

# SRRTEP Committee: Western EKPC Supplemental Projects

March 19, 2021

# 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

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

**Need Number:** EKPC-2021-007

**Process Stage:** Need Meeting – March 19, 2021

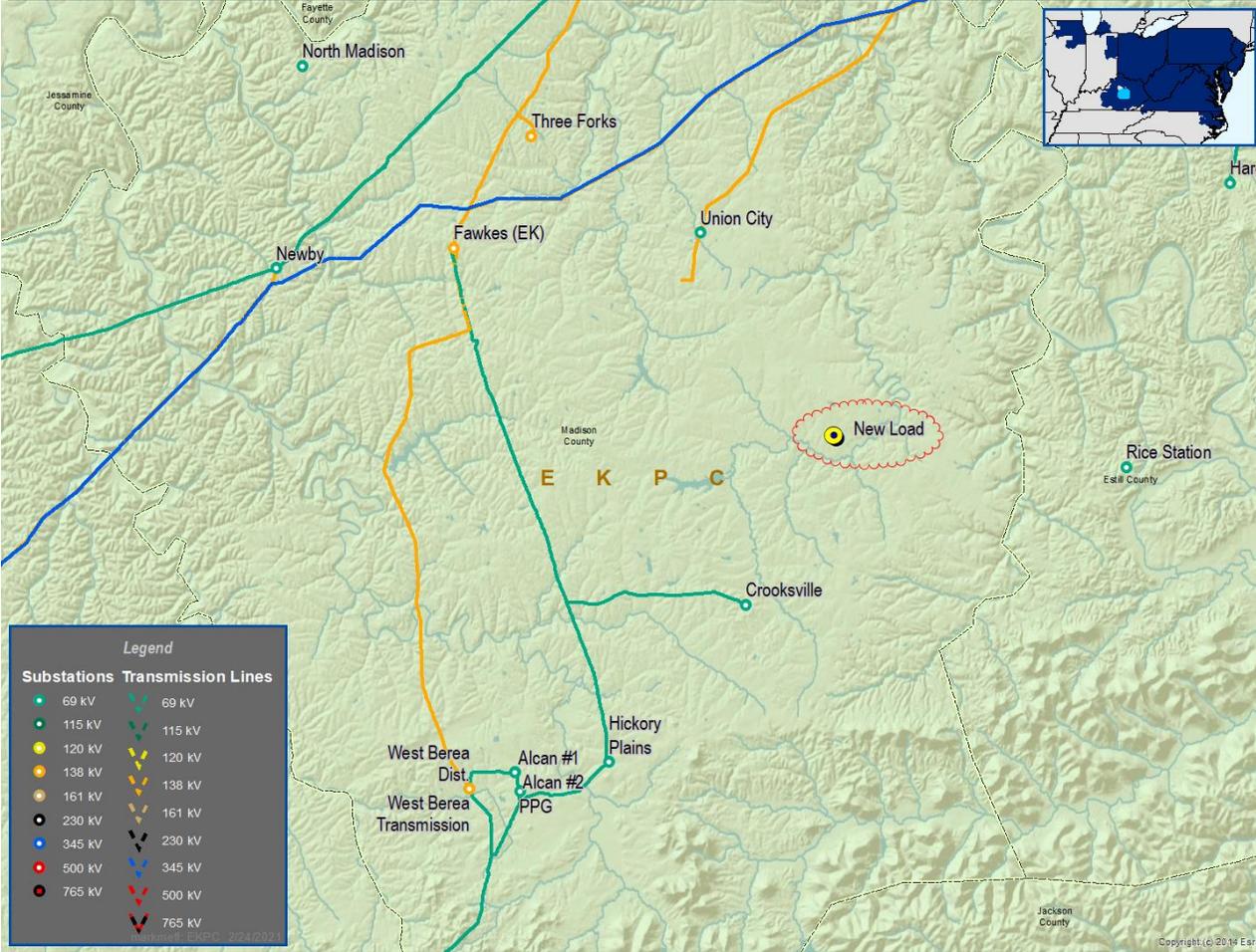
**Supplemental Project Driver:**  
Customer Service

**Specific Assumption Reference:**  
EKPC Assumptions Presentation Slide 14

**Problem Statement:**

A new customer has requested a new delivery point for a 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 Taylorsville Distribution Substation

