SRRTEP Committee: Western
EKPC Supplemental Projects

November 18, 2022

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
Stephensburg – Vertrees 69 KV

Need Number: EKPC-2022-005

Process Stage: Solutions Meeting – November 18, 2022

Previously Presented:

Needs Meeting –October 14, 2022

Supplemental Project Driver:

Equipment Material Condition, Performance and Risk

Specific Assumption Reference:

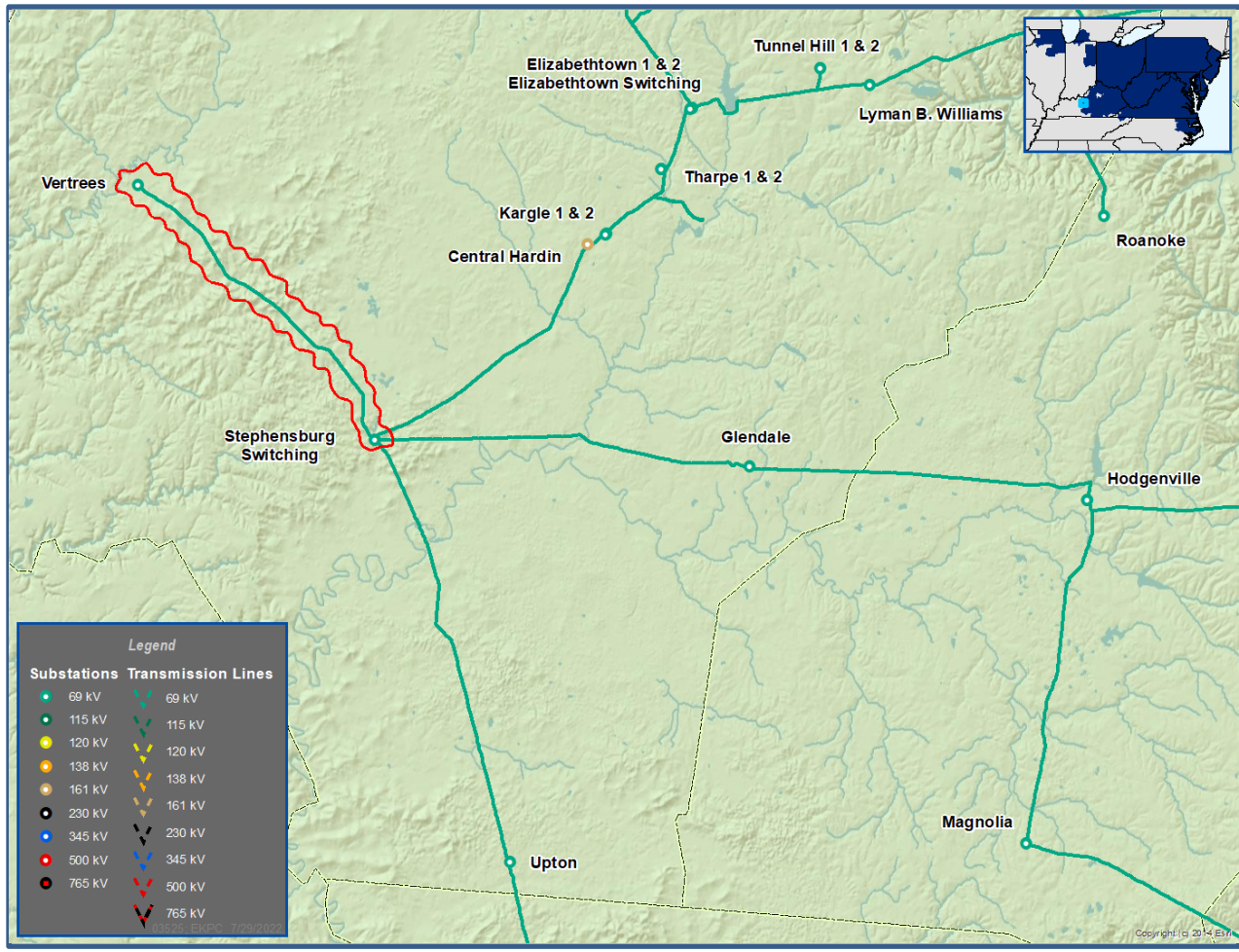
EKPC Assumptions Presentation Slides 13

Problem Statement:

The 8.7 mile, Stephensburg-Vertrees 69 KV transmission line section is 65 years old.

