

Submission of Supplemental Projects for Inclusion in the Local Plan

EKPC Transmission Zone M-3 Process Dahl Road New Customer Load

Need Number: EKPC-2021-018

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan – May 12, 2022

Previously Presented:

Needs Meeting – 8/16/2021

Solutions Meeting 11/19/2021

Supplemental Project Driver:

Customer Service

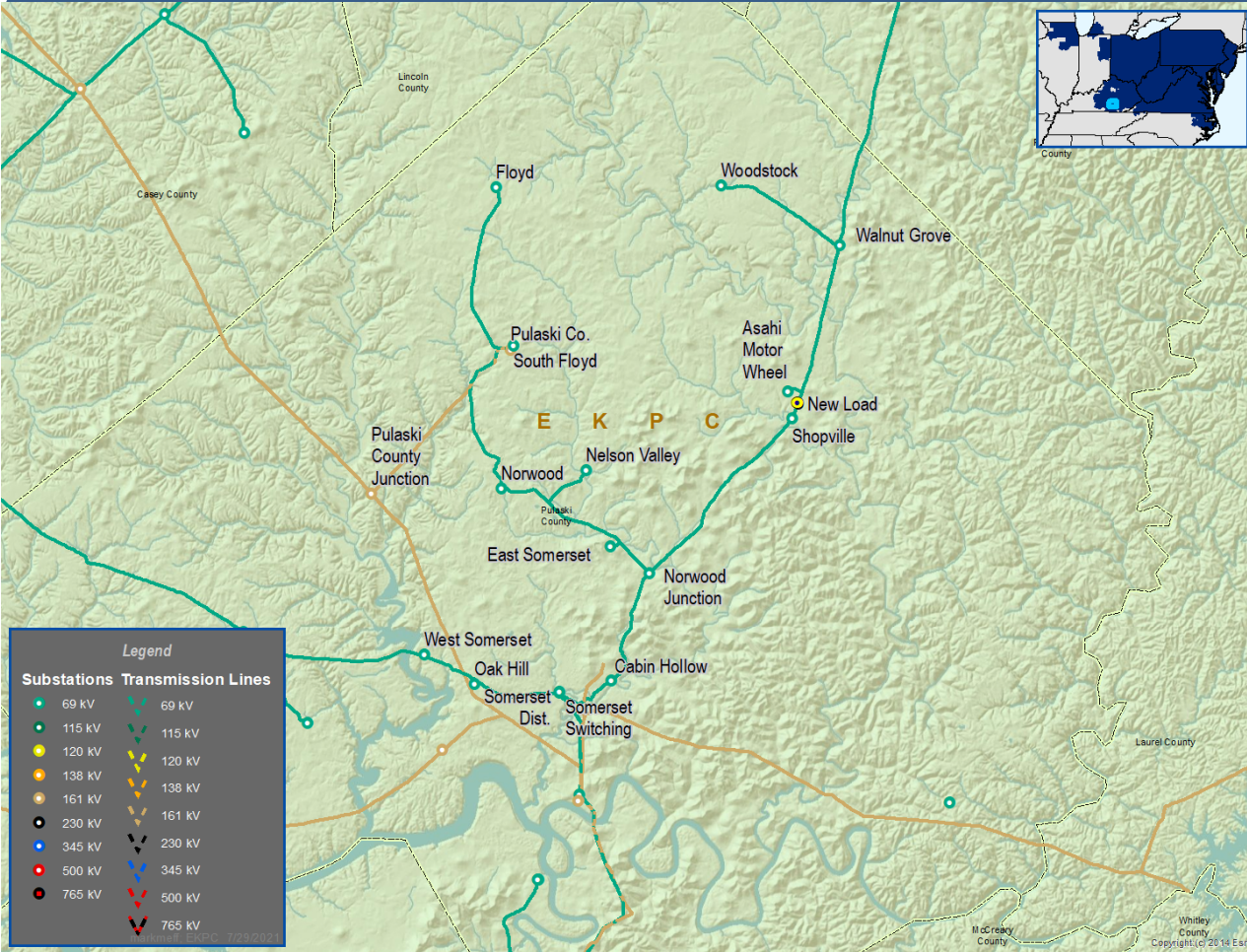
Specific Assumption Reference:

EKPC Assumptions Presentation Slide 14

Problem Statement:

A new customer has requested a new delivery point for a peak demand of 12.0 MW by 6/1/2022. The new delivery point is located in Pulaski Co, KY approximately half way between EKPC’s Shopville and Asahi Motor Wheel distribution substations. The existing distribution infrastructure is not capable of serving this request.

