NOTARIZED PROOF OF PUBLICATION

COMMONWEALTH OF KENTUCKY

COUNTY OF Franklin

Before me, a Notary Public, in and for said county and state, this 17th day of August, 2022, came Rachel McCarty, personally known to me, who, being duly sworn, states as follows: that she is the Advertising Assistant of the Kentucky Press Service, Inc.; that she has personal knowledge of the contents of this Affidavit; that the newspapers shown on Attachment No. 1 to this Affidavit published the Public Notice, on the dates shown thereon at the request of Kentucky Press Service, Inc. for Kentucky Power Company; that the form and content of the Notice submitted for publication to each paper is shown in Attachment No. 2 to this Affidavit; and that the Kentucky Press Service, Inc. has presented to Kentucky Power Company proof of these publications in the form of "tear sheets" for retention in its files.

Rachel McCarty
Signature

Bonnie J. Howard
Notary Public
My Commission Expires: 9-18-2024

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INVITATION TO BID

The Housing Authority of Pikeville will be accepting sealed bids for excess equipment until Thursday, August 25th, 2022, at 12:00 Noon. Item to be sold is:

2011 Ford Explorer
Silver 4 door 6 cylinder
VIN # 1FMHK8B80BGA84339
approximate mileage of 47,000

This vehicle may be inspected prior to the bid deadline.

Minimum bid is $10,750.00. This Vehicle will be sold as is where is with no implied warranty or working condition. Successful bidder will be responsible for transfer of the title the day of the sale. Payment is due the day of the sale.

Questions should be directed to David Thacker, Maintenance Supervisor, at (606) 432-8124 ext. 204.

NOTICE OF PROPOSED ELECTRIC TRANSMISSION LINE CONSTRUCTION PROJECT

Kentucky Power Company ("the Company") proposes to construct or rebuild approximately 6.5 miles of 69 kV transmission in Pike County, Kentucky ("Belfry Area Transmission Line Project"). The Belfry Area Transmission Line Project will connect the existing New Camp 69 kV Substation and the existing Stone 69 kV Substation via the new Orinoco 69 kV Substation.

Kentucky Power proposes to construct the Orinoco 69 kV Substation and perform related distribution line work to connect the Orinoco 69 kV Substation and the existing distribution line system. The Company also proposes to perform related work, including certain substation retirements, at the Stone 69 kV Substation and New Camp 69 kV Substation, to perform reconfiguration work at the New Camp 69 kV Tap, and to perform replacement work at the Hatfield 69 kV Substation. The proposed 69 kV transmission line will be built using both existing right-of-way and right-of-way to be acquired.

Kentucky Power proposes as part of the Belfry Area Transmission Line Project to retire: (a) the 6.5 mile section of the existing 46 kV transmission line located in the Commonwealth between the existing Stone Substation in Pike County, Kentucky and the Sprigg Substation in Mingo County, West Virginia; (b) the existing Belfry 46 kV Substation; and (c) the 0.75 mile Turkey Creek 69 kV transmission line and the Turkey Creek Tap.

Kentucky Power plans to file an application with the Public Service Commission of Kentucky on or after August 29, 2022 seeking a certificate of public convenience and necessity authorizing construction of Belfry Area Transmission Line Project. The application and the Commission proceeding have been assigned Case No. 2022-00236.

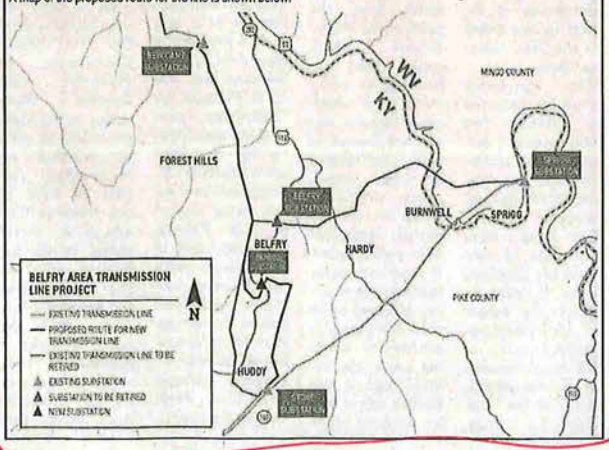
Any interested person under KRS 278.020(9), including any person over whose property the Belfry Area Transmission Line Project will cross, may request a local public hearing in Pike County where the transmission line will be located. The request must be in writing and should be delivered to the Executive Director, Public Service Commission, 211 Sower Boulevard, P.O. Box 615, Frankfort, Kentucky 40602-0615. The request for a local public hearing must be delivered to the Executive Director no later than thirty days after the date the application is filed. The request for a local public hearing must comply with the requirements of 807 KAR 5:120, Section 3.

A person may seek to intervene as a party in the Commission proceeding to review Kentucky Power's application by filing a timely written request for intervention in accordance with the requirements of 807 KAR 5:001, Section 4(11) and 807 KAR 5:120, Section 3(3).

The application and other filings in connection with Kentucky Power's application may be accessed at http://psc.ky.gov under Case No. 2022-00236 when filed.

Comments regarding the application may be submitted by mail to the Public Service Commission of Kentucky, P.O. Box 615, Frankfort, Kentucky 40602, or by sending an e-mail to the Commission's Public Information Officer at psc.info@ky.gov . All comments should reference Case No. 2022-00236.

A map of the proposed route for the line is shown below.