Testing from the LineVue robot from Kinectrics Corporation deemed the condition of the line 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
Stephensburg – Vertrees 69 KV

Need Number: EKPC-2022-005

Process Stage: Solutions Meeting – November 18, 2022

Proposed Solution:

Build a new 8.7 mile Stephensburg – Vertrees 69 KV line using 556 ACSR/TW conductor adjacent to the existing line section. Retire the existing line section.

Distribution Cost: $6.83M

Transmission Cost: $0.0M

Ancillary Benefits:

- None

Alternatives Considered:

Alternative 1 – Build a new Vertrees – Rineyville (9.46 miles) 69 KV line section and retire the existing Stephensburg – Vertrees line section. Rebuild Tharp Tap-Elizabethtown KU using 954 ACSR and increase the maximum operating temperature of the EK Elizabethtown-Tharp Tap to 302F.

Distribution Cost: $10.7M

Transmission Cost: $1.4M

Alternative 2 – Build a new Vertrees-Rineyville (9.46 miles) 69 KV line section using 556 ACSR and rebuild Stephensburg –Vertrees using 556 ACSR (8.7 miles).

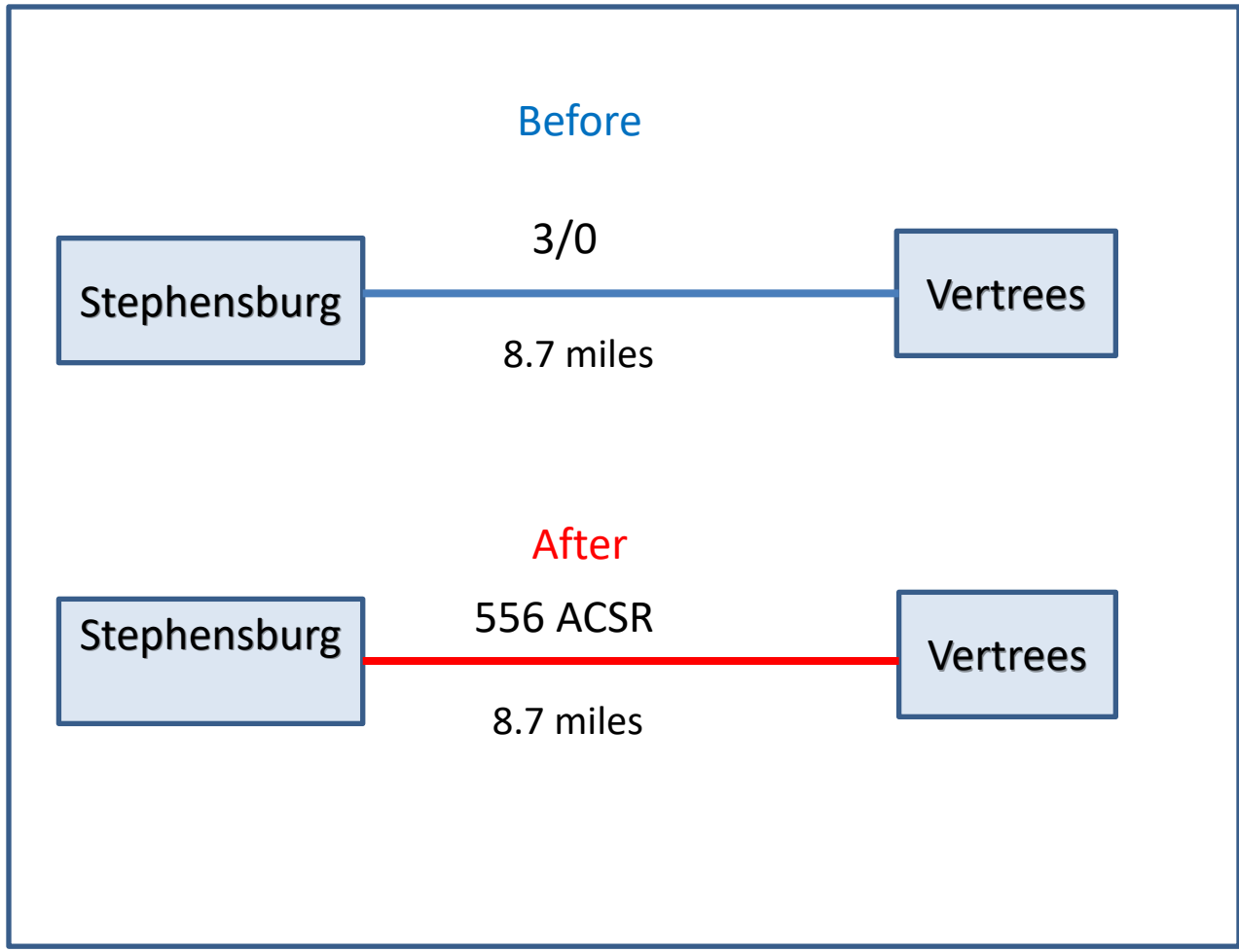
Distribution Cost: $0.0M

Transmission Cost: $17.5M

Projected In-Service: 6/1/2024

Project Status: Engineering

Model: N/A



EKPC Transmission Zone M-3 Process
Laurel Co Industrial Area 69 KV

Need Number: EKPC-2022-006

Process Stage: Solutions Meeting – November 18, 2022

Previously Presented:

Needs Meeting –October 14, 2022

Specific Assumption Reference:

EKPC Assumptions Presentation Slides 15

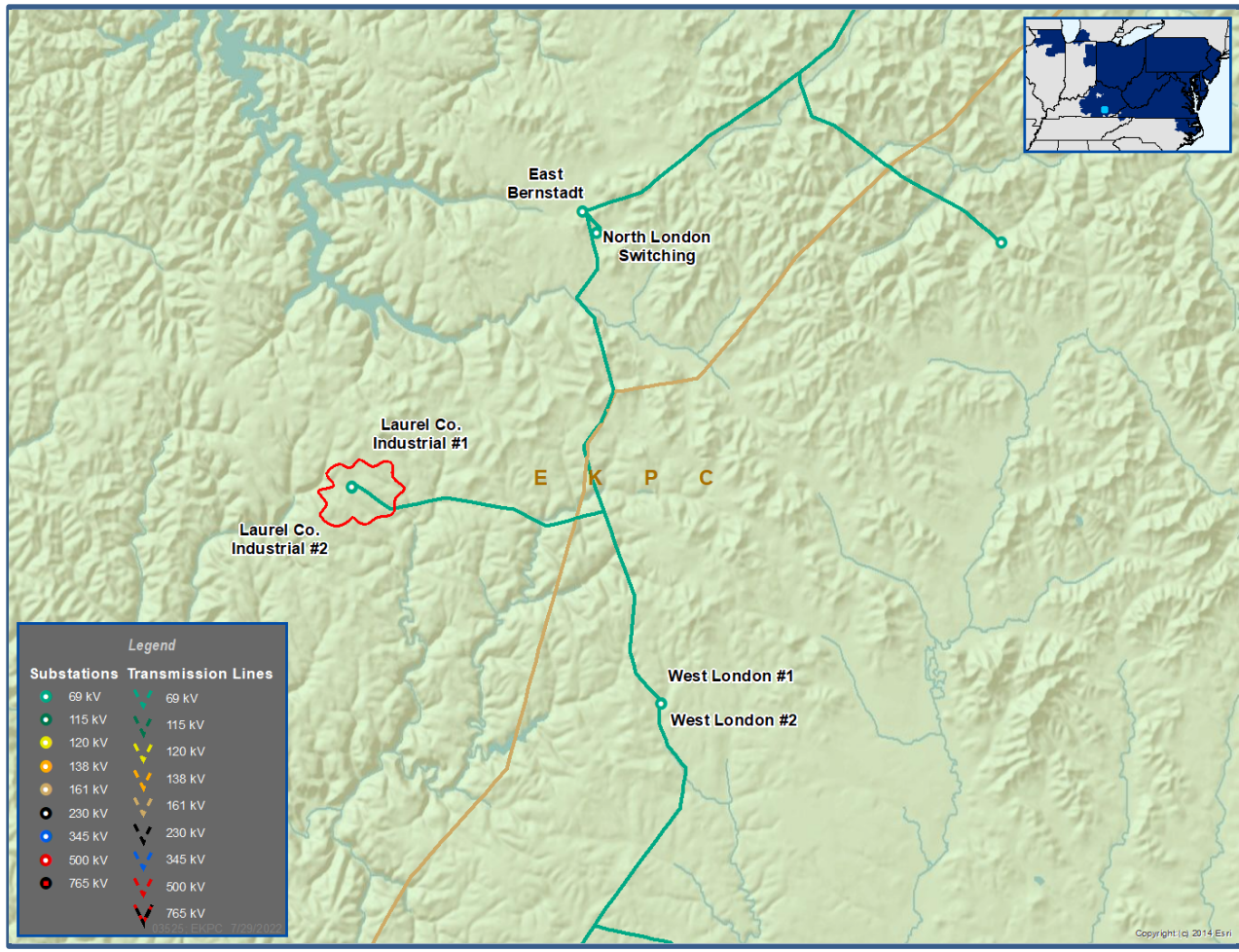
Problem Statement:

The load in the area of the Laurel County Industrial distribution substation has expanded to the maximum capacity of the Laurel County Industrial #1 11.2/14 MVA distribution transformer. Additionally, an industrial customer served from this substation is planning an expansion to add additional load, this would cause the load to exceed the maximum rating of the distribution transformer.

The 69 KV circuit that serves this area currently feeds six distribution substations with one serving a critical hospital load. Distribution outages in the area have been exacerbated due to limited distribution back feed capabilities, limited by loading of nearby distribution feeders.

A solution is needed to address these issues to improve the reliability of the distribution system in the area.

Model: N/A



EKPC Transmission Zone M-3 Process
Laurel Co Industrial Area 69 KV

Need Number: EKPC-2022-006

Process Stage: Solutions Meeting – November 18, 2022

Proposed Solution:

Build a new Dav Lane 4 breaker 69 KV switching station with a 69/12.47 KV, 12/16/20 MVA distribution substation, near the Laurel Co Industrial tap point.

Distribution Cost: $2.9M

Transmission Cost: $3.8M

Ancillary Benefits:

- Increased reliability to critical loads
- Provides operational flexibility
- Reduces restoration times

Alternatives Considered:

Alternative 1 – Build a new Dav Lane 69/12.47 KV, 12/16/20 MVA distribution substation. Construct a new 0.3 mile 69 KV tap line to serve the new distribution station from the North London-Laurel Co Industrial Tap 69 KV transmission line. Create a normally open connection at the Dave Lane tap point to the West London substation. Install a capacitor bank at the new Dav Lane station.