Model: N/A



EKPC Transmission Zone M-3 Process Dahl Road New Customer Load

Need Number: EKPC-2021-018

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan – May 12, 2022

Proposed Solution:

Construct new 69kv-12.5kV 12/16/20 MVA Dahl Road distribution substation and associated 0.10 mile tap line. Station will be served from the EKPC Shopville-Asahi Motor Wheel transmission line. Build new 7.0 mile 69 KV Floyd-Woodstock transmission line using 556 ACSR conductor. Construct a new four line exit 69 KV breaker station at Norwood Junction.

Distribution Cost: \$2.42M

Transmission Cost: \$12.7M

Ancillary Benefits:

- Provides voltage support to the area.
- Improves operational flexibility
- Minimize restoration time
- Improves system protection

Alternatives Considered:

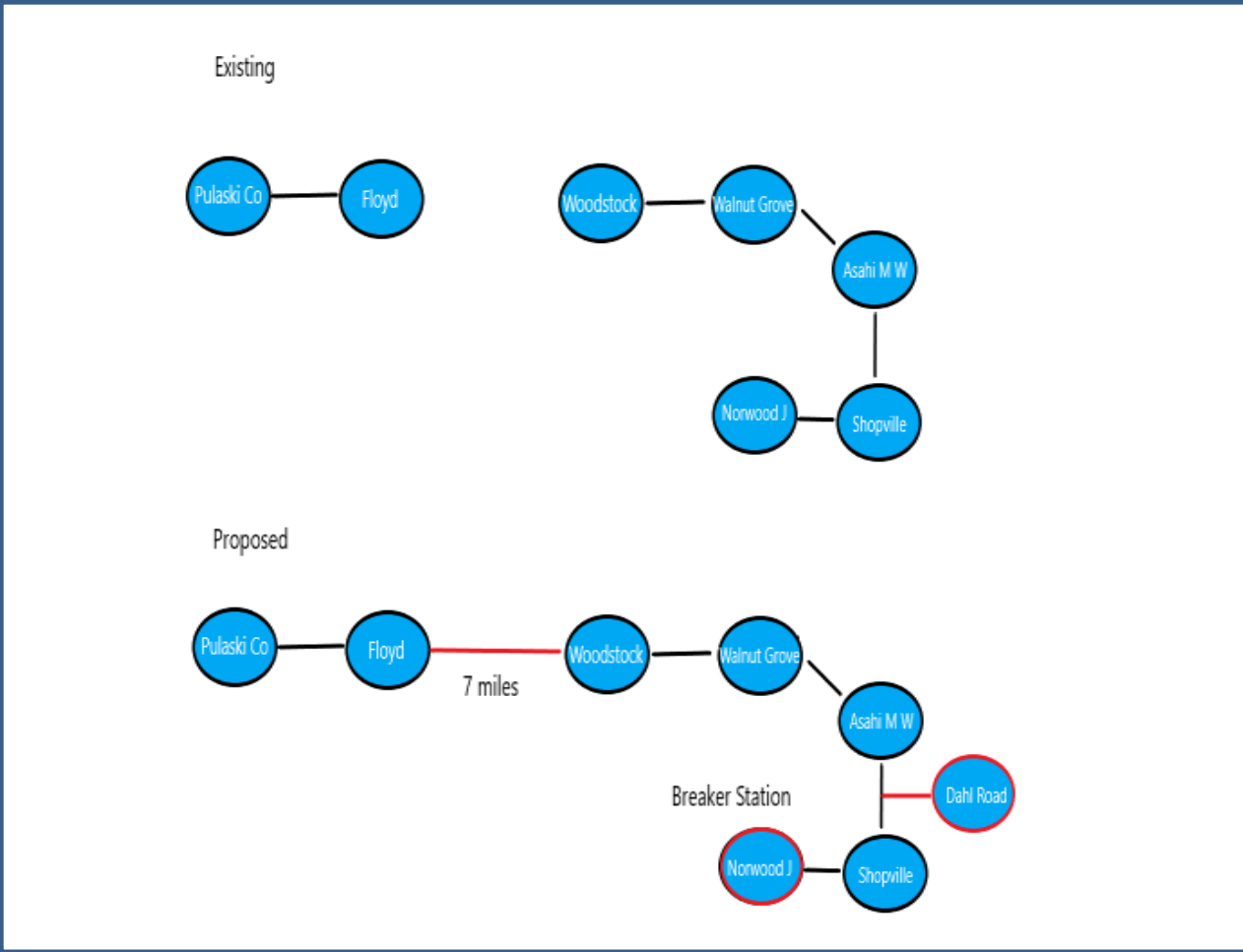
1. New 10.1 mile Pulaski Co–Dahl Road 69 KV line using 556 ACSR and new 69 KV Dahl Road switching station. \$14.1M
2. New 10.1 mile Pulaski Co–Dahl Road 161 KV line using 795 ACSR and new 161/69 KV Dahl Road station. \$16.9M
3. Addition of capacitor bank. (Adequate voltage support not achievable)

Projected In-Service: 6/1/2022 for Dahl Road distribution station
12/1/2023 for new transmission line and breaker station.