KENTUCKY POWER
An AEP Company
BOUNDLESS ENERGY

News from Kentucky Power

MEDIA CONTACT:
Cindy Wiseman
External Affairs and Customer Service
Cell: 606-585-6847
cgwiseman@aep.com; KentuckyPower.com

FOR IMMEDIATE RELEASE

KENTUCKY POWER PLANS POWER GRID IMPROVEMENTS IN PIKE COUNTY

ASHLAND, Ky., Aug.19, 2021 – Kentucky Power officials plan upgrades to the electric transmission system in Pike County. The Belfry Area Transmission Line Project involves:

- Building 6 to 8 miles of 69-kilovolt (kV) electric transmission line
- Building the Orinoco Substation

The project allows crews to retire approximately 9 miles of 46-kV transmission line that includes aging wooden poles from the 1940s and retire outdated equipment at the Belfry Substation. Installing modern equipment and upgrading facilities reduces the need for frequent equipment maintenance and improves electric service reliability by providing a second source of power to customers served from the New Camp Substation located in South Williamson.

"This project modernizes the local electric transmission system and ensures that Pike County residents continue to receive reliable electric service." said Brett Mattison, Kentucky Power president and chief operating officer.

Company representatives are evaluating several route options for the new transmission line. The project begins at the New Camp Substation and continues southeast to the proposed Orinoco Substation located along Route 119. From there, the project continues south through Belfry to the Stone Substation near Route 199.

The Kentucky Power project team invites landowners in the project area to visit KentuckyPower.com/Belfry to learn more about the project enter a virtual open house and provide feedback by **Thursday, September 23**.

Area landowners can expect to receive a packet in the mail that includes additional project details and a comment card they can return with their feedback. The packet also includes an invitation to two virtual town hall events on **Thursday, September 9**. Details on how to join the events can be found on the project website. Landowners and community members are invited to join one of these live events online or by phone to learn more about the project, ask questions and share input.

The project team plans to use feedback from the virtual open house, comment cards, virtual town hall events and additional field work to determine a power line route that minimizes impact to the community and environment.

Company officials plan to file an application with the Kentucky Public Service Commission in early 2022. If the project receives approval, company representatives expect construction to begin in summer 2023 and conclude fall 2024.

Kentucky Power, with headquarters in Ashland, provides electric service to about 165,000 customers in 20 eastern Kentucky counties, including Boyd, Breathitt, Carter, Clay, Elliott, Floyd, Greenup, Johnson, Knott, Lawrence, Leslie, Letcher, Lewis, Magoffin, Martin, Morgan, Owsley, Perry, Pike and Rowan. Kentucky Power is an operating company in the American Electric Power (AEP) system, one of the largest electric utilities in the U.S., delivering electricity and custom energy solutions to nearly 5.4 million regulated customers in 11 states. AEP also owns the nation's largest electricity transmission system. AEP's headquarters are in Columbus, Ohio.

Filing Requirements

Citation	Requirement	Location
807 KAR 5:001, Section 14(1)	Applicant And Project Information.	Application ("App.") at ¶¶ 1-4; *passim*
807 KAR 5:001, Section 14(2)	Corporate Information.	App. at ¶ 1; n. 1.
807 KAR 5:001, Section 14(3)	Limited Liability Company Information.	Not applicable.
807 KAR 5:001, Section 14(4)	Limited Partnership Information	Not applicable.
807 KAR 5:001, Section 15(1)	Information Required For Certificates Of Public Convenience And Necessity To Bid On Franchises.	Not applicable.
807 KAR 5:001, Section 15(2)	Requirements of 807 KAR 5:001, Section 14.	*Supra*.
807 KAR 5:001, Section 15(2)(a)	Facts Demonstrating The Proposed Construction Is Required By The Public Convenience And Necessity.	App. at ¶¶ 7-8, 68-79; App. Exh. 3, 5, 17-20; Koehler Test. at 10-12; 14-15.
807 KAR 5:001, Section 15(2)(b)	Franchises And Permits.	App. at ¶¶ 64-67; Reese Test. at 23-25.
807 KAR 5:001, Section 15(2)(c)	Full description of the location and route of the proposed facilities.	App. at ¶¶ 12-27; App. Exh. 2, 4,10; 13; Koehler Testimony at 13-14; Reese Test. at 20-21; West Testimony at 5-7.
807 KAR 5:001, Section 15(2)(c)	Description Of Construction.	App. at ¶¶ 12-27; App. Exh. 6-9, 13; West Testimony at 10-11.
807 KAR 5:001, Section 15(2)(c)	Competitors.	App. ¶ 79.
807 KAR 5:001, Section 15(2)(d)(1)	Map To Suitable Scale Showing Route And Neighboring Facilities.	App. Exh. 2, 4.[1]

[1] The maps show a preferred centerline and are not an actual design. Kentucky Power will supplement its filing with maps certified in accordance with KRS 322.340 once the project is in service.