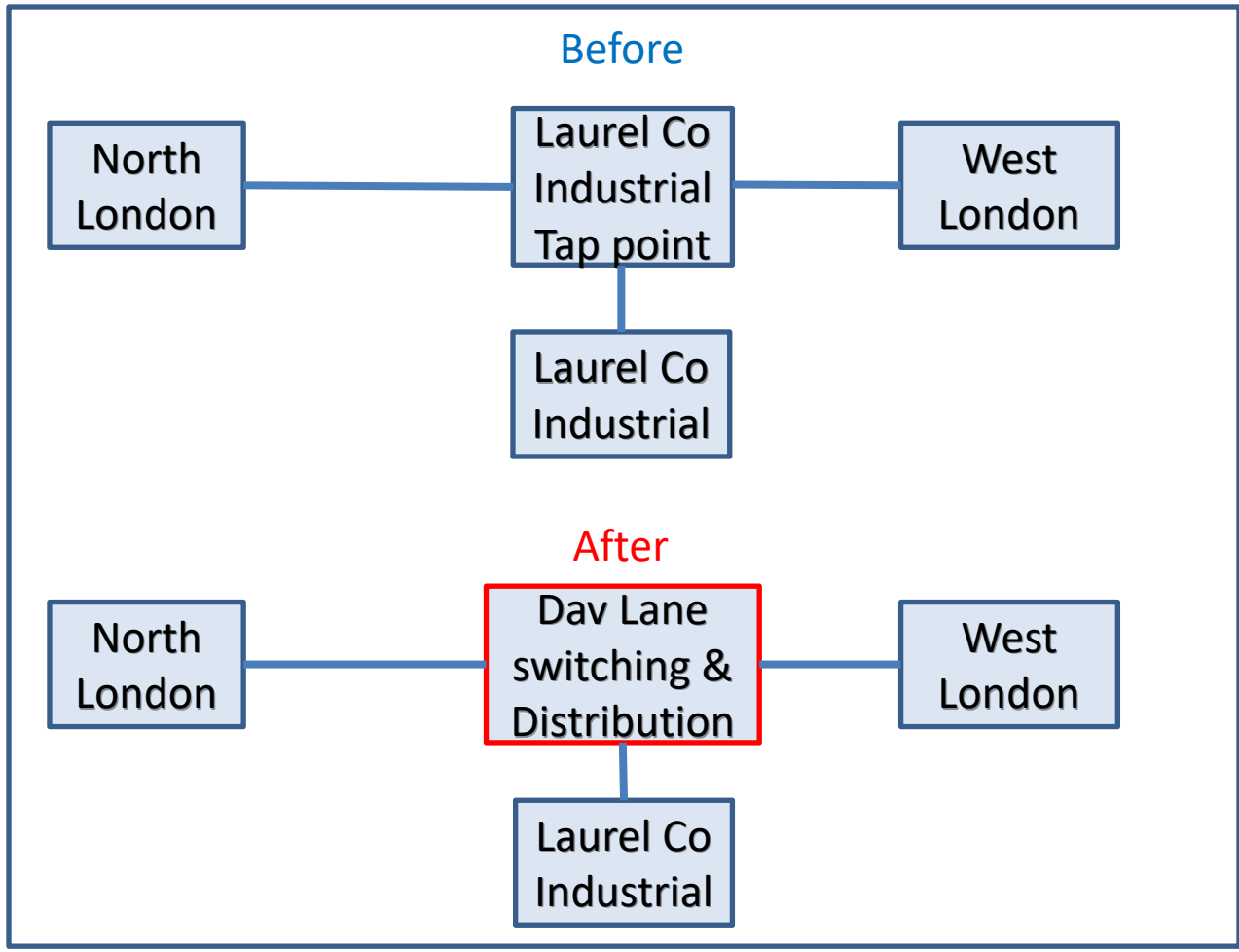
Distribution Cost: $4M

Transmission Cost: $0.6M

Projected In-Service: 6/1/2024

Project Status: Engineering

Model: N/A



EKPC Transmission Zone M-3 Process
Cincinnati/Northern KY Airport Area Customer Service

Need Number: EKPC-2020-002

Process Stage: Solution Meeting – November 18, 2022

Previously Presented:

Needs Meeting –March 19, 2020

Supplemental Project Driver:

Customer Service

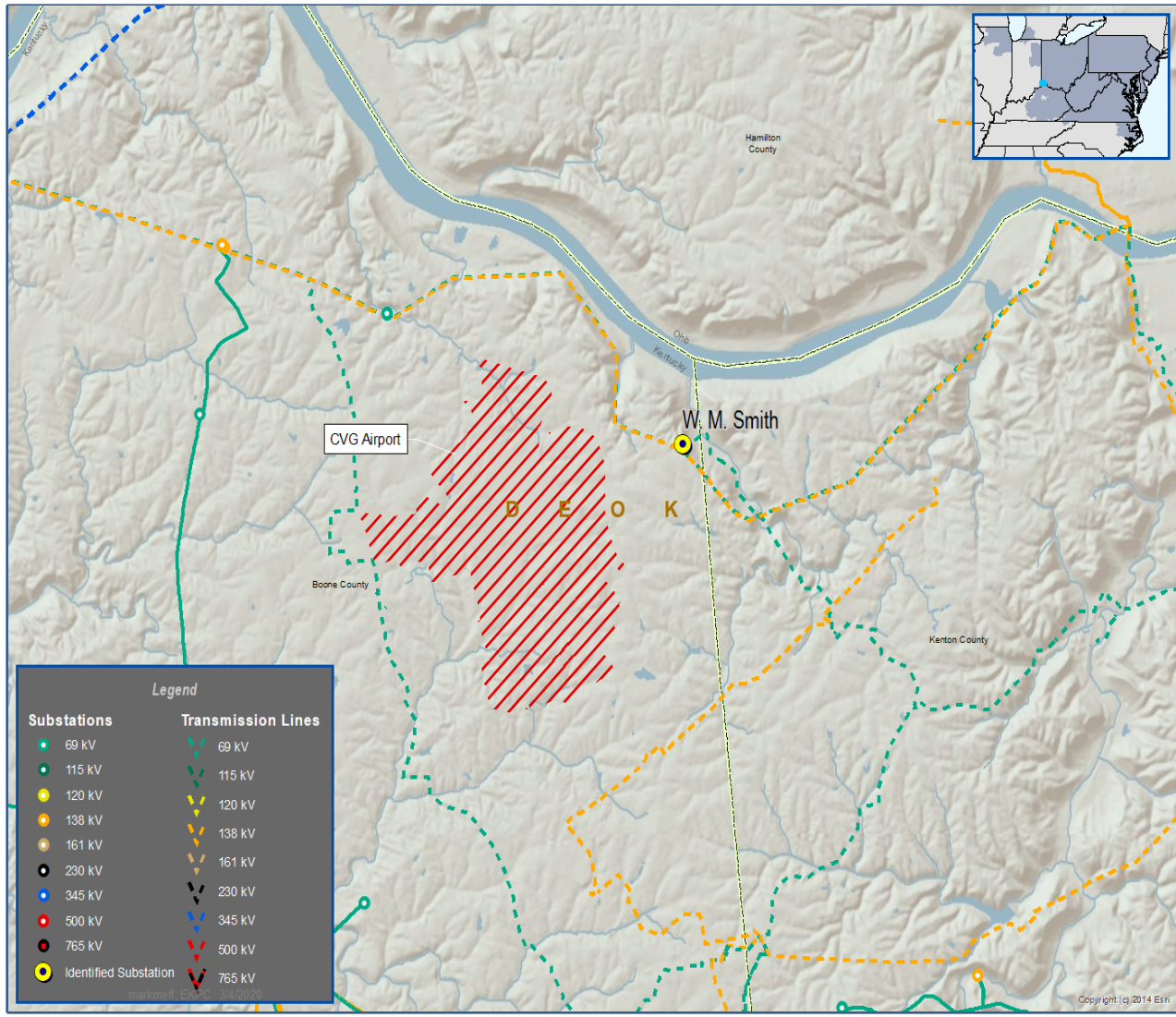
Specific Assumption Reference:

EKPC Assumptions Presentation Slide 15

Problem Statement:

The distribution cooperative serving the area in the vicinity of the Cincinnati/Northern Kentucky International Airport has requested that EKPC develop a solution to improve service reliability to customers, provide back-feed capability, and add substation transformer capacity for expected load growth in the area. This area is currently served by EKPC's W.M. Smith distribution substation. The footprint of that substation is compressed, and future expansion is not possible at that location. Additionally, the existing substation is located on the fringe of the load pocket and is not adjacent to the airport, where the growth is expected to occur.

Model: N/A



EKPC Transmission Zone M-3 Process
Cincinnati/Northern KY Airport Area Customer Service

Need Number: EKPC-2020-002

Process Stage: Solutions Meeting – November 18, 2022

Proposed Solution:
Install a new 69 KV breaker at EKPC's Hebron substation, construct a new 7.6 mile 69 kV transmission line from EKPC's Hebron 69 KV substation to serve a new 69-13.2 kV, 12/16/20 MVA Mineola Pike distribution substation.

Additionally, the Downing substation will be served from this new line section, resulting in changing the Downing normally closed connection to DEOK to a normally-open connection configuration.

