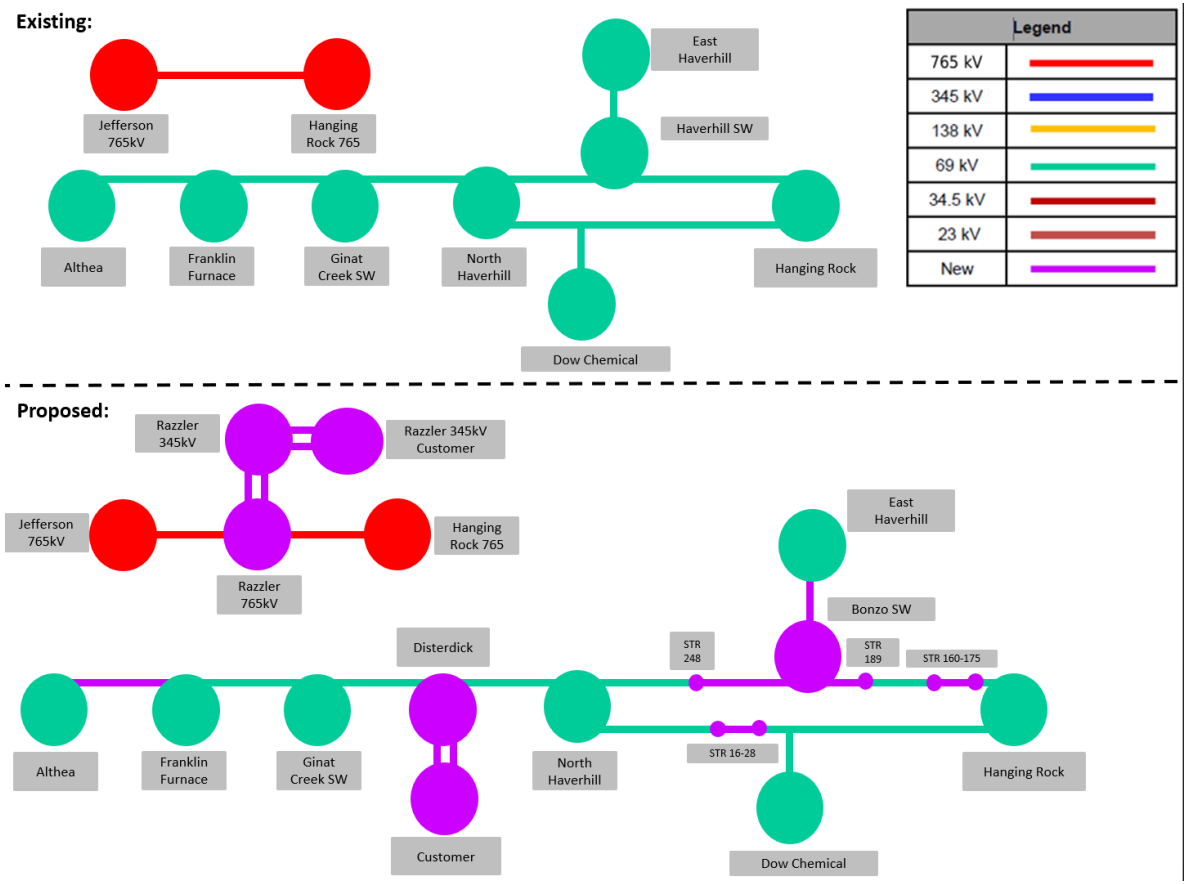
Alternatives Considered:

Considering the size of the load, the location and the system topology, no other viable alternatives to serve this load were identified.



AEP Transmission Zone M-3 Process
Razzler Customer Delivery

Need Number: AEP-2025-OH014, AEP-2026-OH043
Continued from previous slide...
Transmission Cost Estimate: $416.94 M
Projected In-Service: 11/07/2028
Project Status: Scoping
Model: 2030 RTEP



AEP Transmission Zone M-3 Process
Project Avalon

Need Number: AEP-2026-AP005

Process Stage: Solution Meeting TEAC - 12/01/2026

Previously Presented: Need Meeting TEAC - 05/08/2026

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 new service for 1200 MW in Putnam County, West Virginia by 9/2029.



AEP Transmission Zone M-3 Process
Project Avalon

Need Number: AEP-2026-AP005

Process Stage: Solution Meeting TEAC - 12/01/2026

Proposed Solution:

Manilla Ridge 765 kV Extension

- Cut in/out of the existing Culloden - Gavin 765 kV line and construct two new single circuit 765 kV line extensions to the new Manilla Ridge 765 kV station (approx. 2 miles). 765 kV line reactor/breakers will be installed on the line toward Gavin and the line toward Culloden.
- Estimated Cost: $24.05 M

Manilla Ridge Station

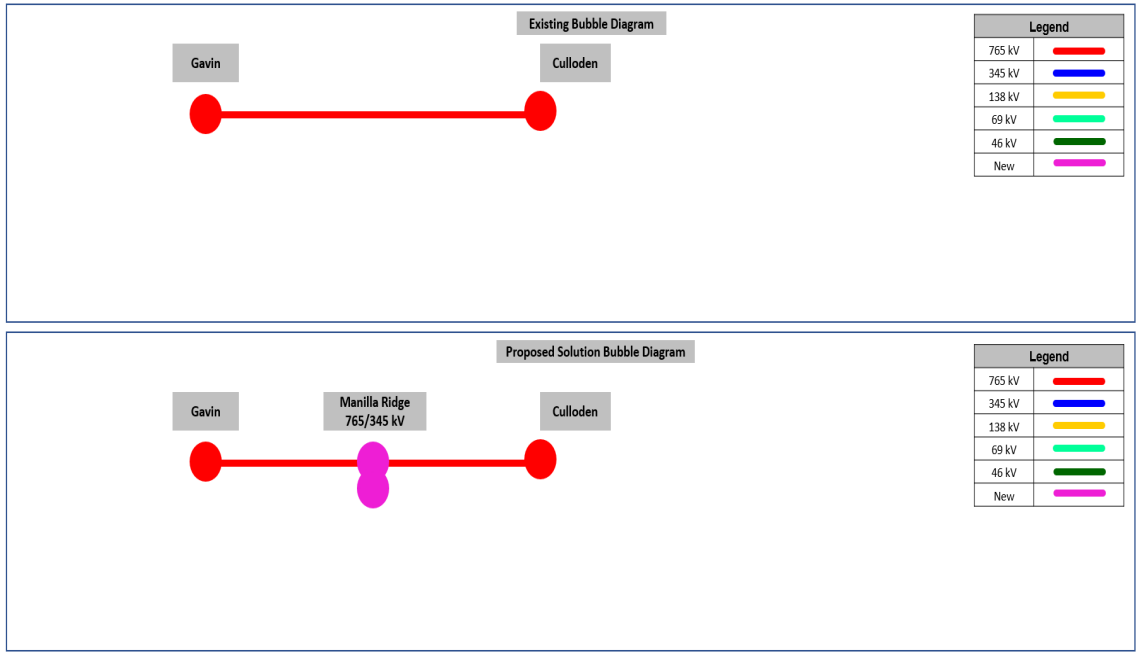
- Construct a new 765/345 kV station (Manilla Ridge). Install six 765 kV circuit breakers, install twelve 345 kV circuit breakers, two 765/345 kV 2250 MVA transformers, and 345 kV metering on six customer feeds. Cost does not include reimbursable portion of the project to be paid by the customer.
- Estimated Cost: $200.856 M

Ratings MVA (SN/SE/WN/WE):

Manilla Ridge 765 kV Extension

- Before Proposed Solution: N/A
- After Proposed Solution: 8197/8197/10350/10350

Manilla Ridge Station



AEP Transmission Zone M-3 Process
Project Avalon

Need Number: AEP-2026-AP005

Continued from previous slide...

Alternatives Considered:

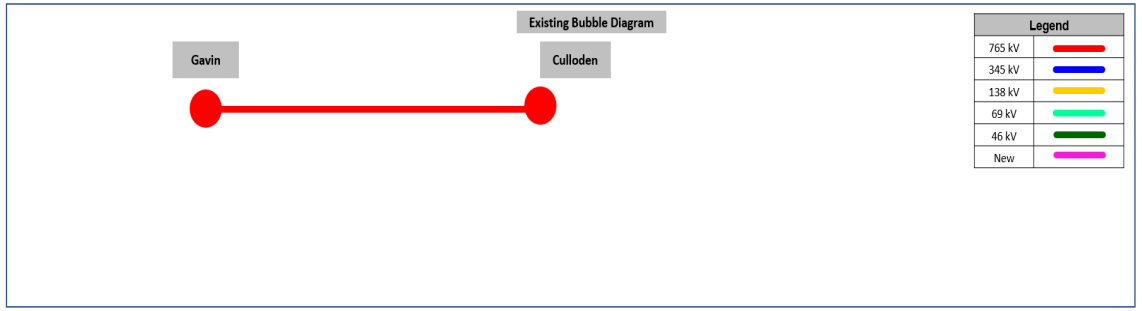
Considering the load amount and location of the request, no other viable alternatives were identified. Service from a 765/138 kV transformer was considered but would have required more transformer banks to serve.

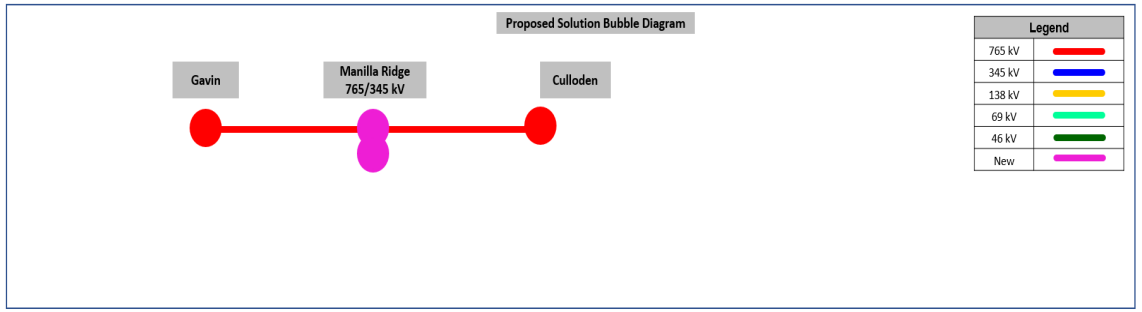
Transmission Cost Estimate: $224.906 M

Projected In-Service: 09/01/2029

Project Status: Scoping

Model: 2030 RTEP





AEP Transmission Zone M-3 Process
Northwest Ohio 345kV Customer Delivery Points & System Reinforcements

Need Number: AEP-2025-OH016

Process Stage: Solution Meeting TEAC - 12/01/2026

Previously Presented: Need Meeting TEAC - 08/05/2025

Project Driver:

- *Customer Service*

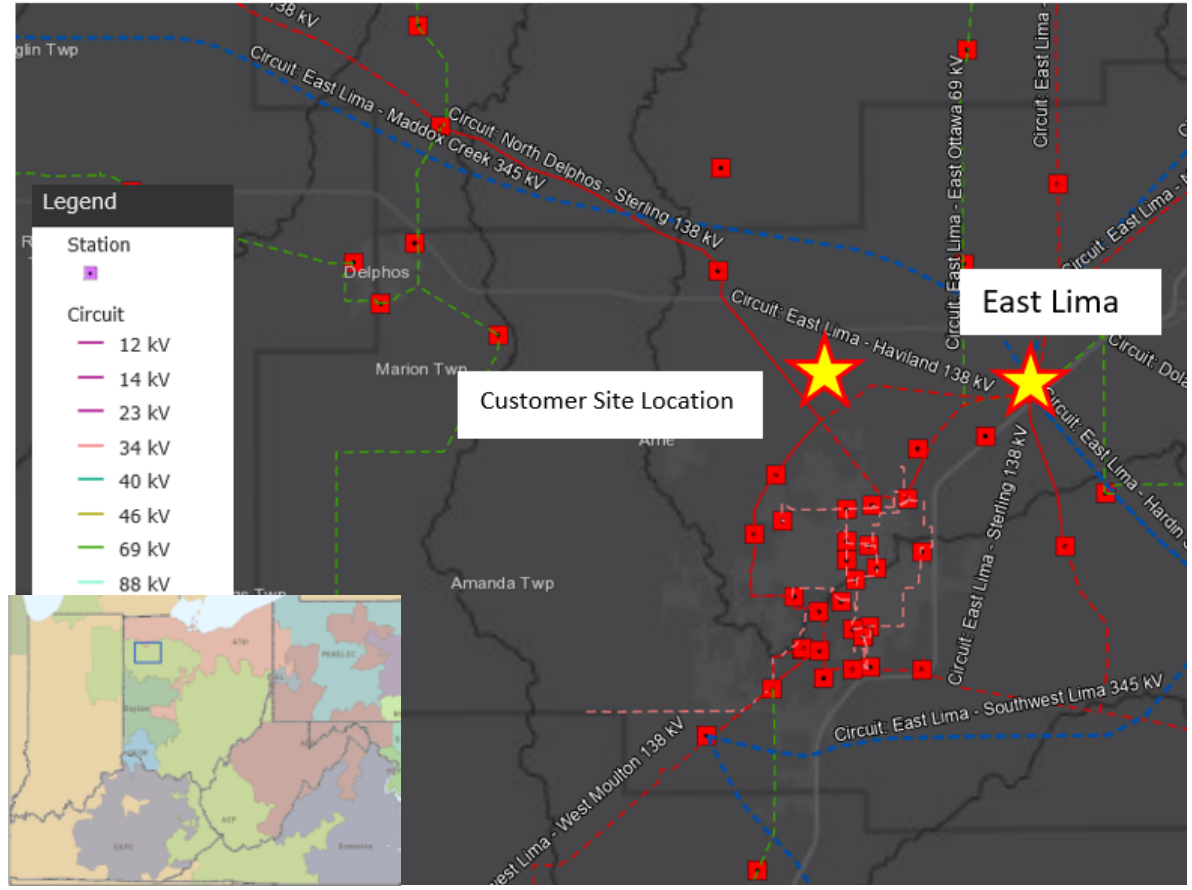
Specific Assumption References:

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

Problem Statement:

A Customer has requested 345 kV transmission service at a site west of AEP's existing East Lima station in Lima, OH.

Initial demand at the delivery point will be 500MW with the ultimate load ramp to 900MW. The customer has requested an initial in-service date of 12/31/2028.



AEP Transmission Zone M-3 Process
Northwest Ohio 345kV Customer Delivery Points & System Reinforcements

Need Number: AEP-2025-OH017

Process Stage: Solution Meeting TEAC - 12/01/2026

Previously Presented: Need Meeting SRRTEP-W - 08/15/2025

Project Driver:

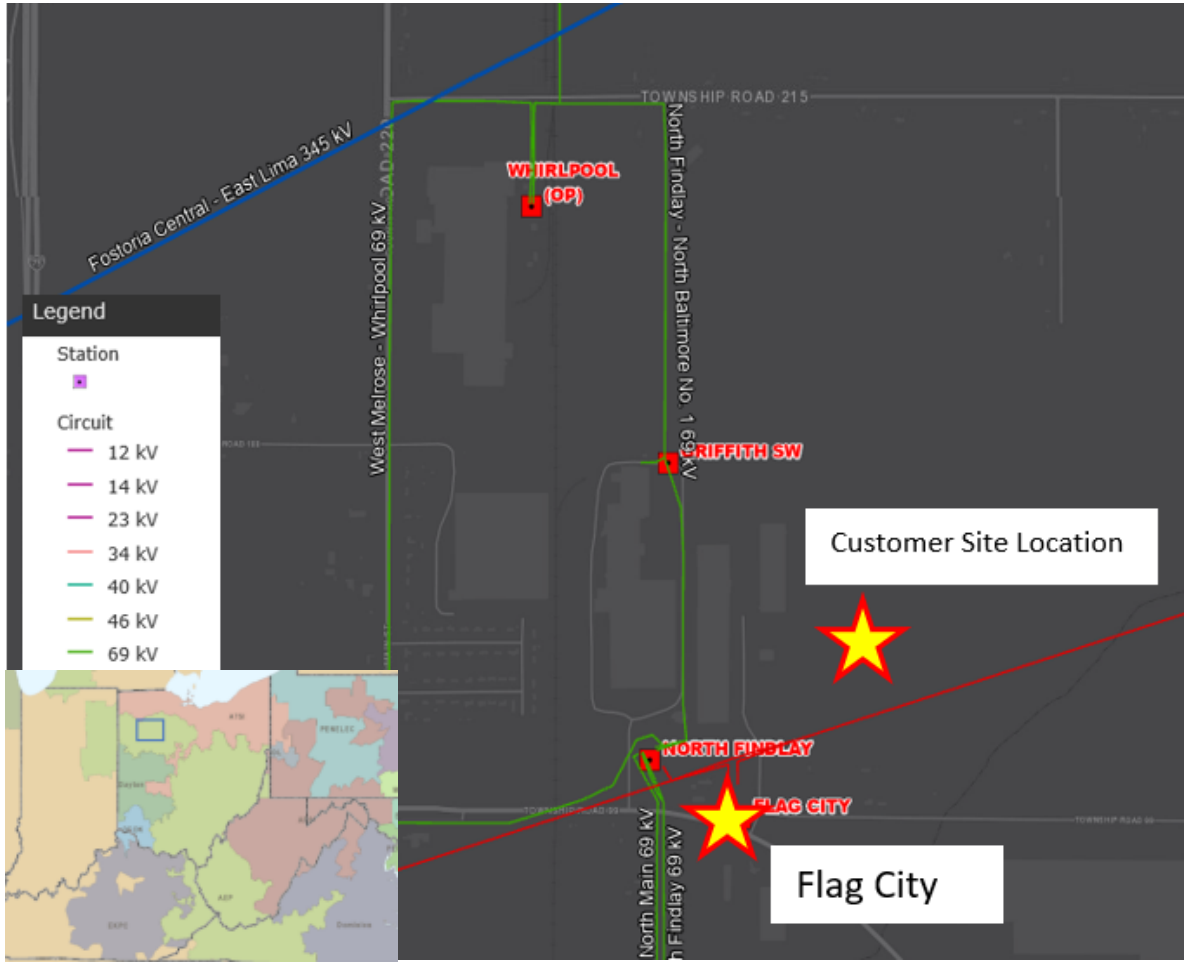
- *Customer Service*

Specific Assumption References:

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

Problem Statement:

A customer has requested 138 kV transmission service for 150MW at a site northeast of AEP's existing Flag City station in Findlay, OH. The customer has requested an in-service date of 9/30/2027.



AEP Transmission Zone M-3 Process
Northwest Ohio 345kV Customer Delivery Points & System Reinforcements

Need Number: AEP-2025-OH018

Process Stage: Solution Meeting TEAC - 12/01/2026

Previously Presented: Need Meeting TEAC - 08/05/2025

Project Driver:

- *Customer Service*

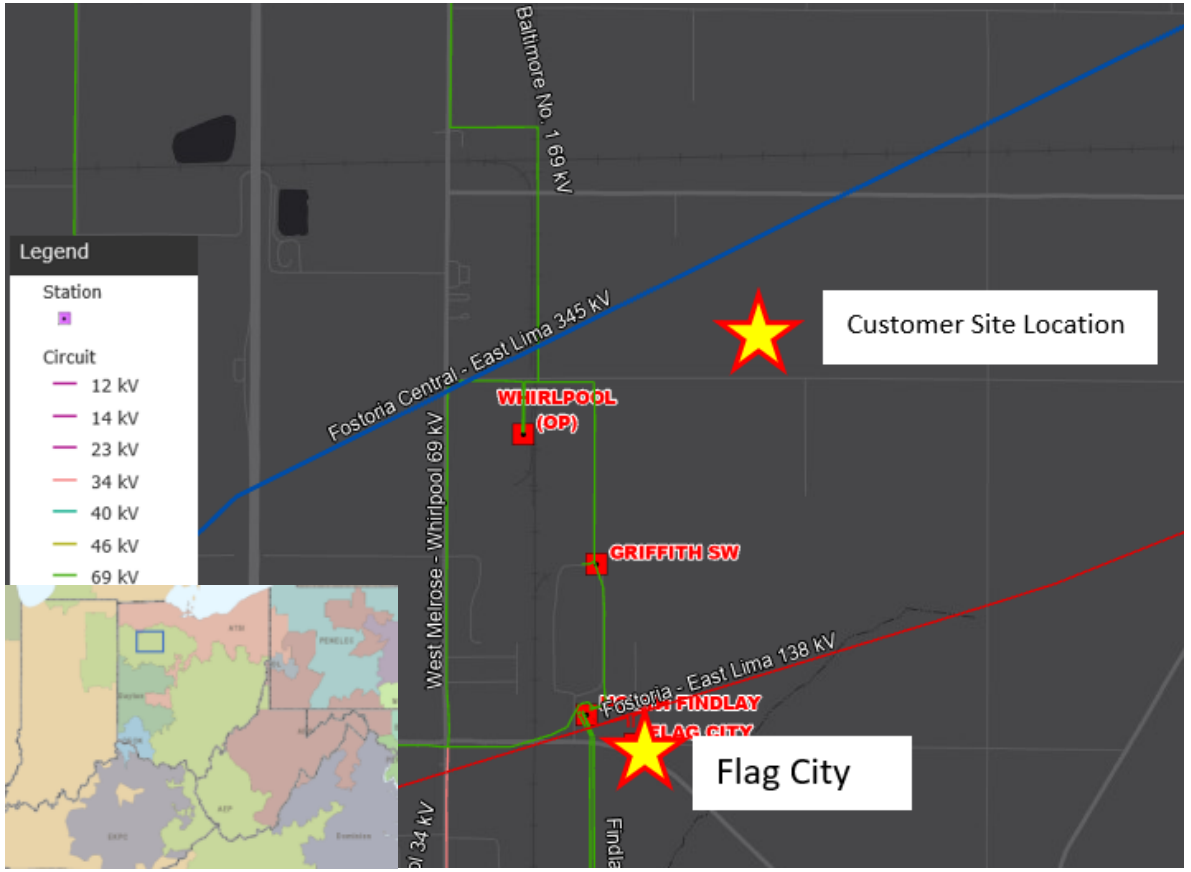
Specific Assumption References:

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

Problem Statement:

A Customer has requested new transmission service for 300 MW at a site near the East Lima-Fostoria Central 345 kV line in Findlay, OH.

The customer has requested an in-service date of 9/30/2028.



AEP Transmission Zone M-3 Process
Northwest Ohio 345kV Customer Delivery Points & System Reinforcements

Need Number: AEP-2025-OH019

Process Stage: Solution Meeting TEAC - 12/01/2026

Previously Presented: Need Meeting TEAC - 08/04/2026, 08/05/2025

Project Driver:

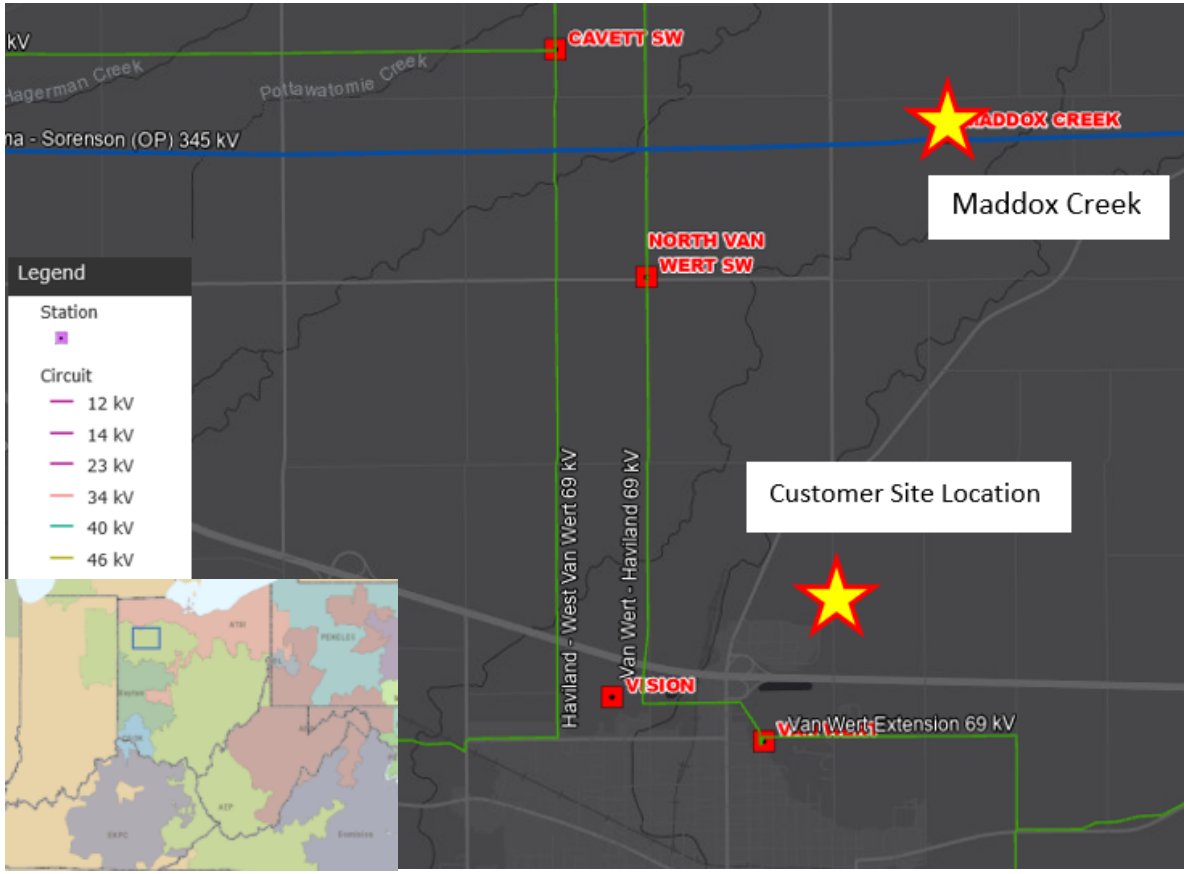
- *Customer Service*

Specific Assumption References:

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

Problem Statement:

A Customer has requested 345 kV transmission service for 1,300 MW at a site south of AEP's existing Maddox Creek station in Van Wert, OH. The customer's initial load is 500 MW and expected to be in service by 12/31/2028. The remaining 800 MW is expected to be in service by Q3 2031.



AEP Transmission Zone M-3 Process
Northwest Ohio 345kV Customer Delivery Points & System Reinforcements

Need Number: AEP-2024-IM014

Process Stage: Solution Meeting TEAC - 12/01/2026

Previously Presented: Need Meeting TEAC - 11/06/2024

Project Driver:

- *Equipment Condition/Performance/Risk*

Specific Assumption References:

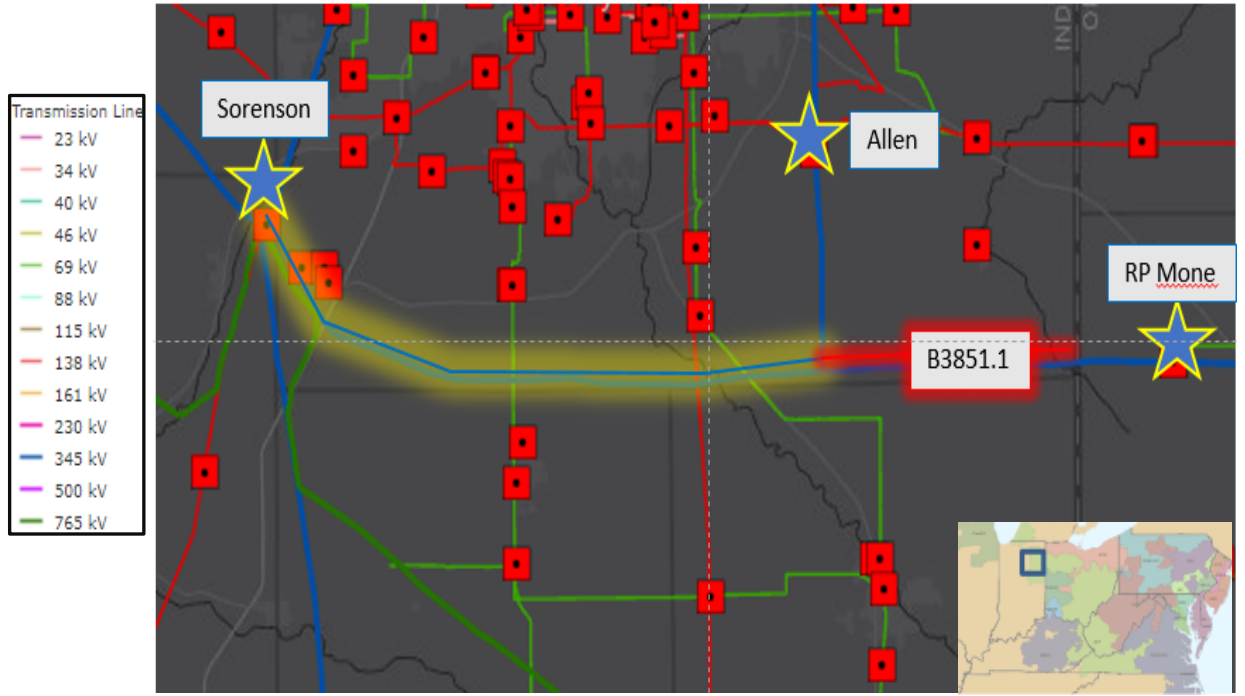
AEP Guidelines for Transmission Owner Identified Needs (AEP Assumptions Slide 13)

Problem Statement:

On 05/09/2023 AEP presented phase 1 of the Paper Expanded lines plan along with specific concerns to the paper expanded conductor lines on AEP's footprint. The below line is part of this plan.

<u>East Lima – Sorenson 345kV Line Need</u>

- The majority of the 30.01 miles of line (117/120 structures) consists of 1955-era double circuit steel lattice towers. This line consists of 2x 345kV circuits Allen – RP Mone 345kV, and Allen – Sorenson 345kV. The Allen – RP Mone 345kV circuit (~8.8 miles of the 30 mile line) is being rebuilt under B3851.1. This need covers the remainder of the line back to Sorenson station.
- The entire 345kV line consists of 1,275,000 ACSR/PE conductor

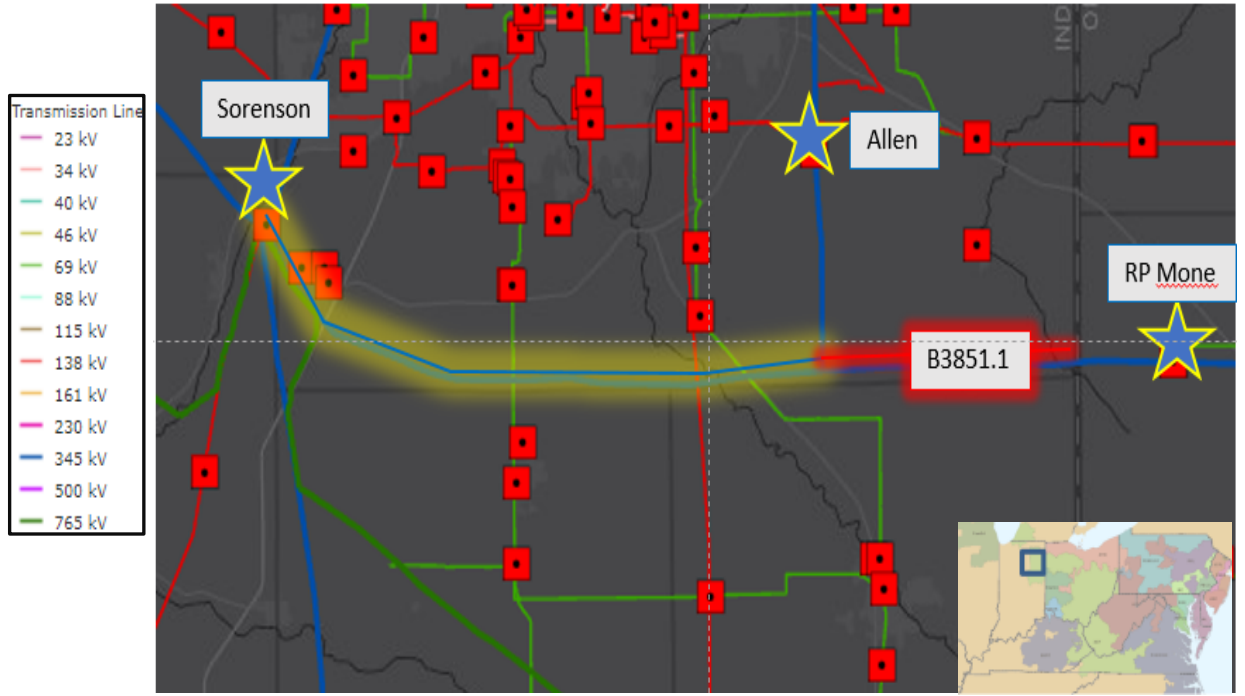


AEP Transmission Zone M-3 Process
Northwest Ohio 345kV Customer Delivery Points & System Reinforcements

Need Number: AEP-2024-IM014

Problem Statement: Continued from previous slide...

- There were 24 Structures throughout the line were assessed by drone and 13 structures assessed by ground crew. Of the structures that were assessed, the following conditions were found:
- All towers show corrosion
- Most towers have corroded insulator attachment hardware, worn arm brackets where the C-hook insulator attachment hardware connects
- Approximately 38% of the towers have broken or flashed insulators
- Many vertical insulators are contaminated from paint droppings
- Much of the line is built across farmland that is difficult to access due to soil conditions
- Since 2019, there has been 1 direct momentary outage caused by lightning
- Currently, there are 117 structures with at least one open structural, shielding or hardware condition which relates to 98% of the structures on the line. These open conditions include, but are not limited to the following:

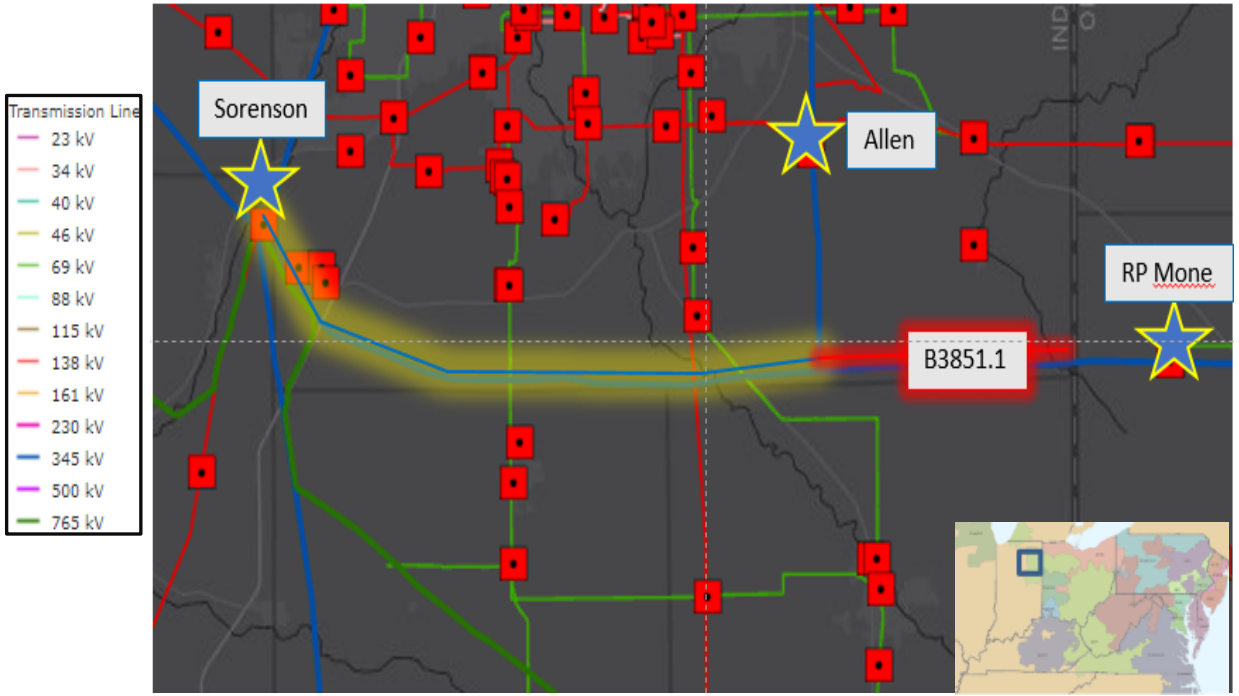


AEP Transmission Zone M-3 Process
Northwest Ohio 345kV Customer Delivery Points & System Reinforcements

Need Number: AEP-2024-IM014

Problem Statement: Continued from previous slide...