Project Status: Engineering

Supplemental Project ID: s2670

Model: N/A



EKPC Transmission Zone M-3 Process

Fall Rock - Manchester 69 KV

Need Number: EKPC-2022-001

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan – November 1, 2022

Previously Presented:

Needs Meeting –March 18, 2022

Solutions Meeting – June 15, 2022

Supplemental Project Driver:

Equipment Material Condition, Performance and Risk

Specific Assumption Reference:

EKPC Assumptions Presentation Slide 13

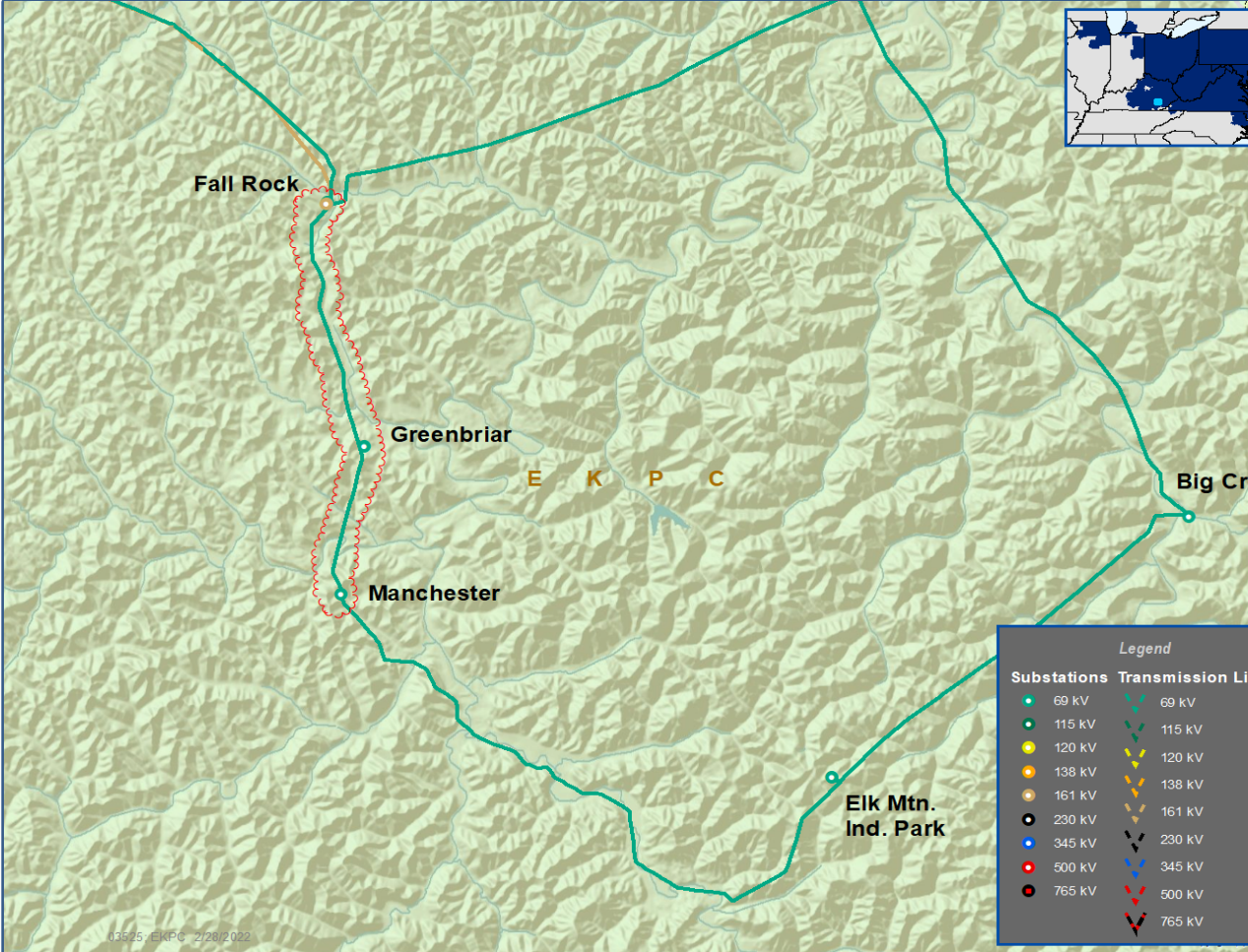
Problem Statement:

The 5.83 mile, Fall Rock-Manchester 69 KV transmission line section is 65 years old.

This line section has condition issues such as rusting, pitting, and broken strands. Based on this information, the EKPC Reliability team has concluded that this line is at or near end of life and should be addressed due to the condition assessment.

There are currently 33 open work orders for the line section with 30 being structure issues such as degraded poles, cross arm, or guy wire issues.