Distribution Cost: $26.7M
Transmission Cost: $0.73M

Ancillary Benefits:

- Large long-term NITS savings
- Reduces reliance on foreign utilities
- Provides greater back-feed capabilities to the area

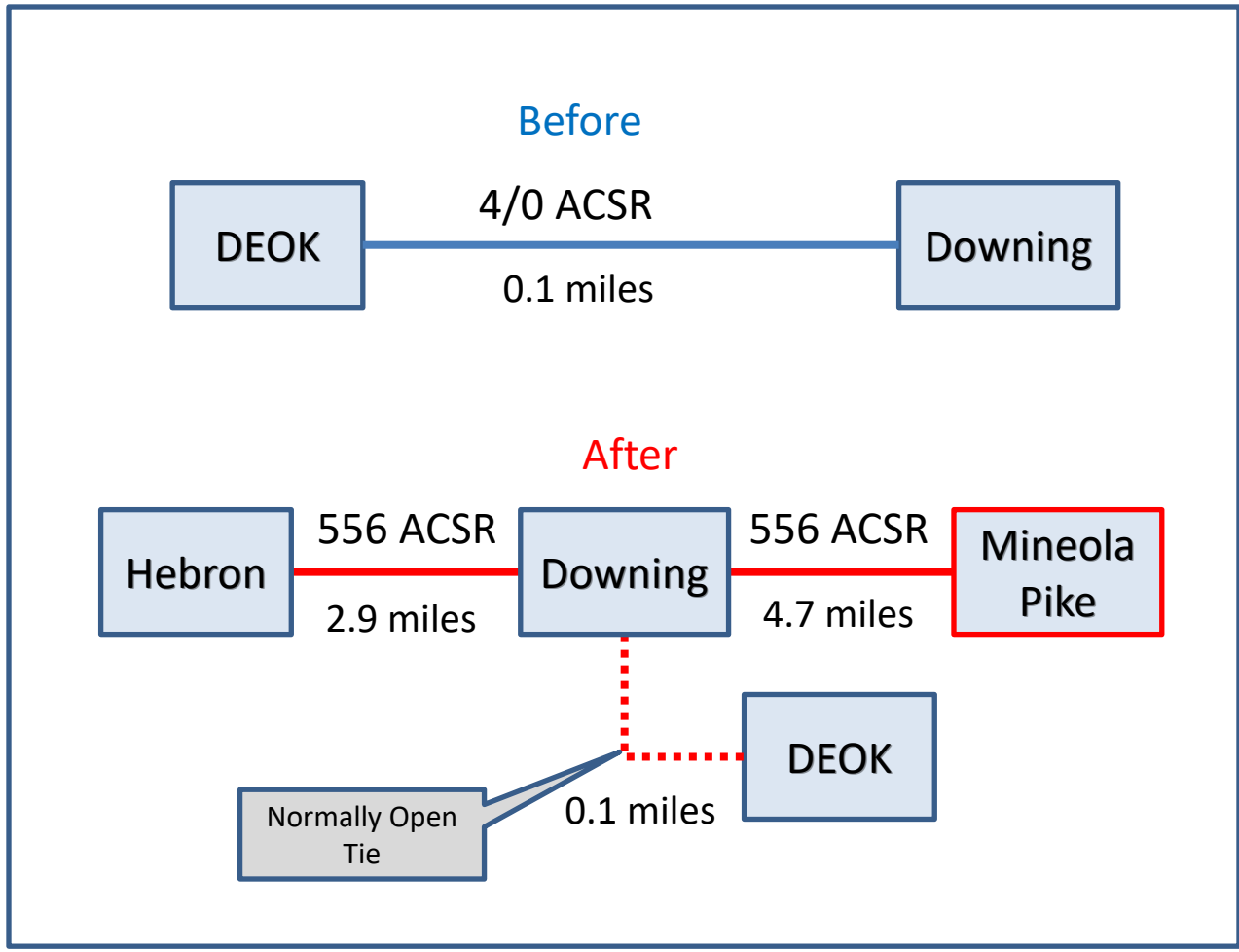
Alternatives Considered:
Install necessary infrastructure at DEOK's Constance 138 KV substation and construct a new 1.0 mile 138 kV transmission line from the Constance substation to serve a new 138-13.2 kV, 12/16/20 MVA Mineola Pike distribution substation.

Distribution Cost: $9.54M
Transmission Cost: $8.01M

Projected In-Service: 12/31/2024

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

11/8/2022 – V1 – Original version posted to pjm.com