- Worn insulator assembly hardware, worn shield wire hardware, broken suspension insulators, and broken insulators. There is currently 1 open shielding condition related to broken shield wire strands



AEP Transmission Zone M-3 Process
Northwest Ohio 345kV Customer Delivery Points & System Reinforcements

Need Number: AEP-2024-IM014, AEP-2025-OH016, AEP-2025-OH017, AEP-2025-OH018, AEP-2025-OH019

Process Stage: Solution Meeting TEAC - 12/01/2026

Proposed Solution:

Sorenson - Pyrite 345kV T-line

- Rebuild the existing 345kV single circuit ~21.2 miles from Sorenson to the proposed Pyrite station as a double circuit 345kV transmission line.
- Estimated Cost: $118 M

Maddox Creek - Pyrite 345kV T-line

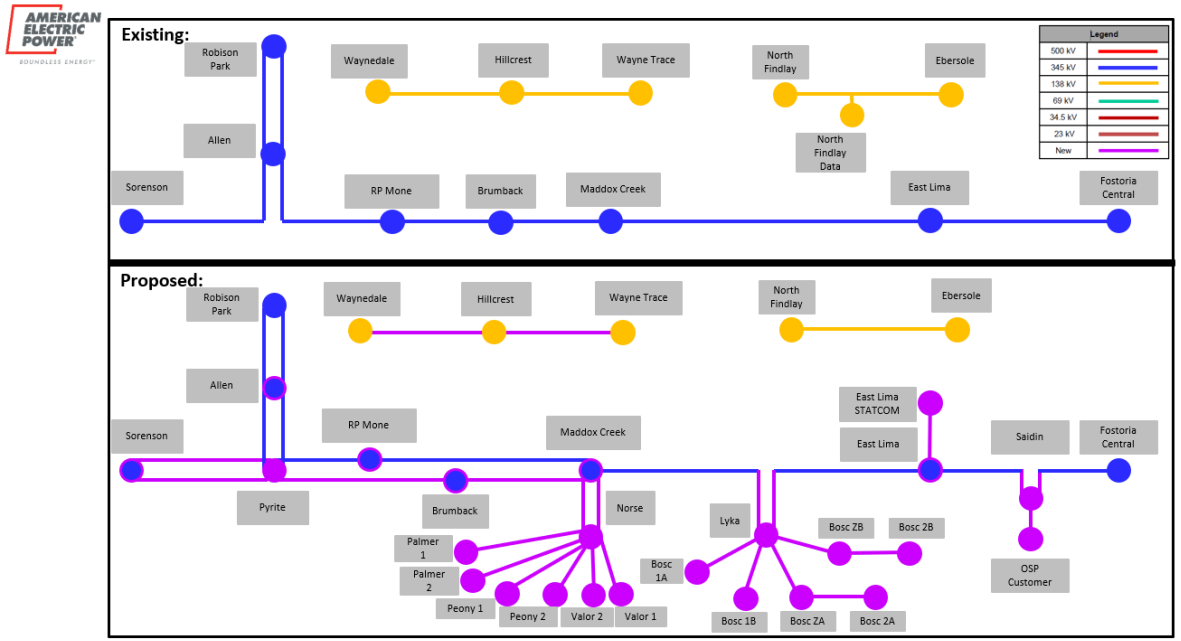
- String the second circuit on the rebuilt 345kV transmission line, part of the PJM Baseline (B3851), ~21.4 miles from Maddox Creek to the proposed Pyrite station as a double circuit 345kV transmission line.
- Estimated Cost: $32 M

Maddox Creek - Norse 345kV T-line

- Build greenfield 345kV double circuit ~2.5 miles from Maddox Creek to the proposed Norse station.
- Estimated Cost: $35 M

Norse - Valor 1 & 2 (Customer) 345kV T-line

- Build greenfield 345kV double circuit ~0.43 miles from the proposed Norse to Valor 1 & 2 (CUSTOMER) station.



AEP Transmission Zone M-3 Process
Northwest Ohio 345kV Customer Delivery Points & System Reinforcements

Need Number: AEP-2024-IM014, AEP-2025-OH016, AEP-2025-OH017, AEP-2025-OH018, AEP-2025-OH019

Proposed Solution: Continued from previous slide...

- Estimated Cost: $1.8 M

Norse - Peony 1 & 2 (Customer) 345kV T-line

- Build greenfield 345kV double circuit ~1.1 miles from the proposed Norse to Peony 1 & 2 (CUSTOMER) station.
- Estimated Cost: $2.6 M

Norse - Palmer 1 & 2 (Customer) 345kV T-line

- Build greenfield 345kV double circuit ~0.9 miles from the proposed Norse to Palmer 1 & 2 (CUSTOMER) station.
- Estimated Cost: $2.3 M

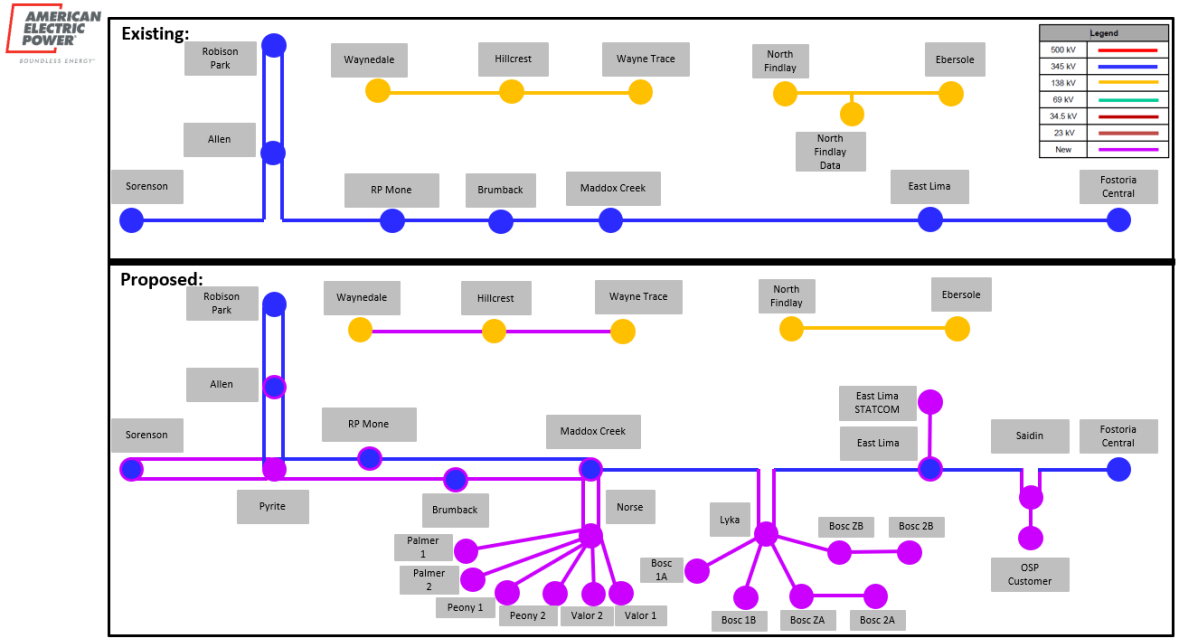
Maddox Creek - East Lima 345kV Cut In T-line

- Cut into the existing 345kV single circuit Maddox Creek - East Lima transmission line for the Lyka 345kV Extension.
- Estimated Cost: $3.2 M

Lyka Extension 345kV T-line

- Build Greenfield 345kV double circuit extension from the cut in on the Maddox Creek - East Lima line to the proposed Lyka station ~5.0 miles of T-line.
- Estimated Cost: $29.5 M

Lyka - Bosc 1A & 1B (Customer) 345kV T-line



AEP Transmission Zone M-3 Process
Northwest Ohio 345kV Customer Delivery Points & System Reinforcements

Need Number: AEP-2024-IM014, AEP-2025-OH016, AEP-2025-OH017, AEP-2025-OH018, AEP-2025-OH019

Proposed Solution: Continued from previous slide...

- Build greenfield 345kV double circuit ~0.23 miles from the proposed Lyka to Bosc 1A & 1B (CUSTOMER) station.
- Estimated Cost: $2.9 M

Lyka - Bosc 2A & 2B (Customer) 345kV T-Line

- Build greenfield 345kV double circuit ~0.23 miles from the proposed Lyka to Bosc 2A & 2B (CUSTOMER) station.
- Estimated Cost: $2.6 M

East Lima - Fostoria Central 345kV Cut In T-line

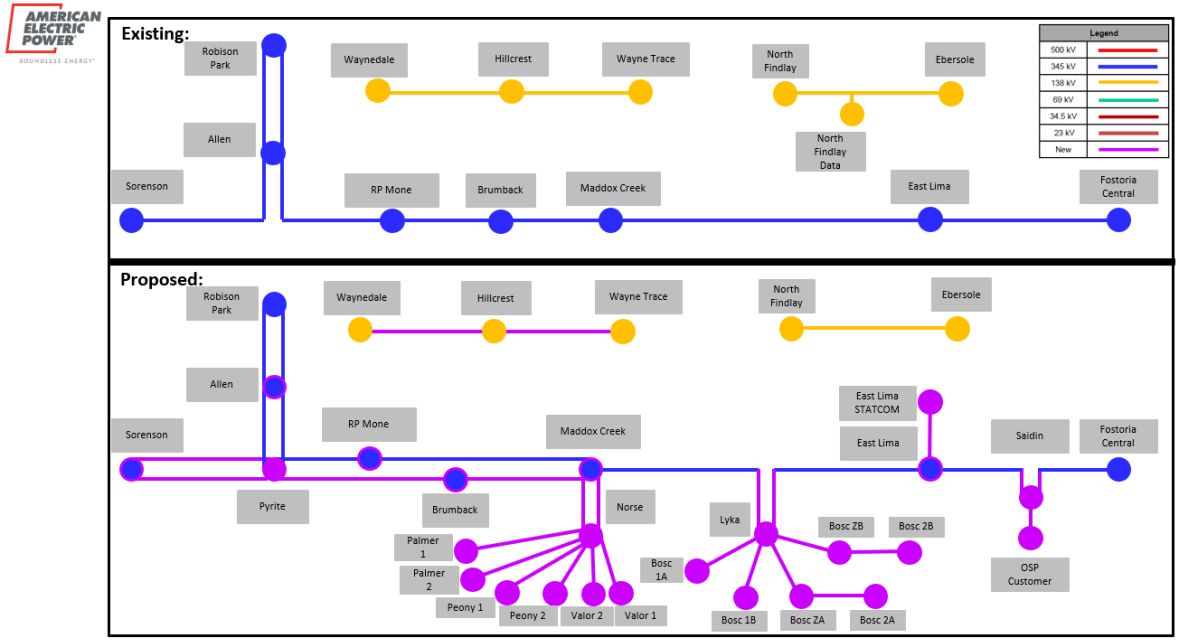
- Cut into the existing 345kV single circuit East Lima - Fostoria Central transmission line
- Estimated Cost: $3.2 M

Saidin Extension 345kV T-line

- Build greenfield 345kV double circuit ~0.4 miles from the cut in on the East Lima - Fostoria Central circuit to the proposed Saidin station.
- Estimated Cost: $4.5 M

Saidin - Customer 345kV T-line

- Build greenfield 345kV single circuit ~0.20 miles from the proposed Saidin to Customer station.
- Estimated Cost: $2.8 M



AEP Transmission Zone M-3 Process
Northwest Ohio 345kV Customer Delivery Points & System Reinforcements

Need Number: AEP-2024-IM014, AEP-2025-OH016, AEP-2025-OH017, AEP-2025-OH018, AEP-2025-OH019

Proposed Solution: Continued from previous slide...