**Need Number:** EKPC-2021-008

**Process Stage:** Need Meeting – March 19, 2021

**Supplemental Project Driver:**

Equipment Material Condition, Performance and Risk

**Specific Assumption Reference:**

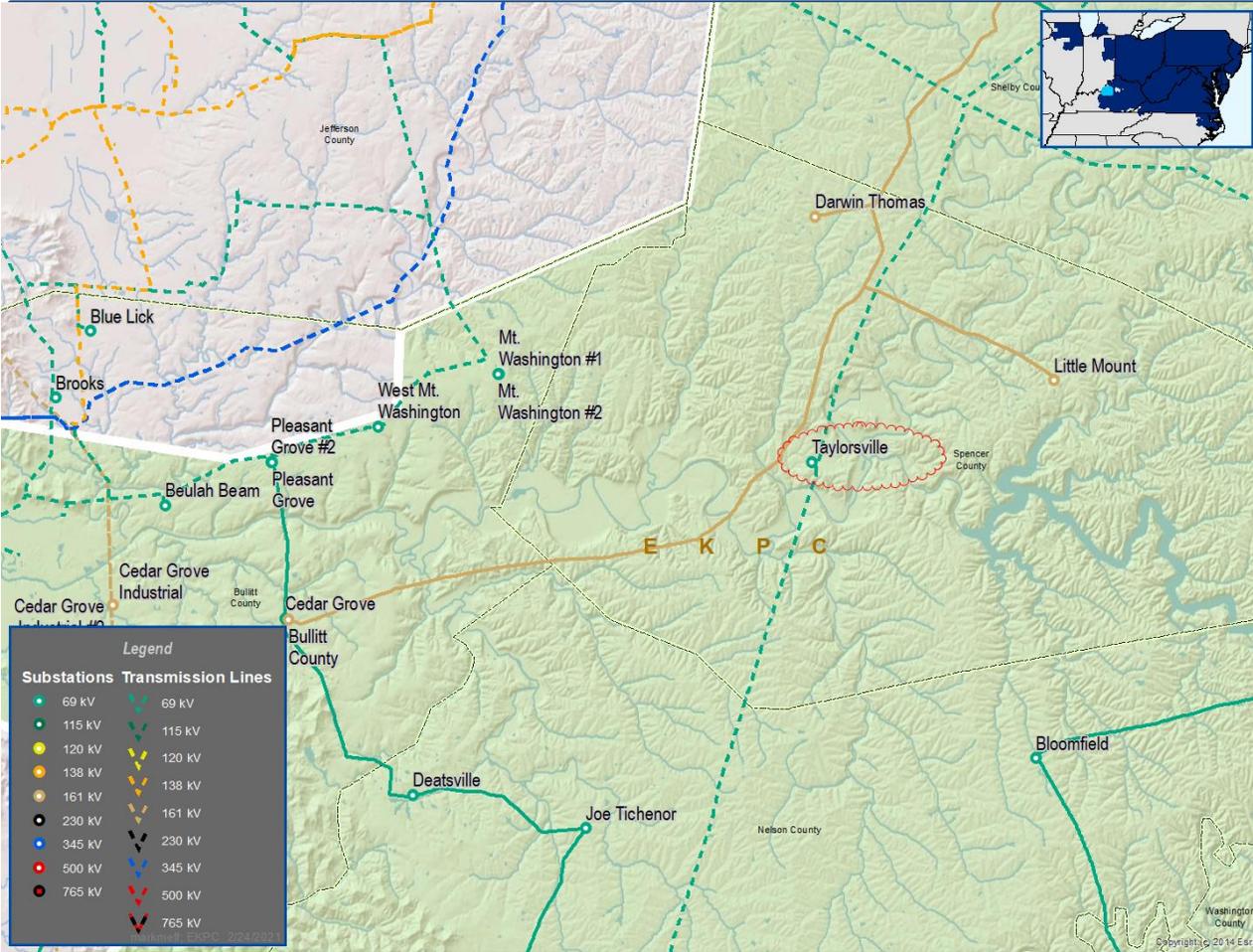
EKPC Assumptions Presentation Slide 12

**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

## Three Links Jct. – Three Links 69kV

**Need Number:** EKPC-2021-009

**Process Stage:** Need Meeting – March 19, 2021

**Supplemental Project Driver:**

Equipment Material Condition, Performance and Risk

**Specific Assumption Reference:**

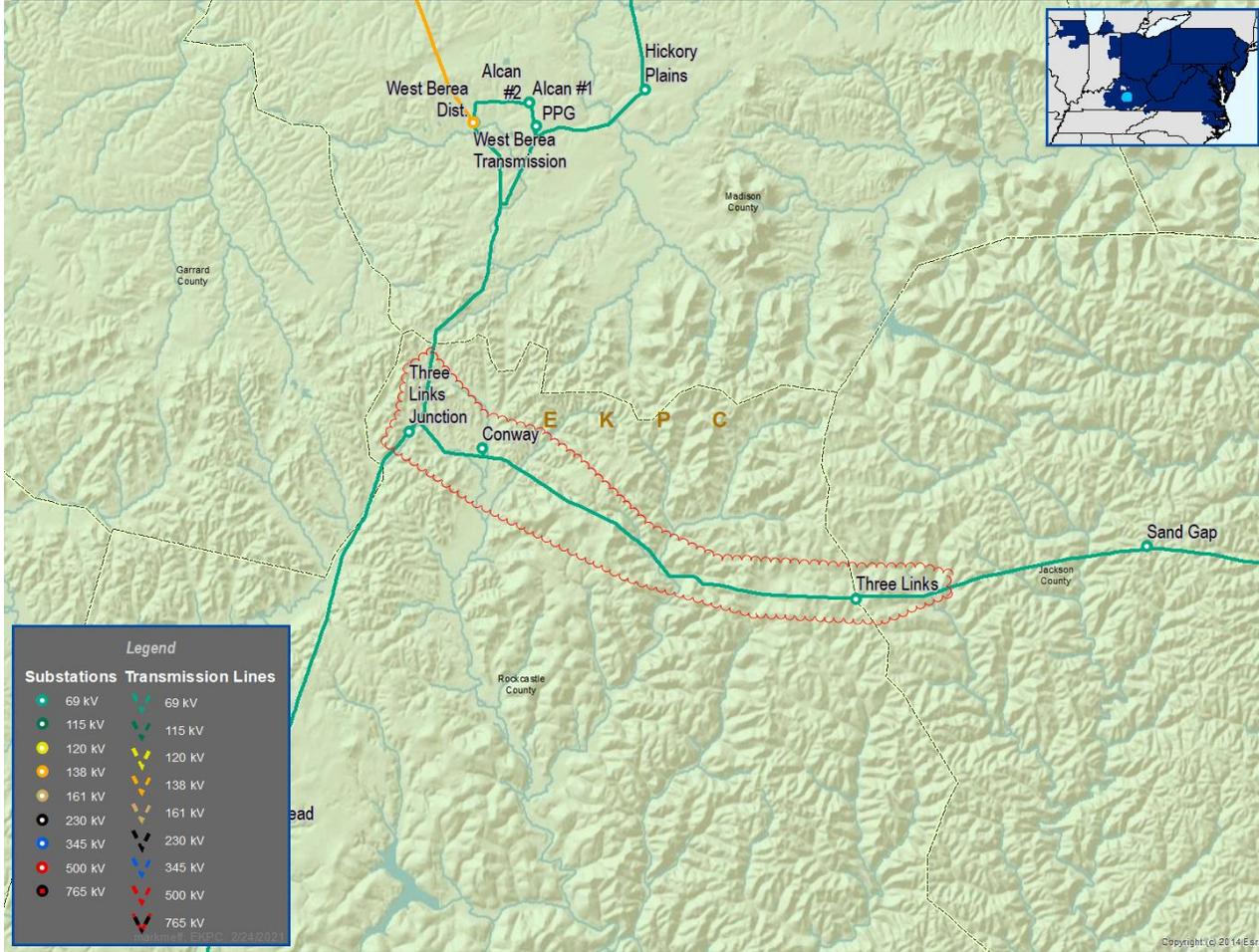
EKPC Assumptions Presentation Slide 12

**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 Goddard - Charters 69 KV

**Need Number:** EKPC-2021-010

**Process Stage:** Need Meeting – March 19, 2021

**Supplemental Project Driver:**

Equipment Material Condition, Performance and Risk