Model: N/A



EKPC Transmission Zone M-3 Process Fall Rock - Manchester 69 KV

Need Number: EKPC-2022-001

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan – November 1, 2022

Proposed Solution:

Rebuild the Fall Rock-Manchester 5.83 mile 69 KV transmission line using 556.5 ACSR conductor.

Transmission Cost: \$4.4M

Ancillary Benefits:

- None

Alternatives Considered:

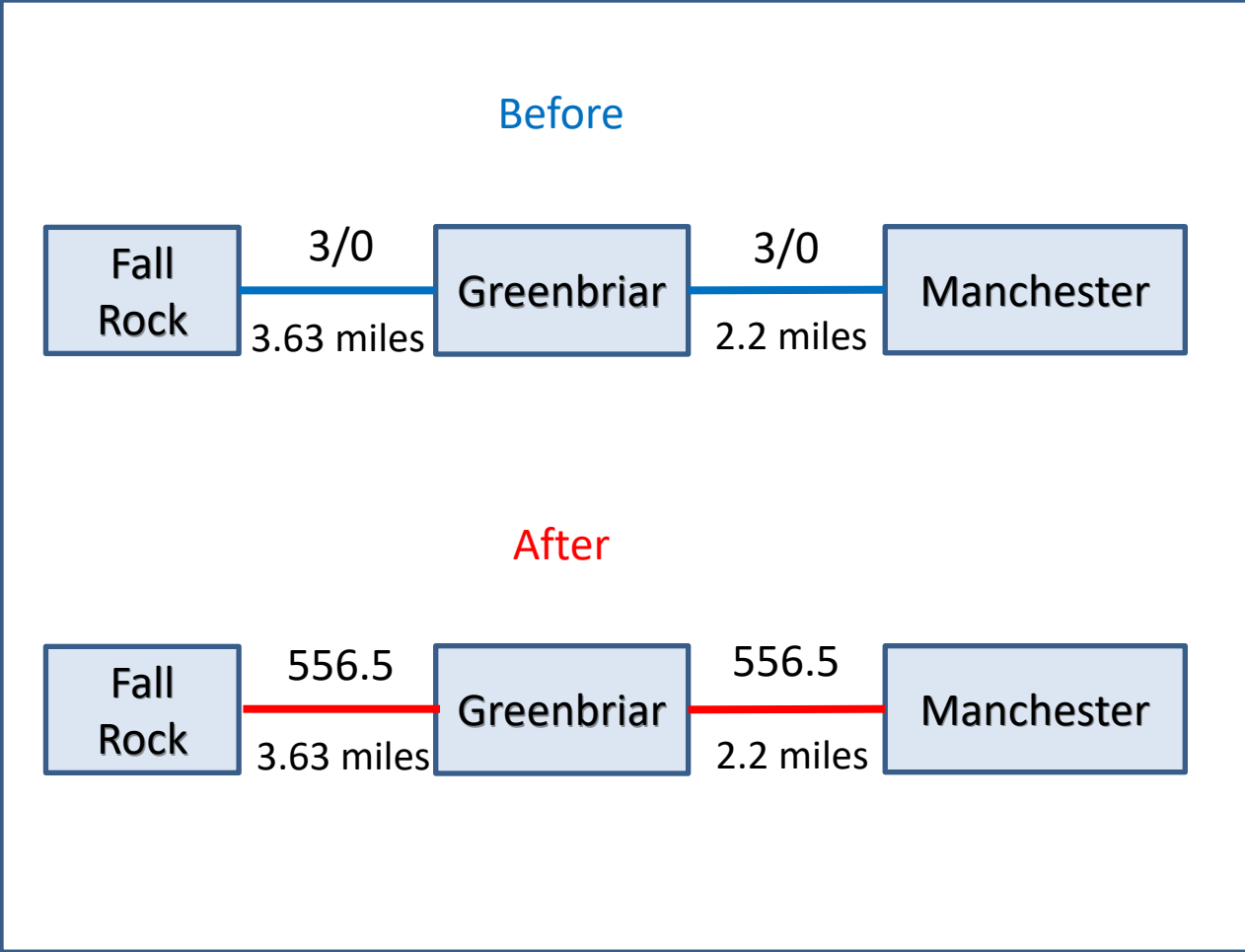
Alternative 1 - Rebuild the Manchester-Greenbriar 69 KV line section as double-circuit, build a new breaker station at Manchester, convert the normally open interconnection with KU at Manchester to normally closed, convert the normally open switch at Elk Mountain to normally closed and retire the Fall Rock-Greenbriar 69 KV line section.

