Submission of Supplemental Projects for Inclusion in the Local Plan

EKPC Transmission Zone M-3 Process
Boone-Bullittsville 69 KV

Need Number: EKPC-2021-001

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan – June 16, 2021

Previously Presented:
Needs Meeting 2/17/2021
Solution Meeting 3/19/2021

Supplemental Project Driver:

Equipment Material Condition, Performance and Risk

Other

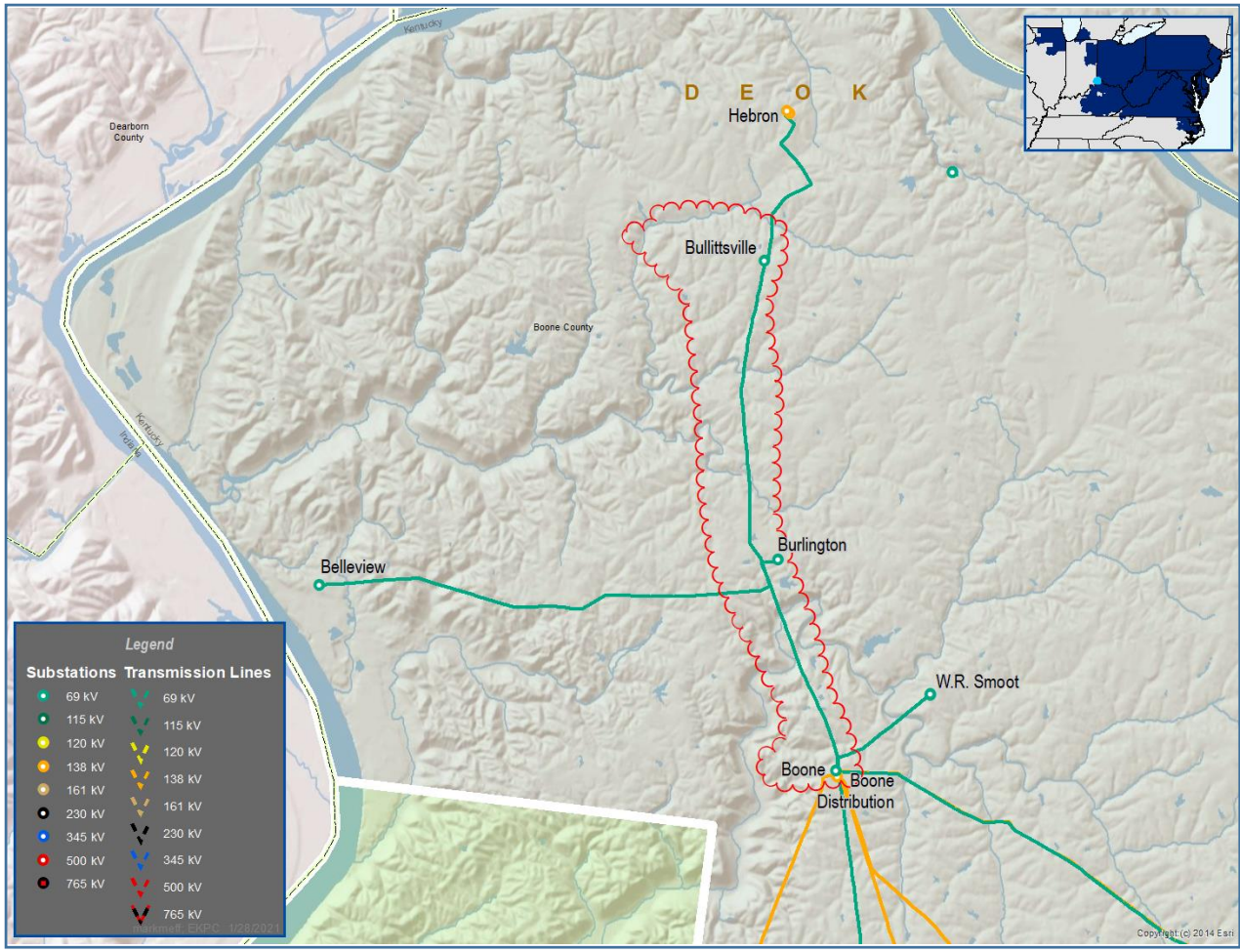
Specific Assumption Reference:
EKPC Assumptions Presentation Slide 12 & 16

Problem Statement:

The 6.4 mile, Boone-Bullittsville 69 KV transmission line is 60 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 should be addressed due to the condition assessment.

Also, the current configuration of the transmission lines routed into the Boone County transmission station has created lines crossing at undesirable angles. This produces safety issues and possible longer outage times during maintenance activities.

Model: N/A



EKPC Transmission Zone M-3 Process
Boone-Bullittsville 69 KV

Need Number: EKPC-2021-001

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan – June 16, 2021

Selected Solution:

Rebuild the 6.4 mile, Boone-Bullittsville 69 KV transmission line using 556.5 ACSR/TW conductor. Build a 69 KV box for a 69 KV breaker addition at the Boone switching station. Boone distribution will be served from this new breaker.

5.25 mile of single structures will be replaced.

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

Distribution Cost: $0.65M
Transmission Cost: $4.03M

Ancillary Benefits:

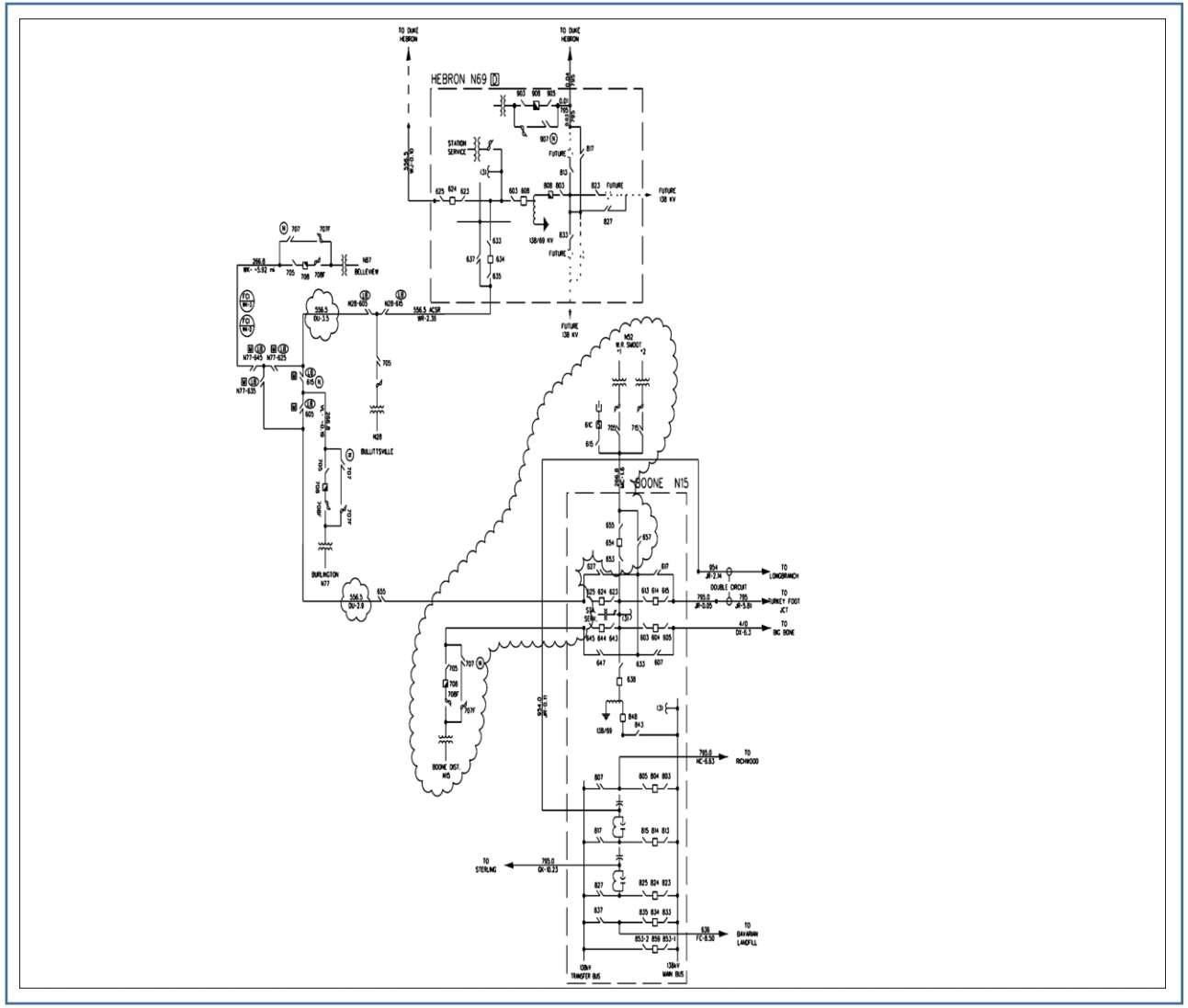
- Increased line capacity and reliability
- Reduces the number of line taps on the Boone – Hebron 69 KV circuit.

Alternatives Considered:
No feasible alternatives

Projected In-Service: 6/1/2022

Supplemental Project ID: S2474

Project Status: Engineering



EKPC Transmission Zone M-3 Process
Hodgenville - Magnolia 69kV

Need Number: EKPC-2021-002

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan – June 16, 2021

Previously Presented:

Needs Meeting 2/17/2021

Solution Meeting 3/19/2021

Supplemental Project Driver:

Equipment Material Condition, Performance and Risk

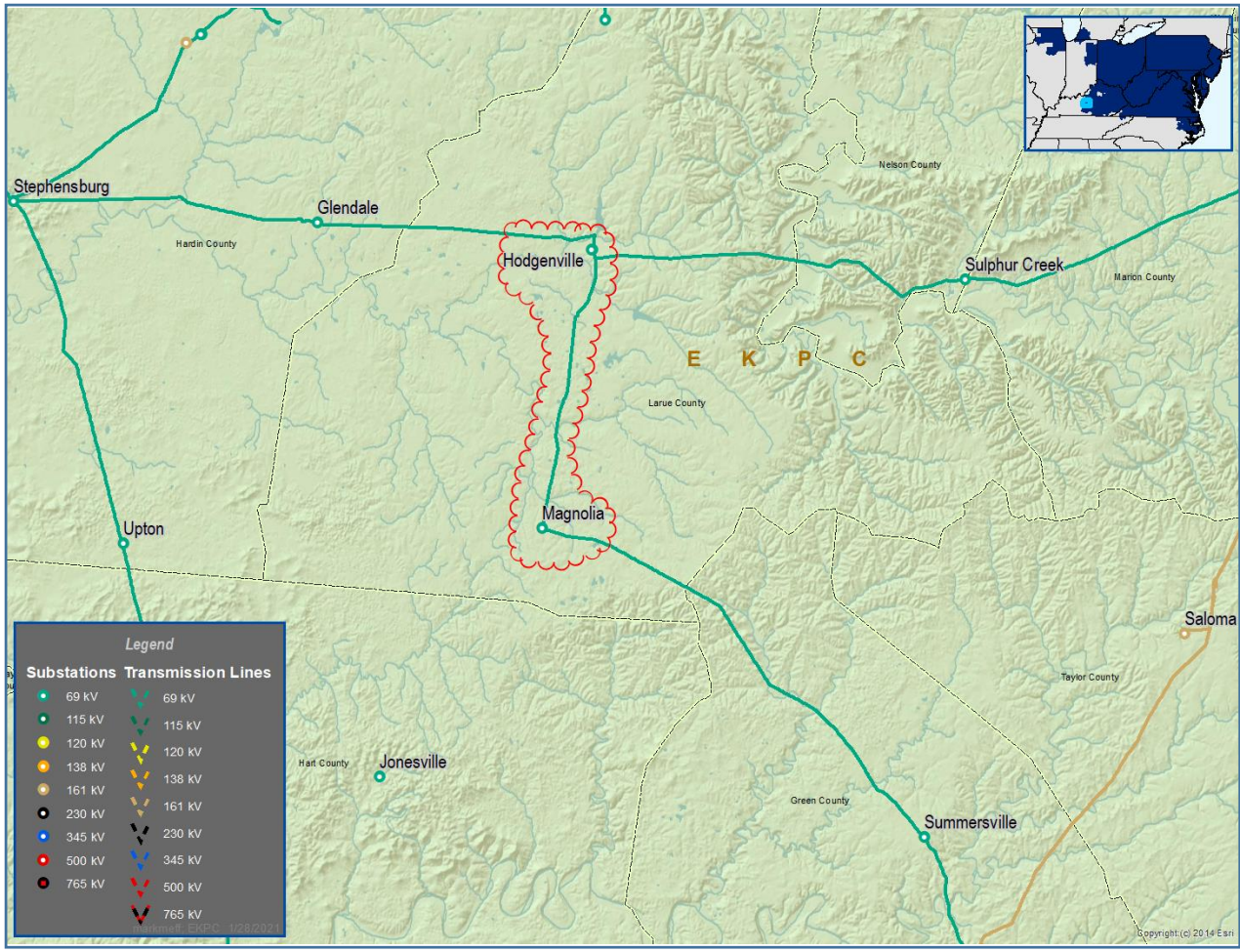
Specific Assumption Reference:

EKPC Assumptions Presentation Slide 12

Problem Statement:

The 8.49 mile, Hodgenville-Magnolia 69 KV transmission line is 64 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 should be addressed due to the condition assessment.

Model: N/A



EKPC Transmission Zone M-3 Process
Hodgenville - Magnolia 69kV

Need Number: EKPC-2021-002

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan – June 16, 2021

Selected Solution:
Rebuild the 8.49 mile, Hodgenville-Magnolia 69 KV transmission line using 556.5 ACSR/TW conductor.

8.49 mile of single structures will be replaced.

Transmission Cost: $4.75M

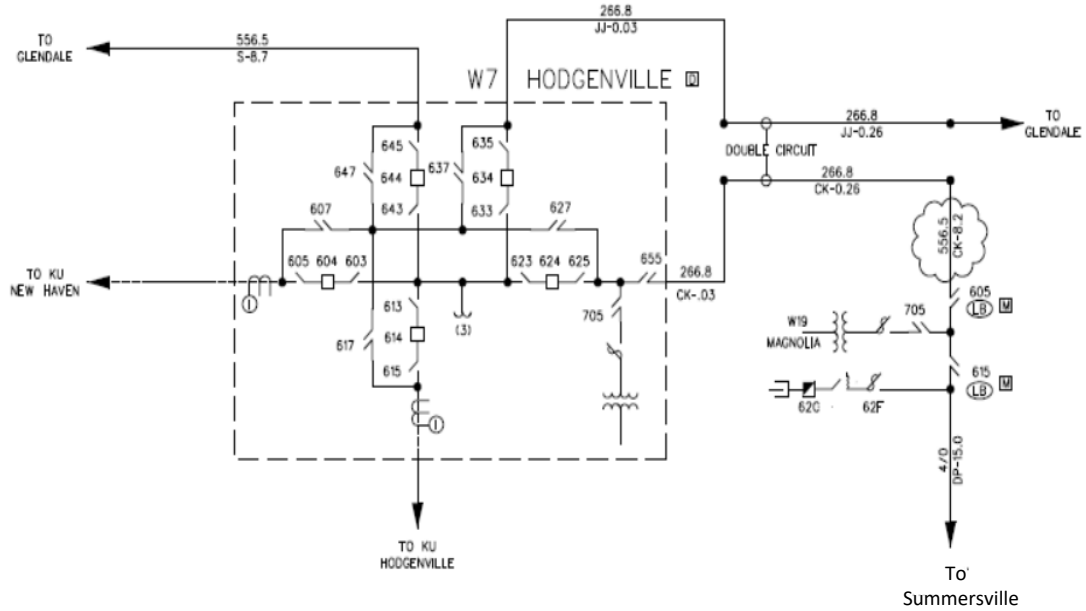
Ancillary Benefits:
Increased line capacity and reliability

Alternatives Considered:
No feasible alternatives

Projected In-Service: 6/30/2022

Supplemental Project ID: S2475

Project Status: Engineering



EKPC Transmission Zone M-3 Process
Summersville - Magnolia 69kV

Need Number: EKPC-2021-003

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan – June 16, 2021

Previously Presented:
Needs Meeting 2/17/2021
Solution Meeting 3/19/2021

Supplemental Project Driver:

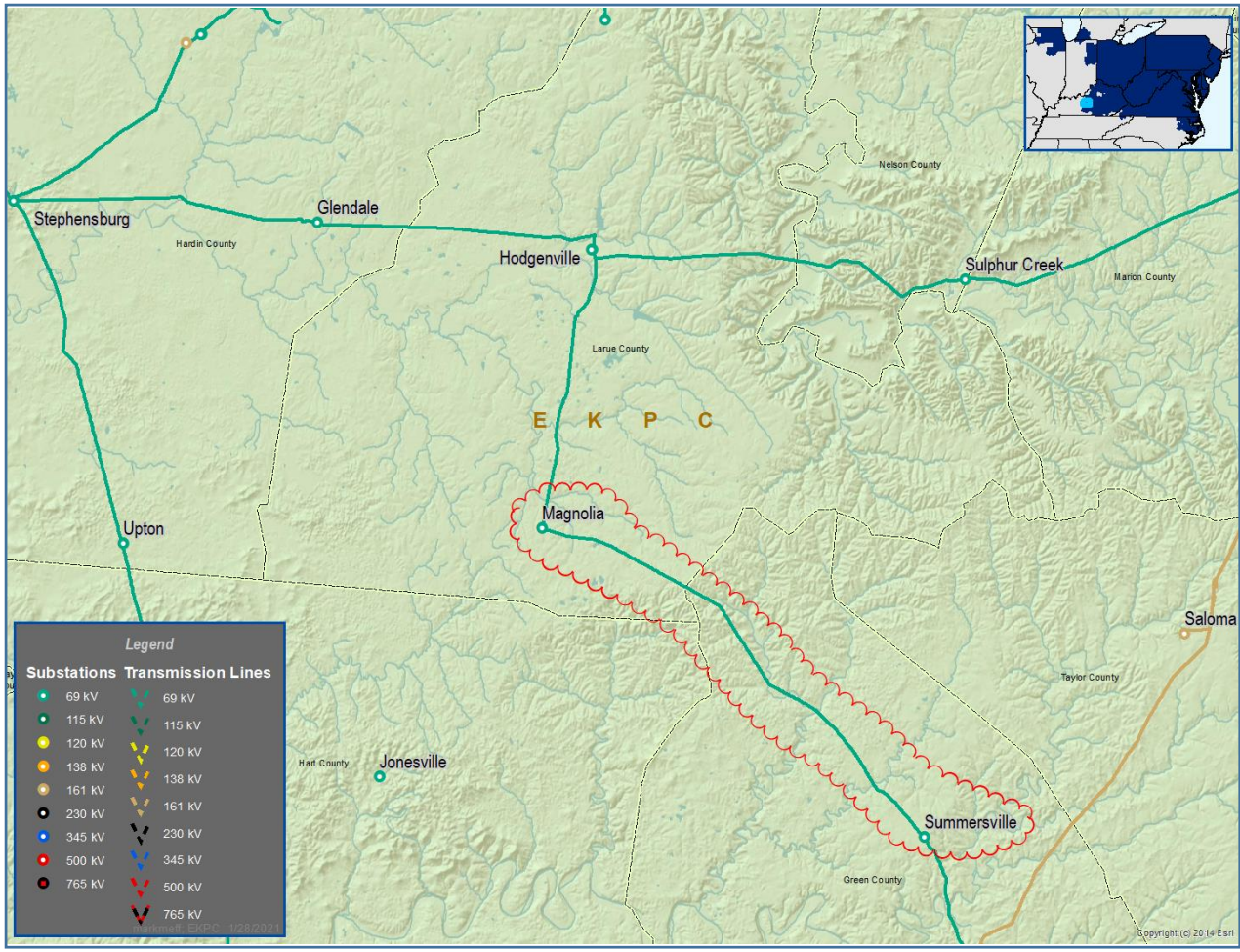
Equipment Material Condition, Performance and Risk

Specific Assumption Reference:
EKPC Assumptions Presentation Slide 12

Problem Statement:

The 15 mile, Summersville-Magnolia 69 KV transmission line is 59 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 should be addressed due to the condition assessment.