Citation	Requirement	Location
807 KAR 5:001, Section 15(2)(d)(2)	Plans And Specifications.	App. Exh. 6-9, 13.[2]
807 KAR 5:001, Section 15(2)(e)	Manner Of Financing.	App. at ¶47; West Test. at 13.
807 KAR 5:001, Section 15(2)(f)	Annual Operating Expenses.	App. at ¶ 48; West Test. at 14.
807 KAR 5:001, Section 15(3)	Extensions In Ordinary Course.	Not applicable.
807 KAR 5:001, Section 15(4)	Renewal Applications.	Not applicable
807 KAR 5:120, Section 1	Notice Of Intent Conforming To The Requirements Of 807 KAR 5:120, Section 1(2).	Filed of record on in Case No. 2022-00236 on July 29, 2022.
807 KAR 5:120, Section 2(1)(a)	All Information Required By 807 KAR 5:001, Section 14.	*Supra*.
807 KAR 5:120, Section 2(1)(b)	All Information Required By 807 KAR 5:001, Section 15(2)(a)-(c) And 807 KAR 5:001, Section 15(2)(e)-(f).	*Supra*.
807 KAR 5:120, Section 2(2)(a)	Map Showing Centerline, Right-Of-Way, And Boundaries Of Properties Crossed By Right-Of-Way.	App. Exh. 4.
807 KAR 5:120, Section 2(2)(b)	Sketches Of Typical Support Structures.	App. Exh. 6-9.
807 KAR 5:120, Section 2(2)(c)	Separate Map Showing Alternate Routes Considered	App. Exh. 10 at 5-10; App. Exh. 10 at Attachment C; Exhibit11; *see generally* Reese Test. at 17-20.
807 KAR 5:120, Section (2)(3)	Verified Statement Concerning Mailed Notice To Property Owners.	App. Exh. 12; West Test. at 11-12.

[2] The structure exhibit drawings are conceptual representative sketches and not actual designs. Kentucky Power will supplement its filing with plans certified in accordance with KRS 322.340 once the project is in service.

Citation	Requirement	Location
807 KAR 5:120, Section (2)(4)	Sample Copy Of Notices Conforming To 807 KAR 5:001, Section 120, Section (2)(3).	App. Exh. 12.
807 KAR 5:120, Section (2)(5)	Statement Of Publication Of Notice Of Proposed Electric Transmission Line Project	App. Exh. 14; West Test. at 12-13
807 KAR 5:120, Section (2)(6)	Copy Of Published Notice Of Proposed Electric Transmission Line Project (and affidavit of publication)	App. Exh. 14.
807 KAR 5:120, Section (2)(7)	Capital Outlay	App. ¶ 46; West Test. at 13.

AEP Transmission Planning Criteria and Guidelines for End-Of-Life and Other Asset Management Needs

December 2020

Document Control

Document Review and Approval

Action	Name(s)	Title
Prepared by:	Jomar M. Perez	Manager, Asset Performance and Renewal
Approved by:	Nicolas Koehler	Director, East Transmission Planning
Approved by:	Wayman L. Smith	Director, West Transmission Planning
Approved by:	Kamran Ali	Managing Director, Transmission Planning

Review Cycle

Quarterly	Semi-annual	Annual	As Needed
			X

Revision History

Version	Revision Date	Changes	Comments
1.0	01/04/2017	N/A	1st Release
2.0	1/18/2018	Format Update	2nd Release
3.0	11/09/2018	Content Additions	3rd Release
4.0	12/14/2020	End-Of-Life Criteria	4th Release

Table of Contents

1.0 Introduction

The American Electric Power (AEP) transmission system consists today of approximately 40,000 miles of transmission lines, 3,600 stations, 5,000 power transformers, 8,000 circuit breakers, and operating voltages between 23 kV and 765 kV in three different RTOs – the Electric Reliability Council of Texas (ERCOT), the PJM Interconnection (PJM), and the Southwest Power Pool (SPP), connecting over 30 different electric utilities while providing service to over 5.4 million customers in 11 different states.

AEP's interconnected transmission system was established in 1911 and is comprised of a very large and diverse combination of line, station, and telecommunication assets, each with its own unique installation date, design specifications, and operating history. As the transmission owner, it is AEP's obligation and responsibility to manage and maintain this diverse set of assets to provide for a safe, adequate, reliable, flexible, efficient, cost-effective and resilient transmission system that meets the needs of all customers while complying with Federal, State, RTO and industry standards. This requires, among other considerations, that AEP determine when the useful life of these transmission assets is coming to an end and when the capability of those assets no longer meets current needs, so that appropriate improvements can be deployed. AEP refers to these issues as transmission owner identified needs that address condition, performance and risk. AEP identifies these needs through the transmission planning criteria and guidelines outlined in this document. Specifically, this document constitutes the AEP transmission planning criteria and guidelines for End-Of-Life and other asset management needs as required in the FERC-approved Attachment M-3 to the PJM Tariff. AEP does not address any End-Of-Life or other asset management needs through the baseline planning criteria AEP files with its FERC Form 715.

AEP's transmission owner identified needs must be addressed to achieve AEP's obligations and responsibilities. Meeting these obligations requires that AEP ensures the transmission system can deliver electricity to all points of consumption in the quantity and quality expected by customers, while reducing the magnitude and duration of disruptive events. Given these considerations, criteria and guidelines are necessary to identify and quantify needs associated with transmission facilities comprising AEP's system. AEP identifies the needs and the solutions necessary to address those needs on a continuous basis using an in-depth understanding of the condition of its assets, and their

associated operational performance and risk, while exercising engineering judgment coupled with Good Utility Practices [1].

Whereas the End-Of-Life needs, as defined in the FERC-approved Attachment M-3 to the PJM Tariff, are limited to transmission facilities rated above 100 kV, these criteria and guidelines apply to all transmission voltages that comprise the AEP transmission system, including those defined as End-Of-Life needs in the FERC-approved Attachment M-3 to the PJM Tariff. In addition, projections of candidate End-Of-Life needs that result from the process outlined in these AEP criteria and guidelines will be provided to PJM in accordance with the provisions in the FERC-approved Attachment M-3 to the PJM Tariff. Current End-Of-Life and other asset management needs will be vetted with stakeholders in accordance with the provisions in the FERC-approved Attachment M-3 to the PJM Tariff.

