

SRRTEP Committee: Western EKPC Supplemental Projects

May 21, 2021

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

EKPC Transmission Zone M-3 Process Clay Village 69 KV Tie

Need Number: EKPC-2021-012

Process Stage: Solutions Meeting – May 21, 2021

Previously Presented:

Needs Meeting 4/16/2021

Supplemental Project Driver:

Equipment Material Condition, Performance and Risk

Specific Assumption Reference:

EKPC Assumptions Presentation Slide 12

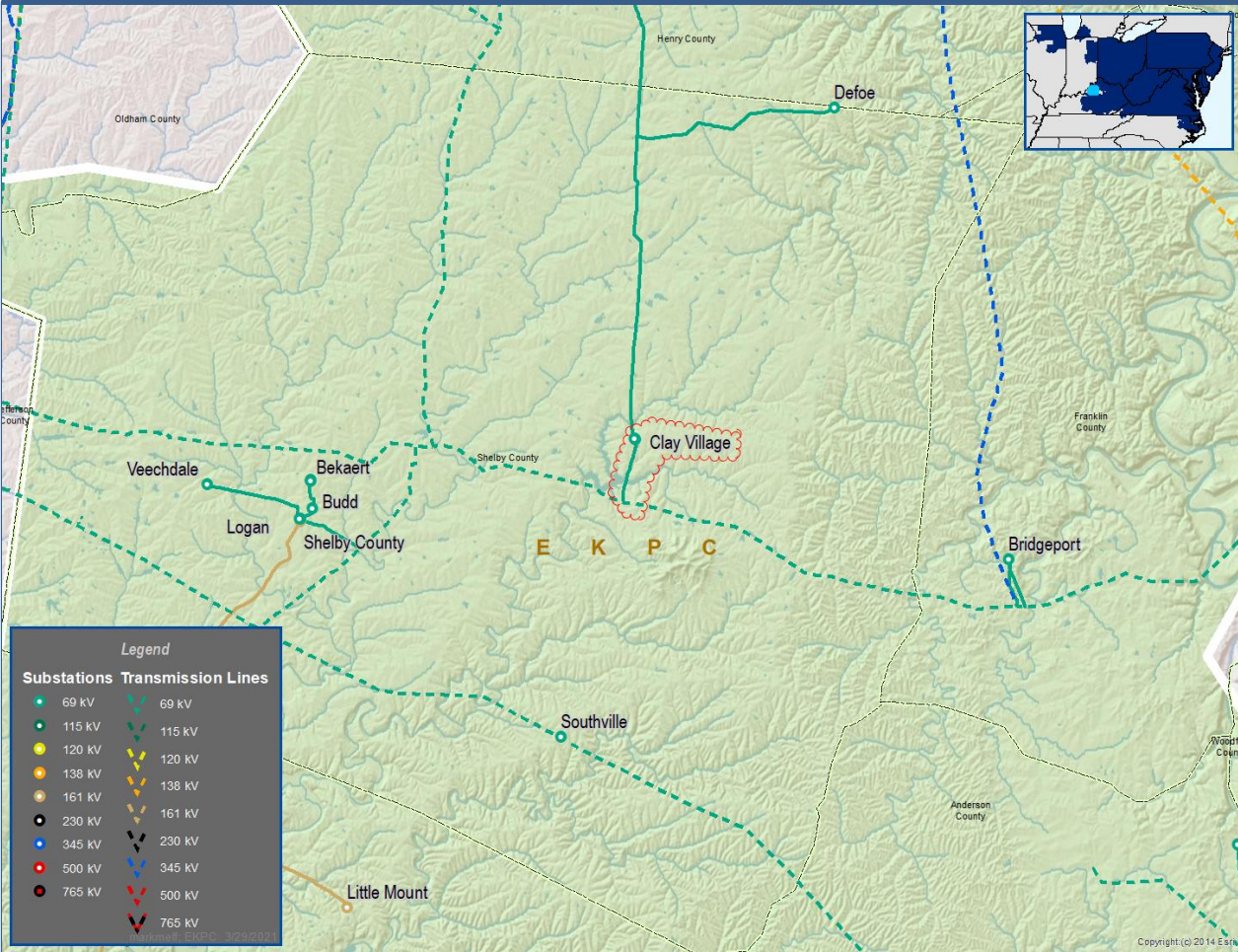
Problem Statement:

The 1.61 mile, Clay Village 69 KV transmission tie line to LG&E/KU is 70 years old.

This line has condition issues such as conductor steel core and static wire deterioration, 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.

Model: N/A



EKPC Transmission Zone M-3 Process
Clay Village 69 KV Tie

Need Number: EKPC-2021-012

Process Stage: Solutions Meeting – May 21, 2021

Proposed Solution:

Rebuild the 1.6 mile, Clay Village 69 kV tie line using 556.5 ACSR/TW conductor and steel poles & structures.

1.25 miles of single structures will be replaced.
0.35 miles of H-Frame tangent structures will be evaluated on structure by structure basis

Distribution Cost: \$0M
Transmission Cost: \$1.05M

Ancillary Benefits:

None

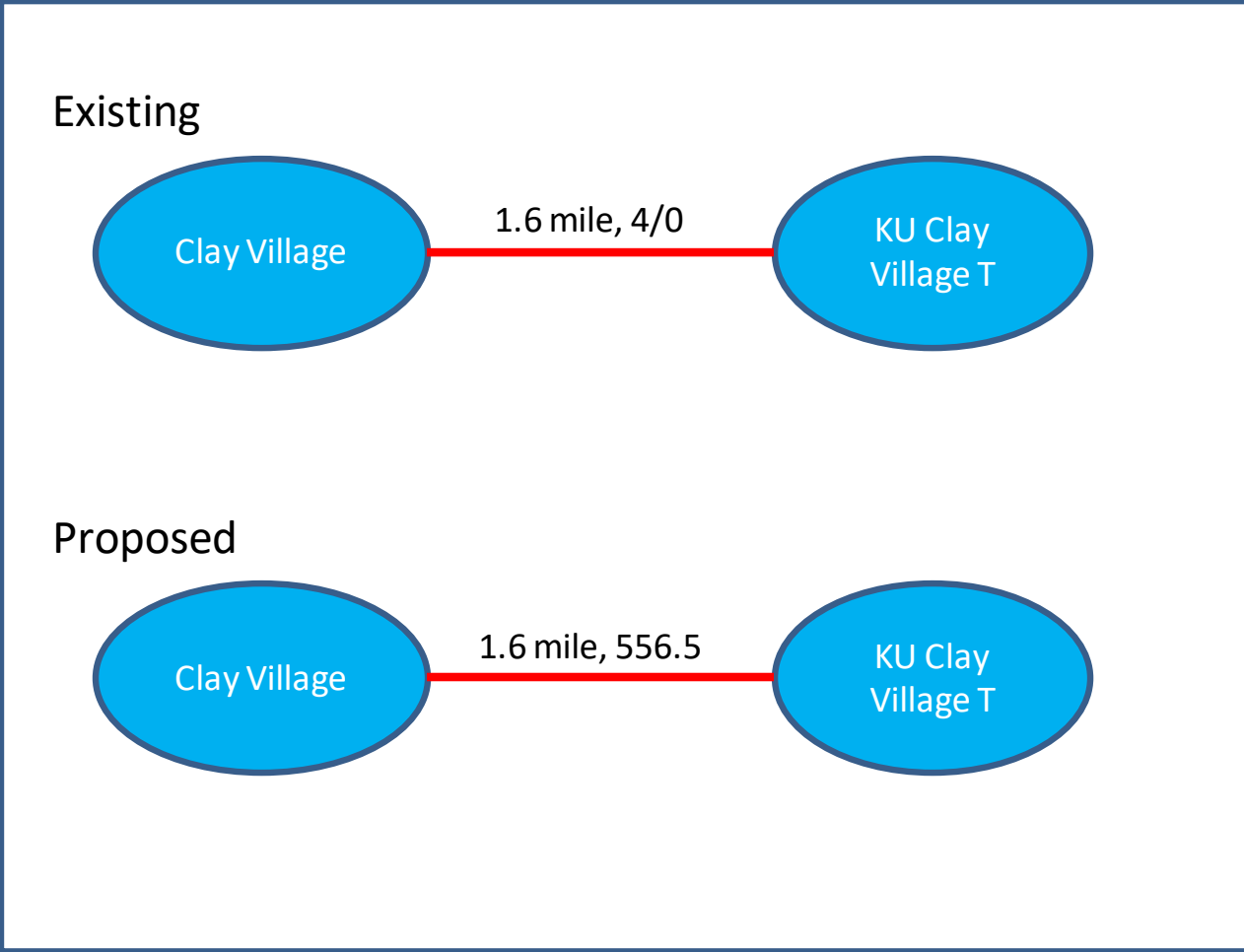
Alternatives Considered:

No feasible alternatives

Projected In-Service: 6/30/2025

Project Status: Engineering

Model: N/A



EKPC Transmission Zone M-3 Process Headquarters - Murphysville 69 KV

Need Number: EKPC-2021-013

Process Stage: Solutions Meeting – May 21, 2021

Previously Presented:

Needs Meeting 4/16/2021

Supplemental Project Driver:

Equipment Material Condition, Performance and Risk

Specific Assumption Reference:

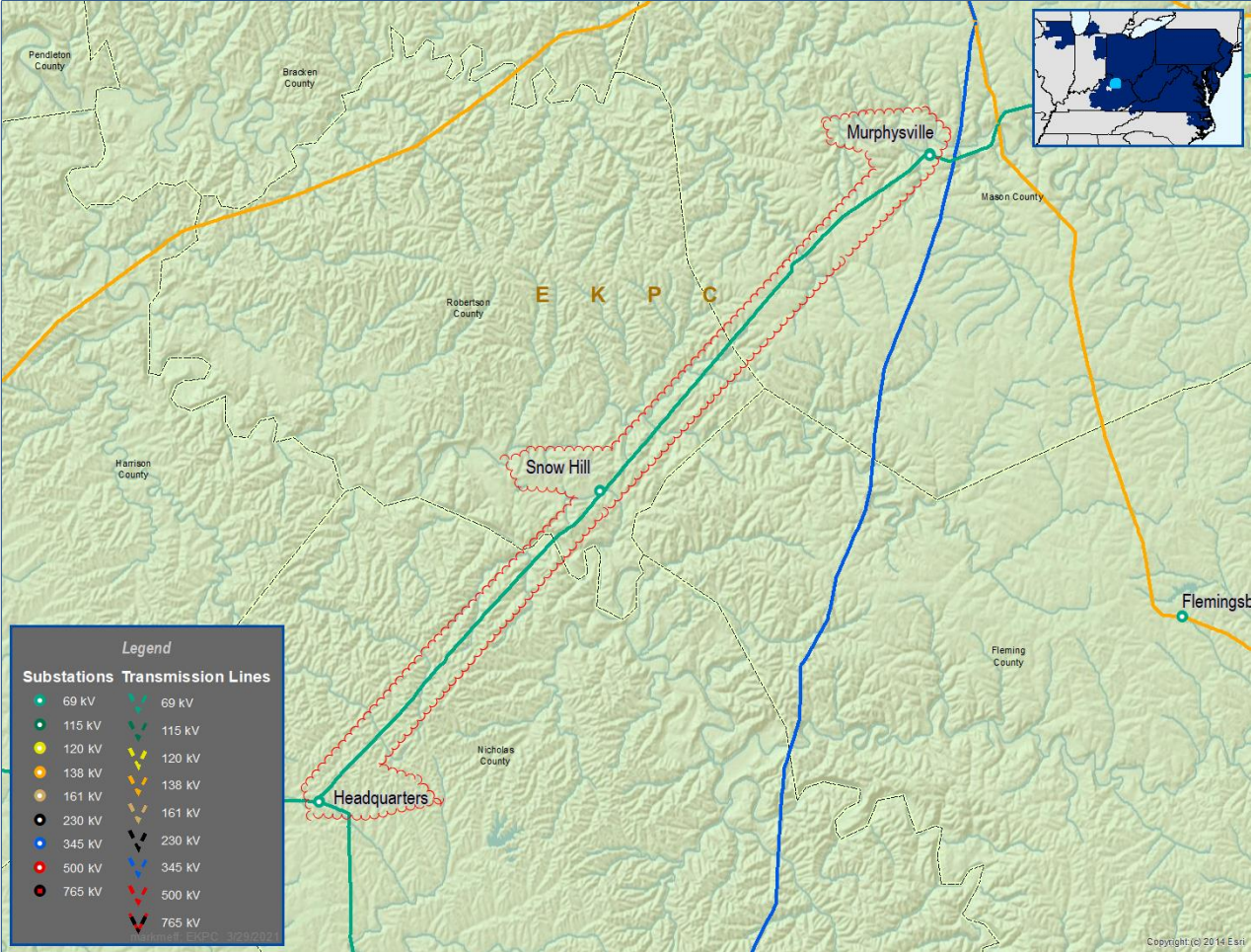
EKPC Assumptions Presentation Slide 12

Problem Statement:

The 19.9 mile, Headquarters-Murphysville 69 KV transmission line is 66 years old.

This line has condition issues such as conductor steel core and static wire deterioration, 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.

Model: N/A



EKPC Transmission Zone M-3 Process Headquarters - Murphysville 69 KV

Need Number: EKPC-2021-013

Process Stage: Solutions Meeting – May 21, 2021

Proposed Solution:

Rebuild the 19.9 mile, Headquarters-Murphysville 69kV line using 556.5 ACSR/TW conductor and steel poles & structures.