**Specific Assumption Reference:**

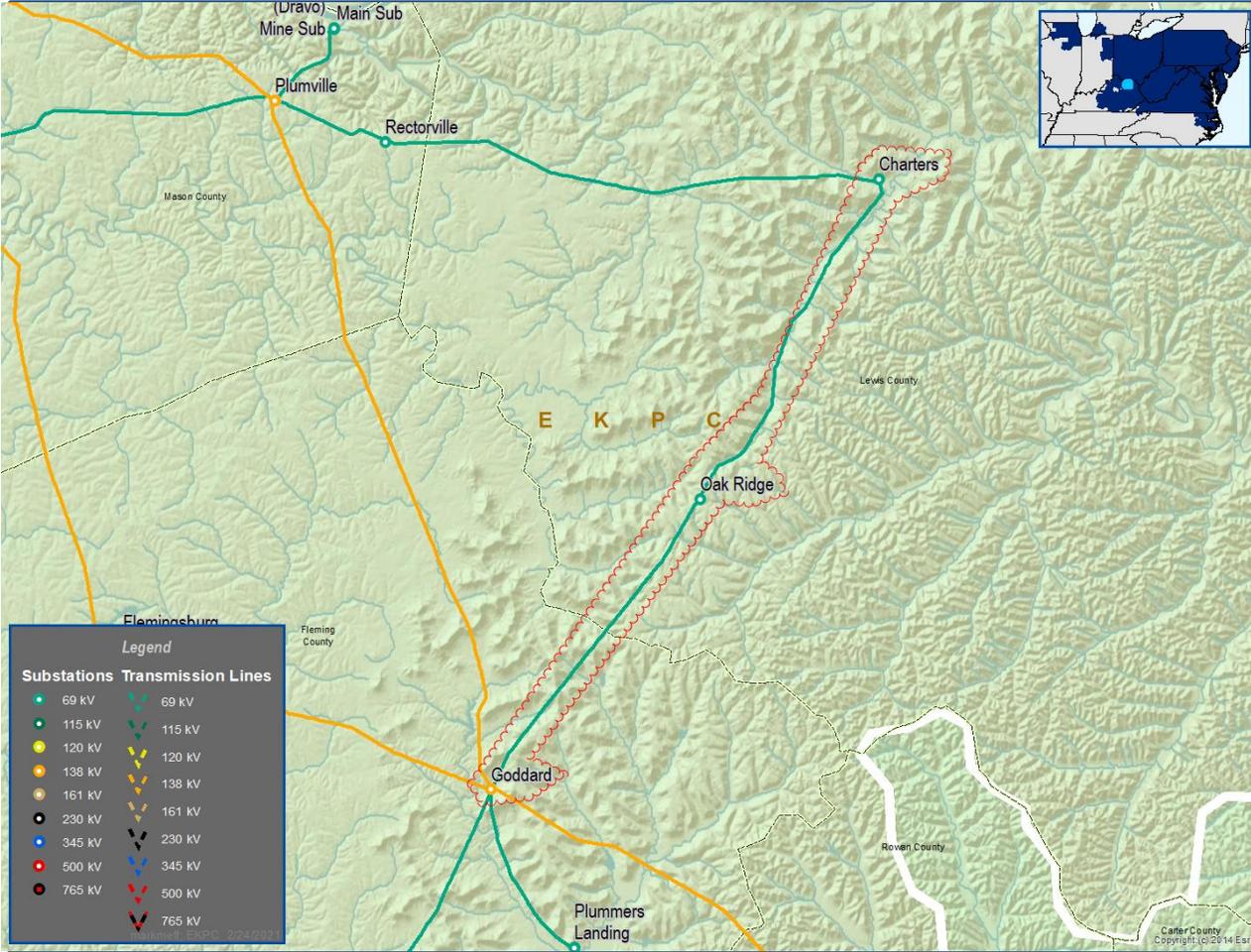
EKPC Assumptions Presentation Slide 12

**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 Beattyville - Tyner 69 KV

**Need Number:** EKPC-2021-011

**Process Stage:** Need Meeting – March 19, 2021

**Supplemental Project Driver:**

Equipment Material Condition, Performance and Risk

**Specific Assumption Reference:**

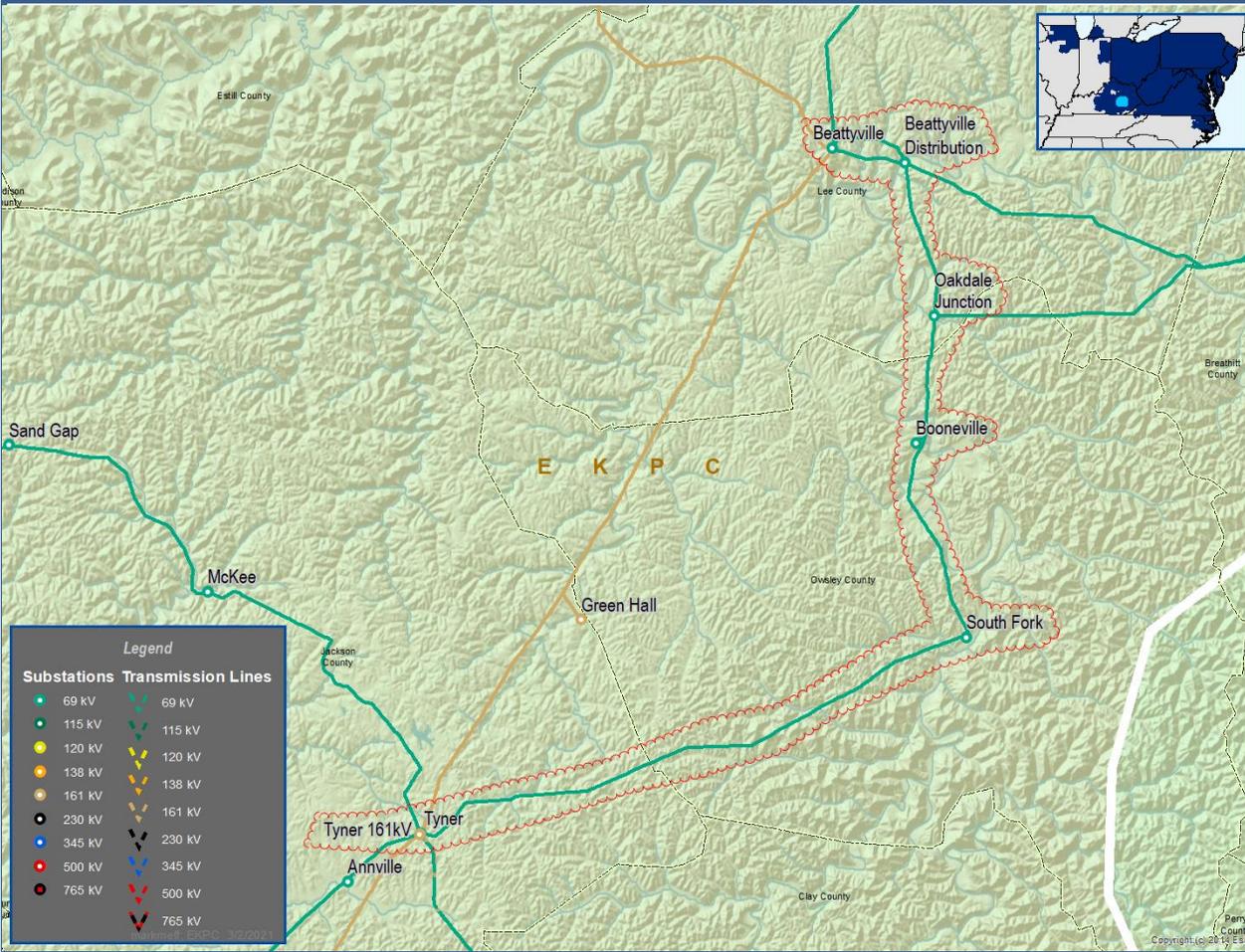
EKPC Assumptions Presentation Slide 12

**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



# 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 Boone-Bullittsville 69 KV

**Need Number:** EKPC-2021-001

**Process Stage:** Solutions Meeting – March 19, 2021

**Previously Presented:**

Needs Meeting 2/17/2020

**Supplemental Project Driver:**

Equipment Material Condition, Performance and Risk

Other

**Specific Assumption Reference:**

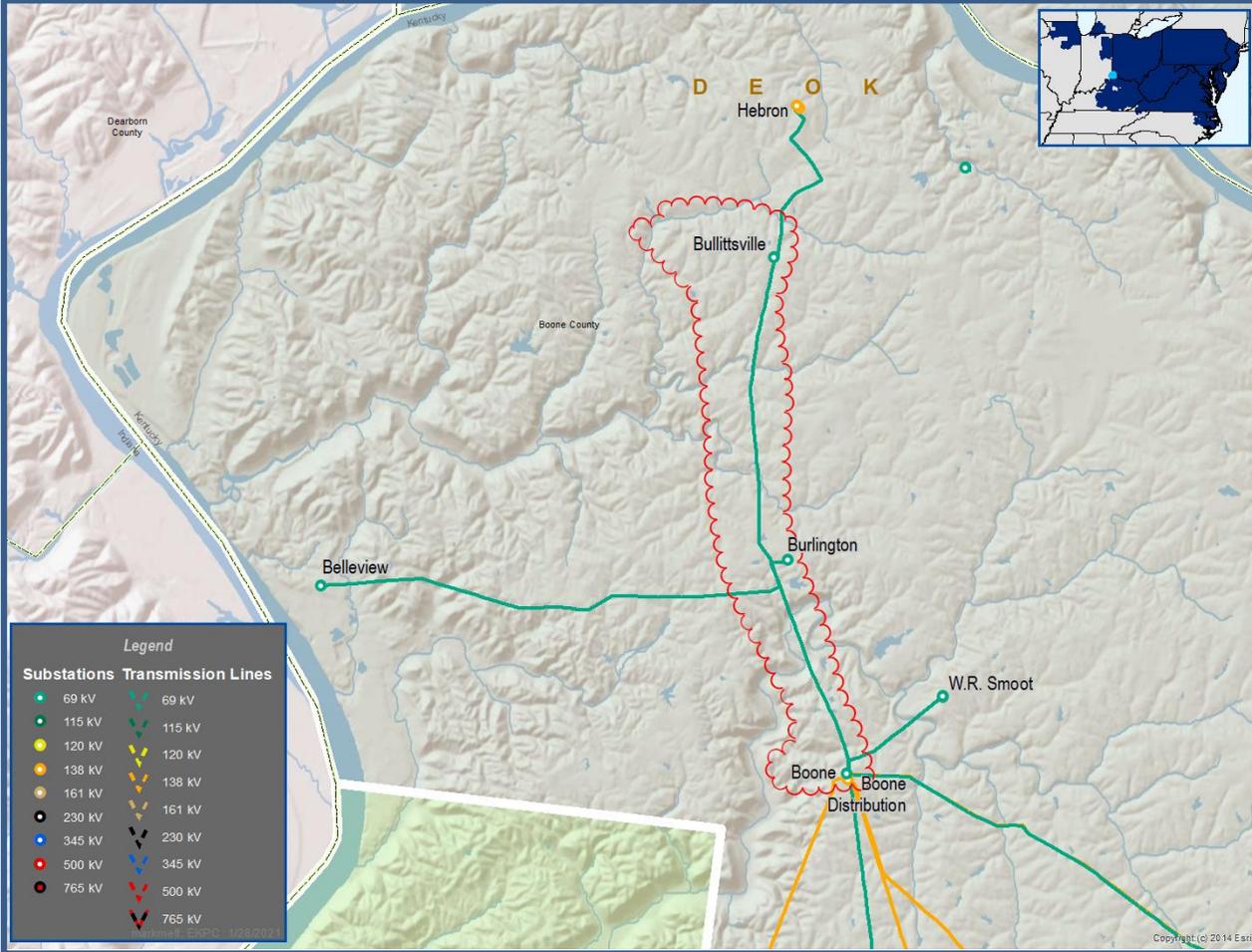
EKPC Assumptions Presentation Slide 12 & 16