Addressing these owner identified transmission system asset management needs, as they pertain to condition, performance and risk, will result in the following benefits to customers:

- Safe operation of the electric grid.
- Reduction in frequency of outage interruptions.
- Reduction in duration of outage interruptions.
- Improvement in service reliability and adequacy to customers.
- Reduction of risk of service disruptions (improved resilience) associated with man-made and environmental threats.
- Proactive correction of reliability constraints that stem from asset failures.
- Effective utilization of resources to provide efficient and cost-effective service to customers.

2.0 Process Overview

AEP's transmission owner needs identification criteria and guidelines are used for projects that address equipment material conditions, performance, and risk. AEP uses the three-step process shown in Figure 1 and discussed in detail in this document to determine the best solutions to address the transmission owner identified needs and meet AEP's obligations and responsibilities. This process is completed on an annual basis. In developing the most efficient and cost-effective solutions, AEP's long-term strategy is to pursue holistic transmission solutions in order to reduce the overall AEP transmission system needs.

Figure 1 – AEP Process for Identifying and Addressing Transmission Asset Condition, Performance and Risk Needs

3.0 Step 1: Needs Identification

Needs Identification is the first step in the process of determining system and asset improvements that help meet AEP's obligations and responsibilities. AEP gathers information from many internal and external sources to identify assets with needs. A collective evaluation of these inputs is conducted and considered, and thus, individual thresholds do not apply. In addition, factors can change over time. A sampling of the inputs and data sources is listed below in Table 1.

Table 1 – Inputs Considered by AEP to Identify Transmission System Needs

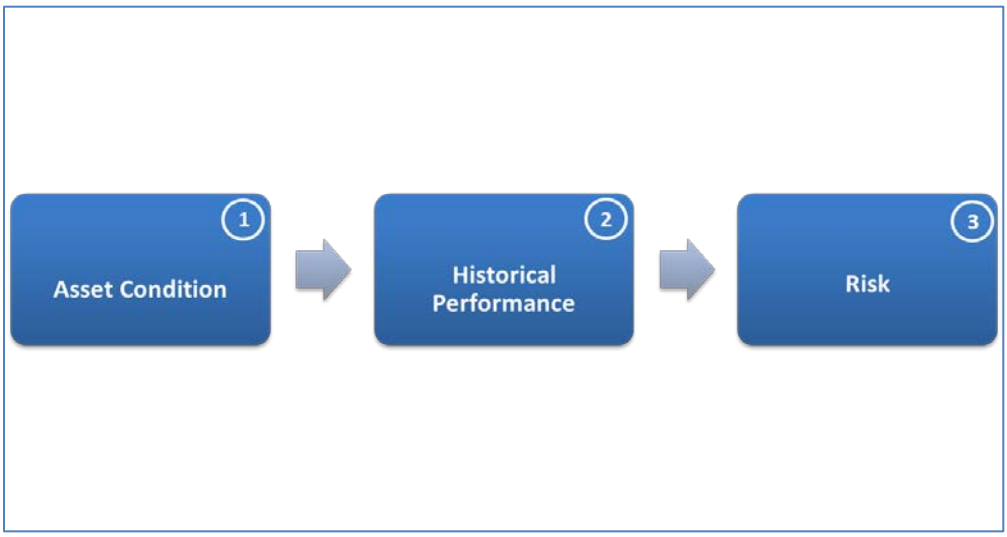
Internal, External, or Both	Inputs	Examples
Internal	Reports on asset conditions	Transmission line and station equipment deterioration identified during routine inspections (pole rot, steel rusting or cracking)
	Capabilities and abnormal conditions	Relay misoperations; Voltage unbalance
	Legacy system configurations	Ground switch protection schemes for transformers;; Transmission Line Taps without switches (hard taps); Equipment without vendor support
	Outage duration and frequency	Outages resulting from equipment failures, misoperations, or inadequate lightning protection
	Operations and maintenance costs	Costs to operate and maintain equipment
External	Regional Transmission Operator (RTO) or Independent System Operator (ISO) issued notices	Post Contingency Local Load Relief Warnings (PCLLRWs) issued by the RTO that can lead to customer load impacts
	Stakeholder input	Input received through stakeholder meetings, such as PJM's Sub Regional RTEP Committee (SRRTEP) meetings or through the AEP hosted Annual Stakeholder Summits
	Customer feedback	Voltage sag issues to customer delivery points due to poor sectionalizing; frequent outages to facilities directly affecting customers
	State and Federal policies, standards, or guidelines	NERC standards for dynamic disturbance recording
Both	Environmental and community impacts	Equipment oil/gas leaks; facilities currently installed at or near national parks, national forests, or metropolitan areas
	Standards and Guidelines	Minimum Design Standards, Radial Lines, Three Terminal Lines, Overlapping Zones of Protection
	Safety risks and concerns	Station and Line equipment that does not meet ground clearances; Facilities identified as being in flood zones; New Occupational Safety and Hazards Administration (OSHA) regulations

These inputs are reviewed and analyzed to identify the transmission assets that are exhibiting unacceptable condition, performance and risk, and thus, must be addressed through the FERC-approved Attachment M-3 planning process.