Sorenson 345kV Station

- Install 345kV circuit breaker to complete the breaker and half string and terminate the proposed 2nd 345kV circuit towards Pyrite station. Replace circuit breaker E with 345kV 5000A 63kA circuit breaker.
- Estimated Cost: $3.5 M

Pyrite 345kV Station

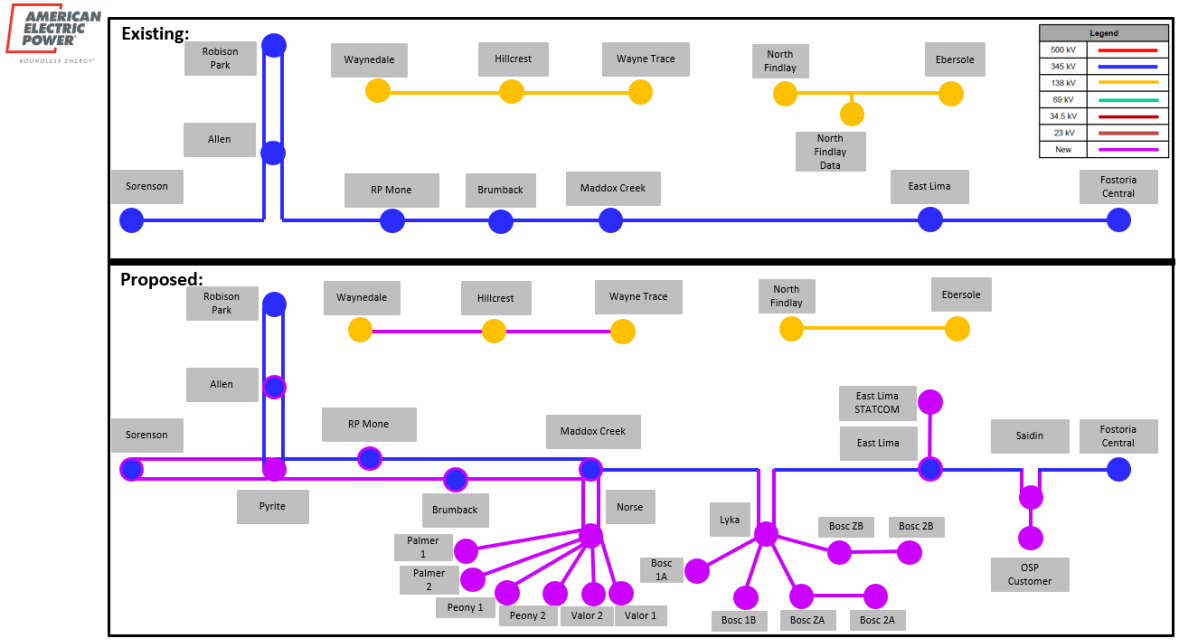
- Build greenfield breaker and half substation with 10 @ 345kV 5000A 63kA circuit breakers.
- Estimated Cost: $73 M

Maddox Creek 345kV Station

- Expand Maddox Creek substation by purchasing additional property south of the existing station. Build out the station by installing 2 additional breaker and half strings installing 8 @ 345kV circuit breakers 5000A 63kA.
- Estimated Cost: $29 M

Norse 345kV Station

- Build greenfield 345kV breaker and half substation with 14 @ 345kV circuit breakers, 2 @ 269.1 MVAR capacitor banks, and retail metering towards the customer stations.
- Estimated Cost: $31.6 M



AEP Transmission Zone M-3 Process
Northwest Ohio 345kV Customer Delivery Points & System Reinforcements

Need Number: AEP-2024-IM014, AEP-2025-OH016, AEP-2025-OH017, AEP-2025-OH018, AEP-2025-OH019

Proposed Solution: Continued from previous slide...

Lyka 345kV Station

- Build greenfield 345kV breaker and half station with 4 strings installing 10 - 345kV 5000A 63kA circuit breakers.
- Estimated Cost: $43 M

East Lima 345kV Station

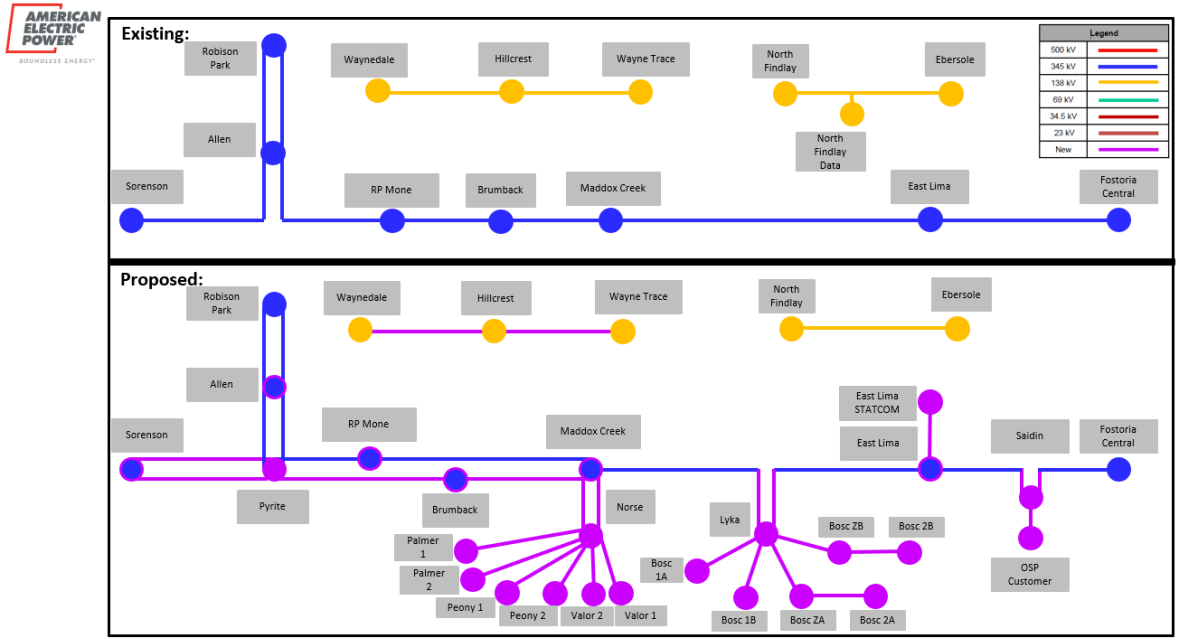
- Install 345kV 150 MVAR STATCOM connected to the East Lima 345kV bus via a 345kV 5000A 63kA circuit breaker. The East Lima station yard will be expanded to accommodate the STATCOM and 138kV T-lines will likely need to be relocated in the station yard.
- Estimated Cost: $129 M

Saidin 345kV Station

- Build greenfield 345kV substation built as breaker and half station (operated as a ring bus) with 3 @ 345kV circuit breakers,
- Estimated Cost: $27 M

Waynedale - Hillcrest - Wayne Trace 138kV T-line

- Rebuild the 138kV single circuit ~6.1 miles of the Waynedale - Hillcrest - Wayne Trace transmission line.



AEP Transmission Zone M-3 Process
Northwest Ohio 345kV Customer Delivery Points & System Reinforcements

Need Number: AEP-2024-IM014, AEP-2025-OH016, AEP-2025-OH017, AEP-2025-OH018, AEP-2025-OH019

Proposed Solution: Continued from previous slide...

- *Note: Waynedale - Hillcrest - Wayne Trace transmission line MLSE limited by station equipment
- Estimated Cost: $31.048 M

North Findlay - Ebersole 138kV Hard Tap Removal T-line

- Retire the North Findlay Data Customer that has a hard tap on the North Findlay - Ebersole 138kV circuit. The customer will be served from the new 345kV Saidin Delivery Point.
- Estimated Cost:

Ratings MVA (SN/SE/WN/WE):

Sorenson - Pyrite 345kV T-line

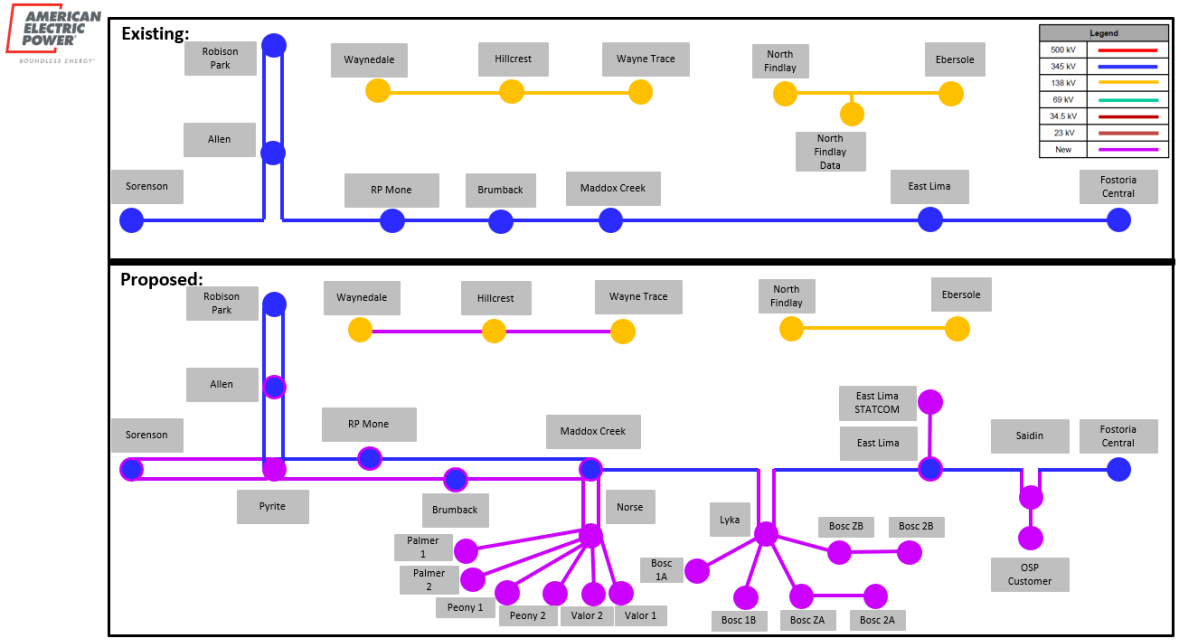
- Before Proposed Solution: 897/897/1138/1138
- After Proposed Solution: 1937/2785/2455/3104

Maddox Creek - Pyrite 345kV T-line

- Before Proposed Solution: 897/1302/1138/1451
- After Proposed Solution: 1937/2785/2455/3104

Maddox Creek - Norse 345kV T-line

- Before Proposed Solution: N/A
- After Proposed Solution: 1937/2785/2455/3104



AEP Transmission Zone M-3 Process
Northwest Ohio 345kV Customer Delivery Points & System Reinforcements

Need Number: AEP-2024-IM014, AEP-2025-OH016, AEP-2025-OH017, AEP-2025-OH018, AEP-2025-OH019