**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:** Solutions Meeting March 19, 2021

## Proposed 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:

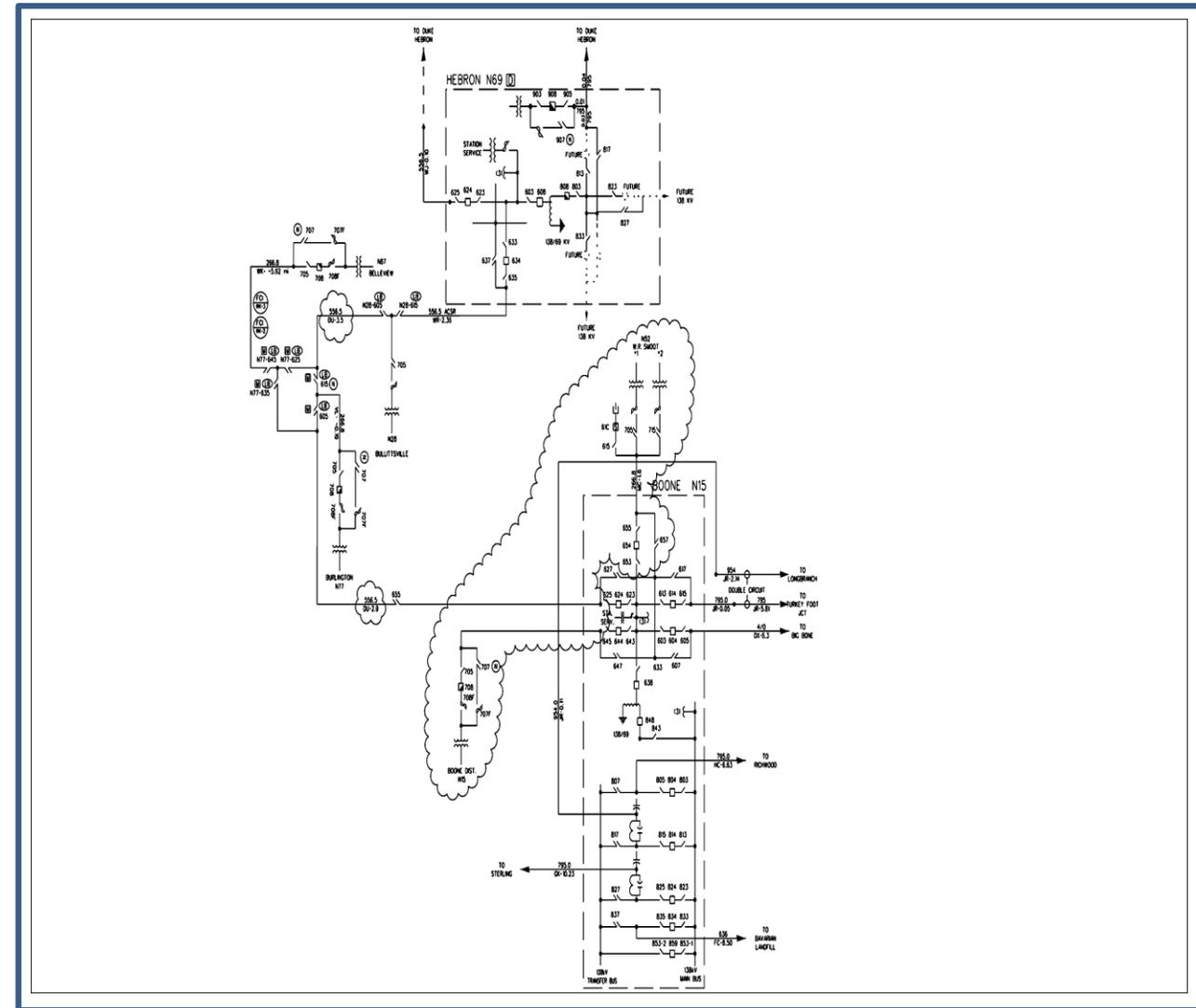
- Increased line capacity and reliability
- Reduces the number of line taps on the Boone – Hebron 69 KV circuit.