Transmission Cost: \$7.5M

Projected In-Service: 12/31/2024

Project Status: Engineering
Supplemental Project ID: s2765

Model: N/A



EKPC Transmission Zone M-3 Process Headquarters – Millersburg Tap 69 KV

Need Number: EKPC-2022-002

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan – November 1, 2022

Previously Presented:

Needs Meeting – March 18, 2022

Solutions Meeting – June 15, 2022

Supplemental Project Driver:

Equipment Material Condition, Performance and Risk

Specific Assumption Reference:

EKPC Assumptions Presentation Slide 13

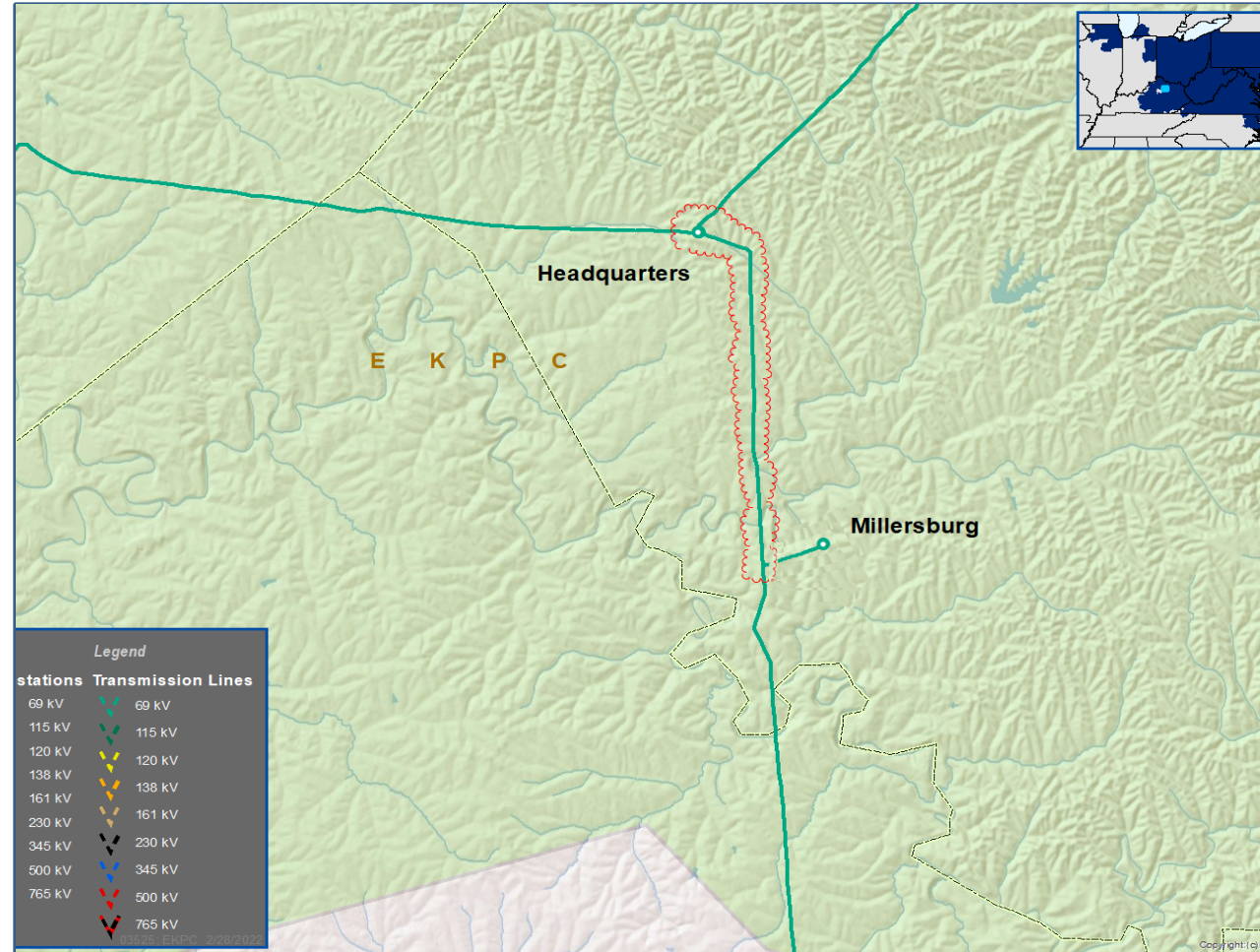
Problem Statement:

The 5.12 mile, Headquarters-Millersburg Tap 69 KV transmission line section is 71 years old.

This line section has condition issues such as rusting, pitting, and broken strands. Based on this information, the EKPC Reliability team has concluded that this line is at or near end of life and should be addressed due to the condition assessment.

There are currently 42 open work orders for the line section with 9 being structure issues such as rotten poles and woodpecker holes.

Model: N/A



EKPC Transmission Zone M-3 Process Headquarters – Millersburg Tap 69 KV

Need Number: EKPC-2022-002
Process Stage: Submission of Supplemental Project for inclusion in the Local Plan – November 1, 2022

Proposed Solution:
Rebuild the 5.12 mile Headquarters-Millersburg Tap 69 KV line section using 556.5 ACSR conductor.