Model: N/A



EKPC Transmission Zone M-3 Process
Summersville - Magnolia 69kV

Need Number: EKPC-2021-003

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan – June 16, 2021

Selected Solution:

Rebuild the 15 mile, Summersville-Magnolia 69 KV transmission line using 556.5 ACSR/TW conductor.

10 mile of single structures will be replaced.

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

Transmission Cost: $8.16M

Ancillary Benefits:

Increased line capacity and reliability

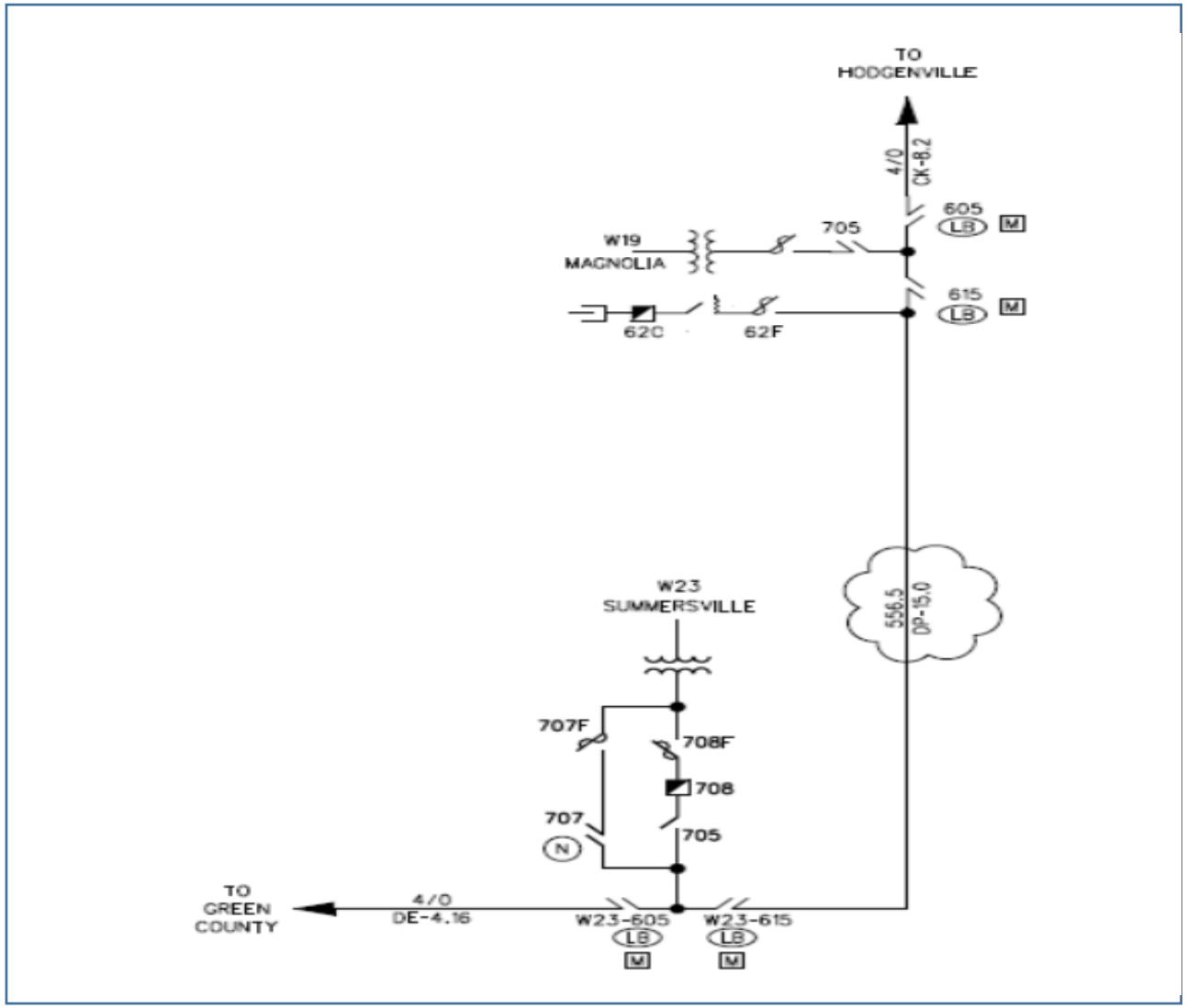
Alternatives Considered:

No feasible alternatives

Projected In-Service: 12/31/2023

Supplemental Project ID: S2476

Project Status: Engineering



EKPC Transmission Zone M-3 Process
Millers Creek

Need Number: EKPC-2021-004

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan – June 16, 2021

Previously Presented:
Needs Meeting 2/17/2021
Solution Meeting 3/19/2021

Supplemental Project Driver:

Equipment Material Condition, Performance and Risk

Customer Service

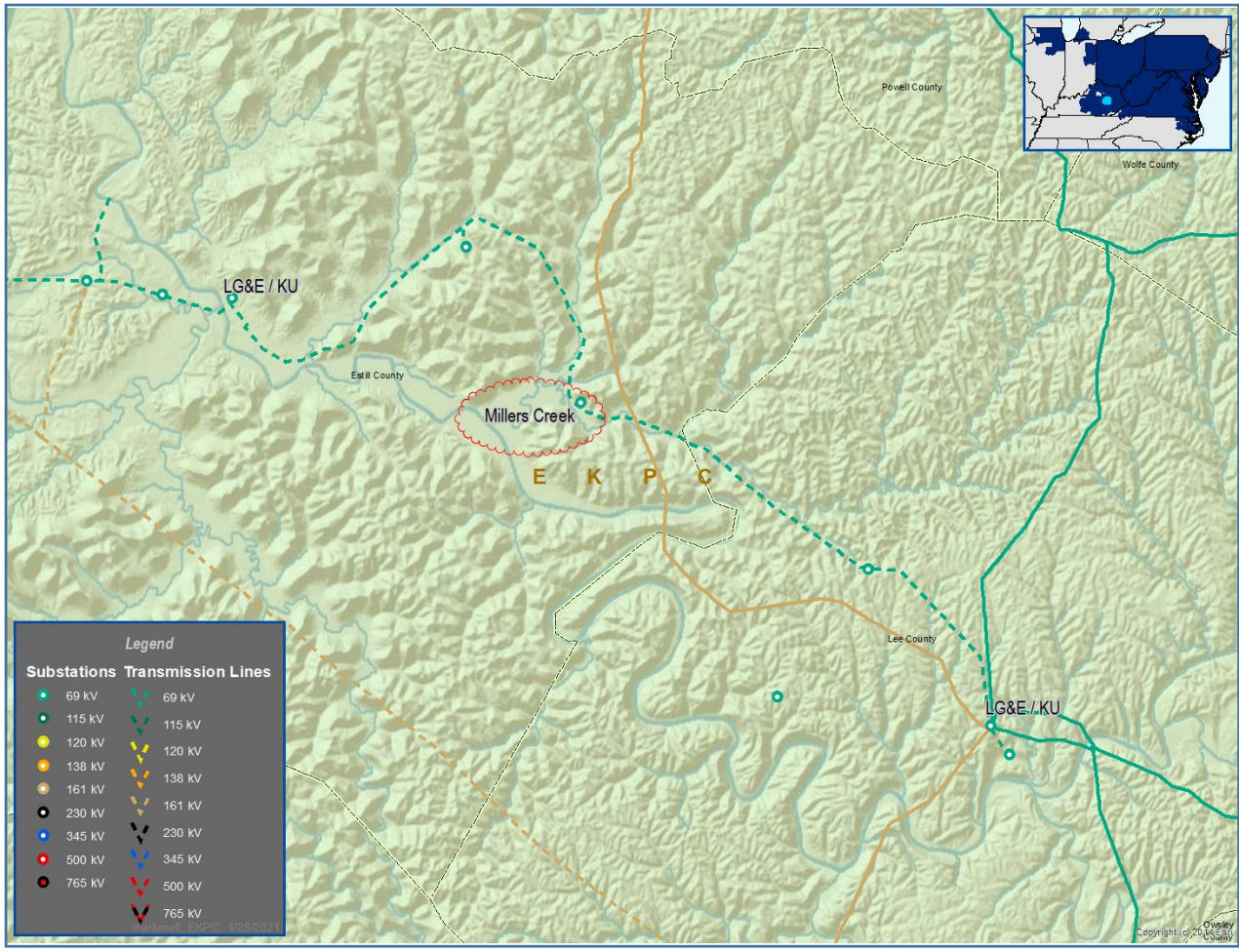
Specific Assumption Reference:
EKPC Assumptions Presentation Slide 12 & 14

Problem Statement:

The Millers Creek substation was built in 1965. It has continued to show up on EKPC's list of Worst Performing areas for several years, and it is currently the #2 worst performing location. It is served on the LG&E/KU 69 KV transmission line between Beattyville and West Irvine. This substation had 12 transmission related outages for the 2015-2019 period.

The substation has multiple issues related to poor site access, degraded condition, safety, and obsolete design. Degradation issues include failing fence and erosion around the perimeter of the substation. There is an atypical metering structure with no bypass capability making maintenance more difficult. Regulators are under the low bay structure and are difficult to remove in the event of a failure. Regulator bypass switches and energized feeders have spacing and clearance issues and there is no bypass bus.

Model: N/A



EKPC Transmission Zone M-3 Process
Millers Creek

Need Number: EKPC-2021-004

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan – June 16, 2021

Selected Solution:
Build a new Millers Creek 161-25 KV distribution substation and associated 0.16 mile 161 kV tap line to the EKPC Beattyville – Powell County 161 kV transmission line. A 3-way MOAB switch will be added at the tap point and the existing distribution substation will be retired.

Distribution Cost: $4.11M
Transmission Cost: $0

Ancillary Benefits:

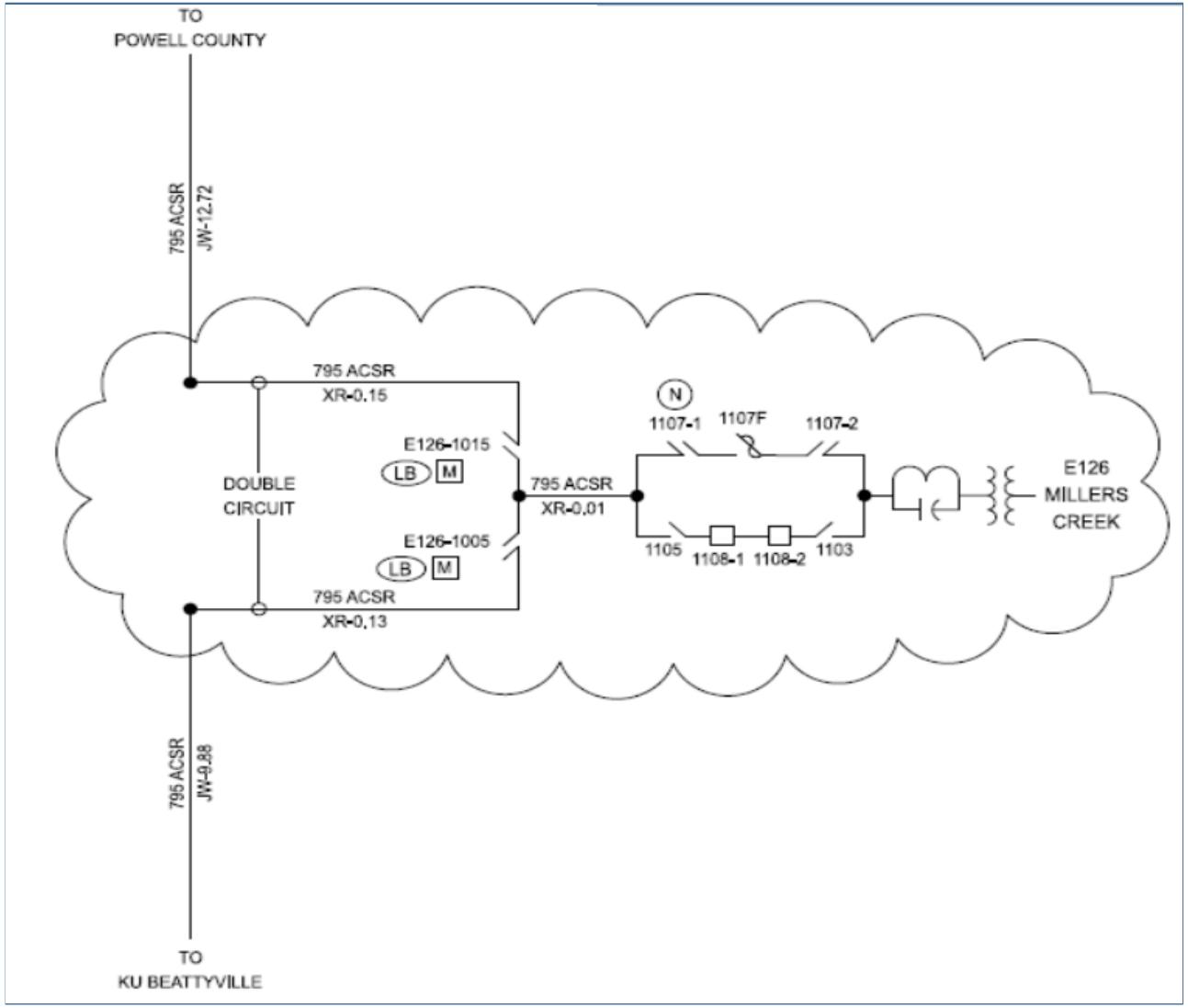
- Millers Creek load served from EKPC system
    - Outside entity is not involved in service restoration
- Savings in NITS

Alternatives Considered:
No feasible alternatives

Projected In-Service: 12/1/2021

Supplemental Project ID: S2477

Project Status: Engineering



EKPC Transmission Zone M-3 Process
East Bernstadt

Need Number: EKPC-2021-005

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan – June 16, 2021

Previously Presented:
Needs Meeting 2/17/2021
Solution Meeting 3/19/2021

Supplemental Project Driver:

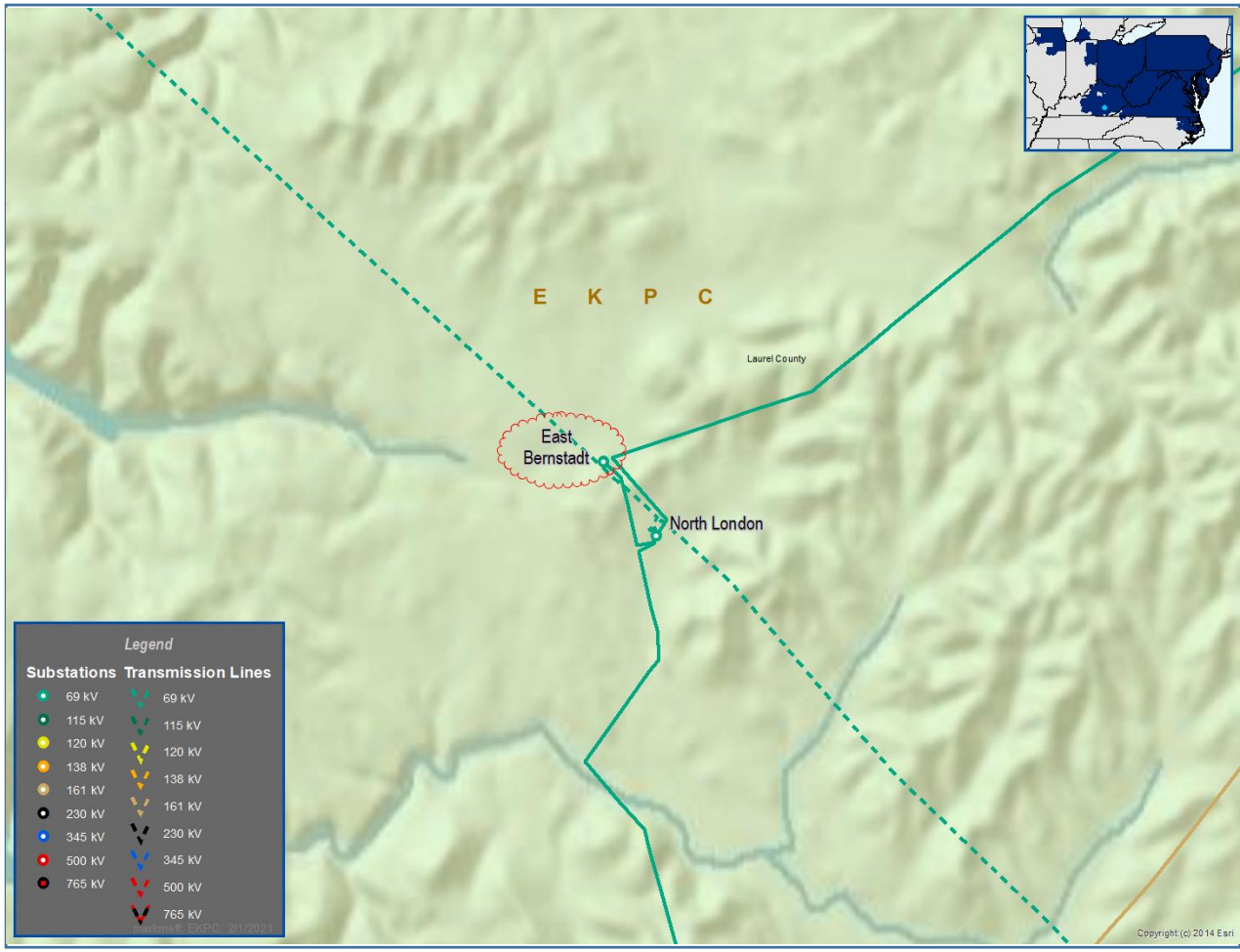
Equipment Material Condition, Performance and Risk

Specific Assumption Reference:
EKPC Assumptions Presentation Slide 12

Problem Statement:

Options are being evaluated to address aging condition issues of the East Bernstadt distribution substation. It has been determined that more space is needed to achieve EKPC's standard substation design requirements. EKPC's planning department has been asked to evaluate the ongoing need of the East Bernstadt 16.2 MVAR capacitor bank due to space limitations at the site.

Model: N/A



EKPC Transmission Zone M-3 Process
East Bernstadt

Need Number: EKPC-2021-005

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan – June 16, 2021

Selected Solution:

It has been determined that the East Bernstadt capacitor bank is no longer needed for voltage support in the area. This will enable the substation to be rebuilt on the existing property where the capacitor bank currently sits. The 16.2 MVAR capacitor bank will be removed during construction.

Transmission Cost: $0

Ancillary Benefits:

None

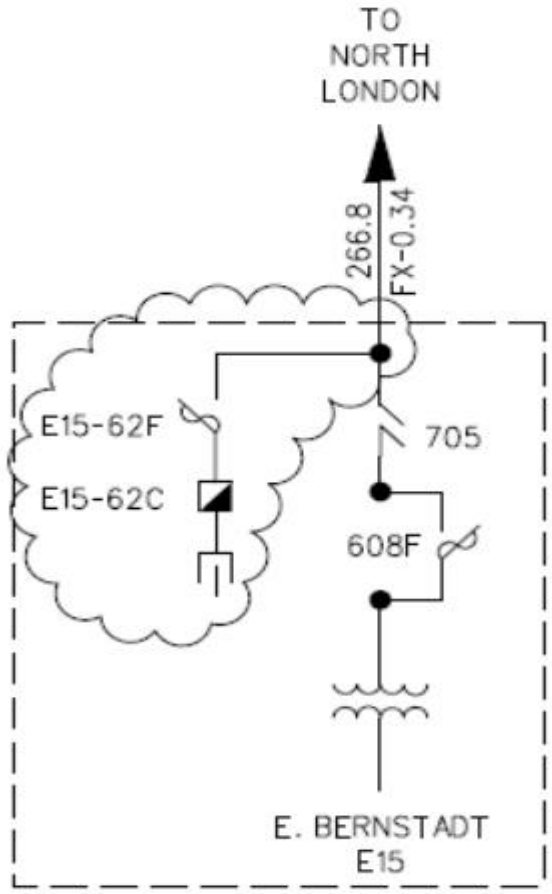
Alternatives Considered:

No feasible alternatives

Projected Retirement Date : 12/31/2022

Supplemental Project ID: S2478

Project Status: Engineering



EKPC Transmission Zone M-3 Process
Lees Lick

Need Number: EKPC-2021-006

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan – June 16, 2021

Previously Presented:

Needs Meeting 2/17/2021

Solution Meeting 3/19/2021

Supplemental Project Driver:

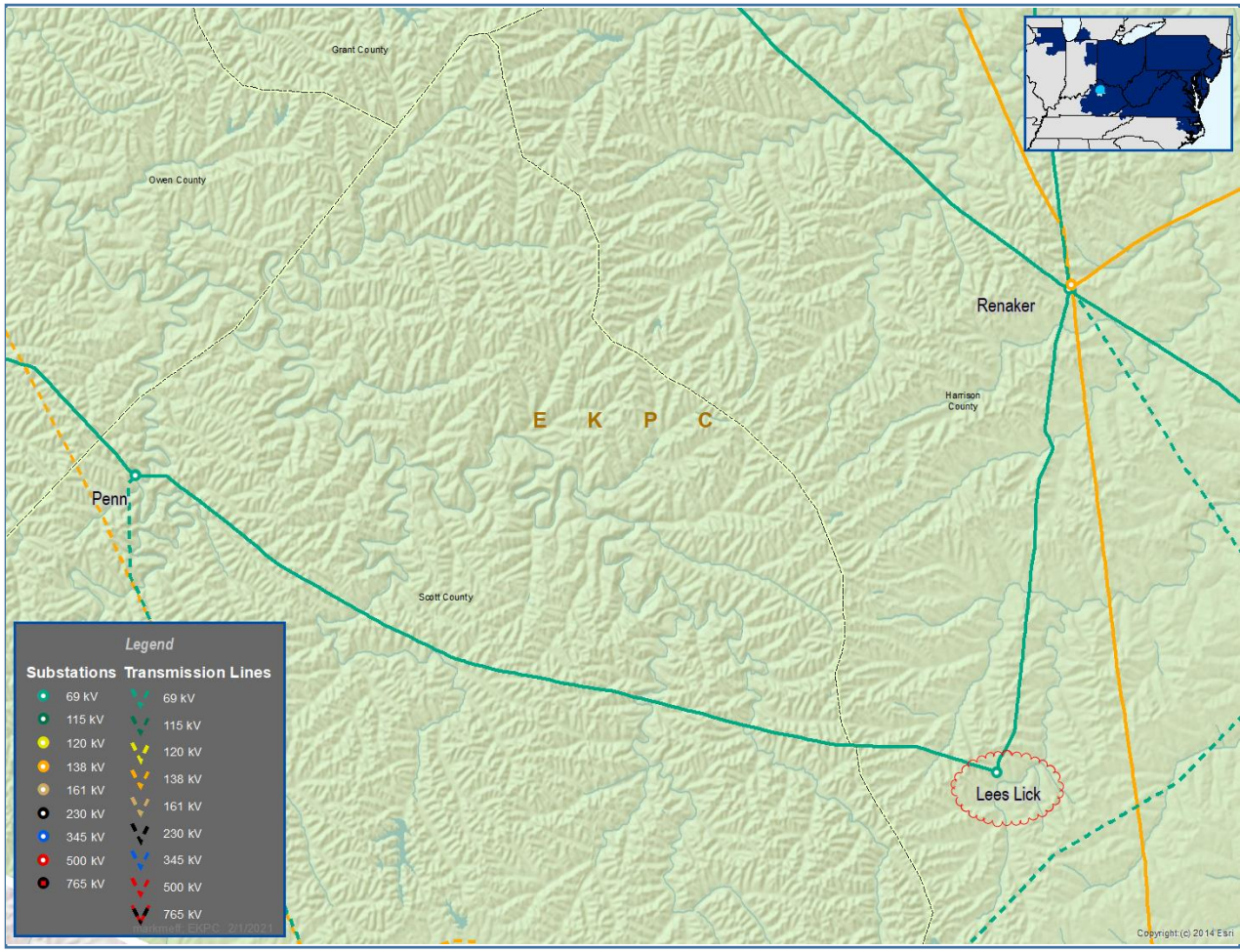
Equipment Material Condition, Performance and Risk

Specific Assumption Reference:

EKPC Assumptions Presentation Slide 12

Problem Statement:

Options are being evaluated to address aging condition issues of the Lees Lick distribution substation. It has been determined that more space is needed to achieve EKPC's standard substation design requirements. EKPC's planning department has been asked to evaluate the ongoing need of the Lees Lick 10.72 MVAR capacitor bank due to space limitations at the site.



Model: N/A

EKPC Transmission Zone M-3 Process
Lees Lick

Need Number: EKPC-2021-006

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan – June 16, 2021

Selected Solution:

It has been determined that the Lees Lick capacitor bank is no longer needed for voltage support in the area. This will enable the substation to be rebuilt on the existing property where the capacitor bank currently sits. The 10.72 MVAR capacitor bank will be removed during construction.

Transmission Cost: $0

Ancillary Benefits:

None

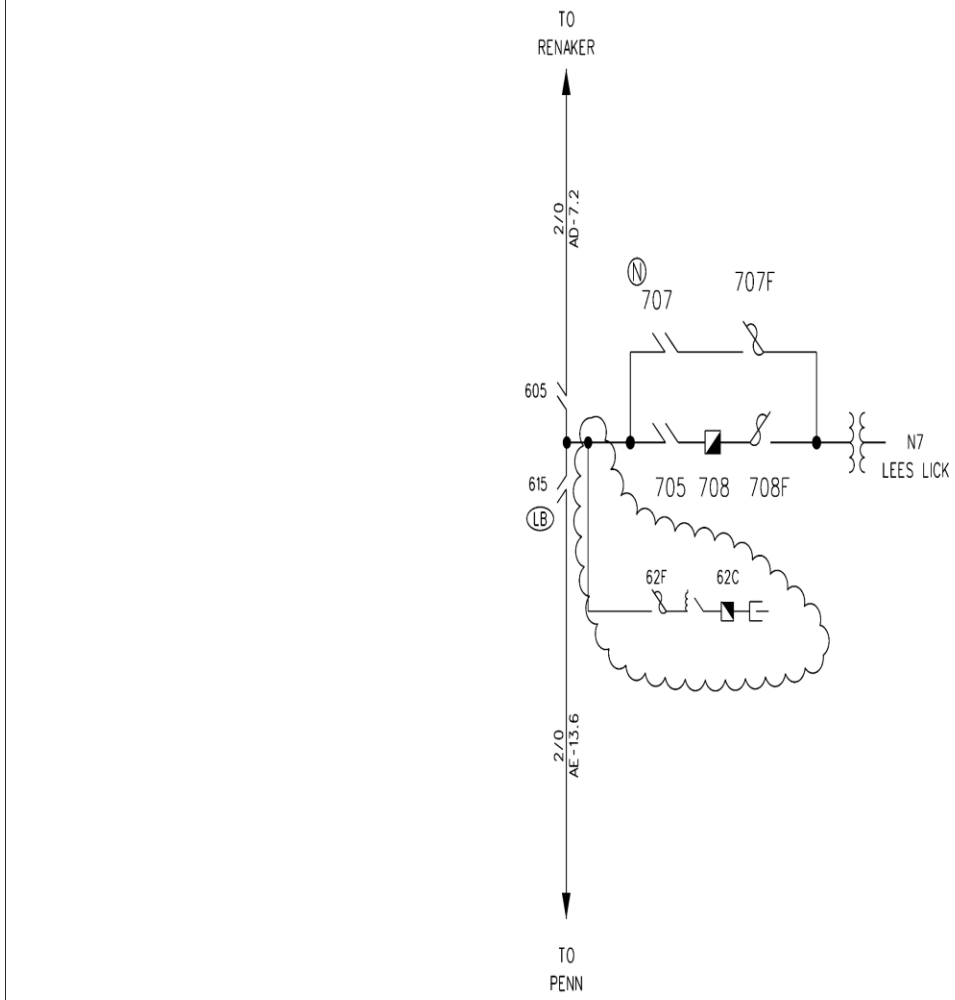
Alternatives Considered:

No feasible alternatives

Projected Retirement Date : 12/31/2022

Supplemental Project ID: S2479

Project Status: Engineering



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

Need Number: EKPC-2021-007

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan – June 16, 2021

Previously Presented:
Needs Meeting 3/19/2021
Solution Meeting 4/16/2021

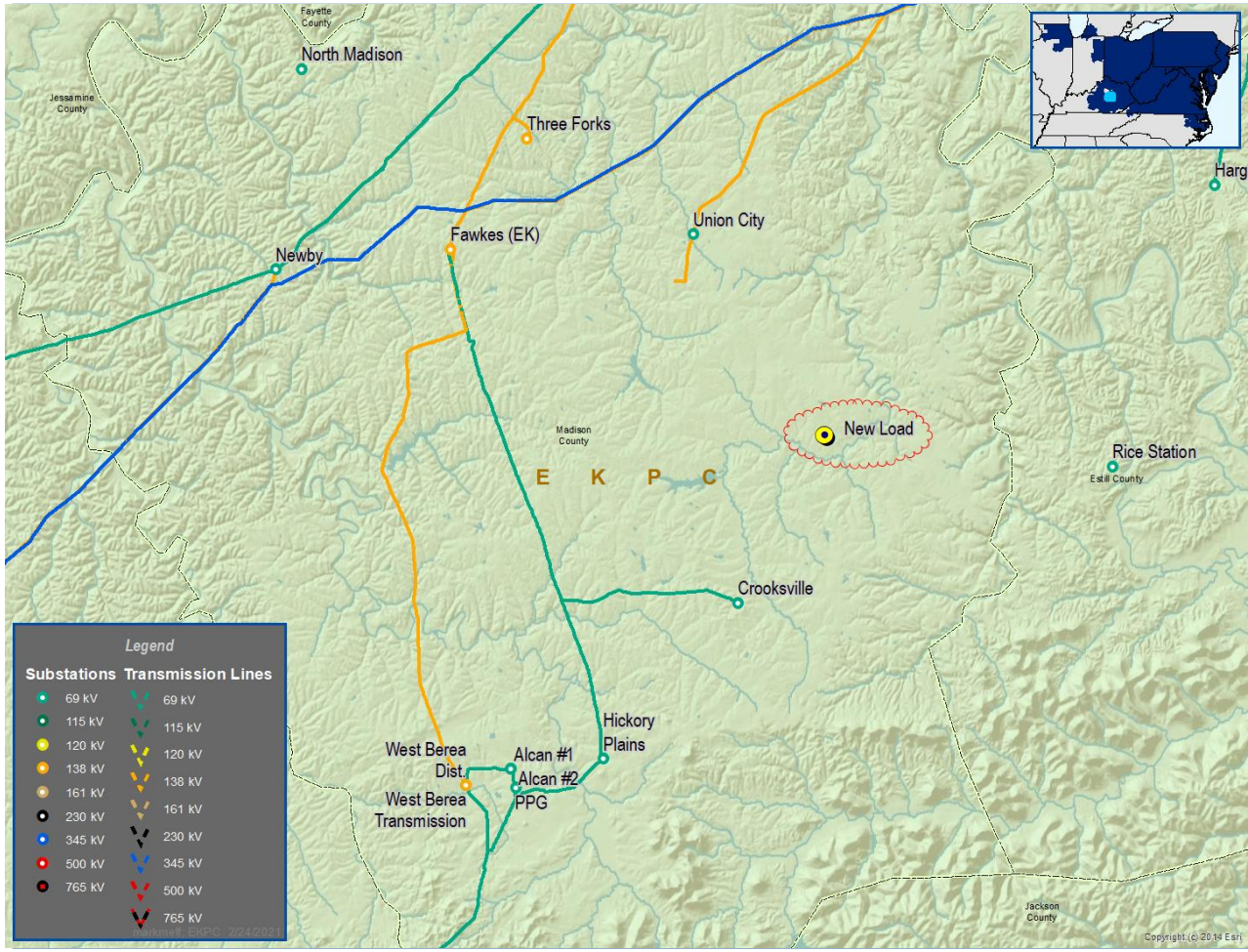
Supplemental Project Driver:
Customer Service

Specific Assumption Reference:
EKPC Assumptions Presentation Slide 14

Problem Statement:

A new customer has requested a new delivery point for a winter peak demand of 28.5 MW and 1.5 MW summer peak by 7/1/2022. The new delivery point is located in Madison Co, KY approximately 5.5 miles northeast from EKPC's Crooksville distribution substation. The existing distribution infrastructure is not capable of serving this request.