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

Norse - Valor 1 & 2 (Customer) 345kV T-line

- Before Proposed Solution: N/A
- After Proposed Solution: 1287/1800/1624/2020

Norse - Peony 1 & 2 (Customer) 345kV T-line

- Before Proposed Solution: N/A
- After Proposed Solution: 1287/1800/1624/2020

Norse - Palmer 1 & 2 (Customer) 345kV T-line

- Before Proposed Solution: N/A
- After Proposed Solution: 1287/1800/1624/2020

Maddox Creek - East Lima 345kV Cut In T-line

- Before Proposed Solution: 2562/2562/2700/2700
- After Proposed Solution: N/A

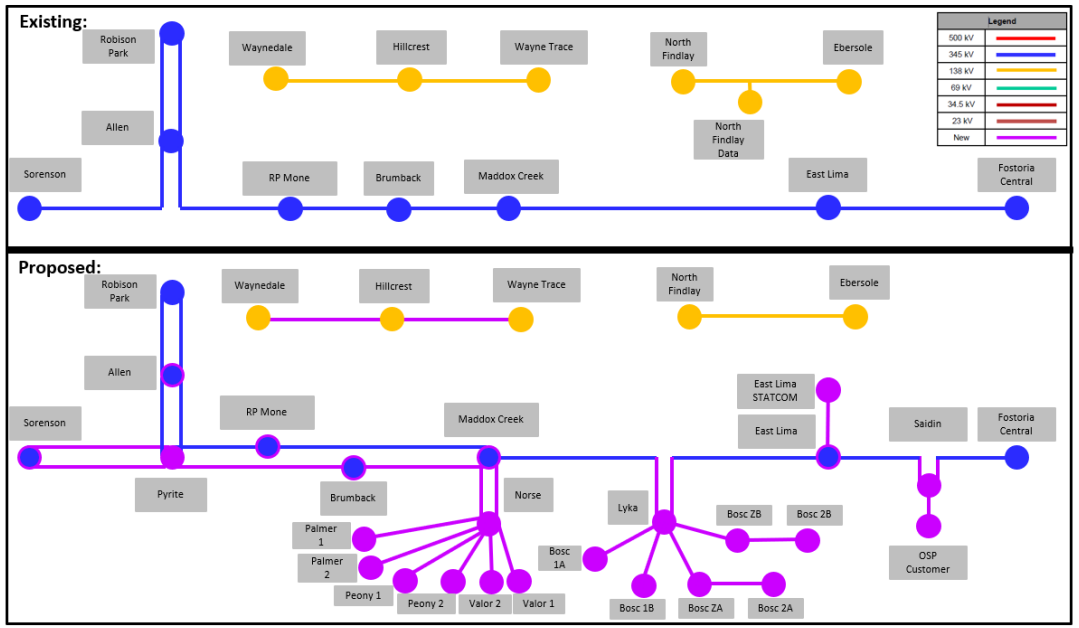
Lyka Extension 345kV T-line

- Before Proposed Solution: N/A
- After Proposed Solution: 3206/3206/3376/3376

Lyka - Bosc 1A & 1B (Customer) 345kV T-line

- Before Proposed Solution: N/A
- After Proposed Solution: 1287/1800/1624/2020

Lyka - Bosc 2A & 2B (Customer) 345kV T-Line



AEP Transmission Zone M-3 Process
Northwest Ohio 345kV Customer Delivery Points & System Reinforcements

Need Number: AEP-2024-IM014, AEP-2025-OH016, AEP-2025-OH017, AEP-2025-OH018, AEP-2025-OH019

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

- Before Proposed Solution: N/A
- After Proposed Solution: 1287/1800/1624/2020

East Lima - Fostoria Central 345kV Cut In T-line

- Before Proposed Solution: 1385/1841/1750/2092
- After Proposed Solution: N/A

Saidin Extension 345kV T-line

- Before Proposed Solution: N/A
- After Proposed Solution: 1385/1841/1750/2092

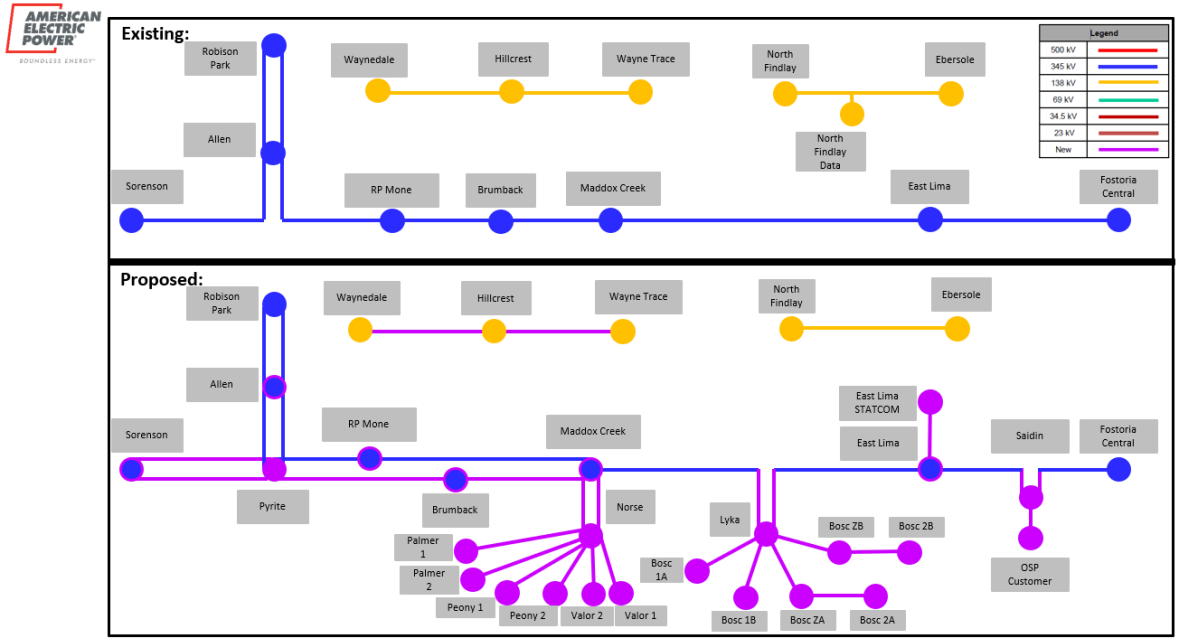
Saidin - Customer 345kV T-line

- Before Proposed Solution: N/A
- After Proposed Solution: 1287/1800/1624/2020

Sorenson 345kV Station

- *M013X5 345 kV Breaker*
  - Before Proposed Solution: 50 kA
  - After Proposed Solution: 63 kA
- *M013X8 345 kV Breaker*
  - Before Proposed Solution: N/A kA
  - After Proposed Solution: 63 kA

Pyrite 345kV Station

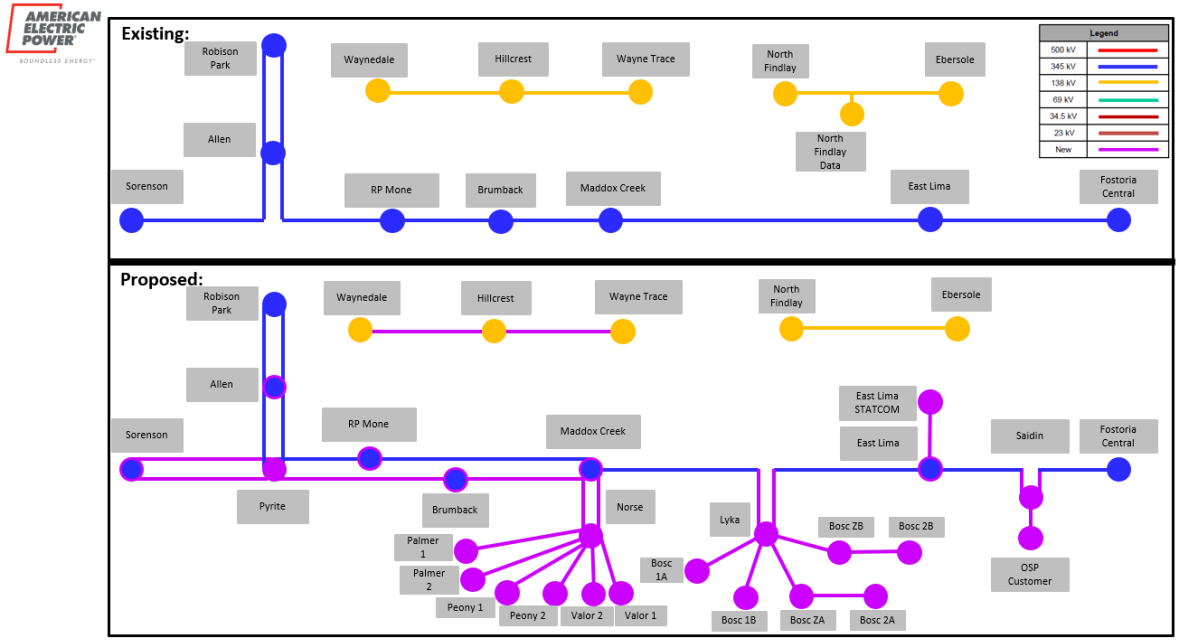


AEP Transmission Zone M-3 Process
Northwest Ohio 345kV Customer Delivery Points & System Reinforcements

Need Number: AEP-2024-IM014, AEP-2025-OH016, AEP-2025-OH017, AEP-2025-OH018, AEP-2025-OH019

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

- *H033Y5 345 kV Breaker*
  - Before Proposed Solution: N/A kA
  - After Proposed Solution: 63 kA
- *H033Y8 345 kV Breaker*
  - Before Proposed Solution: N/A kA
  - After Proposed Solution: 63 kA
- *H033Z5 345 kV Breaker*
  - Before Proposed Solution: N/A kA
  - After Proposed Solution: 63 kA
- *H033Z8 345 kV Breaker*
  - Before Proposed Solution: N/A kA
  - After Proposed Solution: 63 kA
- *H034A2 345 kV Breaker*
  - Before Proposed Solution: N/A kA
  - After Proposed Solution: 63 kA
- *H034A5 345 kV Breaker*
  - Before Proposed Solution: N/A kA
  - After Proposed Solution: 63 kA
- *H034A8 345 kV Breaker*



AEP Transmission Zone M-3 Process
Northwest Ohio 345kV Customer Delivery Points & System Reinforcements

Need Number: AEP-2024-IM014, AEP-2025-OH016, AEP-2025-OH017, AEP-2025-OH018, AEP-2025-OH019

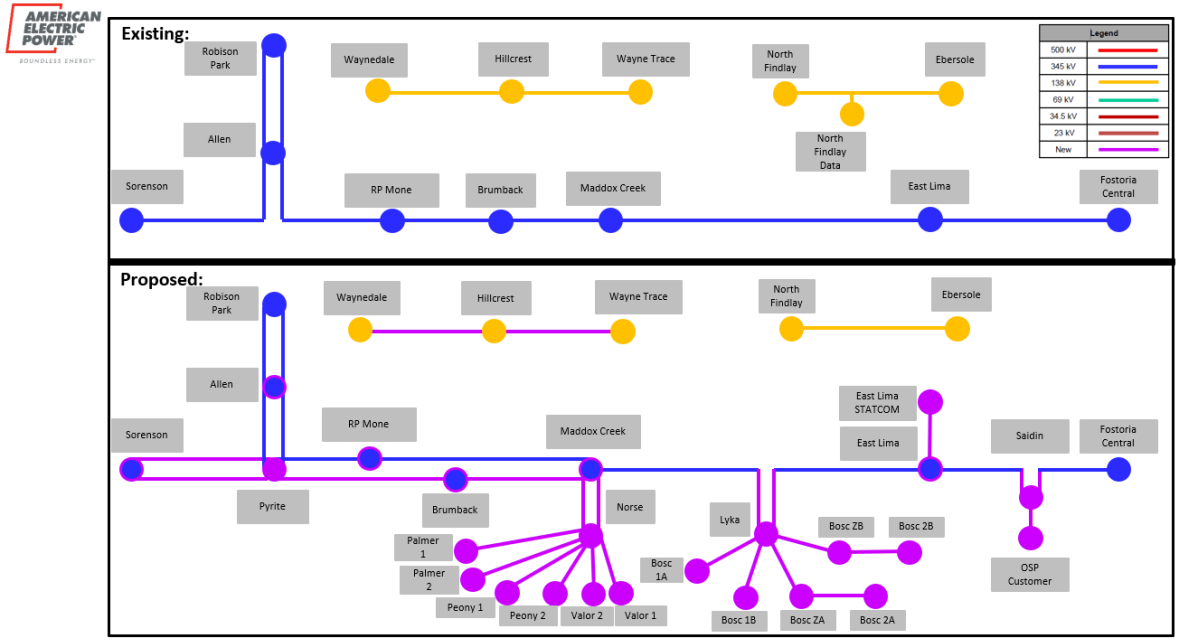
Ratings MVA (SN/SE/WN/WE): Continued from previous slide...