Transmission Cost: \$3.8M

Ancillary Benefits:

- None

Alternatives Considered:

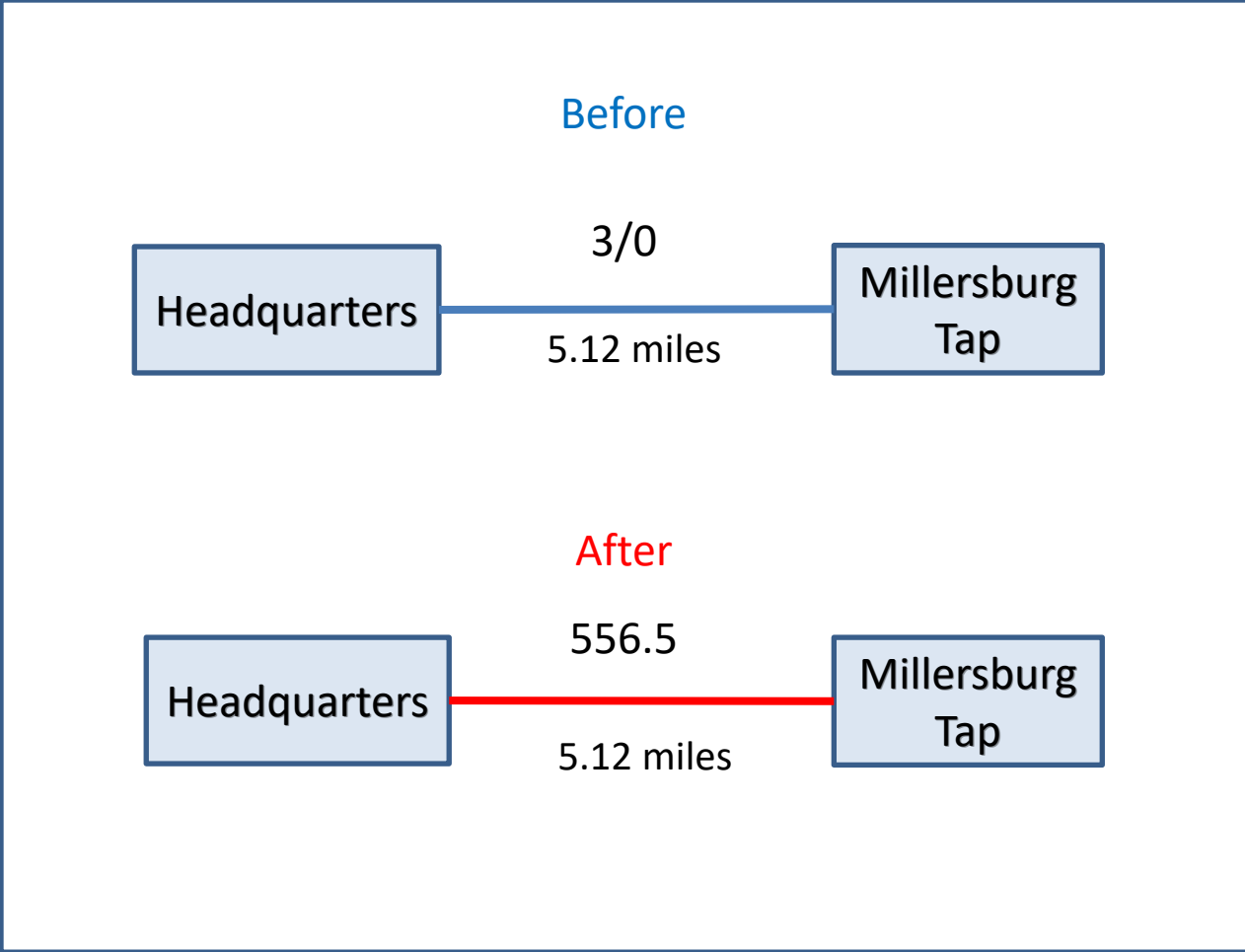
Alternative 1 - Retire the 5.12 mile Headquarters-Millersburg Tap 69 KV line section.
Transmission Cost: \$0.28M

Alternative 2 - Build a new 3.3 mile EKPC Millersburg-KU Millersburg 69 KV line section using 556.5 ACSR conductor. Retire the existing 5.12 mile Headquarter-Millersburg Tap 69 KV line section.
Transmission Cost: \$5.6M

Projected In-Service: 12/31/2025

Project Status: Engineering
Supplemental Project ID: s2766

Model: N/A



EKPC Transmission Zone M-3 Process Griffin Junction – Griffin 69 KV

Need Number: EKPC-2022-003

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan – November 1, 2022

Previously Presented:

- Needs Meeting – March 18, 2022
- Solutions Meeting – June 15, 2022

Supplemental Project Driver:

Equipment Material Condition, Performance and Risk
Customer Service

Specific Assumption Reference:

EKPC Assumptions Presentation Slides 13 & 15

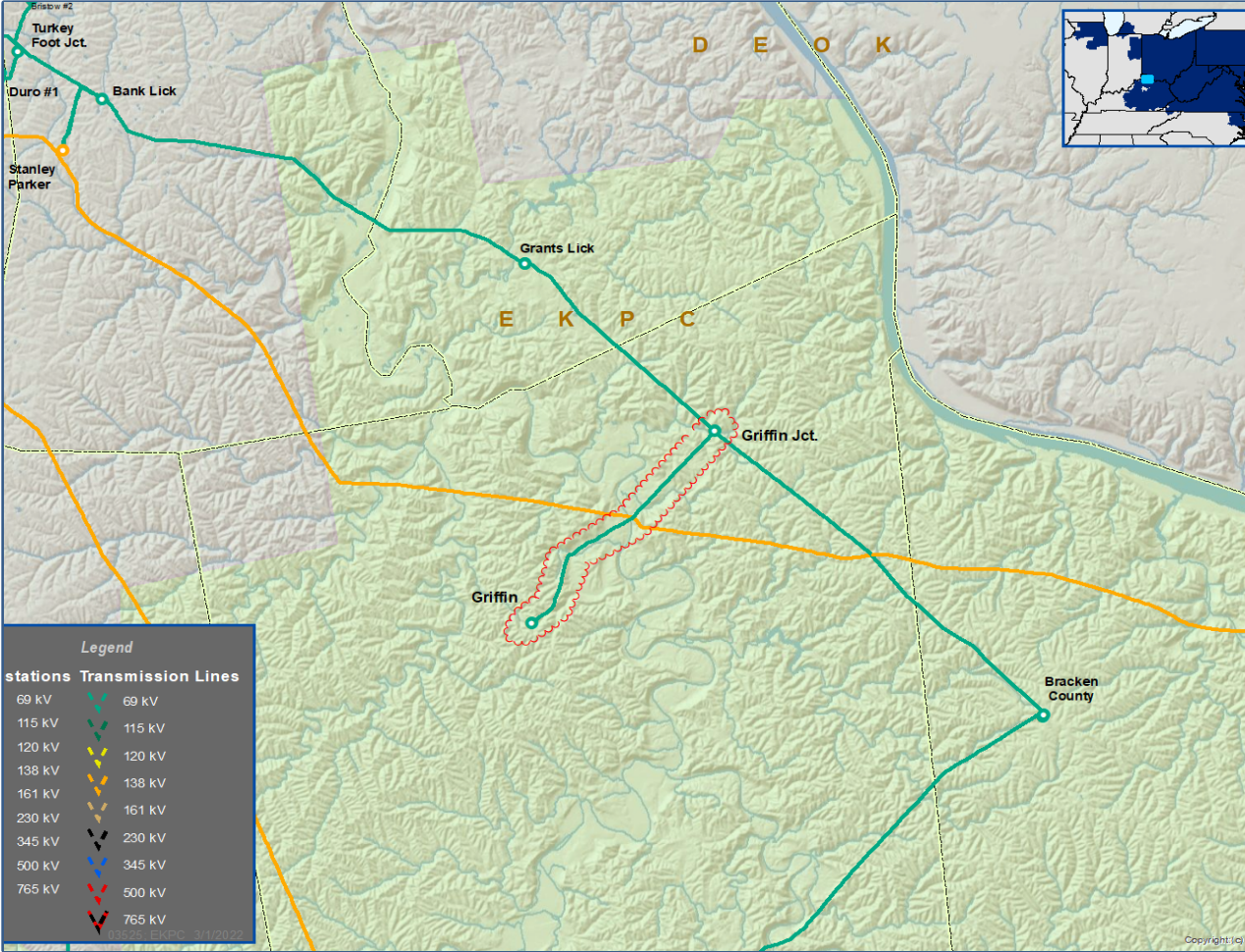
Problem Statement:

The 6.4 mile, Griffin Junction-Griffin 69 KV transmission line section is 56 years old.

This line section has condition issues such as severe static wire condition and wood pole deterioration. Due to safety concerns and potential for forced long-term outages related to the static wire condition, line maintenance cannot be performed while energized and the Griffin substation cannot be back fed during a line outage. The EKPC Reliability team has concluded that this line section is at or near end of life and should be addressed due to this condition assessment.

There are currently 33 open work orders for this line section.

Model: N/A



EKPC Transmission Zone M-3 Process Griffin Junction – Griffin 69 KV

Need Number: EKPC-2022-003

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan – November 1, 2022

Proposed Solution:

Build a new 6.4 mile Griffin Junction-Griffin 69 KV line section using 266.8 ACSR conductor parallel to the existing line section. Retire the existing 6.4 mile line section upon completion of new line.