Model: N/A



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

Need Number: EKPC-2021-007

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan – June 16, 2021

Selected Solution:

Construct new 69kv-25kv 18/24/30 MVA distribution substation and associated 4.79 Mile Tap from the EKPC Crooksville's 69 KV tap line. Upgrade the existing West Berea 138/69 KV 100 MVA to 150 MVA. Add a 2000 A 138 KV breaker to the 138 KV tie line between the EKPC Fawkes switching station and the LG&E/KU Fawkes stations.

Distribution Cost: $7.2M
Transmission Cost: $2.4M

Ancillary Benefits:

None

Alternatives Considered:

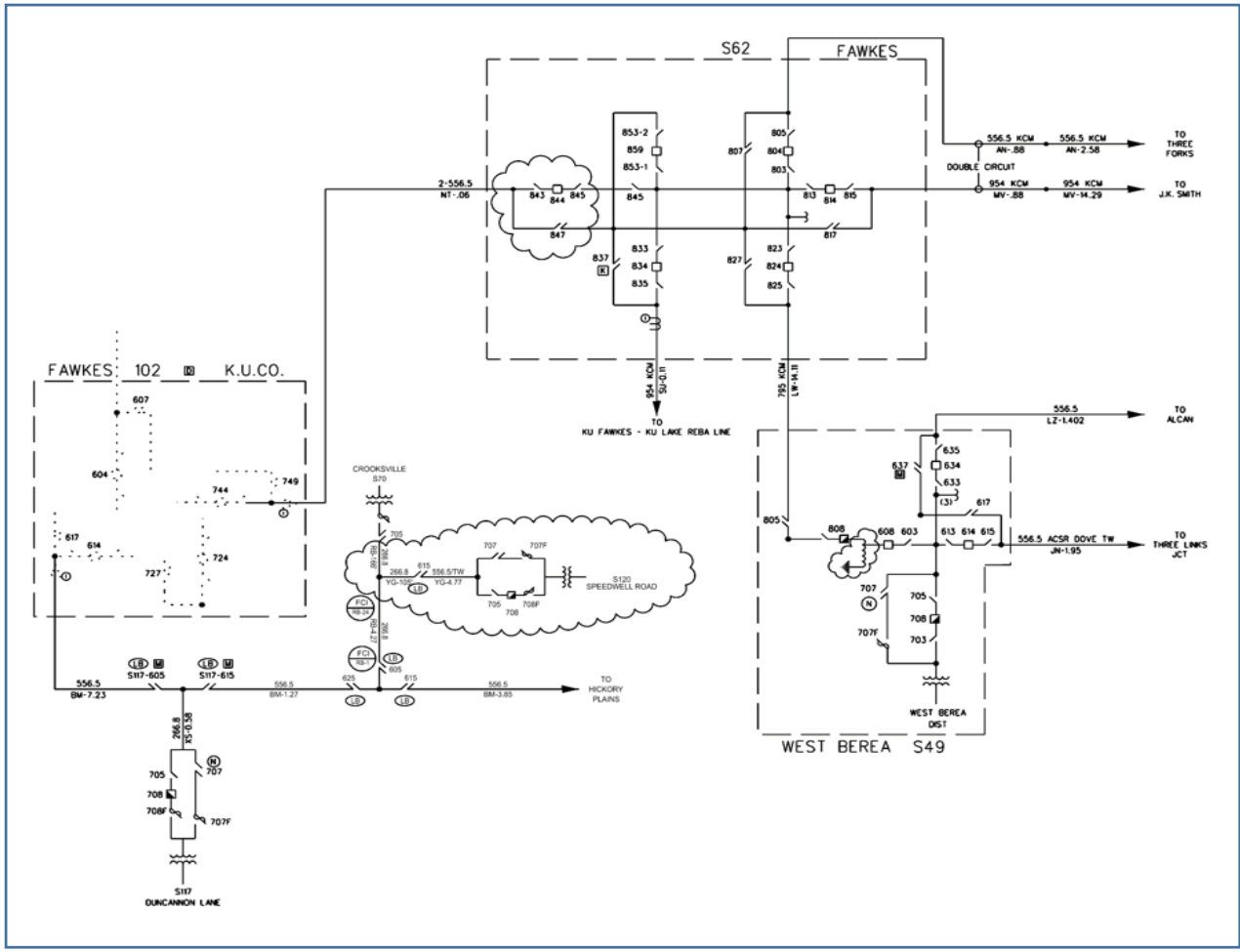
Serve load from nearby foreign utility.

Projected In-Service: 7/1/2022

Supplemental Project ID: S2514

Project Status: Engineering

Model: N/A



EKPC Transmission Zone M-3 Process
Taylorsville Distribution Substation

Need Number: EKPC-2021-008

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan – June 16, 2021

Previously Presented:
Needs Meeting 3/19/2021
Solution Meeting 4/16/2021

Supplemental Project Driver:

Equipment Material Condition, Performance and Risk

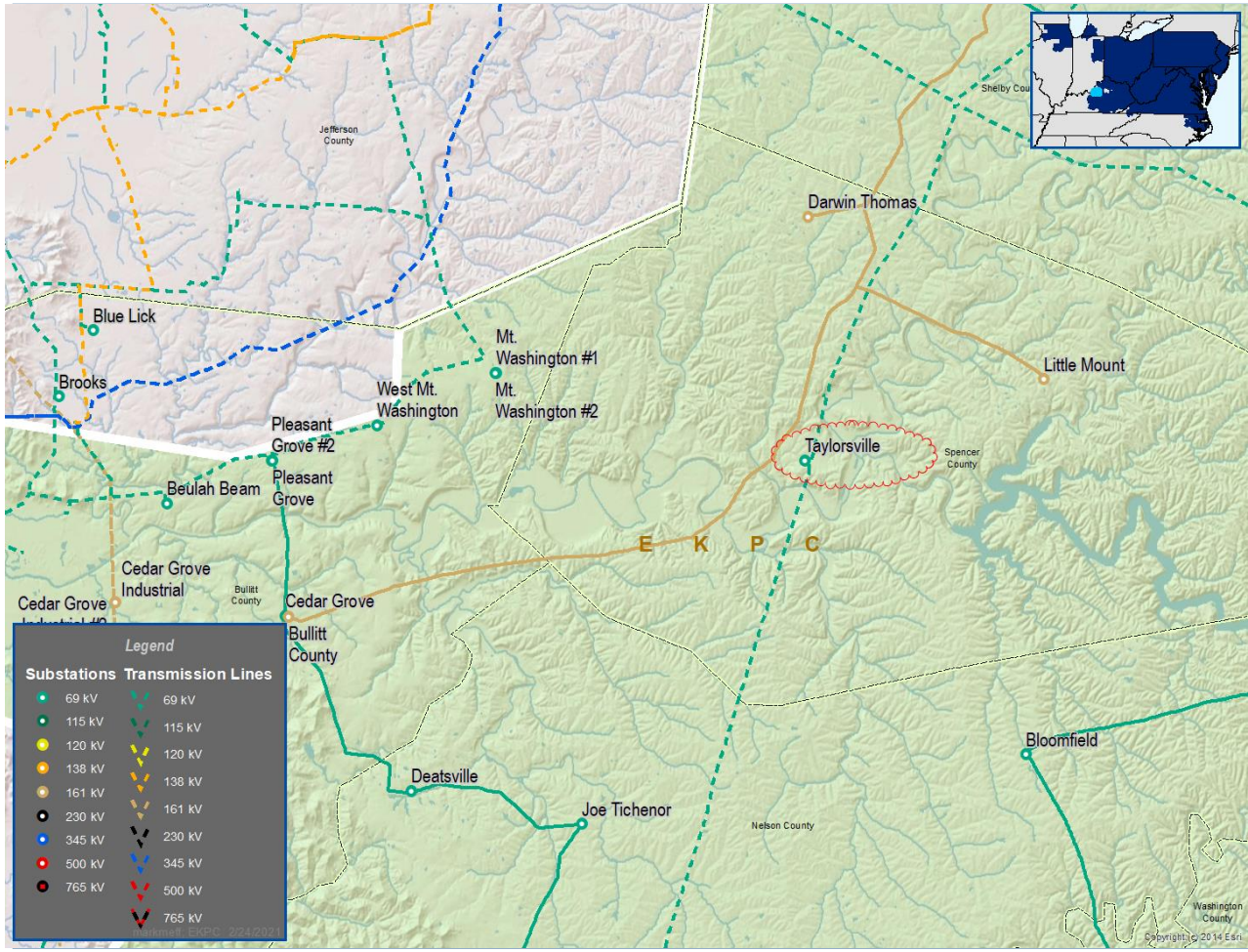
Specific Assumption Reference:
EKPC Assumptions Presentation Slide 12

Problem Statement:

The Taylorsville distribution substation was built in 1946. This station is currently served from LG&E/KU's Bardstown-Finchville 69 KV transmission circuit.

This station has numerous issues associated with aging/condition, site location, and accessibility. The station has a narrow driveway with a 90 degree turn. Extremely small station footprint with minimal space to maneuver around the equipment. High side switch and porcelain lightning arrestors are at end of life. There is no metering bypass, or bypass buss in the low bay, which prolongs restoration. The distribution transformer is inconveniently located under the high side bus which creates prolonged maintenance outage time.

Model: N/A



EKPC Transmission Zone M-3 Process
Taylorsville Distribution Substation

Need Number: EKPC-2021-008

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan – June 16, 2021

Selected Solution:

Rebuild and relocate the Taylorsville distribution substation. Build a new Taylorsville 161-25 KV distribution substation looping into the Bullitt Co-Little Mount 161 KV line section. The existing distribution substation will be retired.

Distribution Cost: $4.13M
Transmission Cost: $0

Ancillary Benefits:

- Taylorsville load served from EKPC system
    - Outside entity is not involved in service restoration
- Savings in NITS

Alternatives Considered:
Rebuild at the existing site.

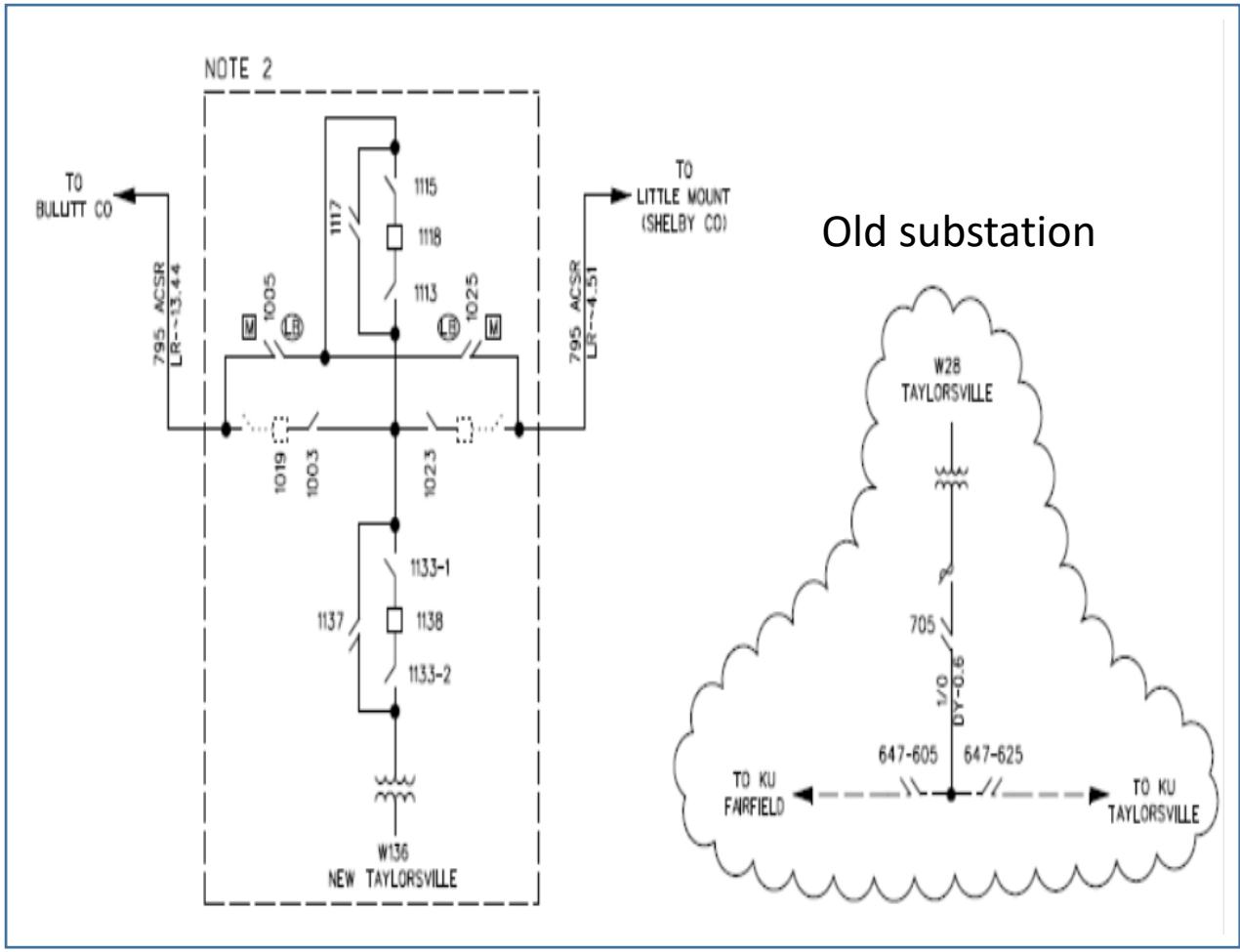
- This was not chosen due to property size and large NITS savings.

Projected In-Service: 12/31/2023

Supplemental Project ID: S2515

Project Status: Engineering

Model: N/A



EKPC Transmission Zone M-3 Process
Three Links Jct. – Three Links 69kV

Need Number: EKPC-2021-009

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan – June 16, 2021

Previously Presented:

Needs Meeting 3/19/2021

Solution Meeting 4/16/2021

Supplemental Project Driver:

Equipment Material Condition, Performance and Risk

Specific Assumption Reference:

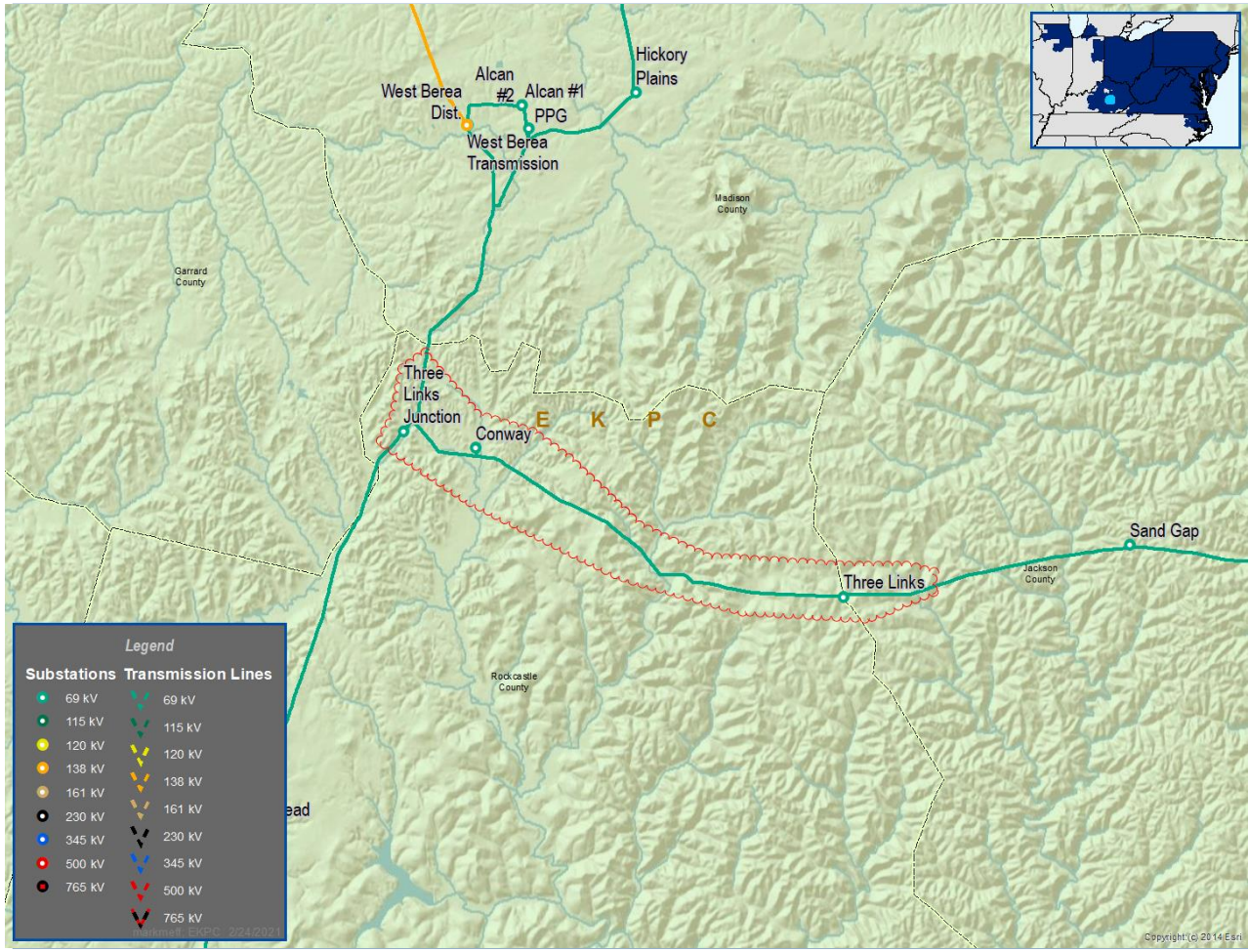
EKPC Assumptions Presentation Slide 12

Problem Statement:

The 9.61 mile, Three Links Jct.-Three Links 69 KV transmission line is 63 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
Three Links Jct. – Three Links 69kV

Need Number: EKPC-2021-009

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan – June 16, 2021

Selected Solution:

Rebuild the 9.3 miles, Three Links Jct. – Three Links 69 KV transmission line using 556.5 ACSR/TW conductor. Single pole tangent, angle & deadend structures to be replaced, H-frame tangent will be evaluated on structure by structure basis.