## Alternatives Considered:

No feasible alternatives

**Projected In-Service:** 6/1/2022

**Project Status:** Engineering



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

**Need Number:** EKPC-2021-002

**Process Stage:** Solutions Meeting – March 19, 2021

**Previously Presented:**

Needs Meeting 2/17/2020

**Supplemental Project Driver:**

Equipment Material Condition, Performance and Risk

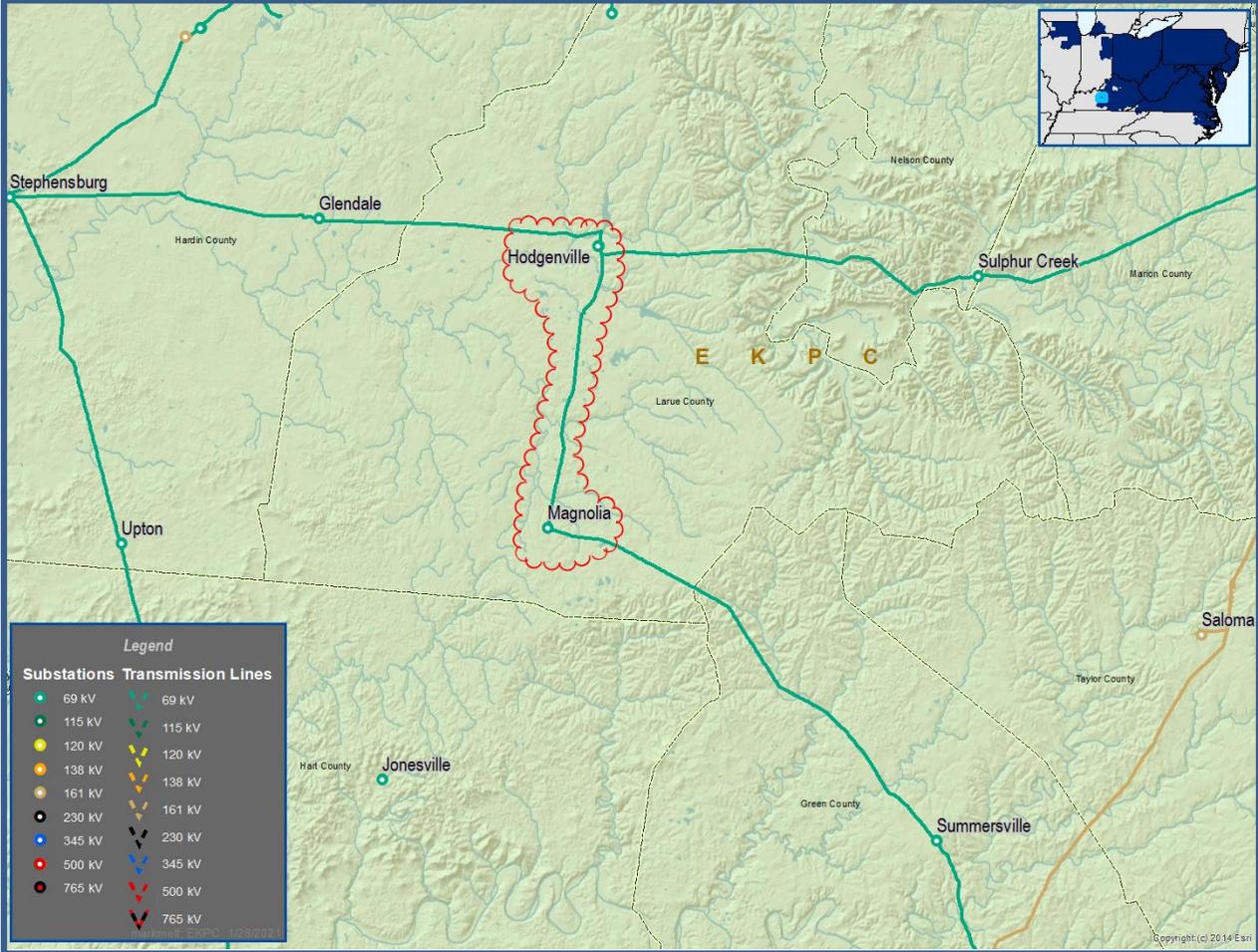
**Specific Assumption Reference:**

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:** Solutions Meeting March 19, 2021