3.1 Methodology and Process Overview

The AEP transmission system is composed of a very large number of assets that provide specific functionality and must work in conjunction with each other in the operation of the grid. These assets have been deployed over a long period of time using engineering principles, design standards, safety codes, and Good Utility Practices that were applicable at the time of installation and have been exposed to varying operating conditions over their life. The Needs Identification methodology is shown below in Figure 2. AEP addresses the identified needs considering factors including severity of the asset condition and overall system impacts. These are subsequently evaluated versus constraints such as outage availability, siting requirements, availability of labor and material, constructability, and available capital funding in determining the timing and scope of mitigation.

Figure 2 – Needs Identification Methodology



It is AEP's strategy and goal to develop and provide the more efficient, cost-effective, safe, reliable, resilient, and holistic long-term solutions for the identified needs.

3.2 Asset Condition (Factor 1)

The Asset Condition assessment gathers a standard set of physical characteristics associated with an asset or a group of assets. The set of data points recorded is determined based on the asset type and class. Information assembled during the Asset Condition assessment is used to show the historical

deterioration, current condition, and future expectation of the asset or group of assets on the AEP system.

AEP annually assembles a list of reported condition issues for all of its assets in its system. A detailed follow-up review is conducted to determine if a transmission asset is in need of upgrade and/or replacement. Additionally, this Asset Condition review is used to determine an adequate scope of work required to mitigate the risk associated with a facility's performance and its identified issues. This level of risk is determined through the Future Risk assessment (Factor 3).

Beyond physical condition, AEP's ability to restore the asset in case of a failure is also considered. This is referred to as the future probability of failure adder. Typically, assets that are no longer supported by manufacturers or lack available spare parts are assigned a higher probability of failure adder.

To perform condition assessments, AEP classifies its Transmission assets in two main categories: Transmission Lines and Substations.

3.2.1 Transmission Line Considerations

Design Portion

A. Age (Original Installation Date)
B. Structure Type (Wood, Steel, Lattice)
C. Conductor Type (Size, Material & Stranding)
D. Static Wire Type (Size & Material)
E. Foundation Type (Grillage, Direct Embed, Caisson, Guyed V, Drilled Pier etc.)
F. Insulator Type (Material)
G. Shielding and Grounding Design Criteria (Ground Rod, Counterpoise, "Butt Wrap" etc.)
H. Electrical Configuration
    a. Three Terminal Lines
    b. Radial Facilities
I. NESC Standards Compliance
    a. Structural Strength (NESC 250B, 250C & 250D Compliance)
    b. Clearances (TLES-047 Compliance)

J. Easement Adequacy (Width, Encroachments, Type; etc.)

Physical Condition

A. Open Conditions (existing and unaddressed physical conditions associated with a Transmission Line component)
B. Closed Conditions (previously addressed physical conditions associated with a Transmission Line component)
C. Emergency Fixes (History of emergency fixes)
D. Accessibility (Identified areas of difficult access)

3.2.2 Substation Considerations

A. Transformers
    a. Manufacturer
    b. Manufacturing Date
    c. In Service Date
    d. Load Tap Changer Type & Operation History (if applicable)
    e. Dissolved Gas Analysis
    f. Bushing Power Factor
    g. Through Fault Events (Duval Triangles)
    h. Moisture Content (Oil)
    i. Oil Interfacial Tension
    j. Dielectric Strength
    k. Maintenance History
    l. Malfunction Records

B. Circuit Breakers
    a. Manufacturer & Type
    b. Manufacturing Date
    c. In Service Date
    d. Interrupting Medium
    e. Fault Operations
    f. Switched Operations

g. Spare Part Availability
h. Maintenance History
i. Malfunction Records
j. Breaker Type Population

C. Secondary/Auxiliary Substation Equipment*
a. Station Batteries
b. Control House
c. Station Security
d. Station Structures
e. Capacitor Banks
f. Bus, Cable and Insulators
g. Disconnect Switches
h. Station Configuration
i. Station Service
j. Relay Types
k. RTU Types
l. Voltage Sensing Devices

**AEP substation inspections include assessments of secondary/ancillary equipment. If needed, upgrades to these components are typically included in the scope of projects addressing major equipment and may not necessarily drive stand-alone projects.*

3.3 Historical Performance (Factor 2)

AEP's Historical Performance assessment quantifies how an asset or a group of assets has historically impacted the Transmission system's reliability and Transmission connected customers, helps identify the primary contributing factors to a facility's performance, and baselines the outage probability used in our Future Risk analysis. The metrics used as part of this historical performance assessment include:

A. Forced Outage Rates
B. Manual Outage Rates
C. Outage Durations (Forced Outage Duration in Hours)
D. System Average Interruption Indices (T-SAIDI, T-SAIFI, T-SAIFI-S, T-MAIFI)

E. Customer Minutes of Interruption (CMI)

F. Customer Average Interruption Indices (IEEE SAIDI, CAIDI & SAIFI)

G. Number of Customers Interrupted (CI)

AEP utilizes this standard set of metrics as a means to quantify the historical performance of an asset. These historical performance metrics allow AEP to further investigate assets that have historically impacted customers the most.