Transmission Cost: $6.16M

Ancillary Benefits:

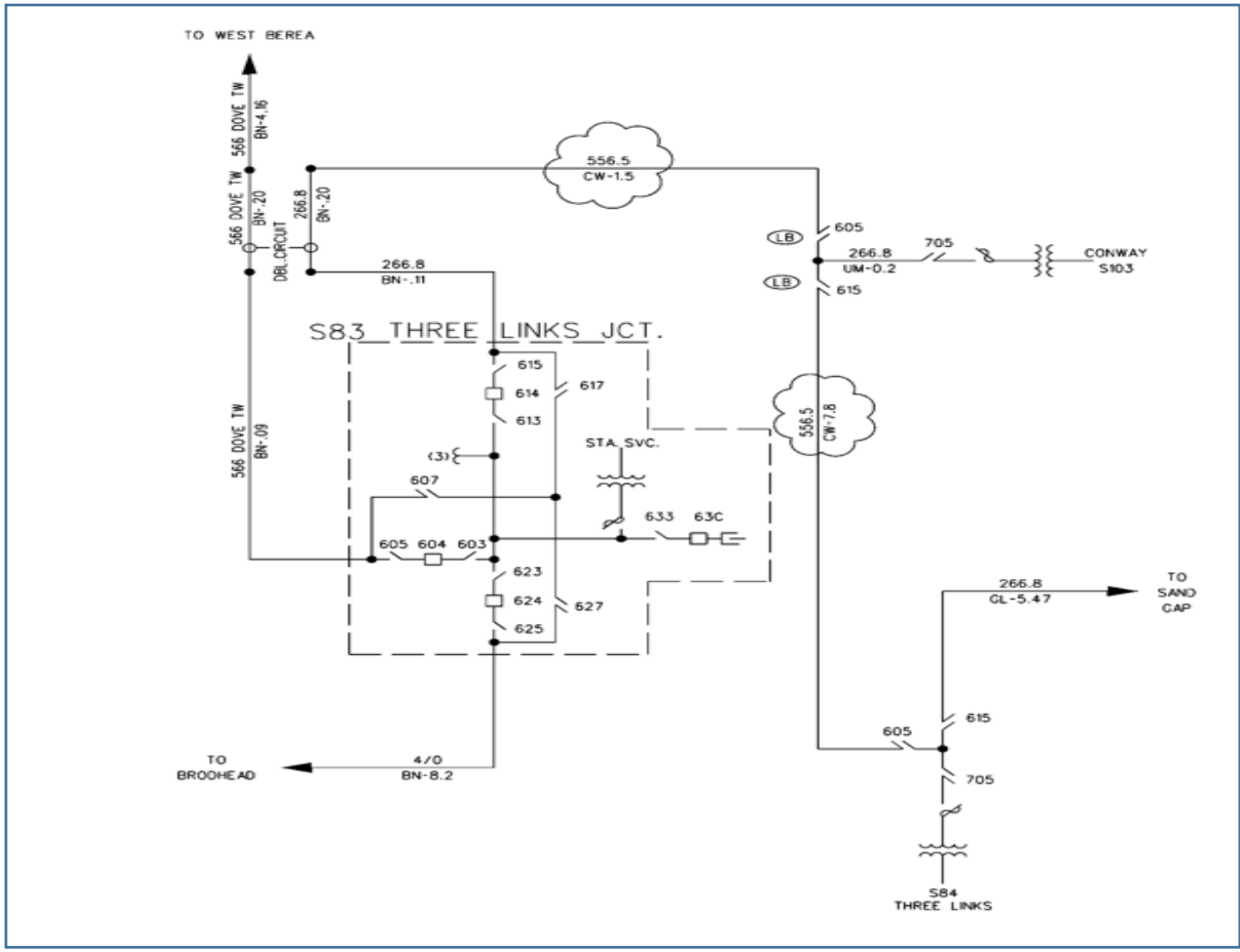
Alternatives Considered:
No feasible alternatives

Projected In-Service: 7/31/2024

Supplemental Project ID: S2516

Project Status: Engineering

Model: N/A



EKPC Transmission Zone M-3 Process
Goddard - Charters 69 KV

Need Number: EKPC-2021-010

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan – June 16, 2021

Previously Presented:
Needs Meeting 3/19/2021
Solution Meeting 4/16/2021

Supplemental Project Driver:

Equipment Material Condition, Performance and Risk

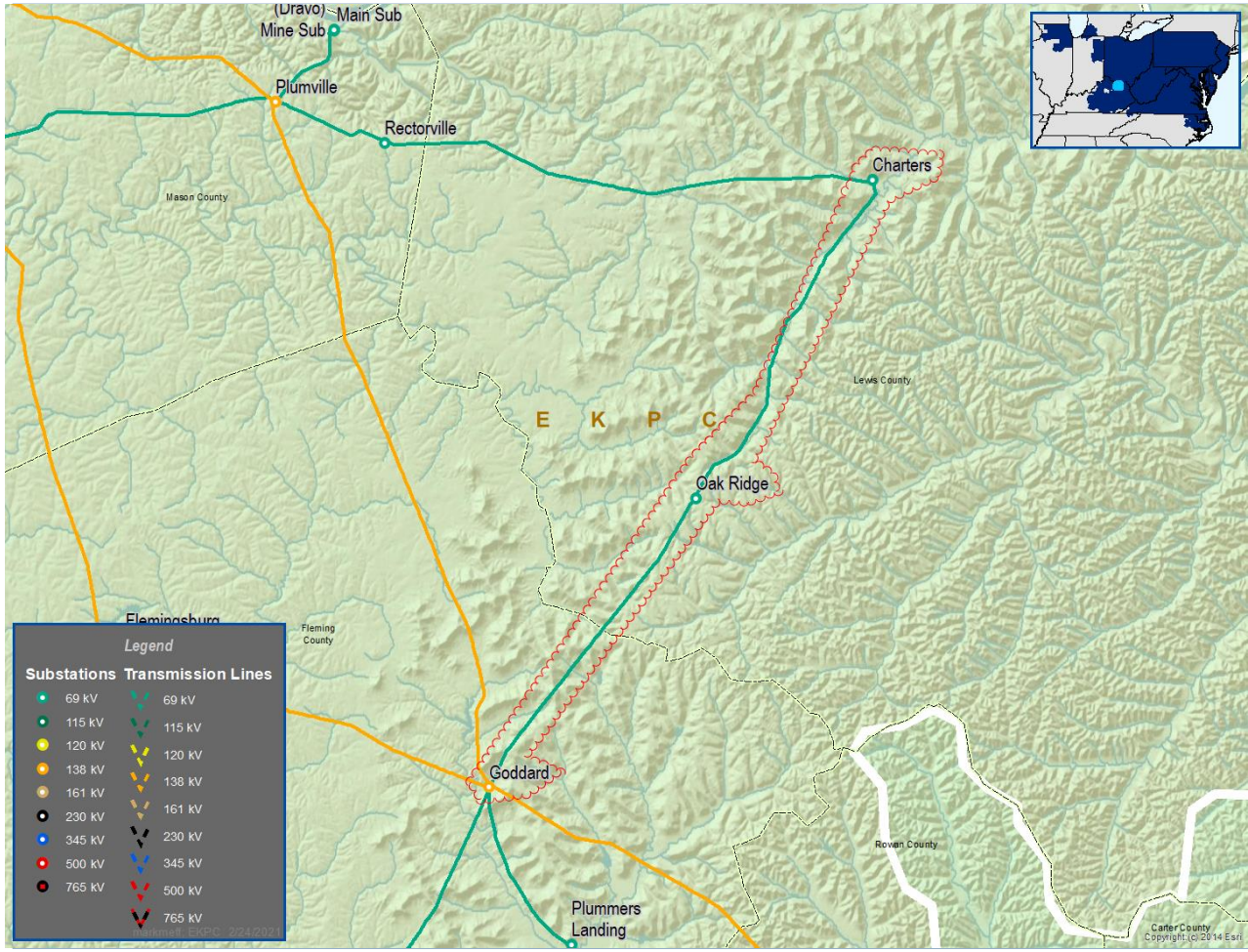
Specific Assumption Reference:
EKPC Assumptions Presentation Slide 12

Problem Statement:

The 17 mile, Goddard - Charters transmission line is 69 years old.

Testing from the LineVue robot from Kinectrics Corporation deemed the phase and static wire condition as 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 should be addressed due to the condition assessment.

Model: N/A



EKPC Transmission Zone M-3 Process
Goddard – Charters 69kV

Need Number: EKPC-2021-0010

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan – June 16, 2021

Selected Solution:

Rebuild the 16.99 miles, Goddard – Charters 69 KV transmission line using 556.5 ACSR/TW conductor.

7.87 mile of single structures will be replaced.

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

Transmission Cost: $9.73M

Ancillary Benefits:

None

Alternatives Considered:

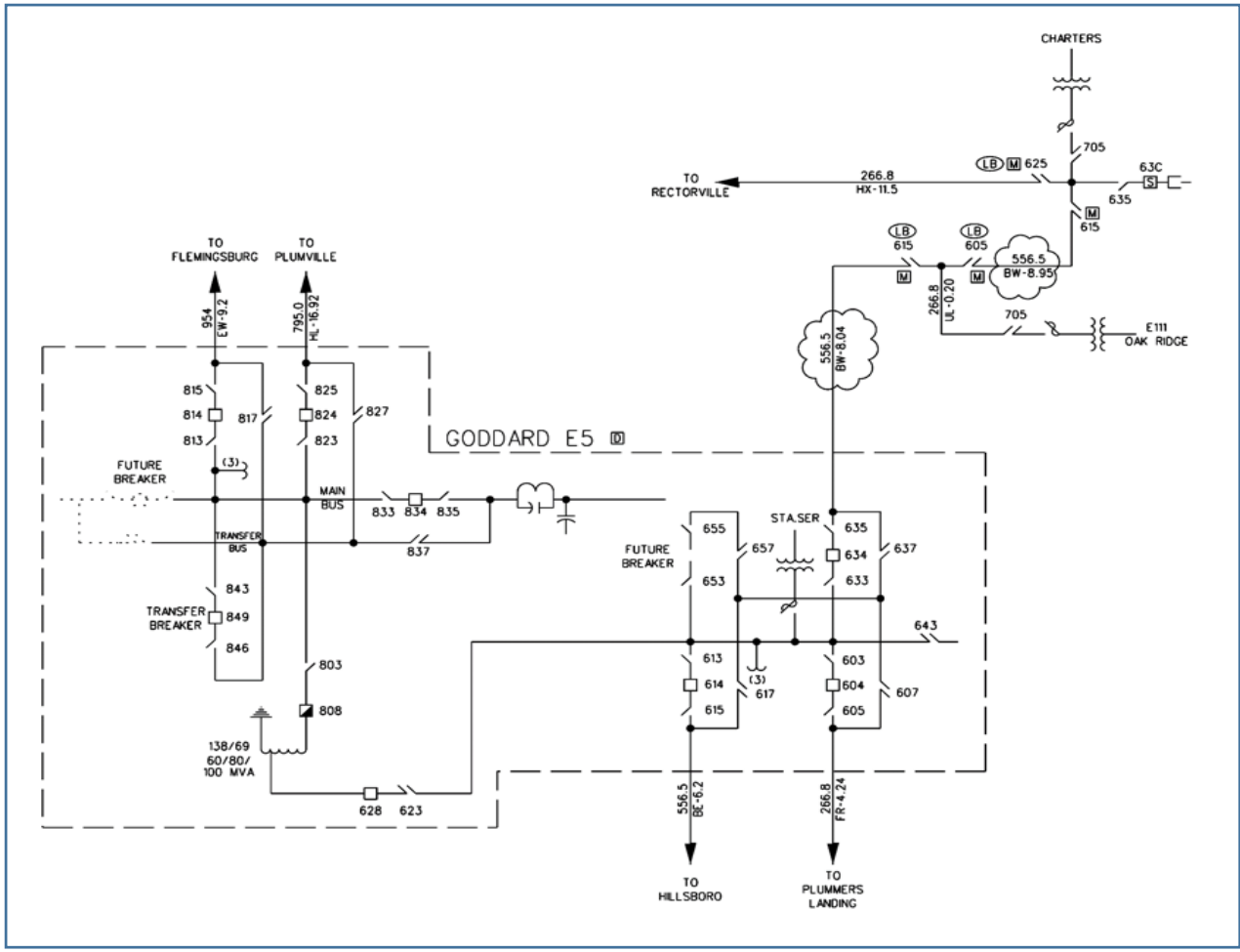
No feasible alternatives

Projected In-Service: 9/30/2024

Supplemental Project ID: S2517

Project Status: Engineering

Model: N/A



EKPC Transmission Zone M-3 Process
Beattyville - Tyner 69 KV

Need Number: EKPC-2021-011

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan – June 16, 2021

Previously Presented:

Needs Meeting 3/19/2021

Solution Meeting 4/16/2021

Supplemental Project Driver:

Equipment Material Condition, Performance and Risk

Specific Assumption Reference:

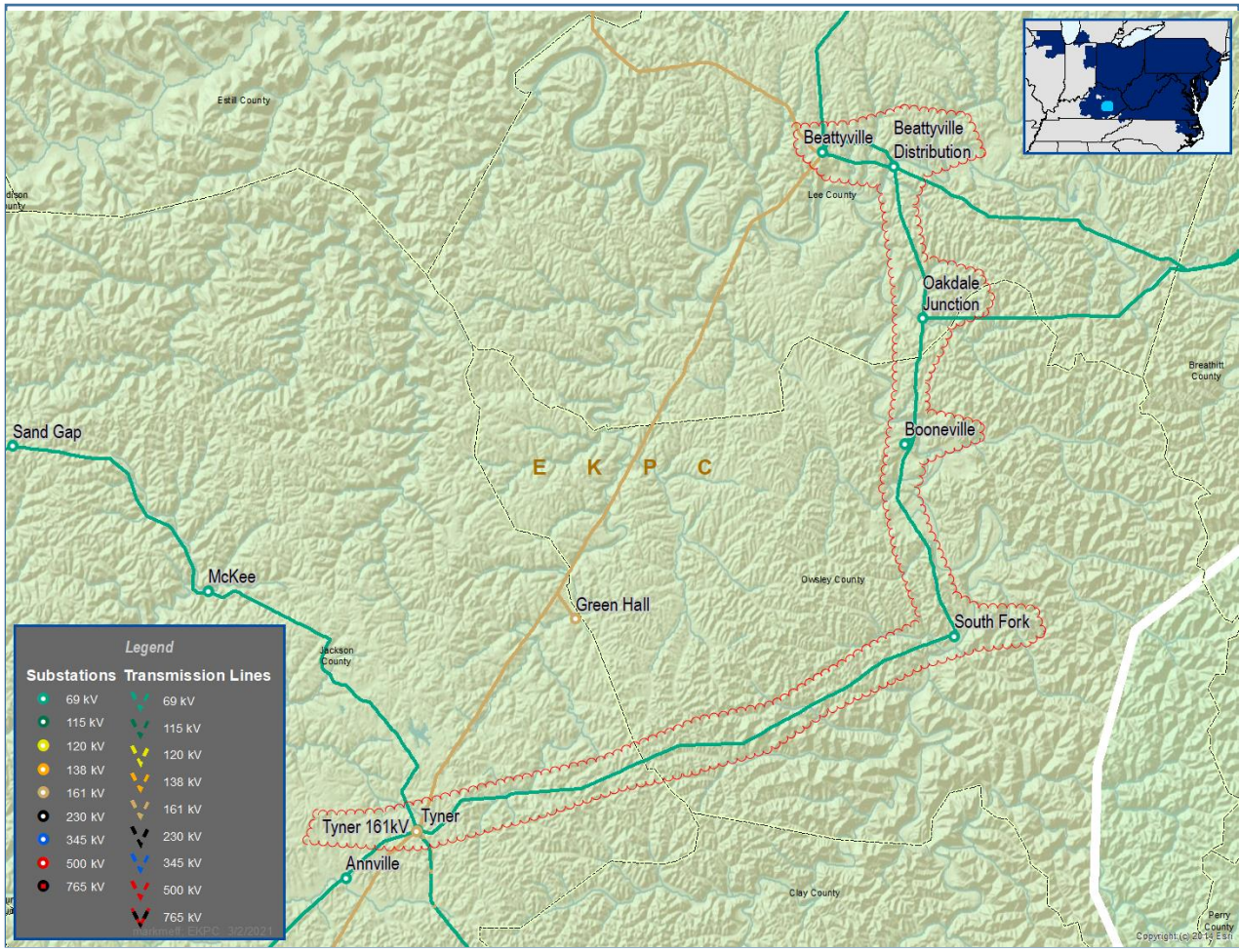
EKPC Assumptions Presentation Slide 12

Problem Statement:

The 29.29 mile, Beattyville-Tyner transmission line is 65 to 66 years old.

Testing from the LineVue robot from Kinectrics Corporation deemed the phase and static wire condition as poor. The testing identified instances of rusting, pitting, and broken strands. Based on this testing information, the EKPC Reliability team has concluded that this line should be addressed due to the condition assessment.