**Proposed 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:**

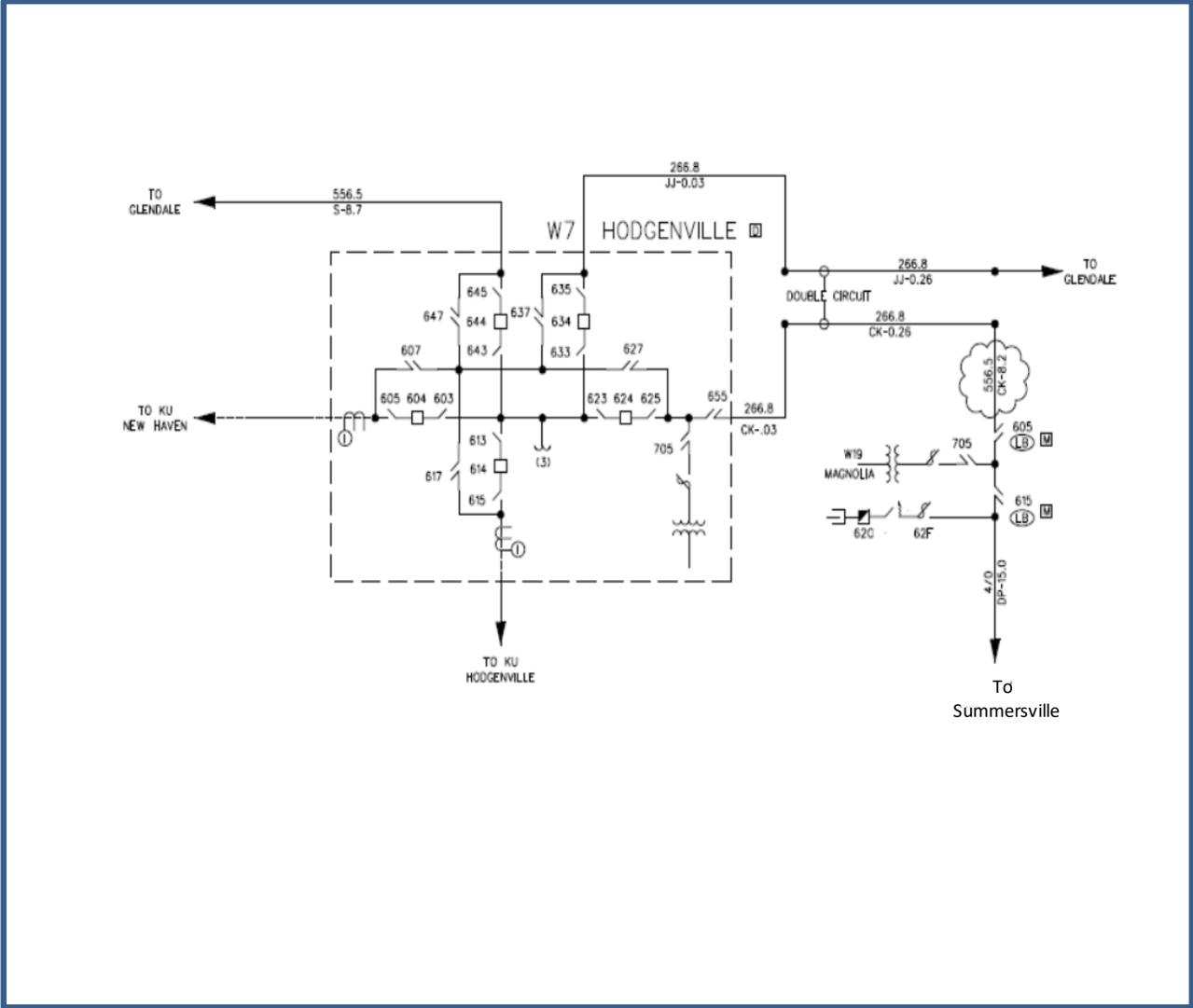
Increased line capacity and reliability

**Alternatives Considered:**

No feasible alternatives

**Projected In-Service:** 6/30/2022

**Project Status:** Engineering



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

**Need Number:** EKPC-2021-003

**Process Stage:** Need Meeting – March 19, 2021

**Previously Presented:**

Needs Meeting 2/17/2020

**Supplemental Project Driver:**

Equipment Material Condition, Performance and Risk

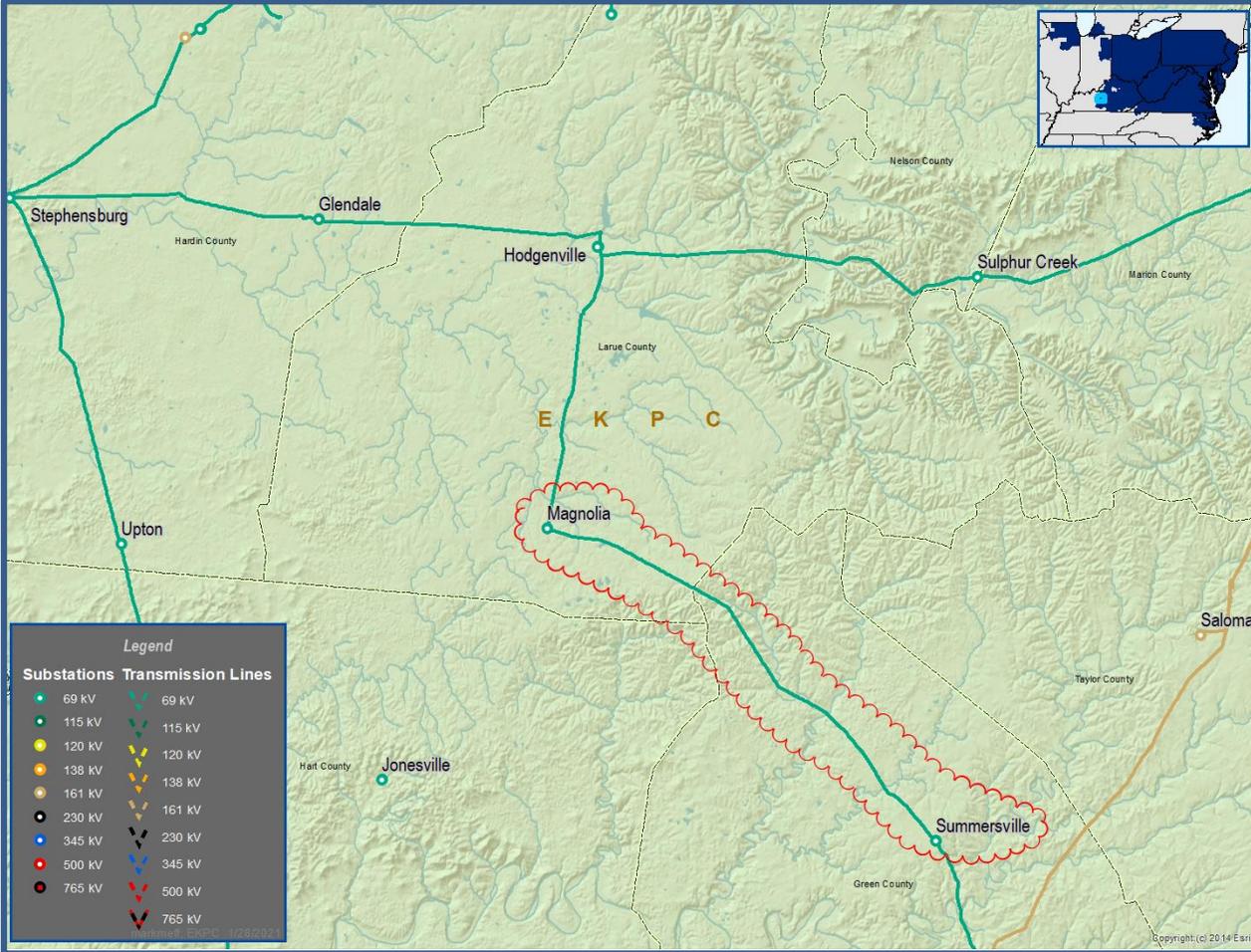
**Specific Assumption Reference:**

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 Millers Creek

**Need Number:** EKPC-2021-004

**Process Stage:** Solutions Meeting – March 19, 2021

**Previously Presented:**

Needs Meeting 2/17/2020

**Supplemental Project Driver:**

Equipment Material Condition, Performance and Risk  
Customer Service

**Specific Assumption Reference:**

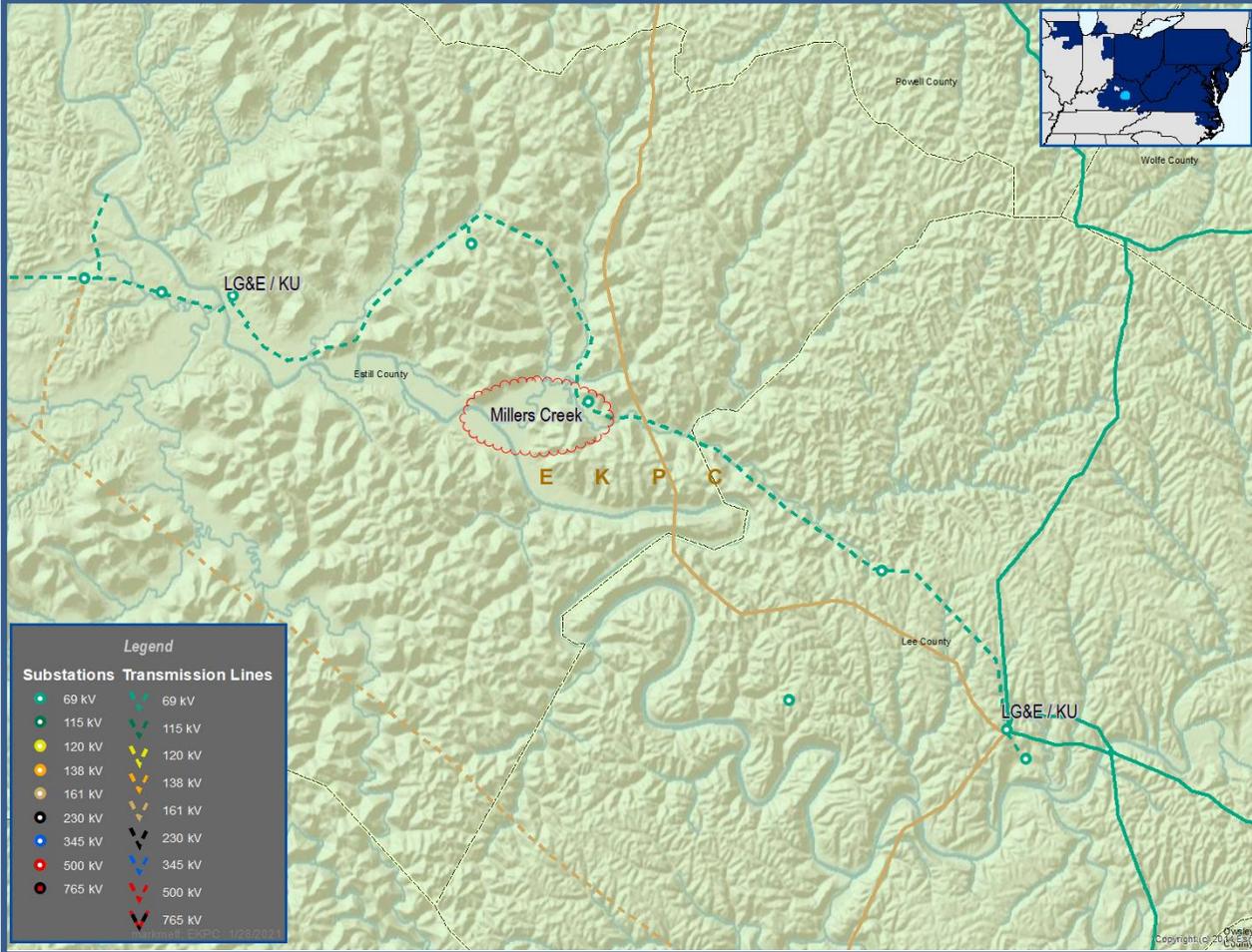
EKPC Assumptions Presentation Slide 12 & 14