- Before Proposed Solution: N/A kA
- After Proposed Solution: 63 kA

- *H034B2 345 kV Breaker*
  - Before Proposed Solution: N/A kA
  - After Proposed Solution: 63 kA
- *H034B5 345 kV Breaker*
  - Before Proposed Solution: N/A kA
  - After Proposed Solution: 63 kA
- *H034B8 345 kV Breaker*
  - Before Proposed Solution: N/A kA
  - After Proposed Solution: 63 kA

Maddox Creek 345kV Station

- *H029R8 345 kV Breaker*
  - Before Proposed Solution: N/A kA
  - After Proposed Solution: 63 kA
- *H029R2 345 kV Breaker*
  - Before Proposed Solution: N/A kA
  - After Proposed Solution: 63 kA
- *H027F8 345 kV Breaker*



AEP Transmission Zone M-3 Process
Northwest Ohio 345kV Customer Delivery Points & System Reinforcements

Need Number: AEP-2024-IM014, AEP-2025-OH016, AEP-2025-OH017, AEP-2025-OH018, AEP-2025-OH019

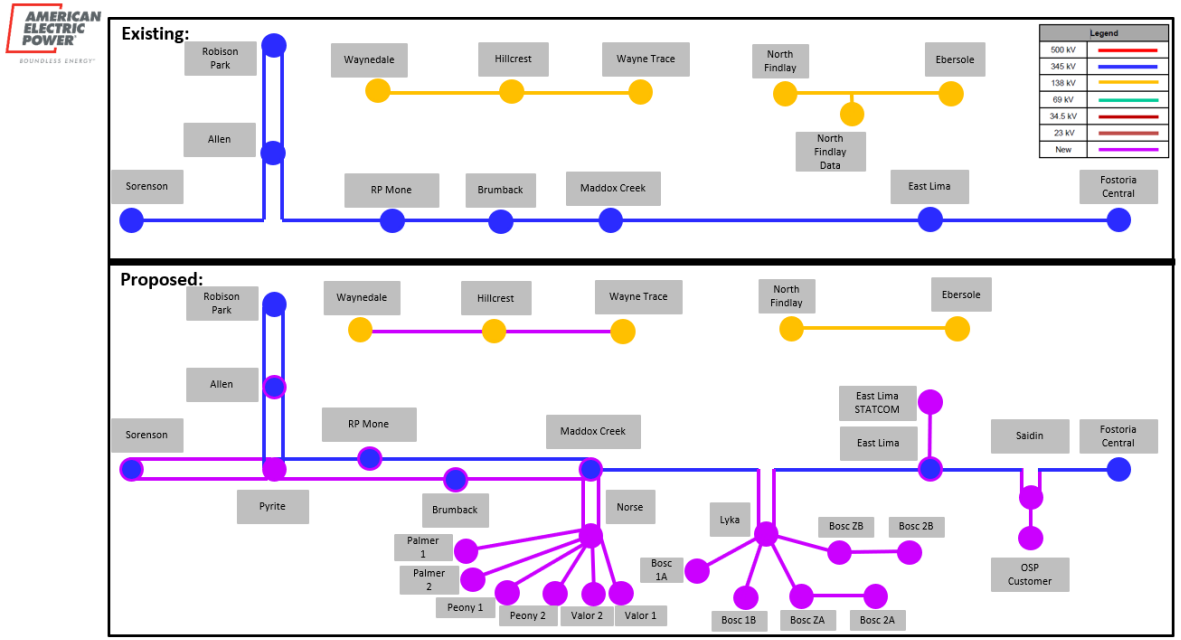
Ratings MVA (SN/SE/WN/WE): Continued from previous slide...

- Before Proposed Solution: 50 kA
- After Proposed Solution: 63 kA

- *H029S8 345 kV Breaker*
  - Before Proposed Solution: N/A kA
  - After Proposed Solution: 63 kA
- *H029S5 345 kV Breaker*
  - Before Proposed Solution: N/A kA
  - After Proposed Solution: 63 kA
- *H029S2 345 kV Breaker*
  - Before Proposed Solution: N/A kA
  - After Proposed Solution: 63 kA
- *H029T8 345 kV Breaker*
  - Before Proposed Solution: N/A kA
  - After Proposed Solution: 63 kA
- *H029T5 345 kV Breaker*
  - Before Proposed Solution: N/A kA
  - After Proposed Solution: 63 kA

Norse 345kV Station

- *H029E1 345 kV Breaker*



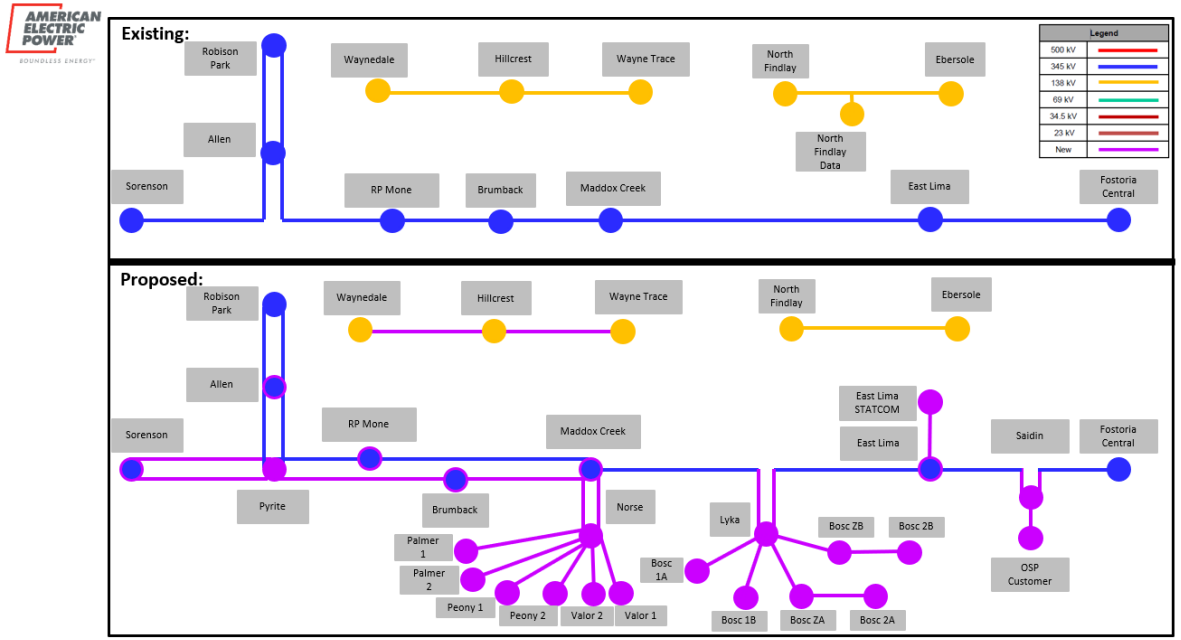
AEP Transmission Zone M-3 Process
Northwest Ohio 345kV Customer Delivery Points & System Reinforcements

Need Number: AEP-2024-IM014, AEP-2025-OH016, AEP-2025-OH017, AEP-2025-OH018, AEP-2025-OH019

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

- Before Proposed Solution: N/A kA
- After Proposed Solution: 63 kA

- *H029E3 345 kV Breaker*
  - Before Proposed Solution: N/A kA
  - After Proposed Solution: 63 kA
- *H029F2 345 kV Breaker*
  - Before Proposed Solution: N/A kA
  - After Proposed Solution: 63 kA
- *H029F5 345 kV Breaker*
  - Before Proposed Solution: N/A kA
  - After Proposed Solution: 63 kA
- *H029F8 345 kV Breaker*
  - Before Proposed Solution: N/A kA
  - After Proposed Solution: 63 kA
- *H029G2 345 kV Breaker*
  - Before Proposed Solution: N/A kA
  - After Proposed Solution: 63 kA
- *H029G5 345 kV Breaker*



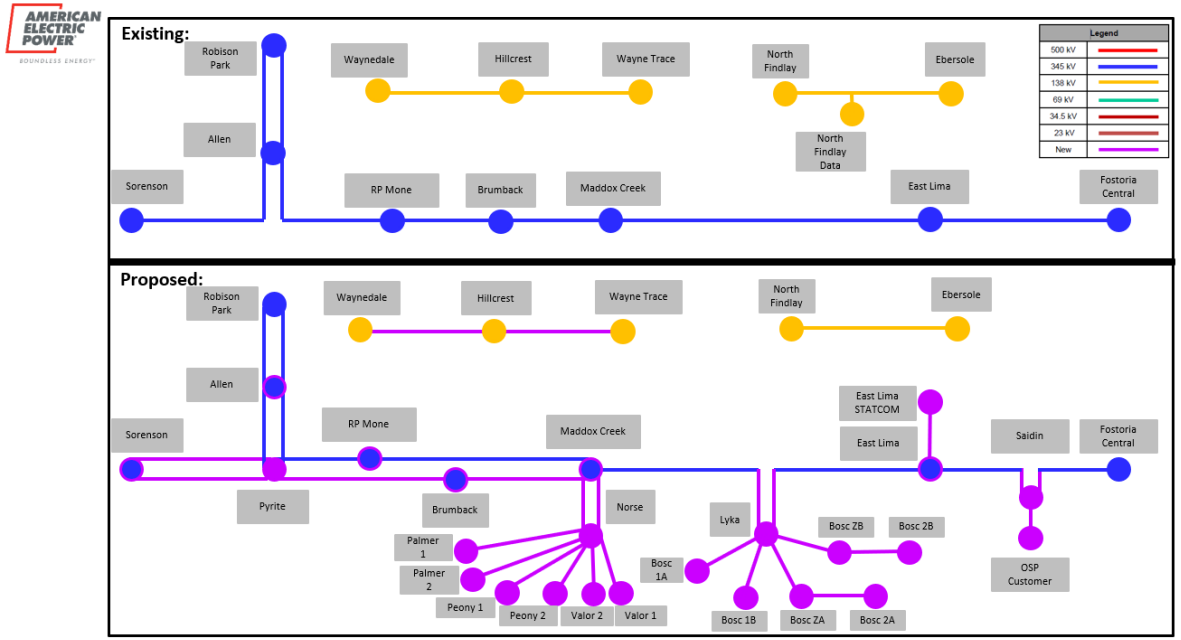
AEP Transmission Zone M-3 Process
Northwest Ohio 345kV Customer Delivery Points & System Reinforcements

Need Number: AEP-2024-IM014, AEP-2025-OH016, AEP-2025-OH017, AEP-2025-OH018, AEP-2025-OH019

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

- Before Proposed Solution: N/A kA
- After Proposed Solution: 63 kA

- *H029G8 345 kV Breaker*
  - Before Proposed Solution: N/A kA
  - After Proposed Solution: 63 kA
- *H029H2 345 kV Breaker*
  - Before Proposed Solution: N/A kA
  - After Proposed Solution: 63 kA
- *H029H5 345 kV Breaker*
  - Before Proposed Solution: N/A kA
  - After Proposed Solution: 63 kA
- *H029H8 345 kV Breaker*
  - Before Proposed Solution: N/A kA
  - After Proposed Solution: 63 kA
- *H029J2 345 kV Breaker*
  - Before Proposed Solution: N/A kA
  - After Proposed Solution: 63 kA
- *H029J5 345 kV Breaker*



AEP Transmission Zone M-3 Process
Northwest Ohio 345kV Customer Delivery Points & System Reinforcements

Need Number: AEP-2024-IM014, AEP-2025-OH016, AEP-2025-OH017, AEP-2025-OH018, AEP-2025-OH019

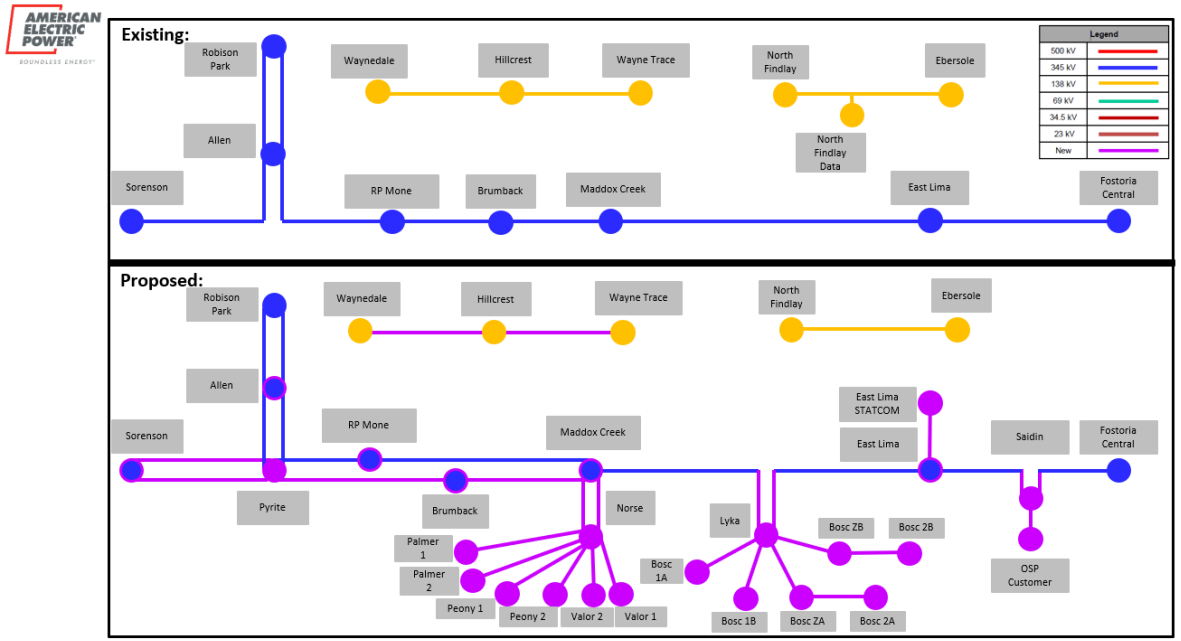
Ratings MVA (SN/SE/WN/WE): Continued from previous slide...