Distribution Cost: \$4.3M
Transmission Cost: \$0.0M

Ancillary Benefits:

- None

Alternatives Considered:

Alternative 1 - Build a new 6.4 mile double circuit Griffin Junction-Griffin 69 KV line section using 556.5 ACSR conductor parallel to the existing line section. Retire the existing 6.4 mile line section upon completion of new line.

Distribution Cost: \$0.35M
Transmission Cost: \$5.25M

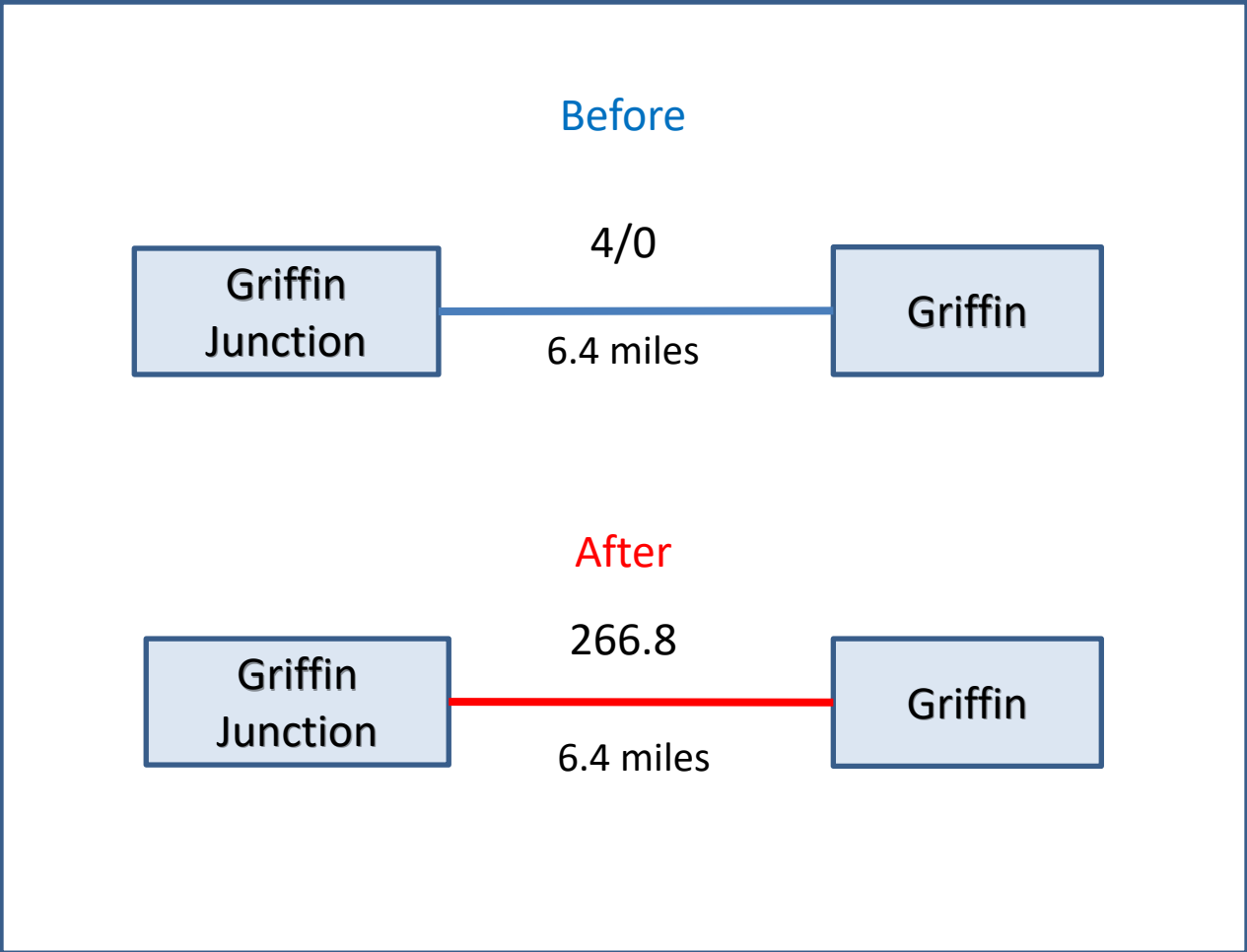
Alternative 2 –Convert the distribution substation to 138 KV, loop in the EKPC 138 KV transmission via a new 3.5 mile 138 KV double circuit line. Retire the existing Griffin Junction-Griffin 6.4 mile line section upon completion of new line.

Distribution Cost: \$2.35M
Transmission Cost: \$4.45M

Projected In-Service: 12/31/2023

Project Status: Engineering
Supplemental Project ID: s2767

Model: N/A



Revision History

5/12/2022 – V1 – Added s2670

10/25/2022 – V2 – Added s2765, s2766 and s2767