**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 East Bernstadt

**Need Number:** EKPC-2021-005

**Process Stage:** Solution Meeting – March 19, 2021

**Previously Presented:**

Needs Meeting 2/17/2020

**Supplemental Project Driver:**

Equipment Material Condition, Performance and Risk

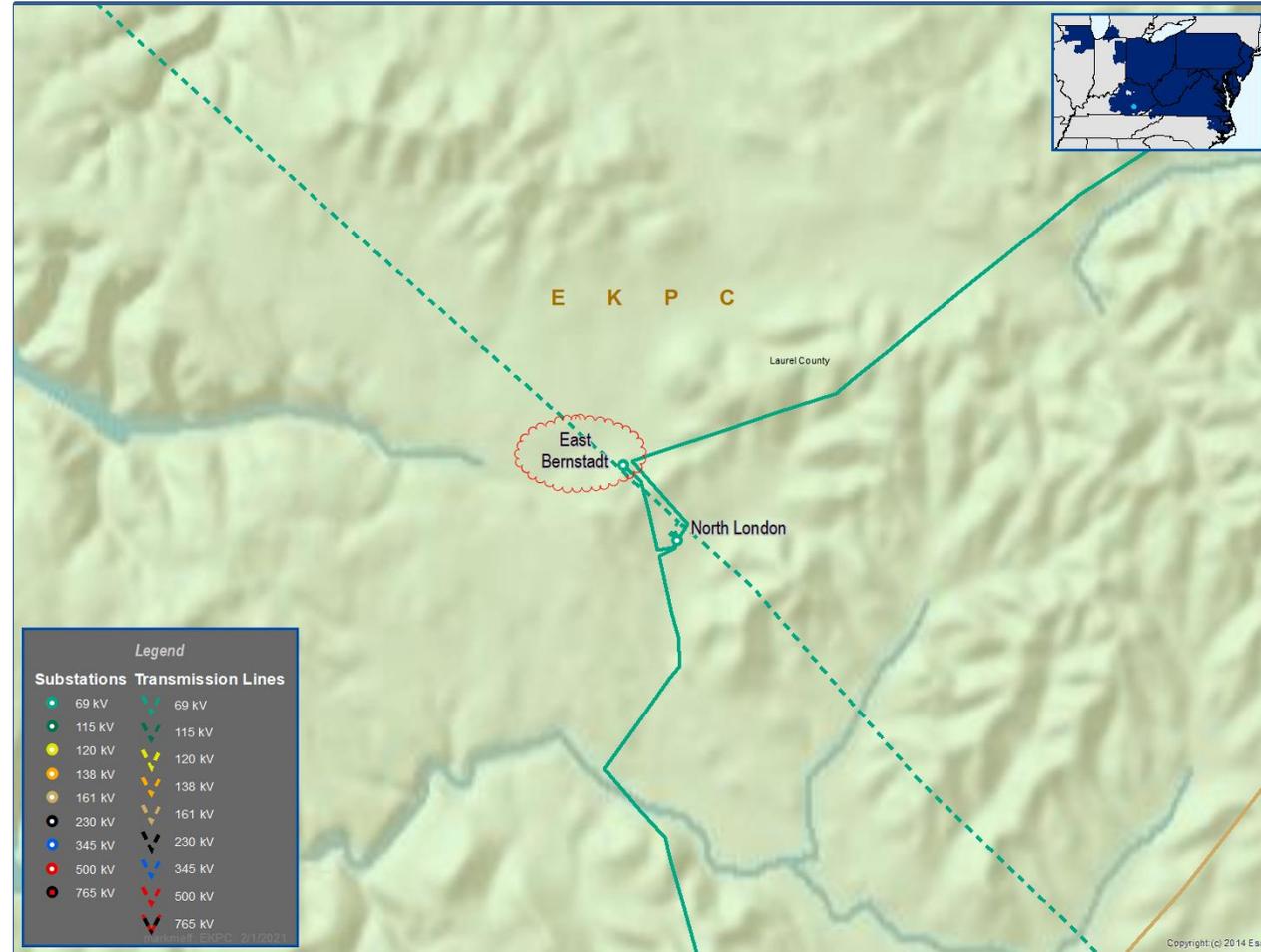
**Specific Assumption Reference:**

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:** Solutions Meeting March 19, 2021