Due to the vast size of the AEP operating territory covering 11 states, AEP segments its needs into seven distinct operating company regions and six voltage classes. This segmentation ensures that variations in geography with respect to vegetation, weather patterns, and terrain can be accounted for within the process of identifying needs for each operating company area. In addition to customers of AEP operating companies, consideration for retail customers that are served at non-AEP wholesale customer service points is also included. In order to account for customers served behind wholesale meter points, AEP gathers information from the parent wholesale provider or in its absence, applies a surrogate customers per MW ratio to estimate the number of customers served by a wholesale power provider's delivery point. This customer count is used to calculate the individual metrics above.

AEP's standard approach is to annually review the historical performance of its assets based on a rolling three-year average, but in some cases AEP may extend the review period beyond three years. AEP classifies all transmission asset outage causes into the following five categories to conduct this review: Transmission Line Component Failure, Substation Component Failure, Vegetation (AEP), Vegetation (Non-AEP), and External Factors. Each transmission asset and its associated performance is quantified and compared against corresponding system totals to determine its percentage contribution to aggregated system performance. An evaluation of outage rates is also performed for Transmission line assets. The observed performance of the assets in any of these categories can point to a need that may need to be addressed.

3.4 Future Risk (Factor 3)

AEP reviews the associated risk exposure (future risk) inherent with each identified asset to determine an asset's level of risk. This risk exposure is quantified assuming the probability of an outage scenario

and is based on the reported condition of the asset and the severity of that condition and what the impact could be to customers or to the operation of AEP's Transmission system. Some of the key items to assess these impacts included in the risk criteria are:

A. Number of Customers Served
B. Load Served
C. Operational Risks
    a. Post Contingency Load Loss Relief Warnings (PCLLRW's)
    b. History of Load Shed Events
    c. Stations in Black Start Paths

In addition to the future risk calculation performed through this process, AEP is systematically reviewing its system to identify and remediate equipment and practices that have resulted in operational, restoration, environmental, or safety issues in the past that cannot be directly quantified, but that remain as acknowledged risks in the AEP Transmission system. These include:

A. Wood pole construction
B. Pilot wire protection schemes
C. Oil circuit breakers
D. Air Blast circuit breakers
E. Pipe type oil filled cables
F. Electromechanical relays
G. Legacy system configurations
    a. Missing or inadequate line switches (e.g., hard-taps)
    b. Missing or inadequate transformer/bus protection
    c. Three-terminal lines
    d. Overlapping zones of protection
H. Non-Standard Voltage Classes
I. Poor Lightning & Grounding Performance
J. Radial Facilities
K. Public vulnerability

These items as described above are reviewed on a case by case basis and considered when holistic system solutions are being developed.

4.0 Step 2: Solution Development

The development of solutions for the identified needs considers a holistic view of all of the needs in which several solution options are developed and scoped. AEP applies the appropriate industry standards, engineering judgment, and Good Utility Practices to develop these solution options. AEP solicits customer and external stakeholder input on potential solutions through the Annual Stakeholder Summits hosted by AEP and also through the PJM Project Submission process. This ensures that input from external stakeholders on identified needs can be received and considered as part of the solution development process.

Solution options consider many factors including, but not limited to, environmental conditions, community impacts, land availability, permitting requirements, customer needs, system needs, and asset conditions in ultimately identifying the best solution to address the identified need. Once the selected solution for a need or group of needs is defined, it is reviewed using the current RTO provided power-flow, short circuit, and stability system models (as needed) to ensure that the proposed solution does not adversely impact or create baseline planning criteria violations on the transmission grid. Finally, AEP reviews its existing portfolio of baseline planning criteria driven reliability projects and evaluates opportunities to combine or complement existing baseline planning criteria driven reliability projects with the transmission owner needs driven solutions developed through this process. This step ultimately results in the implementation of the more efficient, cost-effective, and holistic long-term solutions. Stand-alone projects are created to implement the proposed solution where transmission owner needs driven solutions cannot be integrated into existing projects.

5.0 Step 3: Solution Scheduling

Once solutions are developed to address the identified needs, the scheduling of the solutions will take place. As mentioned in the previous section, if opportunities exist to combine or complement existing baseline planning criteria driven reliability projects with the needs driven solutions developed

through this process, the scheduling will be aligned to the extent possible. In all other situations, AEP will schedule the implementation of the identified solutions in consideration of various factors including severity of the asset condition, overall system impacts, outage availability, siting requirements, availability of labor and material, constructability, and available capital funding. AEP uses its discretion and engineering judgment to determine suitable timelines for project execution.

6.0 Conclusion

This document outlines AEP's criteria and guidelines for transmission owner identified needs that address equipment material conditions, performance, and risk. It outlines the sources and methods considered by AEP to identify assets with needs on a continuous basis and it outlines how solutions are developed and scheduled. AEP will review and modify these criteria and guidelines as appropriate based upon our continuing experience with the methodology, acquisition of data sources, deployment of improved performance statistics and the receipt of stakeholder input in order to provide a safe, adequate, reliable, flexible, efficient, cost-effective and resilient transmission system that meets the evolving needs of all of the customers it serves.

7.0 References

[1] FERC Pro Forma Open Access Transmission Tariff, Section 1.14, Definition of "Good Utility Practice". Link: https://www.ferc.gov/legal/maj-ord-reg/land-docs/rm95-8-0aa.txt

[2] AEP Transmission Planning Documents and Transmission Guidelines. Link: http://www.aep.com/about/codeofconduct/OASIS/TransmissionStudies/

AMERICAN ELECTRIC POWER
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AEP Transmission Zone M-3 Process
New Camp

Need Number: AEP-2020-AP028

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan 04/08/2021

Selected Solution:

In conjunction with the baseline work identified under B3288 presented in 12/18/2020 SRRTEP – West meeting which would install new 69kV line between Stone and New Camp via Orinoco substation, the following is proposed under this solution to address the identified needs on the Sprigg – Stone 46kV line.