Model: N/A



EKPC Transmission Zone M-3 Process
Beattyville – Tyner 69kV

Need Number: EKPC-2021-0011

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan – June 16, 2021

Selected Solution:

Rebuild the 29.29 miles, Beattyville – Tyner 69 KV transmission line using 556.5 ACSR/TW conductor.

1.7 mile of single structures will be replaced.

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

Transmission Cost: $22.0M

Ancillary Benefits:

None

Alternatives Considered:

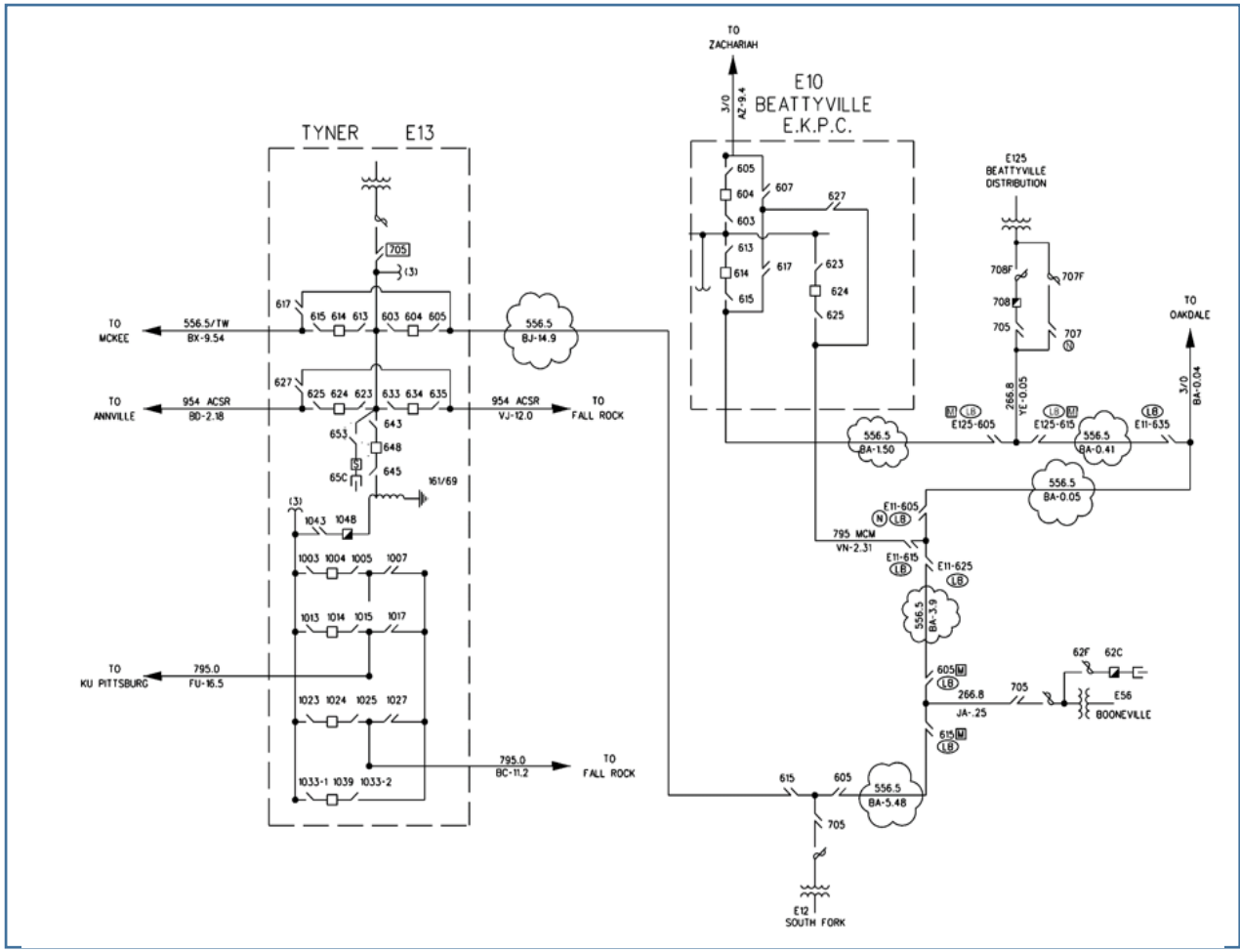
No feasible alternatives

Projected In-Service: 12/31/2028

Supplemental Project ID: S2518

Project Status: Engineering

Model: N/A



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

Need Number: EKPC-2021-012

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan – October 7, 2021

Previously Presented:
Needs Meeting 4/16/2021
Solution Meeting 5/21/2021

Supplemental Project Driver:

Equipment Material Condition, Performance and Risk

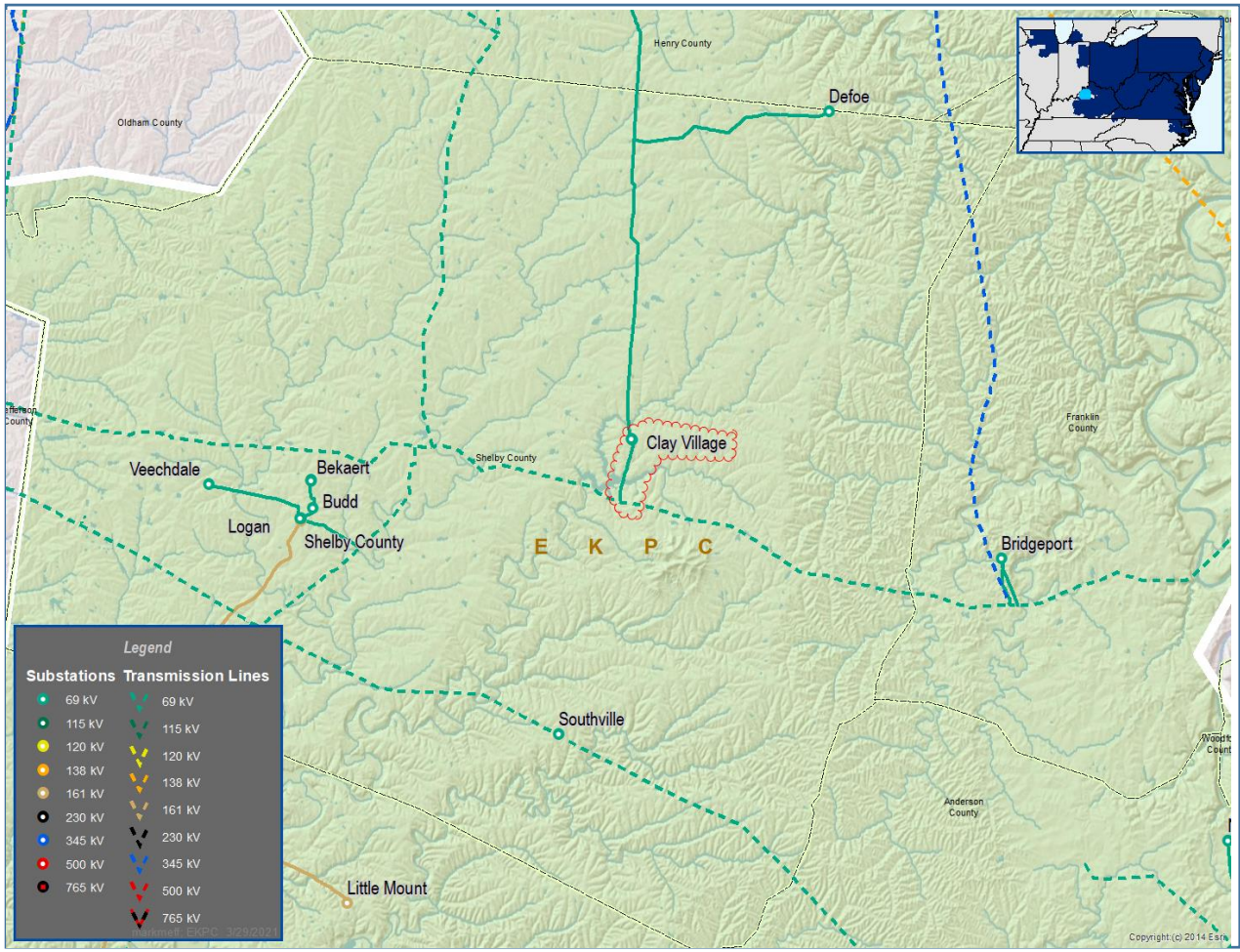
Specific Assumption Reference:
EKPC Assumptions Presentation Slide 12

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: Submission of Supplemental Project for inclusion in the Local Plan – October 7, 2021

Selected 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

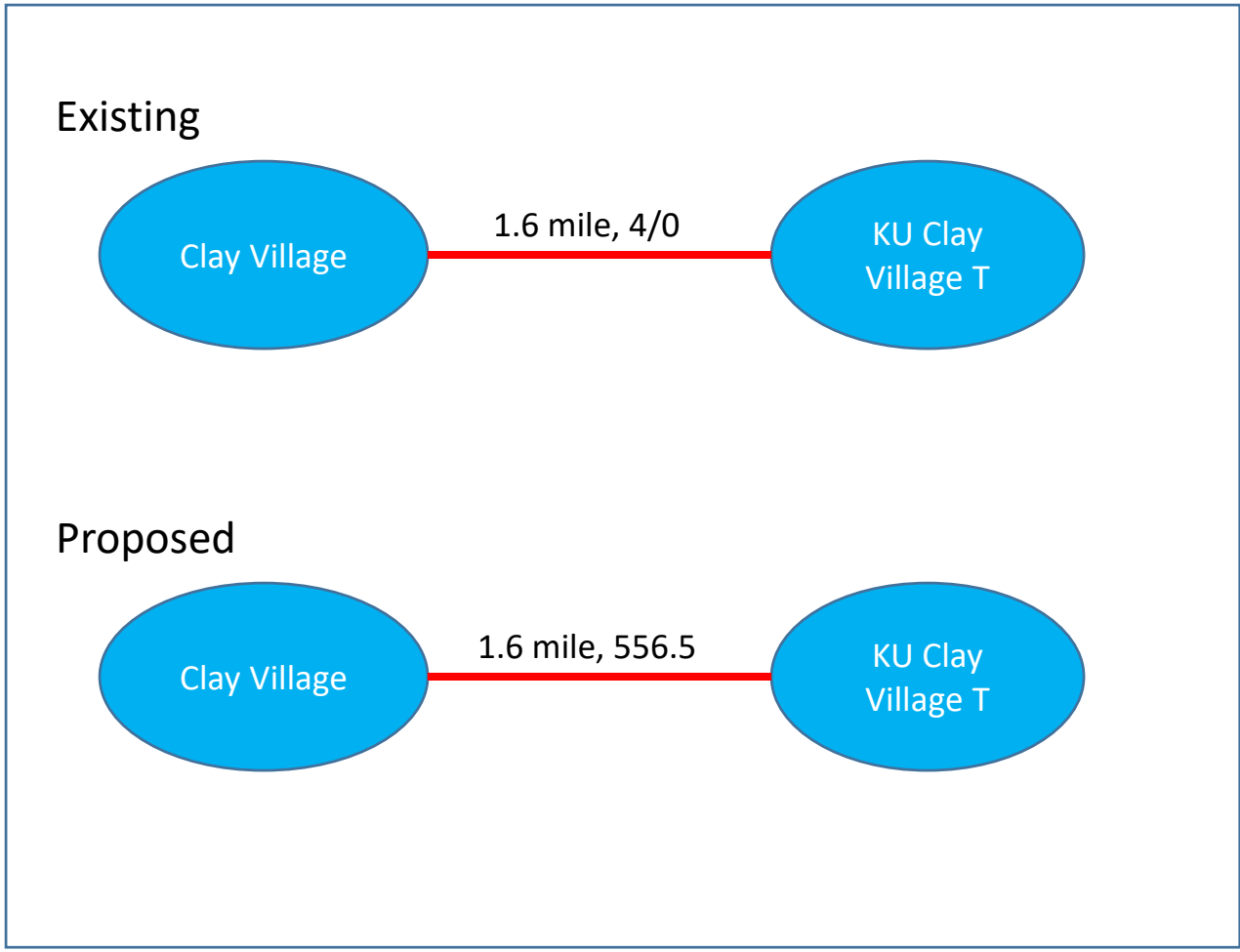
Alternatives Considered:
No feasible alternatives

Projected In-Service: 6/30/2025

Supplemental Project ID: s2528

Project Status: Engineering

Model: N/A



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

Need Number: EKPC-2021-013

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan – October 7, 2021

Previously Presented:

Needs Meeting 4/16/2021

Solution Meeting 5/21/2021

Supplemental Project Driver:

Equipment Material Condition, Performance and Risk

Specific Assumption Reference:

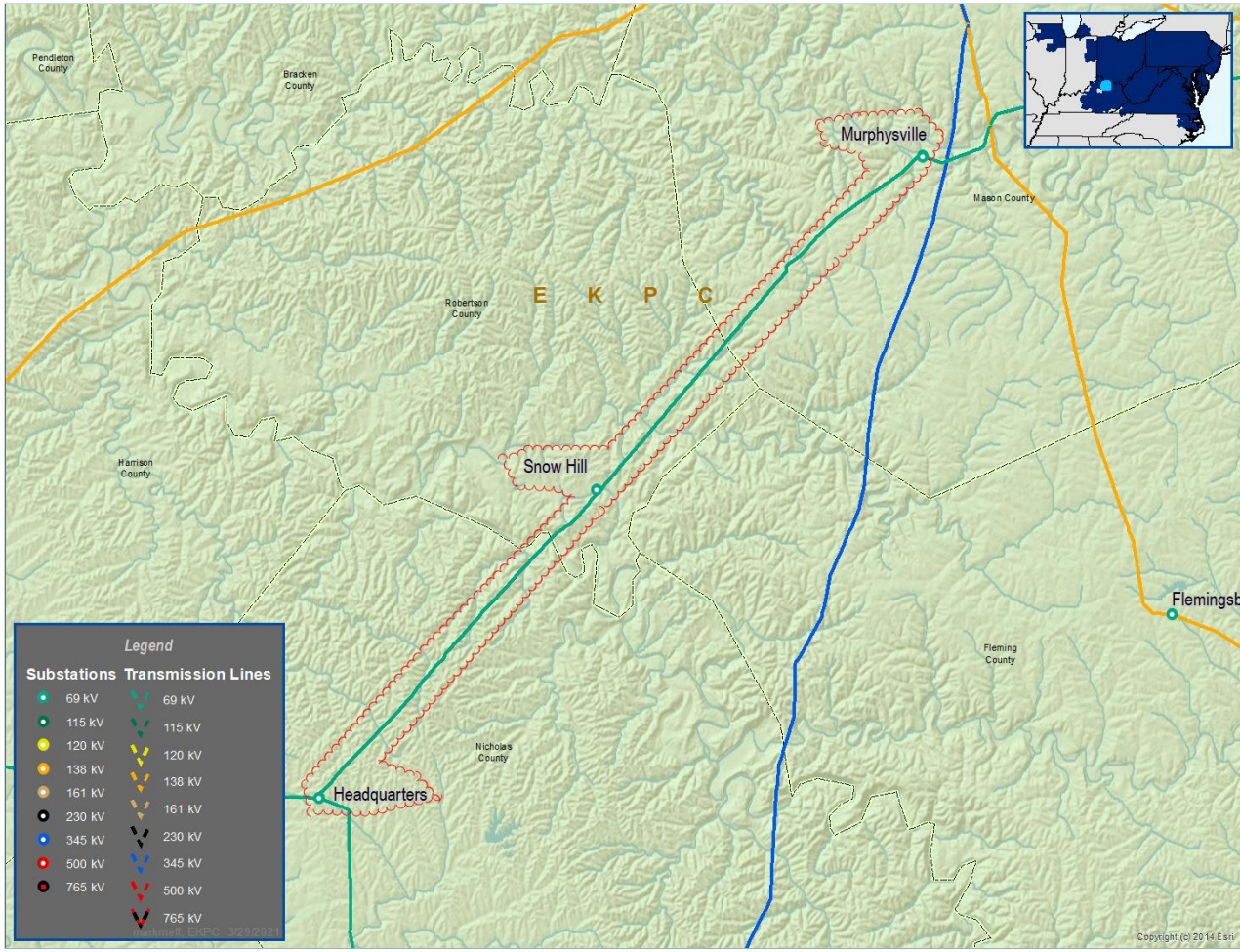
EKPC Assumptions Presentation Slide 12

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: Submission of Supplemental Project for inclusion in the Local Plan – October 7, 2021

Selected 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:

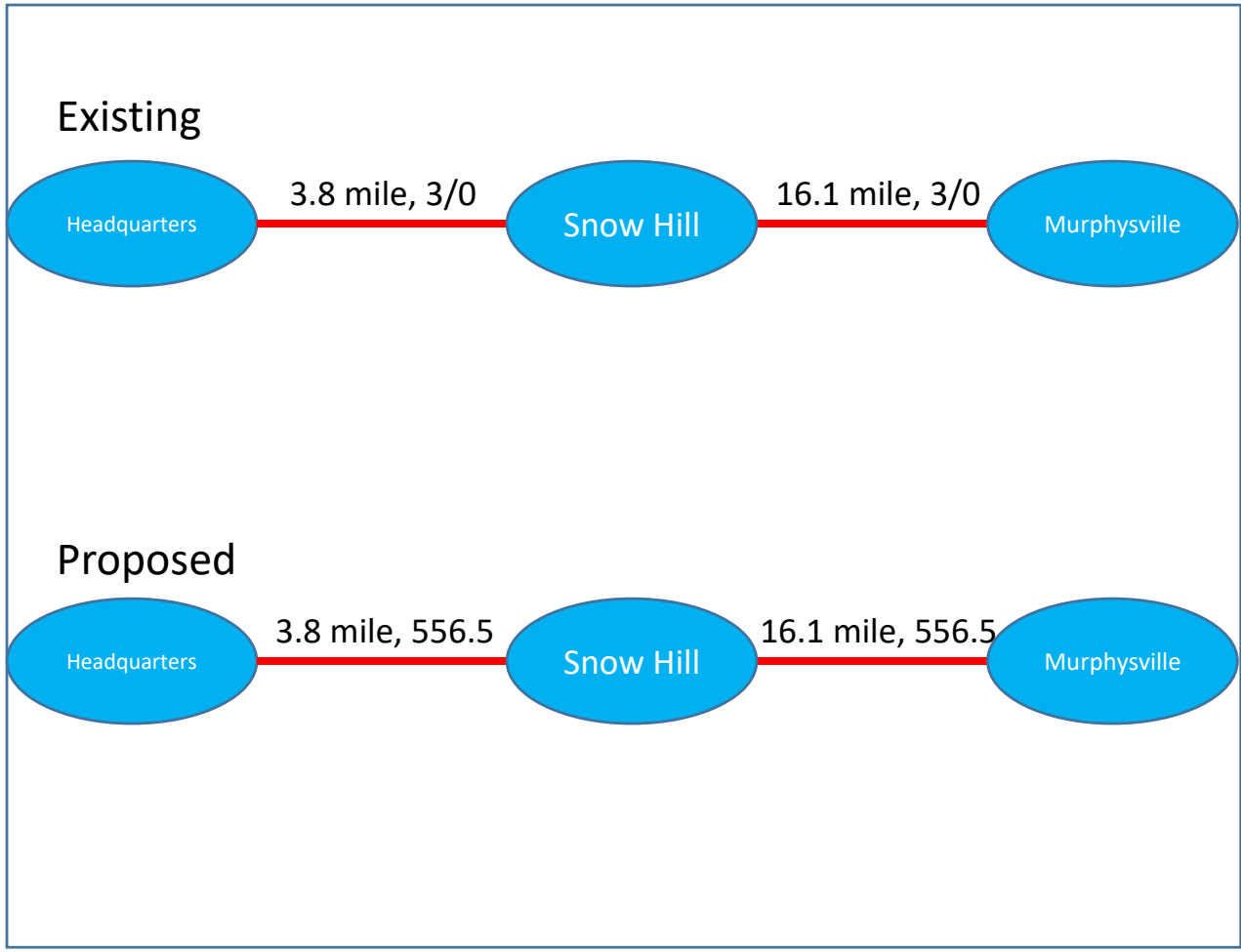
- Retire Headquarters-Murphysville and serve Snow Hill via a new tap to LG&E/KU.
- Rebuild Headquarters-Snow Hill and build a 69 KV breaker station at Snow Hill and connect to LG&E/KU.