- Before Proposed Solution: N/A kA
- After Proposed Solution: 63 kA

- *H029J8 345 kV Breaker*
  - Before Proposed Solution: N/A kA
  - After Proposed Solution: 63 kA

Lyka 345kV Station

- *H028S2 345 kV Breaker*
  - Before Proposed Solution: N/A kA
  - After Proposed Solution: 63 kA
- *H028T2 345 kV Breaker*
  - Before Proposed Solution: N/A kA
  - After Proposed Solution: 63 kA
- *H028R5 345 kV Breaker*
  - Before Proposed Solution: N/A kA
  - After Proposed Solution: 63 kA
- *H028R8 345 kV Breaker*
  - Before Proposed Solution: N/A kA
  - After Proposed Solution: 63 kA
- *H028S5 345 kV Breaker*



AEP Transmission Zone M-3 Process
Northwest Ohio 345kV Customer Delivery Points & System Reinforcements

Need Number: AEP-2024-IM014, AEP-2025-OH016, AEP-2025-OH017, AEP-2025-OH018, AEP-2025-OH019

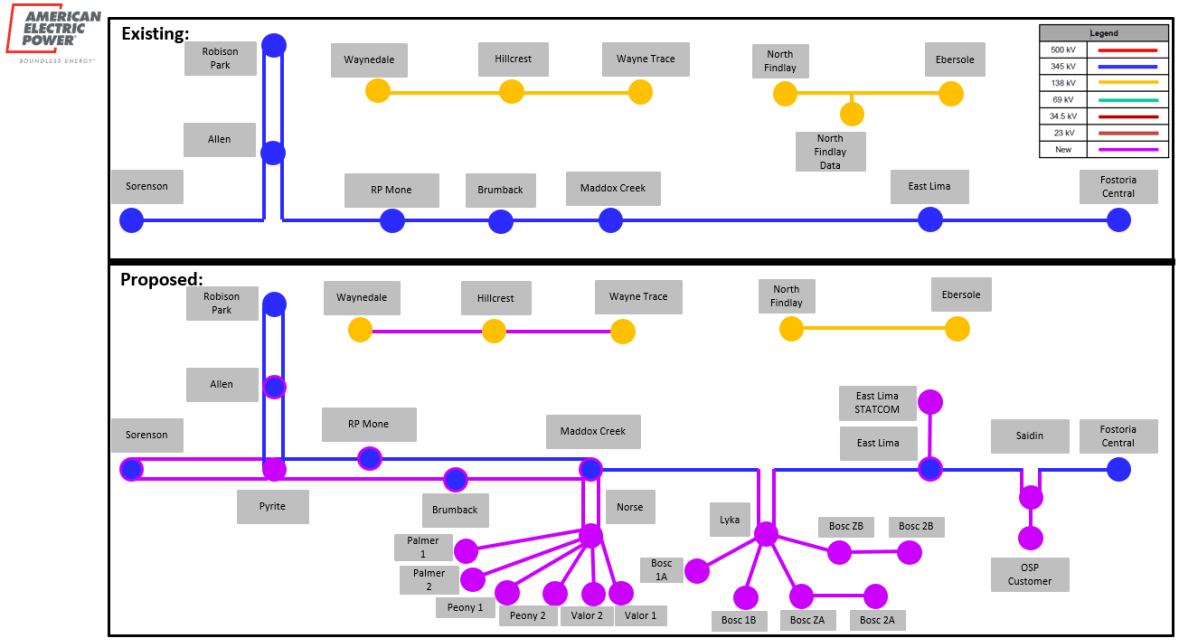
Ratings MVA (SN/SE/WN/WE): Continued from previous slide...

- Before Proposed Solution: N/A kA
- After Proposed Solution: 63 kA

- *H028S8 345 kV Breaker*
  - Before Proposed Solution: N/A kA
  - After Proposed Solution: 63 kA
- *H028T5 345 kV Breaker*
  - Before Proposed Solution: N/A kA
  - After Proposed Solution: 63 kA
- *H028T8 345 kV Breaker*
  - Before Proposed Solution: N/A kA
  - After Proposed Solution: 63 kA
- *H028U5 345 kV Breaker*
  - Before Proposed Solution: N/A kA
  - After Proposed Solution: 63 kA
- *H028U8 345 kV Breaker*
  - Before Proposed Solution: N/A kA
  - After Proposed Solution: 63 kA

East Lima 345kV Station

- *H033G8 345 kV Breaker*



AEP Transmission Zone M-3 Process
Northwest Ohio 345kV Customer Delivery Points & System Reinforcements

Need Number: AEP-2024-IM014, AEP-2025-OH016, AEP-2025-OH017, AEP-2025-OH018, AEP-2025-OH019

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

- Before Proposed Solution: N/A kA
- After Proposed Solution: 63 kA

Saidin 345kV Station

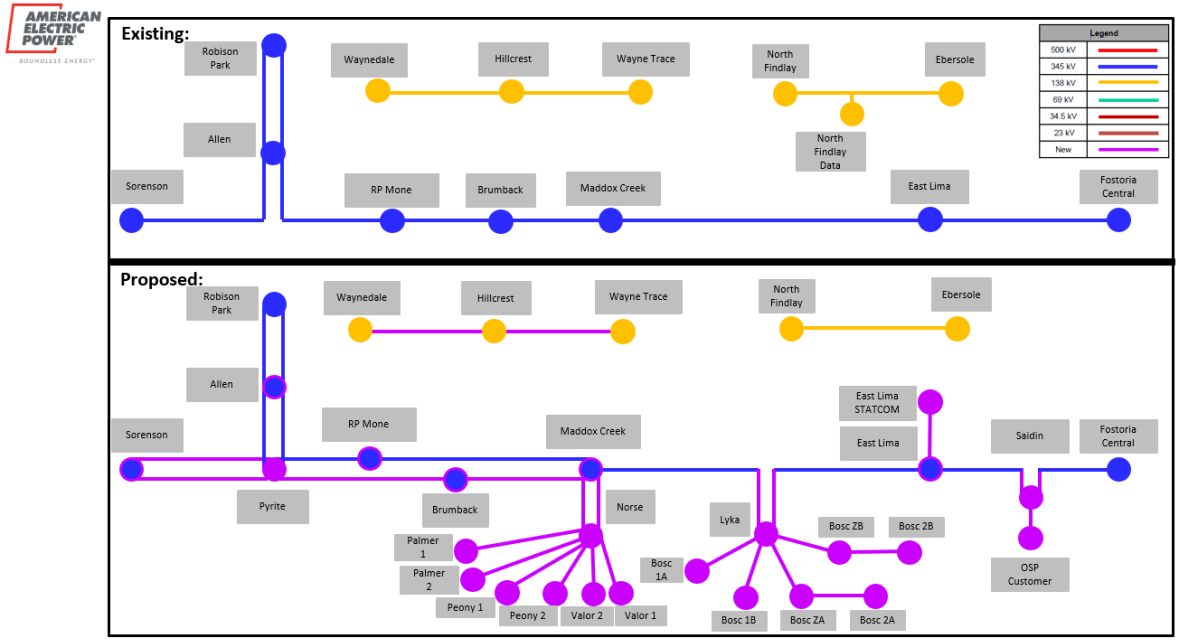
- *A 345 kV Breaker*
  - Before Proposed Solution: N/A kA
  - After Proposed Solution: 63 kA
- *B 345 kV Breaker*
  - Before Proposed Solution: N/A kA
  - After Proposed Solution: 63 kA
- *C 345 kV Breaker*
  - Before Proposed Solution: N/A kA
  - After Proposed Solution: 63 kA

Waynedale - Hillcrest - Wayne Trace 138kV T-line

- Before Proposed Solution: 246/246/311/311
- After Proposed Solution: 295/411/373/461

North Findlay - Ebersole 138kV Hard Tap Removal T-line

- Before Proposed Solution: 257/360/325/404
- After Proposed Solution: N/A



AEP Transmission Zone M-3 Process
Northwest Ohio 345kV Customer Delivery Points & System Reinforcements

Need Number: AEP-2024-IM014, AEP-2025-OH016, AEP-2025-OH017, AEP-2025-OH018, AEP-2025-OH019

Continued from previous slide...

Alternatives Considered:

AEP-2025-OH016: Serving the load at 138kV and tying 6 138kV circuits was considered but ultimately discarded in favor of a more robust 345kV interconnection. Additional 138 kV upgrades would have been required if the load remained at 138 kV considering the other loads in the area.

AEP-2025-OH017 & AEP-2025-OH018: Separate delivery points for these needs were initially considered but these were ultimately consolidated into a single 345kV delivery point to eliminate additional 138 kV work.

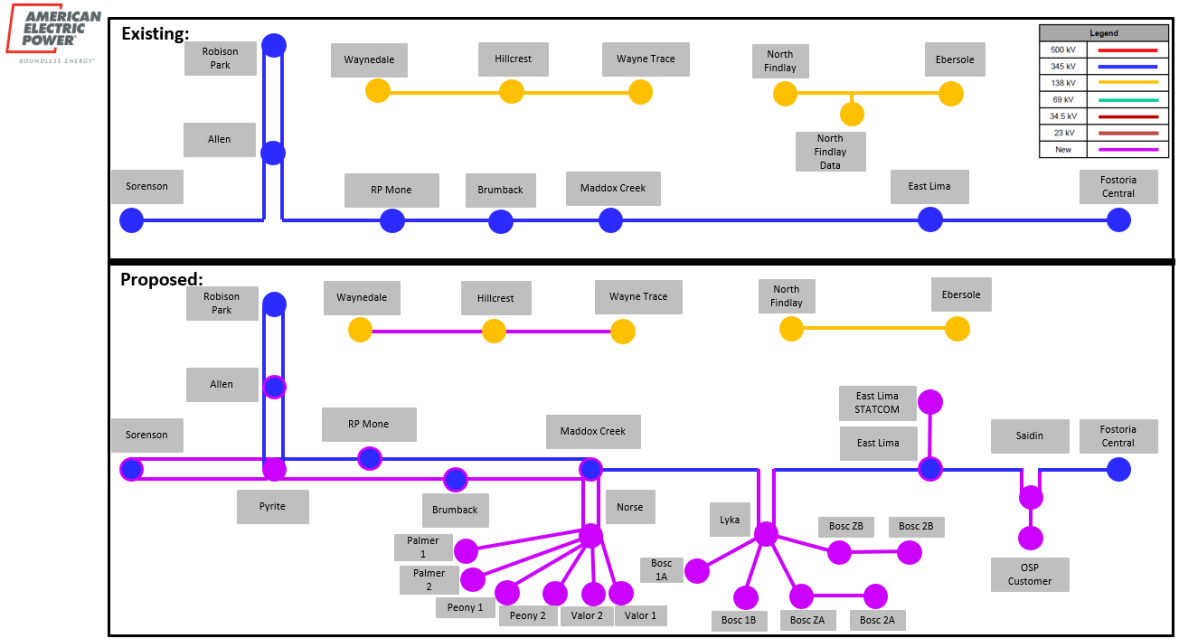
AEP-2024-IM014: Reconductoring with advanced conductor and sag study alternates were considered, however to support the proposed total demand of approximately 2.3 GW in the NW OH area, a rebuild to double circuit is required to address violations associated with the new load additions.

Transmission Cost Estimate: $607.548 M

Projected In-Service: 09/26/2031

Project Status: Scoping

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

11/20/2026 – V1 – Original version posted to pjm.com