Replace Belfry substation with Orinoco substation by installing a 69KV box bay and 12KV rural bay to be built in the clear southwest of existing Belfry station. Install 69/12kV 20 MVA transformer and two 12kV breakers. **Estimated Transmission Cost: $0.65 M (s2446.1)**

Retire Belfry 46kV substation. **Estimated Transmission Cost: $0 M (s2446.2)**

Retire 46kV equipment from Stone substation. **Estimated Transmission Cost: $0.07 M (s2446.3)**

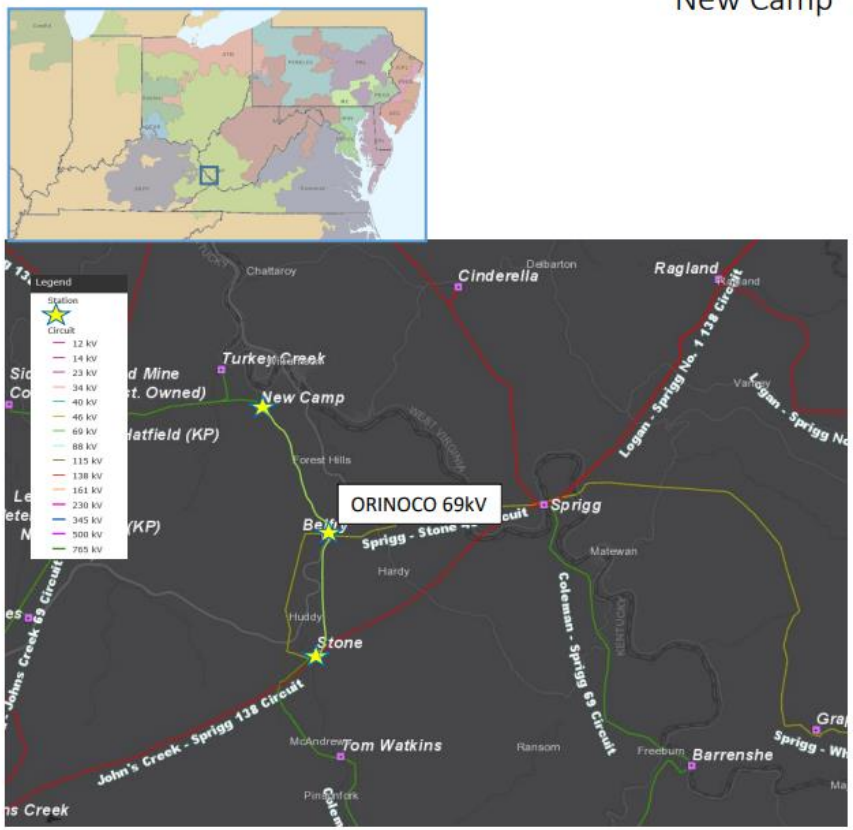
At Hatfield substation, replace MOAB Y with a 69KV Circuit Breaker towards Stone 69kV line via New Camp and Orinoco. **Estimated Transmission Cost: $0.85 M (s2446.4)**

Retire the 46kV equipment at Sprigg station towards Stone (via Belfry). **Estimated Transmission Cost: $0.05 M (s2446.5)**

Retire Turkey Creek Tap. **Estimated Transmission Cost: $0.76 M (s2446.6)**

Retire the ~8.23 miles of the 46kV Sprigg – Stone 46 KV circuit. **Estimated Transmission Cost: $6.73 M (s2446.7)**

Total Estimated Transmission Cost: $9.11 M



AEP Transmission Zone M-3 Process
New Camp

Need Number: AEP-2020-AP028

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan 04/08/2021

Previously Presented:
Need Meeting 04/20/2020
Solution Meeting 01/15/2021

Project Driver:
Equipment Condition/Performance/Risk

Specific Assumption Reference:
AEP Guidelines for Transmission Owner Identified Needs (AEP Assumptions Slide 13)

Problem Statement:
Line Name: Sprigg – Stone 46kV
Original Install Date (Age): 1940
Length of Line: 8.23 mi
Total structure count: 55
Original Line Construction Type: Wood
Majority Conductor Type: 3/0 ACSR 6/1 (Pigeon) and 2/0 COPPER
Momentary/Permanent Outages and Duration: 6 Momentary and 7 permanent Outage
CMI (last 5 years only): 1,119,129 minutes
Line conditions:

- 35 structures with at least one open condition, 64% of the structures on this circuit.
- 98 structure related conditions: rotted poles, crossarms and braces, woodpecker damage, bowed braces and loose braces, affecting the crossarm, knee/ vee brace, or pole including rot, split, woodpecker, damaged, loose, and bowed conditions
- 1 open conditions related to the broken strands on a jumper conductor
- 9 hardware related open conditions loose or broken guy wires

AEP Transmission Zone M-3 Process
New Camp

Need Number: AEP-2020-AP028

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan 04/08/2021

Selected Solution:

In conjunction with the baseline work identified under B3288 presented in 12/18/2020 SRRTEP – West meeting which would install new 69kV line between Stone and New Camp via Orinoco substation, the following is proposed under this solution to address the identified needs on the Sprigg – Stone 46kV line.