**Proposed 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:**

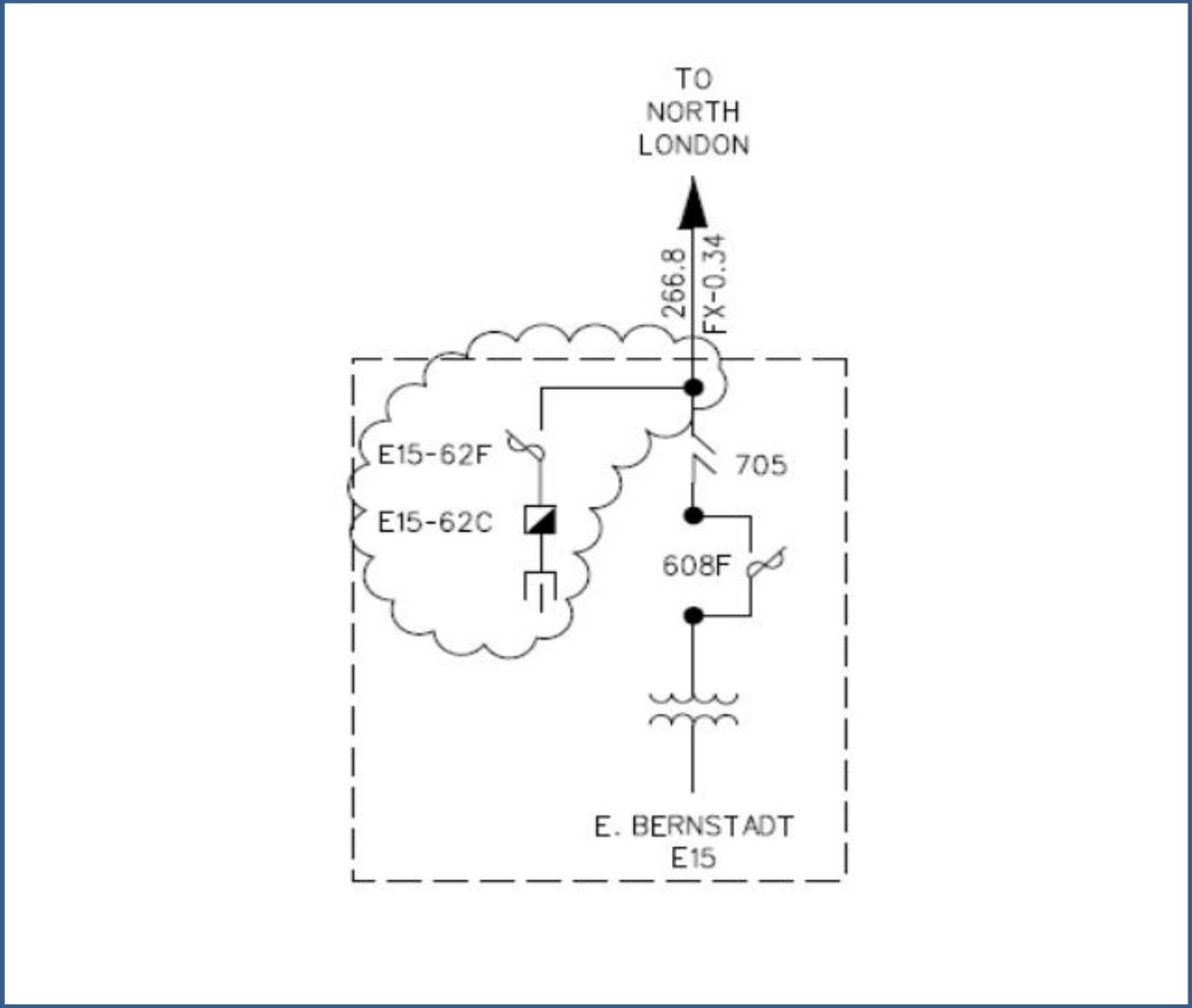
None

**Alternatives Considered:**

No feasible alternatives

**Projected Retirement Date :** 12/31/2022

**Project Status:** Engineering



# EKPC Transmission Zone M-3 Process Lees Lick

**Need Number:** EKPC-2021-006

**Process Stage:** Solution Meeting – March 19, 2021

**Previously Presented:**

Needs Meeting 2/17/2020

**Supplemental Project Driver:**

Equipment Material Condition, Performance and Risk

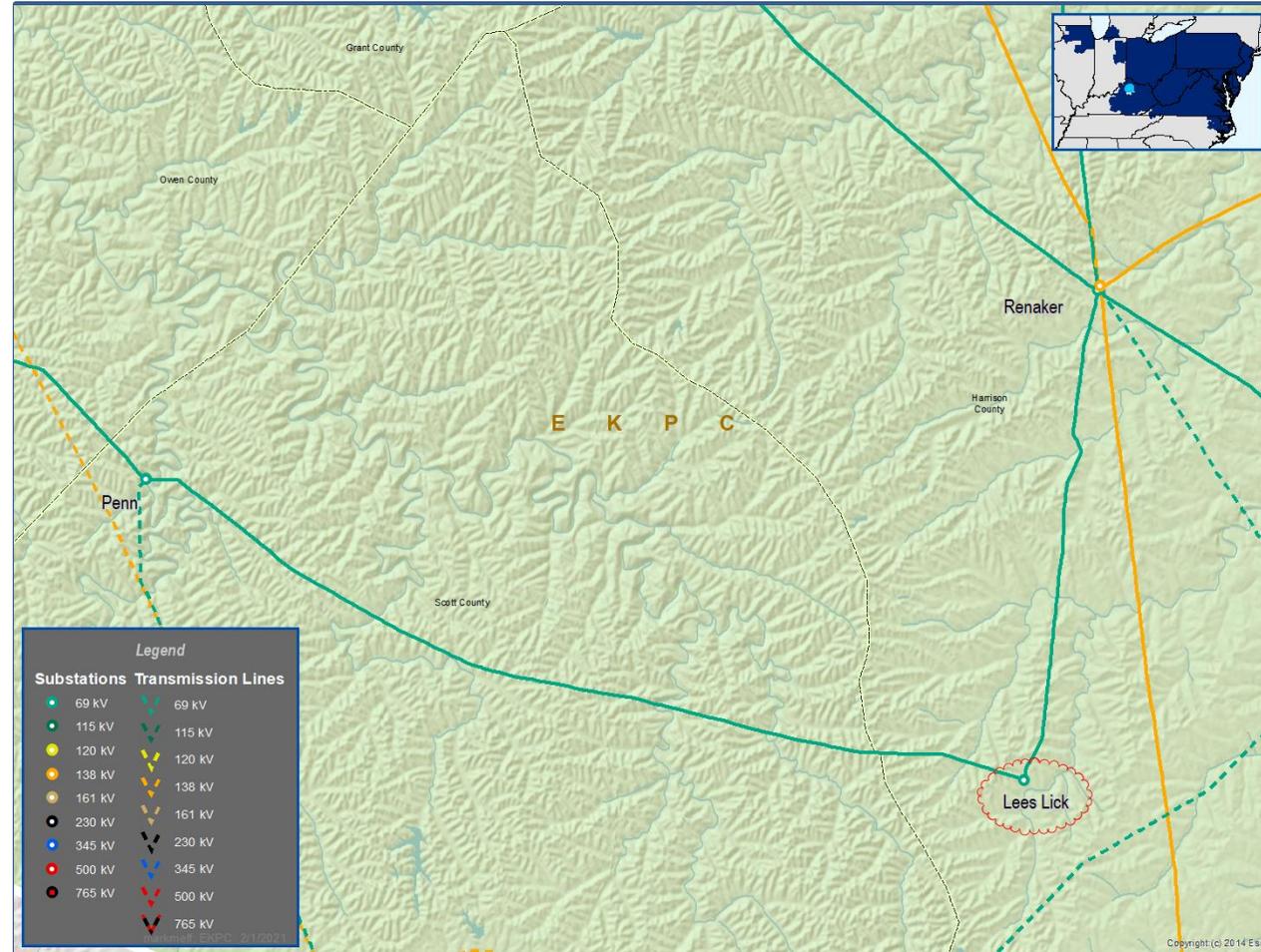
**Specific Assumption Reference:**

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:** Solutions Meeting March 19, 2021

**Proposed 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:**

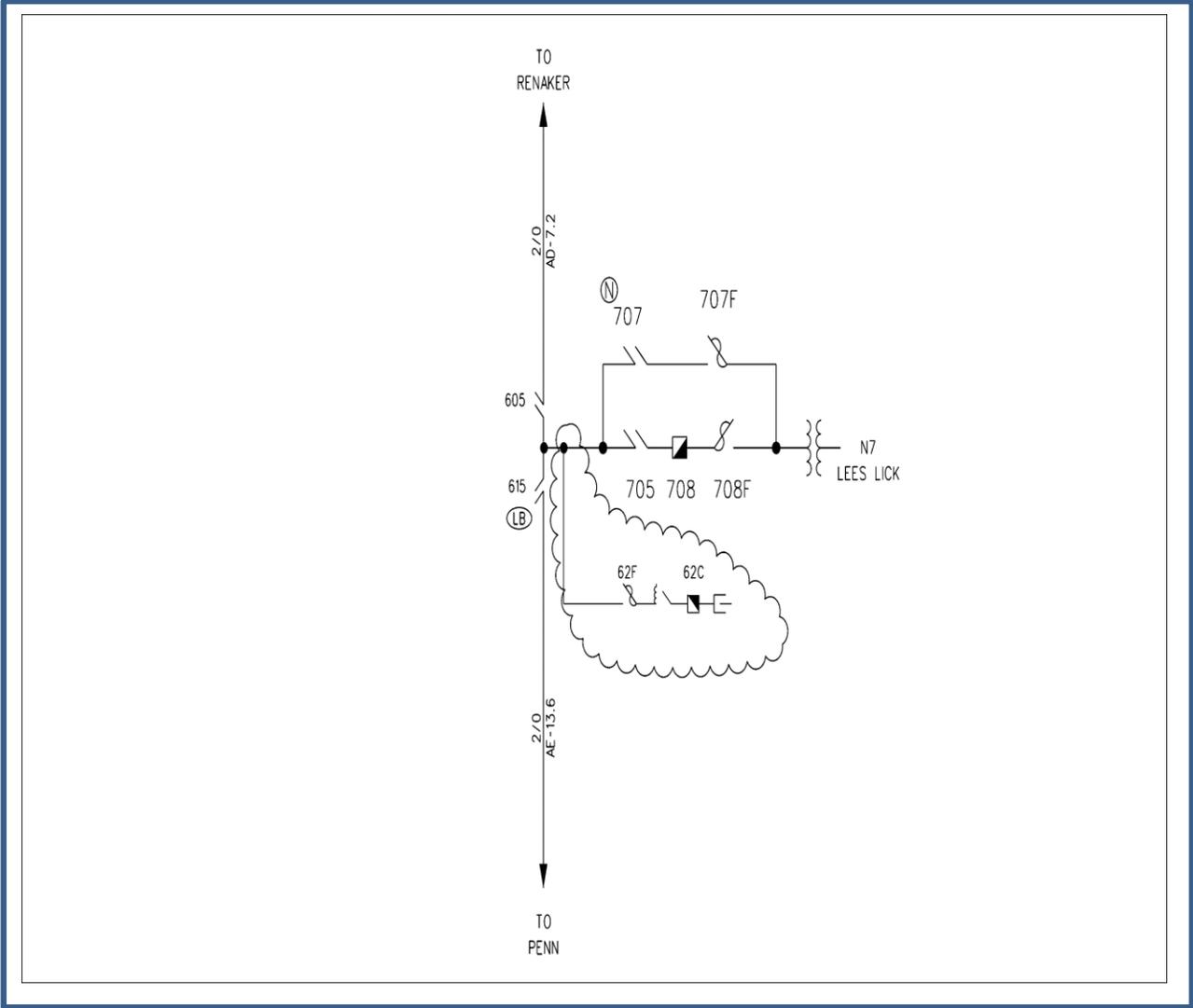
None

**Alternatives Considered:**

No feasible alternatives

**Projected Retirement Date :** 12/31/2022

**Project Status:** Engineering



# 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

3/9/2021 – V1 – Original version posted to pjm.com

3/15/2021 – V2 – Slide #16, Corrected estimated costs

5/24/2021 – V3 – Slide #20, Corrected Need ID