19.9 miles of H-Frame tangent structures will be evaluated on structure by structure basis

Distribution Cost: \$0M
Transmission Cost: \$13.74M

Ancillary Benefits:

None

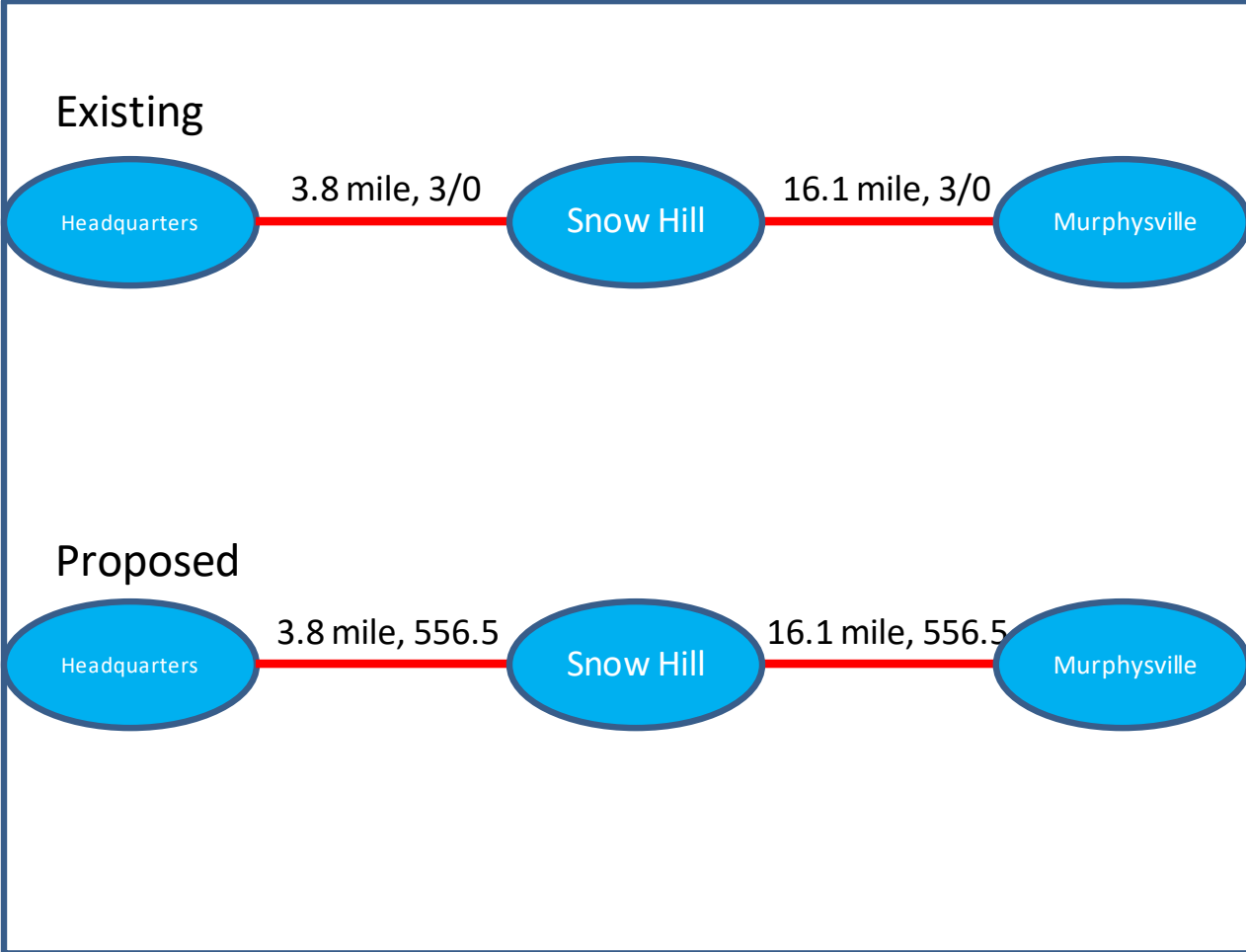
Alternatives Considered:

- Retire Headquarters-Murphysville and serve Snow Hill via a new tap to LG&E/KU.
- Rebuild Headquarters-Snow Hill and build a 69 KV breaker station at Snow Hill and connect to LG&E/KU.

Projected In-Service: 7/6/2027

Project Status: Engineering

Model: N/A



EKPC Transmission Zone M-3 Process Peyton Store – Liberty Junction 69kV

Need Number: EKPC-2021-014

Process Stage: Solutions Meeting – May 21, 2021

Previously Presented:

Needs Meeting 4/16/2021

Supplemental Project Driver:

Equipment Material Condition, Performance and Risk

Specific Assumption Reference:

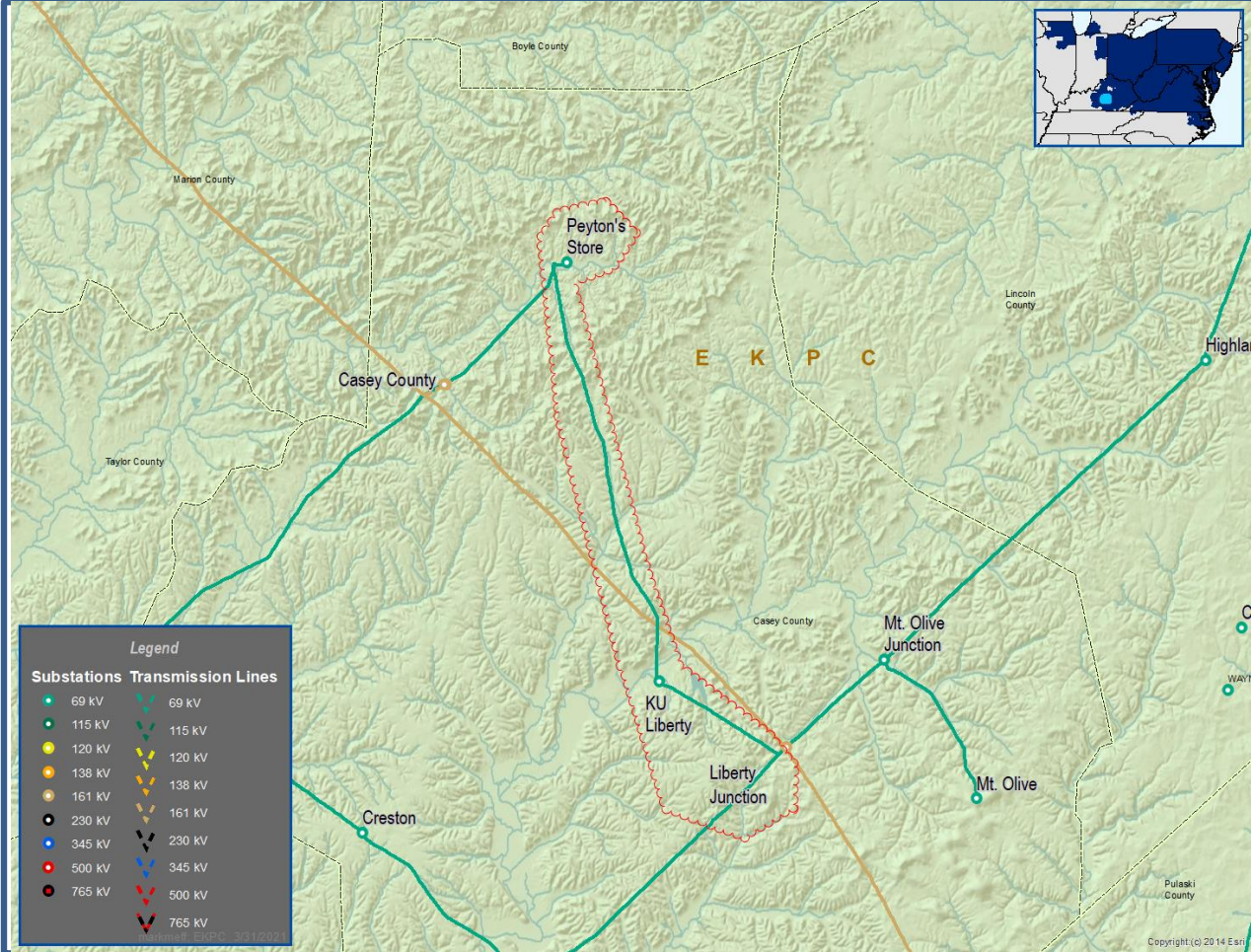
EKPC Assumptions Presentation Slide 12

Problem Statement:

The 14.2 mile, Peyton Store – Liberty Junction 69 KV transmission line is 67 years old.

Testing from the LineVue robot from Kinectrics Corporation deemed the phase and static wire condition as unacceptable. The testing identified instances of rusting, pitting, and broken strands. Based on this testing 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.

Model: N/A



EKPC Transmission Zone M-3 Process Peyton Store – Liberty Junction 69kV

Need Number: EKPC-2021-014

Process Stage: Solutions Meeting – May 21, 2021

Proposed Solution:

Rebuild the 14.2 mile, Peyton Store-Liberty Jct 69kV line using 556.5 ACSR/TW conductor and steel poles & structures.

2.42 miles of single structures will be replaced.
11.78 miles of H-Frame tangent structures will be evaluated on structure by structure basis

Distribution Cost: \$0M
Transmission Cost: \$9.6M

Ancillary Benefits:

None

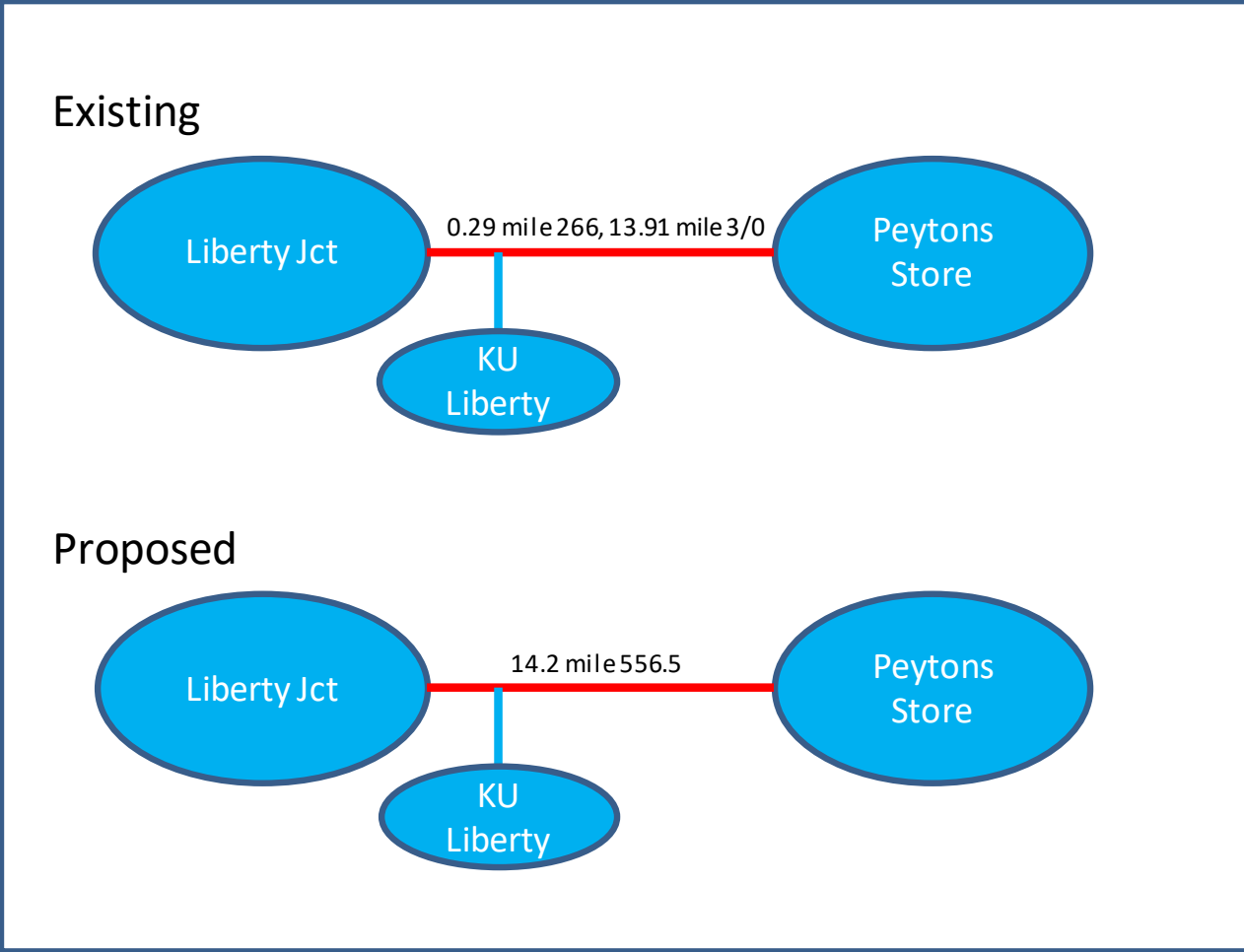
Alternatives Considered:

- Rebuild Liberty Jct-KU Liberty with a new Casey Co-Peyton Store line and retire Peyton Store-KU Liberty
- Build new Peyton Store-Shelby and operate Shelby-Shelby KU as normally open. Rebuild Liberty Jct-KU Liberty and retire Peyton Store-KU Liberty

Projected In-Service: 10/26/2026

Project Status: Engineering

Model: N/A



EKPC Transmission Zone M-3 Process Maytown Tap– Hot Mix Road Tap 69kV

Need Number: EKPC-2021-015

Process Stage: Solutions Meeting – May 21, 2021

Previously Presented:

Needs Meeting 4/16/2021

Supplemental Project Driver:

Equipment Material Condition, Performance and Risk

Specific Assumption Reference:

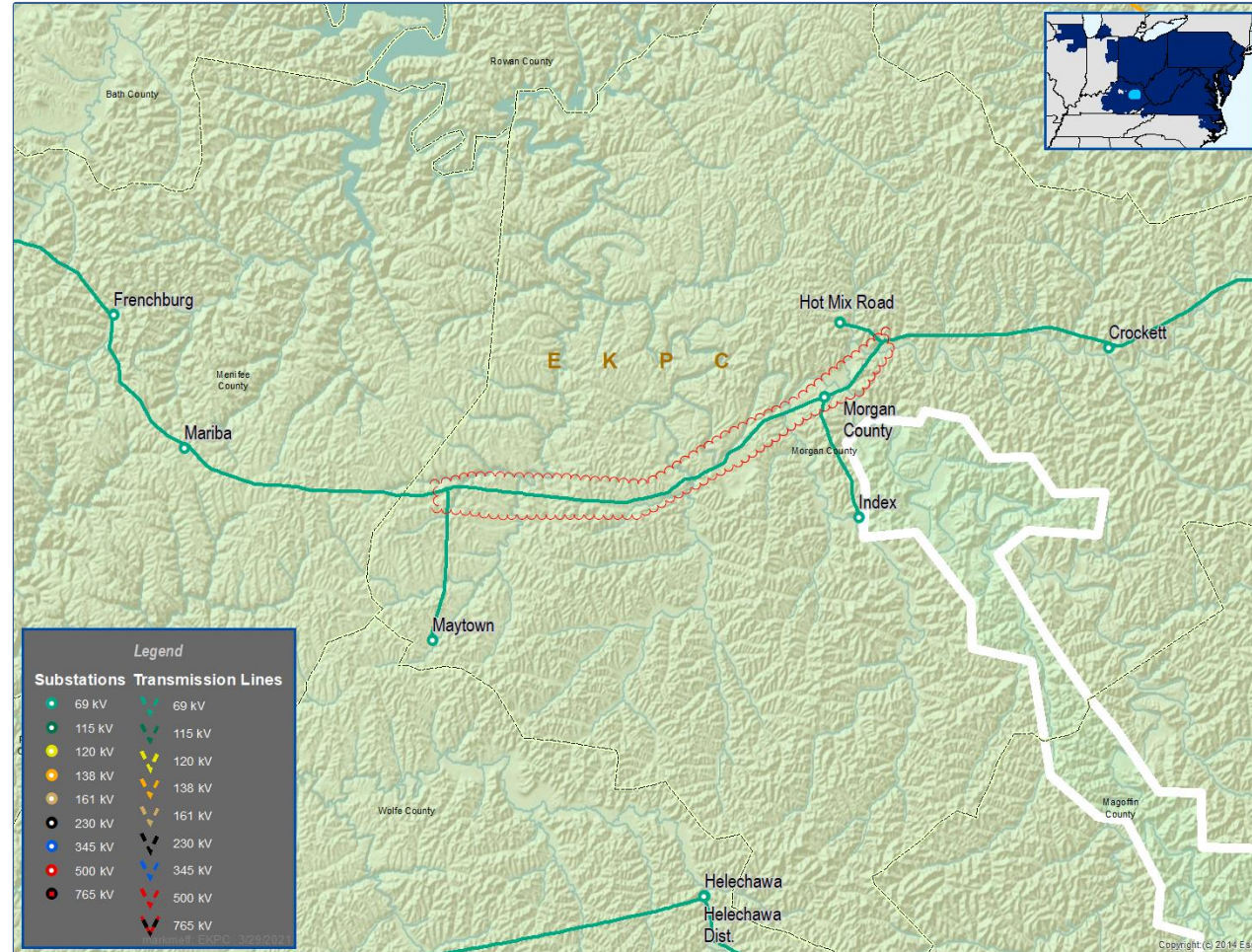
EKPC Assumptions Presentation Slide 12

Problem Statement:

The 12.3 mile, Maytown Tap-Hot Mix Road Tap 69 KV transmission line is 62 years old.

Testing from the LineVue robot from Kinectrics Corporation deemed the phase and static wire condition as unacceptable. The testing identified instances of rusting, pitting, and broken strands. Based on this testing 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.

Model: N/A



EKPC Transmission Zone M-3 Process Maytown Tap– Hot Mix Road Tap 69kV

Need Number: EKPC-2021-015

Process Stage: Solutions Meeting – May 21, 2021

Proposed Solution:

Rebuild the 12.3 mile, Maytown Tap-Hot Mix Road Tap 69kV line using 556.5 ACSR/TW conductor and steel poles & structures.

12.3 miles of H-Frame tangent structures will be evaluated on structure by structure basis

Distribution Cost: \$0M
Transmission Cost: \$8.78M

Ancillary Benefits:

None

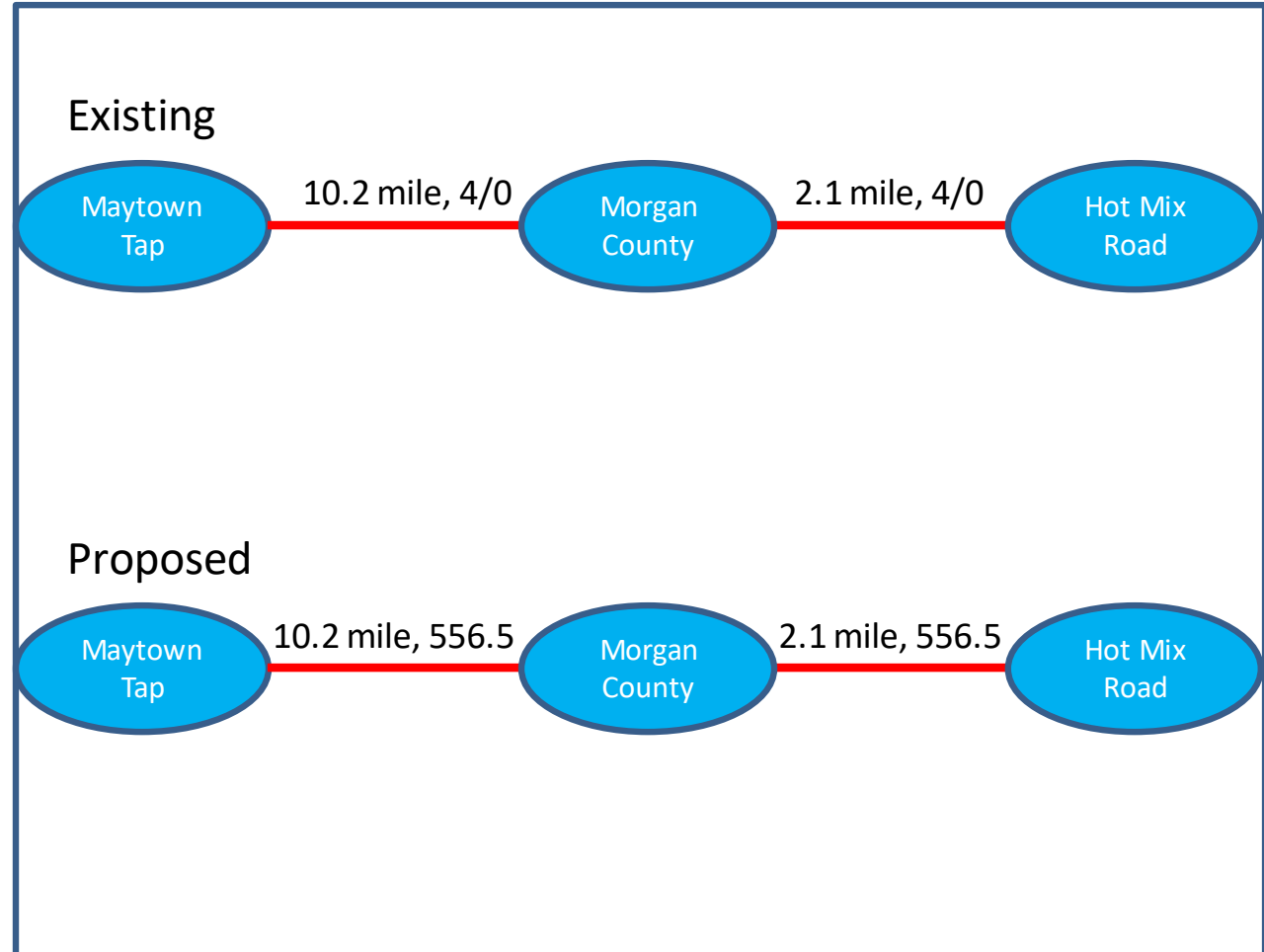
Alternatives Considered:

No feasible alternatives

Projected In-Service: 12/20/2028

Project Status: Engineering

Model: N/A



EKPC Transmission Zone M-3 Process KU Carrollton – Bedford 69kV

Need Number: EKPC-2021-016

Process Stage: Solutions Meeting – May 21, 2021

Previously Presented:

Needs Meeting 4/16/2021

Supplemental Project Driver:

Equipment Material Condition, Performance and Risk

Specific Assumption Reference:

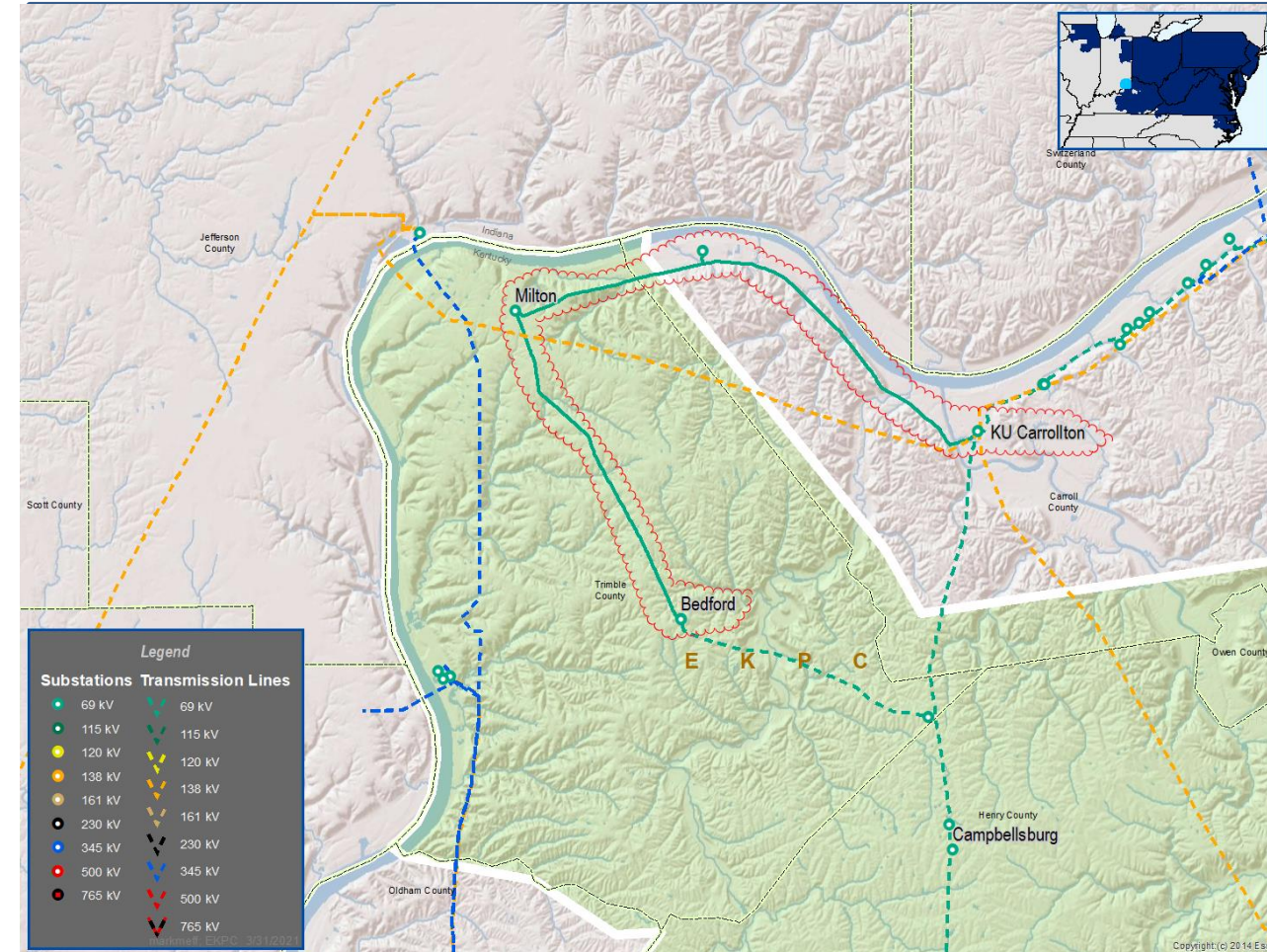
EKPC Assumptions Presentation Slide 12

Problem Statement:

The 22.09 mile, KU Carrollton - Bedford transmission line is 61 to 66 years old.

This line section has continued to show up on EKPC's list of Worst Performing Areas for several years, and it is currently the #5 worst performing line. Testing from the LineVue robot from Kinectrics Corporation deemed the phase and static wire condition as poor to marginal. The testing identified instances of rusting, pitting, and broken strands. Based on this testing information, the EKPC Reliability team has concluded that this line is near end of life and should be addressed due to the condition assessment

Model: N/A



EKPC Transmission Zone M-3 Process

KU Carrollton – Bedford 69kV

Need Number: EKPC-2021-016

Process Stage: Solutions Meeting – May 21, 2021

Proposed Solution:

Rebuild the 22.1 mile, KU Carrollton-Bedford 69kV line using 556.5 ACSR/TW conductor and steel poles & structures.