Projected In-Service: 7/6/2027

Supplemental Project ID: s2529

Project Status: Engineering

Model: N/A



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

Need Number: EKPC-2021-014

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan – October 7, 2021

Previously Presented:

Needs Meeting 4/16/2021

Solution Meeting 5/21/2021

Supplemental Project Driver:

Equipment Material Condition, Performance and Risk

Specific Assumption Reference:

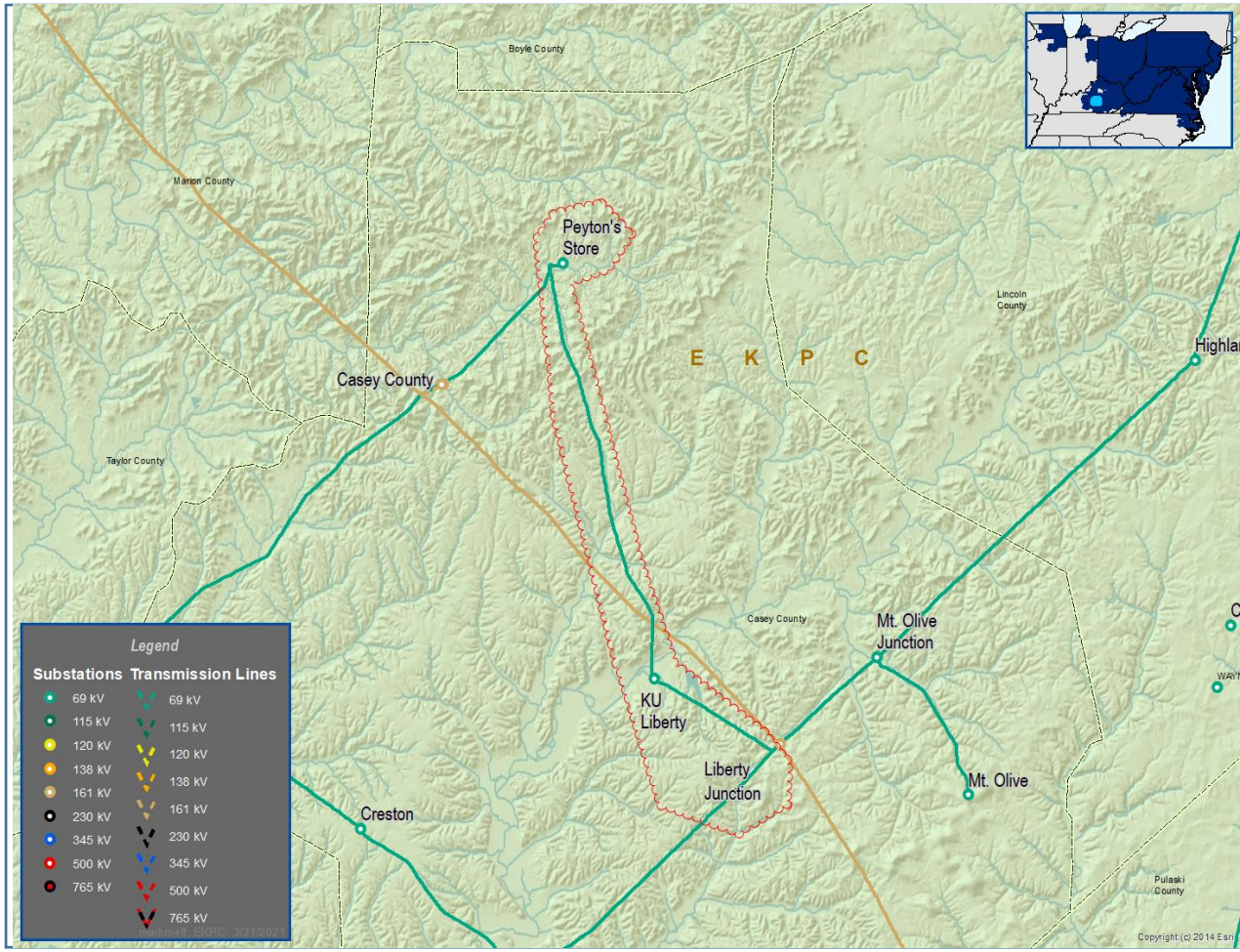
EKPC Assumptions Presentation Slide 12

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: Submission of Supplemental Project for inclusion in the Local Plan – October 7, 2021

Selected 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:

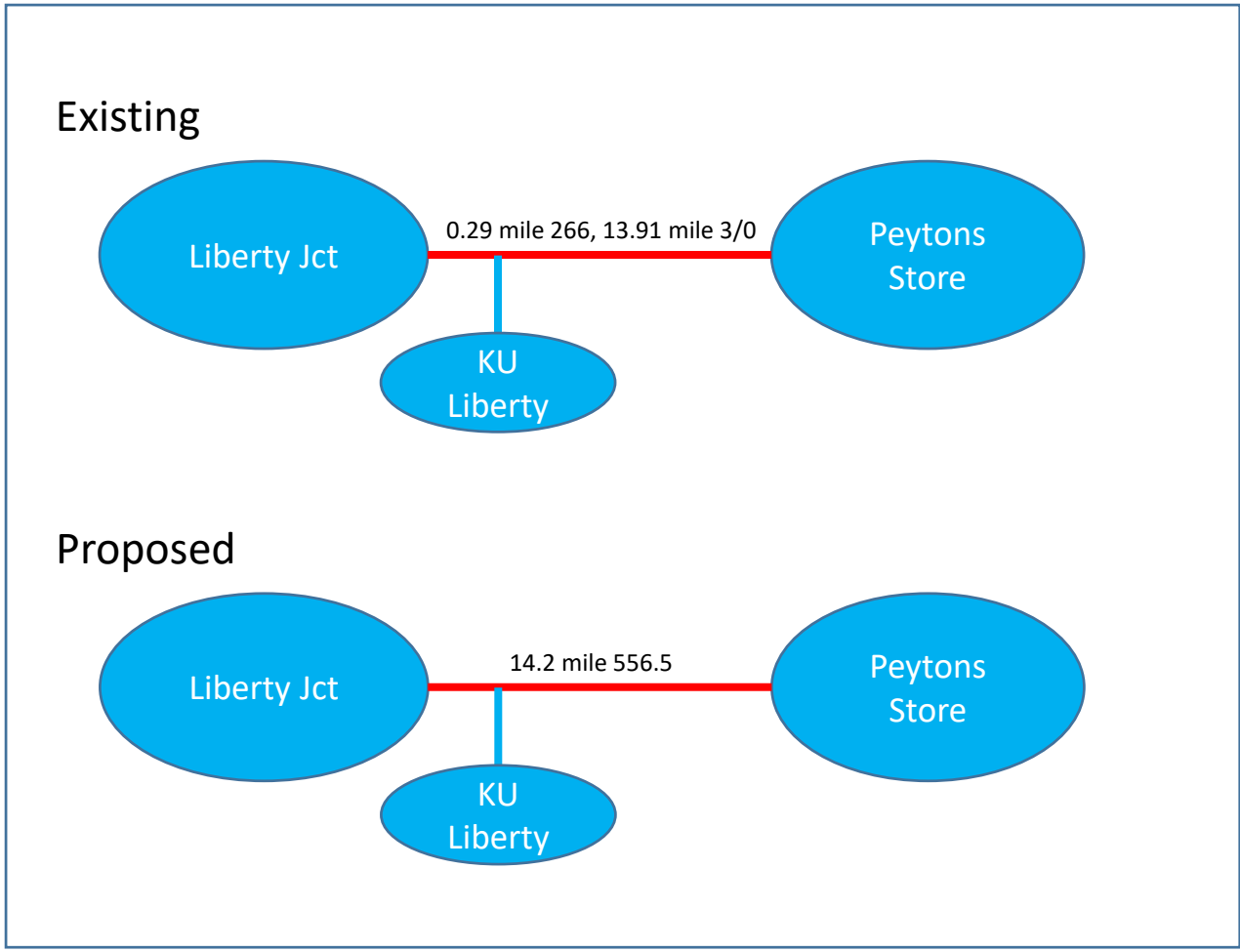
- Rebuild Liberty Jct-KU Liberty with a new Casey Co-Peyton Store line and retire Peyton Store-KU Liberty
- Build new Peyton Store-Shelby and operate Shelby-Shelby KU as normally open. Rebuild Liberty Jct-KU Liberty and retire Peyton Store-KU Liberty

Projected In-Service: 10/26/2026

Supplemental Project ID: s2530

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: Submission of Supplemental Project for inclusion in the Local Plan – October 7, 2021

Previously Presented:
Needs Meeting 4/16/2021
Solution Meeting 5/21/2021

Supplemental Project Driver:

Equipment Material Condition, Performance and Risk

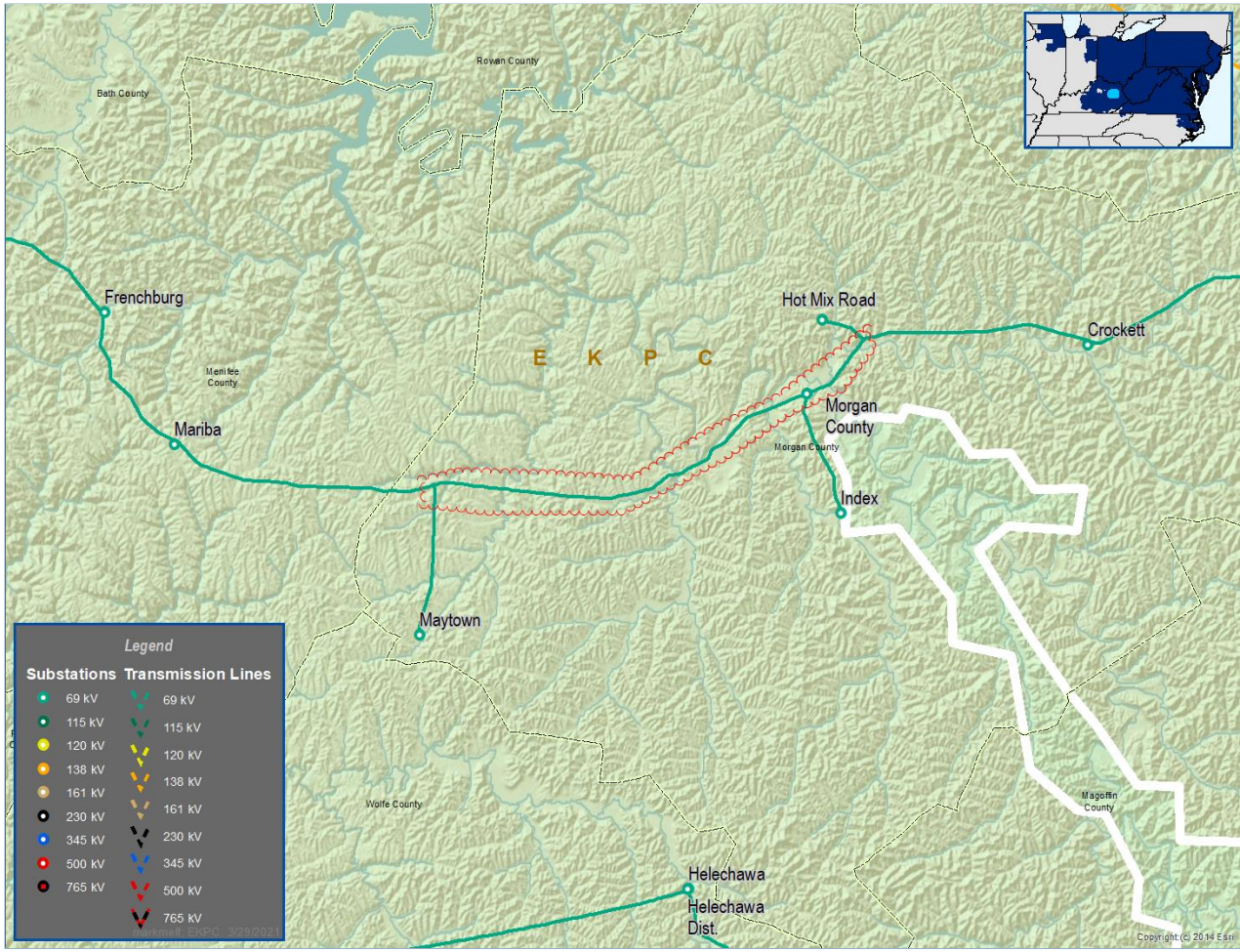
Specific Assumption Reference:
EKPC Assumptions Presentation Slide 12

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: Submission of Supplemental Project for inclusion in the Local Plan – October 7, 2021

Selected 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:

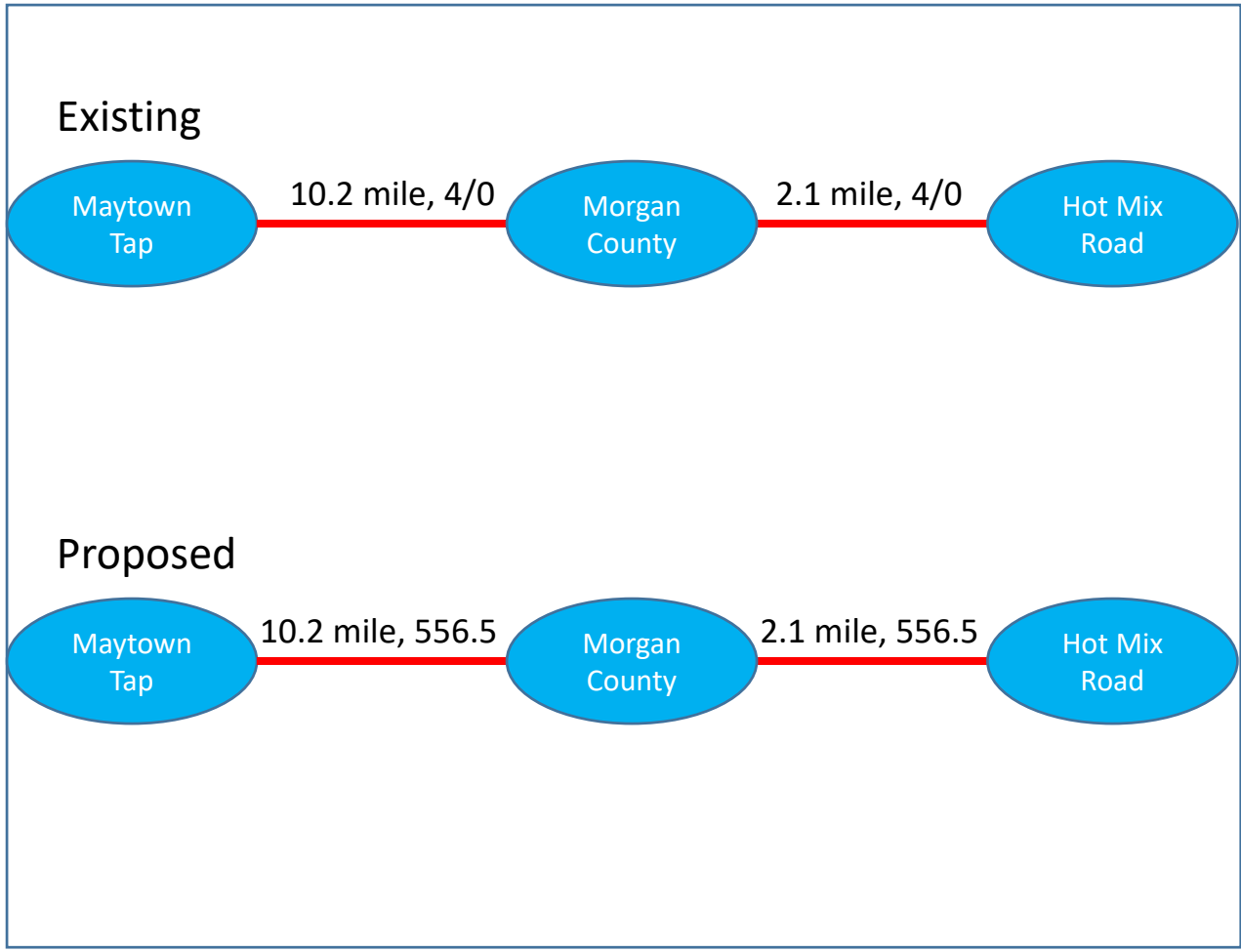
No feasible alternatives

Projected In-Service: 12/20/2028

Supplemental Project ID: s2531

Project Status: Engineering

Model: N/A



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

Need Number: EKPC-2021-016

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan – October 7, 2021

Previously Presented:
Needs Meeting 4/16/2021
Solution Meeting 5/21/2021

Supplemental Project Driver:

Equipment Material Condition, Performance and Risk

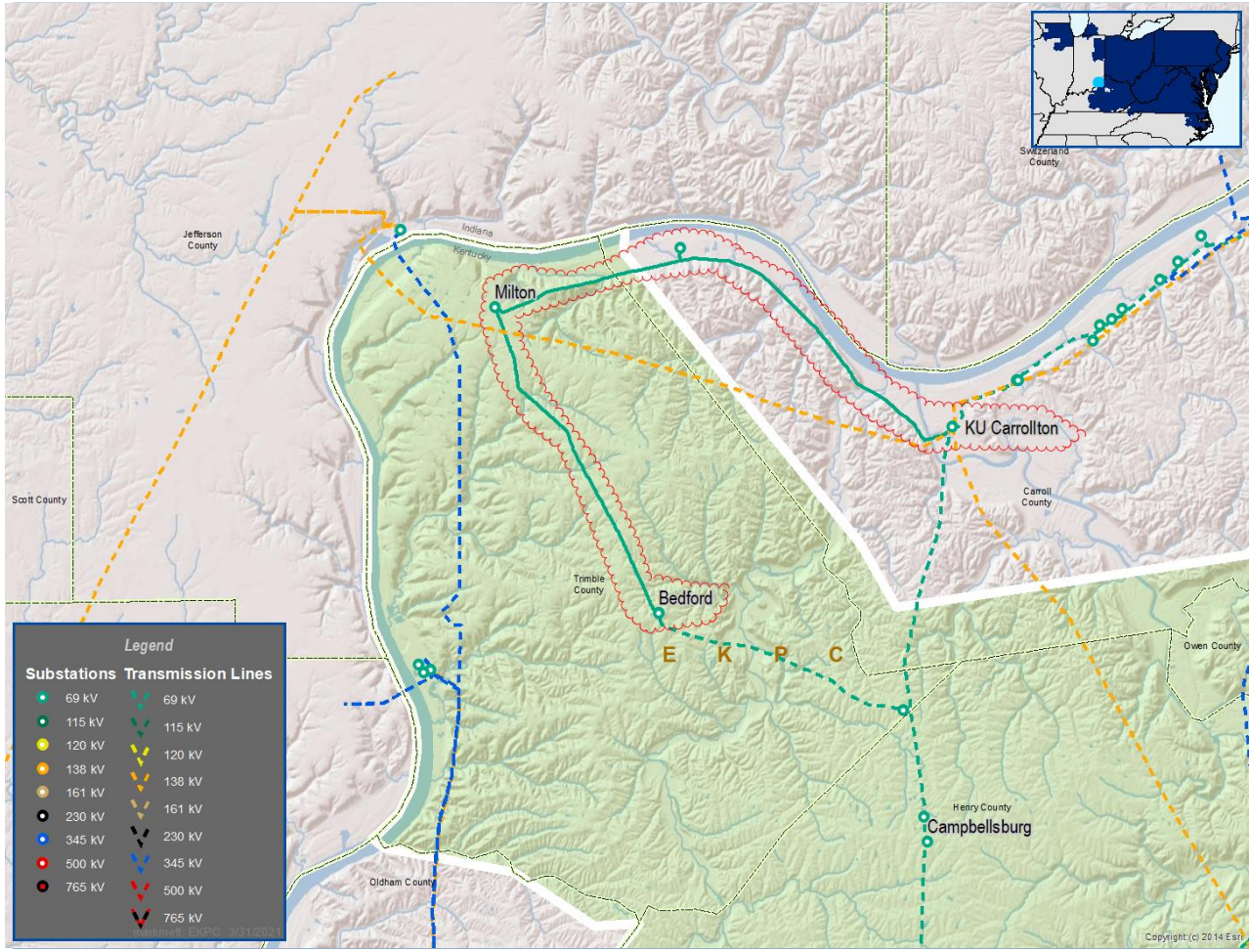
Specific Assumption Reference:
EKPC Assumptions Presentation Slide 12

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: Submission of Supplemental Project for inclusion in the Local Plan – October 7, 2021

Selected 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:

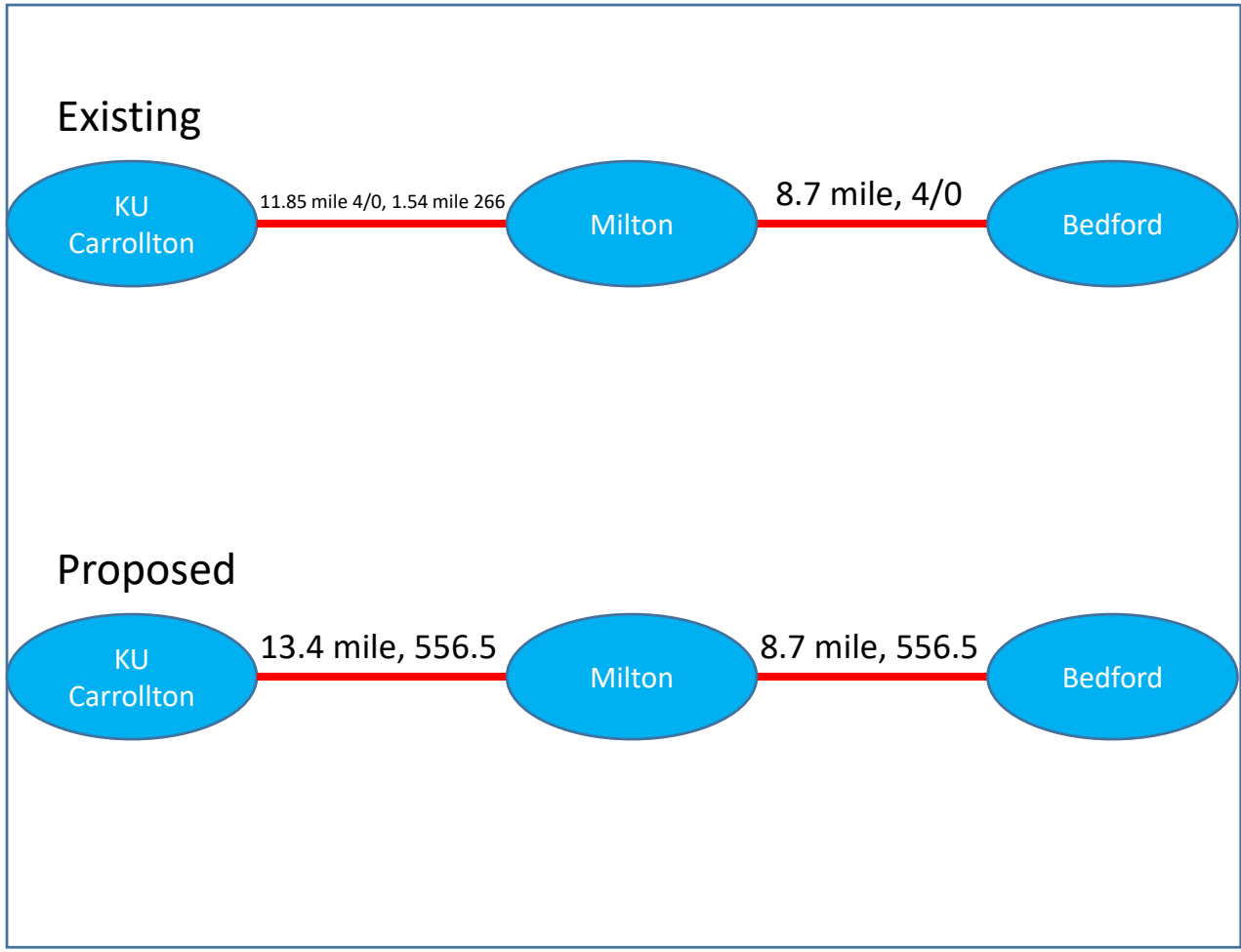
No feasible alternatives

Projected In-Service: 3/11/2026

Supplemental Project ID: s2532

Project Status: Engineering

Model: N/A



EKPC Transmission Zone M-3 Process
South Fork distribution station

Need Number: EKPC-2021-017

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan – October 7, 2021

Previously Presented:
Needs Meeting 4/16/2021
Solution Meeting 5/21/2021

Supplemental Project Driver:

Equipment Material Condition, Performance and Risk

Specific Assumption Reference:
EKPC Assumptions Presentation Slide 12

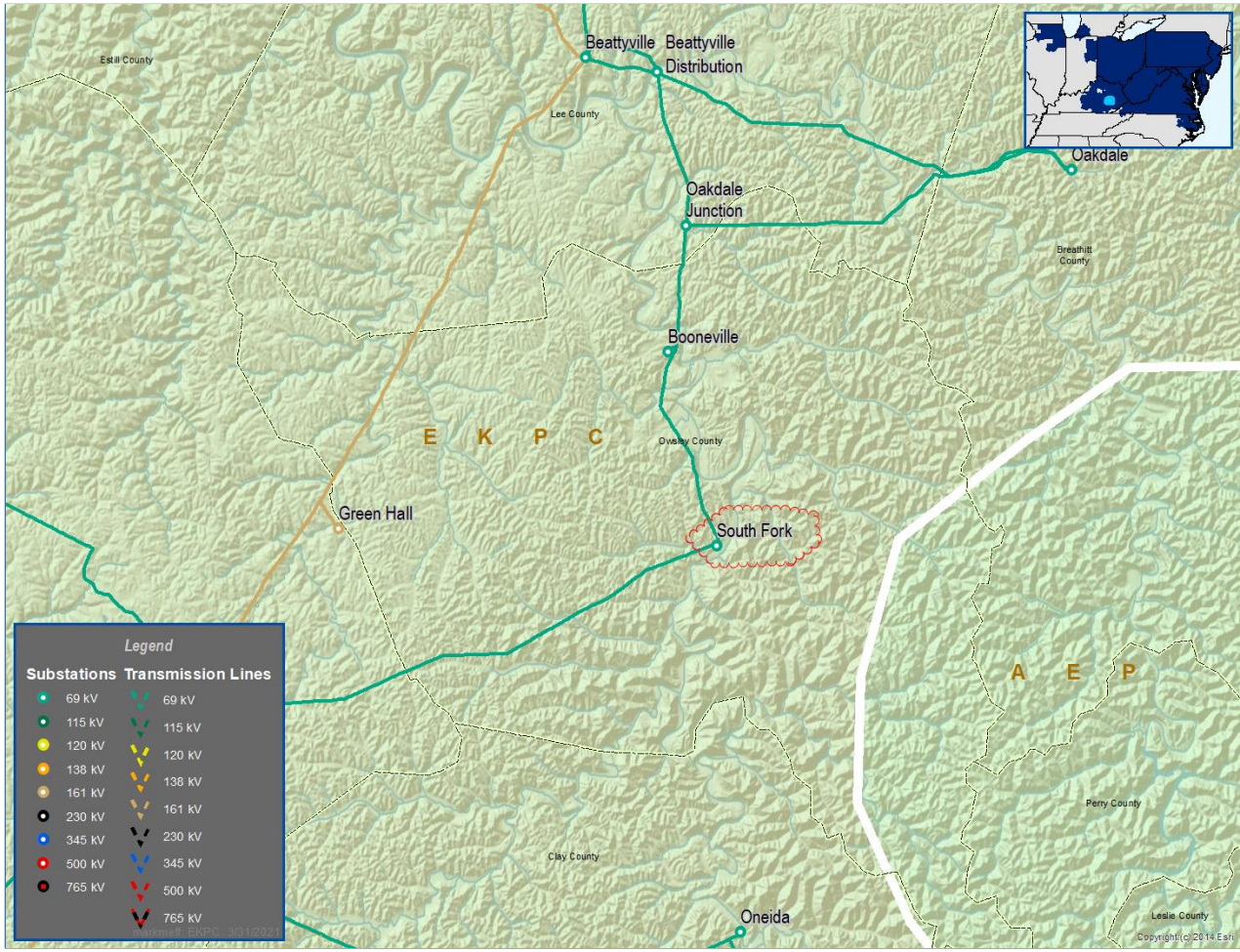
Problem Statement:

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: Submission of Supplemental Project for inclusion in the Local Plan – October 7, 2021

Selected 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:

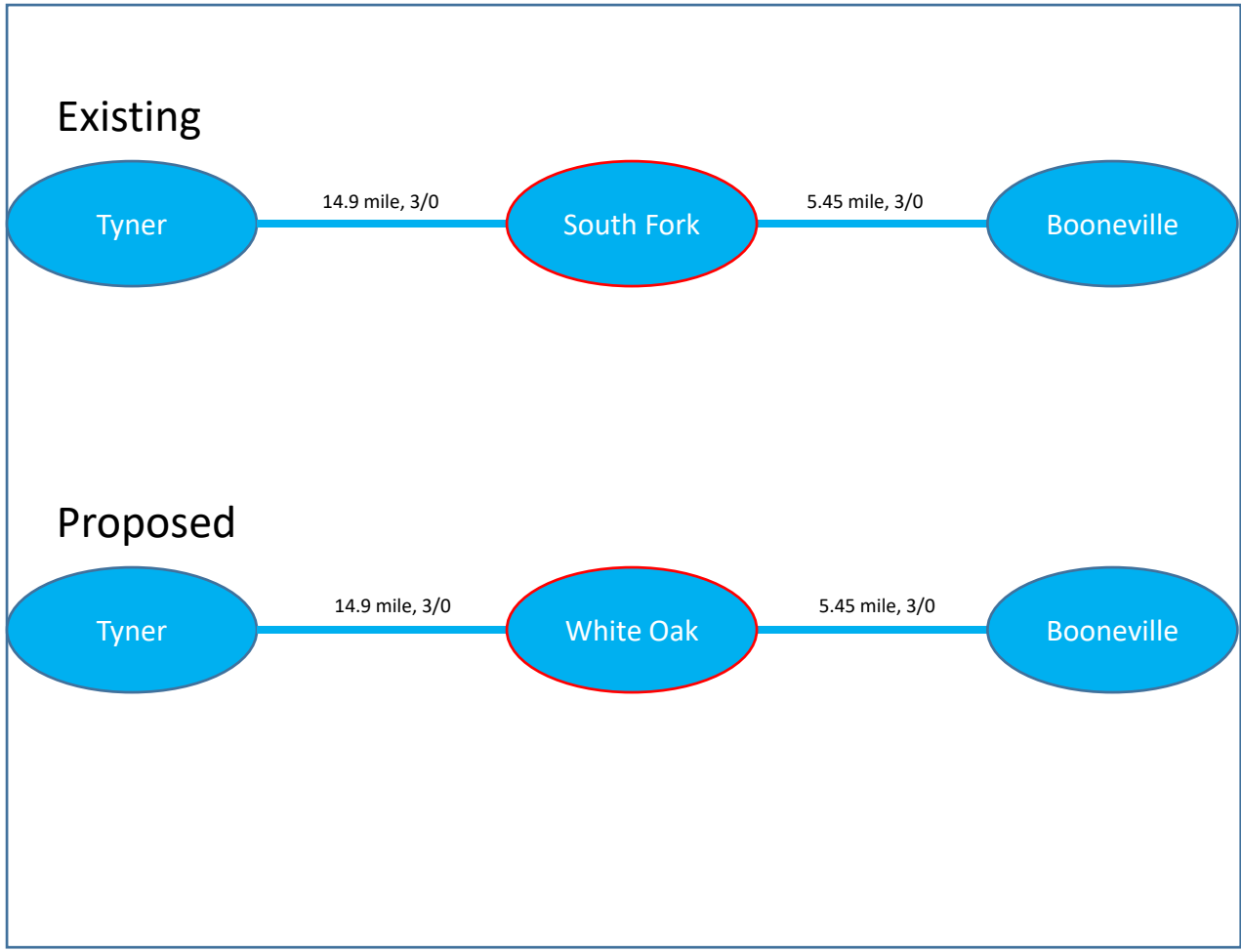
No feasible alternatives

Projected In-Service: 12/31/2023

Supplemental Project ID: s2533

Project Status: Engineering

Model: N/A



Revision History

6/16/2020 – V1 – Added S2474 – S2479 and S2514 – S2518

10/6/2021 – V2 – Added s2528 - s2533

10/8/2021 – V3 – Added missing solution slide for s2533