All of the single structures will be replaced. The H-Frame tangent structures will be evaluated on structure by structure basis.

Distribution Cost: \$0M

Transmission Cost: \$12.3M

Ancillary Benefits:

None

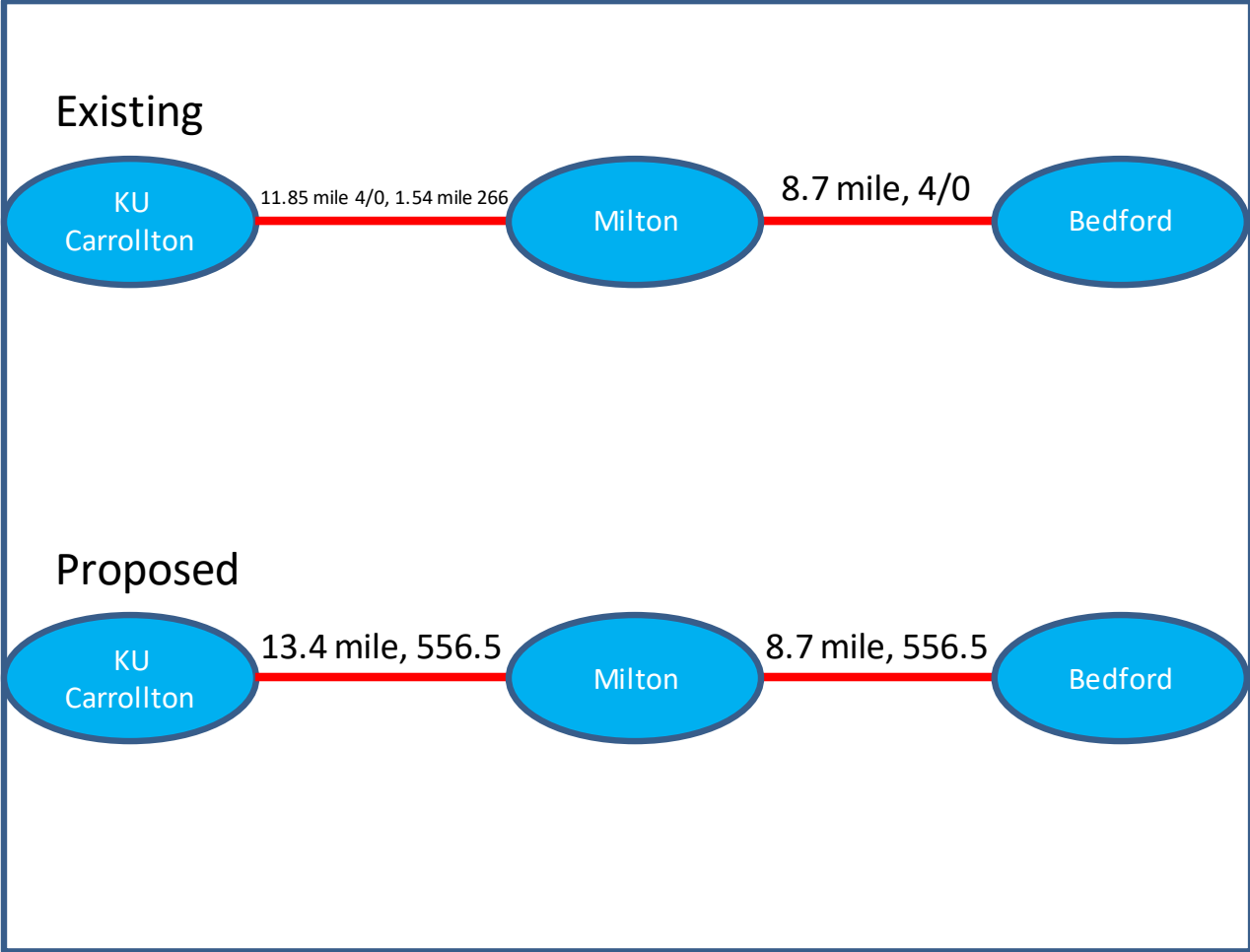
Alternatives Considered:

No feasible alternatives

Projected In-Service: 3/11/2026

Project Status: Engineering

Model: N/A



EKPC Transmission Zone M-3 Process

South Fork distribution station

Need Number: EKPC-2021-017

Process Stage: Solutions Meeting – May 21, 2021

Previously Presented:

Needs Meeting 4/16/2021

Supplemental Project Driver:

Equipment Material Condition, Performance and Risk

Specific Assumption Reference:

EKPC Assumptions Presentation Slide 12

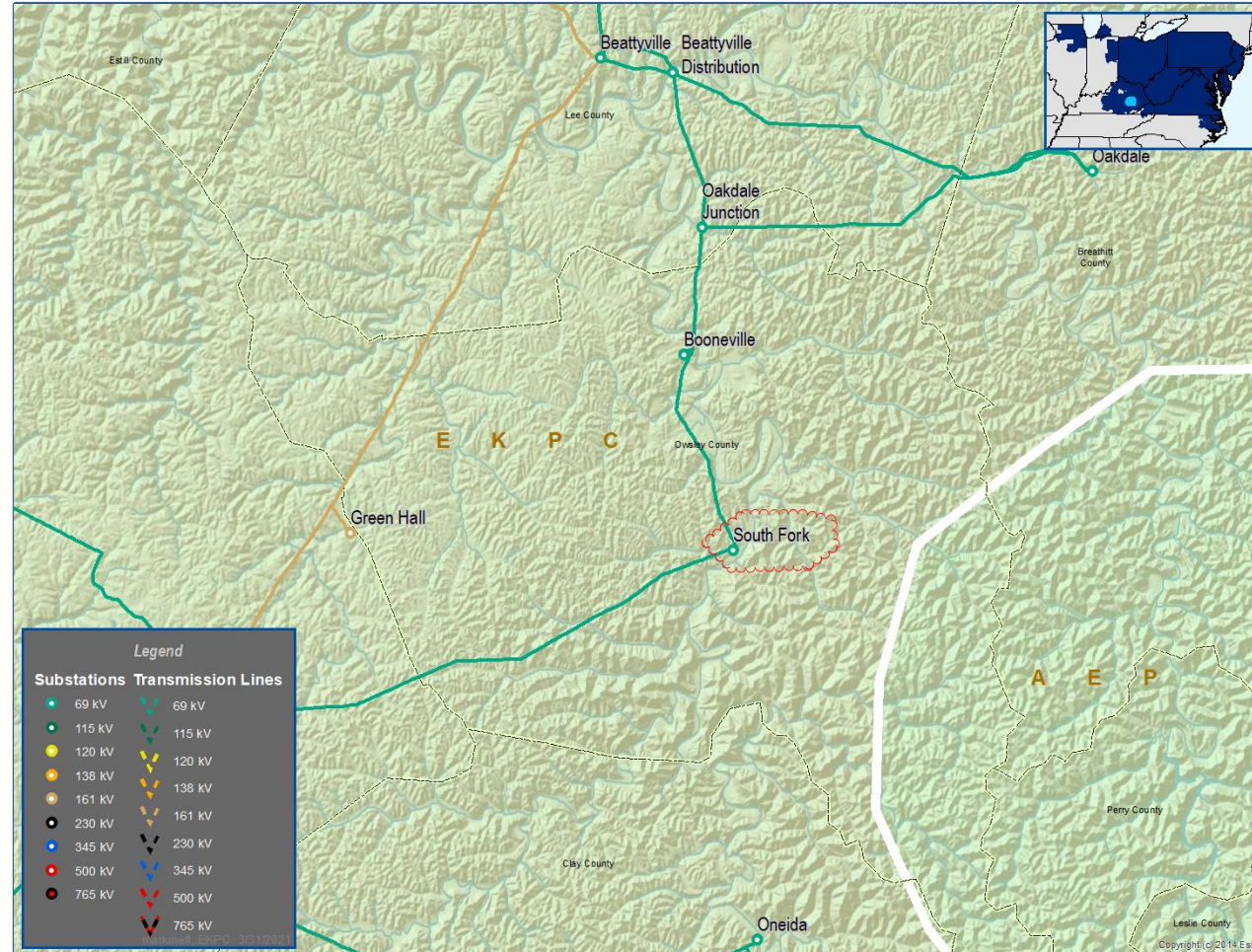
Problem Statement:

The South Fork Distribution Substation is 65 years old, and does not meet current EKPC design standards.

The station has the following issues:

- limited space with no access to equipment on two sides of the station.
- Cap-and-pin insulators, which are a safety and reliability concern.
- Does not have the EKPC standard metering bypass switching or low bay transfer schemes, which causes additional outage time and creates a heightened safety risk when taking equipment out of service for maintenance activities.
- Several foundations in the station are crumbling.
- The elevation change and drainage around the station has caused multiple wash outs of gravel from the station and driveway.
- The site entrance is very steep making it difficult to navigate.

Model: N/A



EKPC Transmission Zone M-3 Process South Fork distribution station

Need Number: EKPC-2021-017

Process Stage: Solutions Meeting – May 21, 2021

Proposed Solution:

Build a new White Oak 69-25 KV, 12/16/20 MVA distribution substation and 0.1 mile 69 kV tap line using 266.8 ACSR. Install MOAB switches at the new tap point. Retire the existing South Fork substation.

Distribution Cost: \$2.92M

Transmission Cost: \$0.10M

Ancillary Benefits:

None

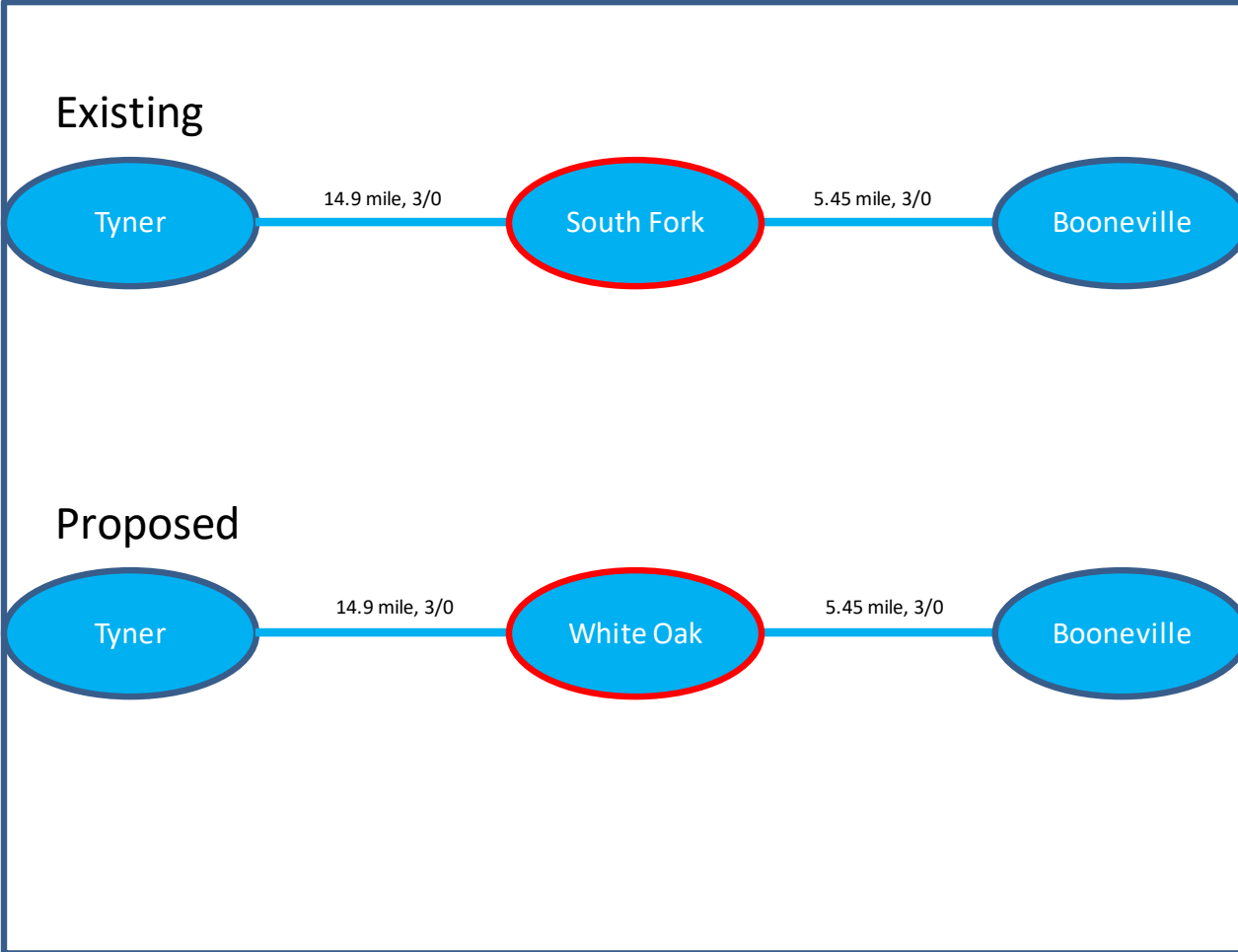
Alternatives Considered:

No feasible alternatives

Projected In-Service: 12/31/2023

Project Status: Engineering

Model: N/A



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

5/11/2021 – V1 – Original version posted to pjm.com