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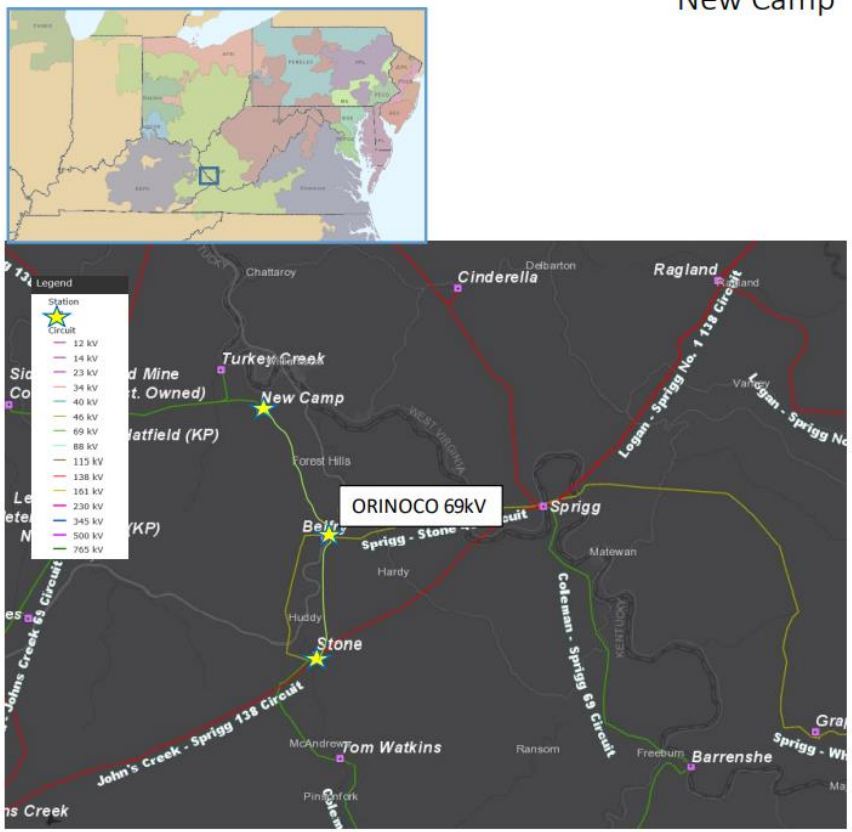
At Hatfield substation, replace MOAB Y with a 69KV Circuit Breaker towards Stone 69kV line via New Camp and Orinoco. **Estimated Transmission Cost: $0.85 M (s2446.4)**

Retire the 46kV equipment at Sprigg station towards Stone (via Belfry). **Estimated Transmission Cost: $0.05 M (s2446.5)**

Retire Turkey Creek Tap. **Estimated Transmission Cost: $0.76 M (s2446.6)**

Retire the ~8.23 miles of the 46kV Sprigg – Stone 46 KV circuit. **Estimated Transmission Cost: $6.73 M (s2446.7)**

Total Estimated Transmission Cost: $9.11 M



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AEP Transmission Zone M-3 Process
New Camp

Need Number: AEP-2020-AP028

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan 04/08/2021

Ancillary Benefits: Removal of obsolete ~8.23 mi of 46kV transmission line and associated equipment

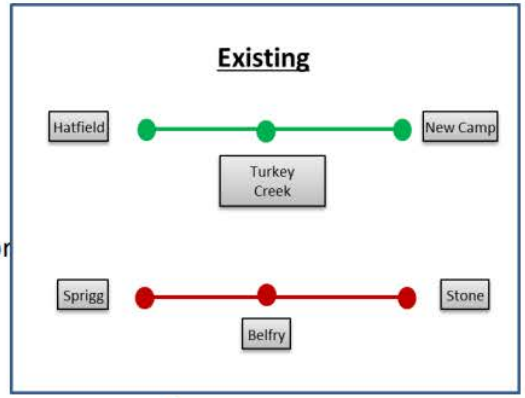
Required In Service Date: 9/1/2025

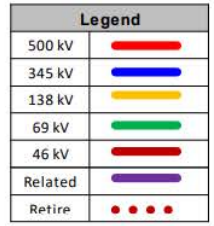
Projected In Service Date: 12/31/2024

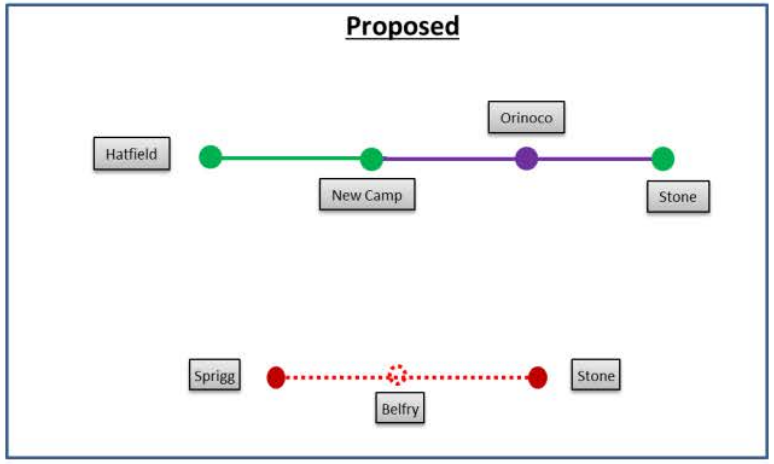
Supplemental Project ID: s2446.1-.7

Project Status: Scoping

Model: N/A







AEP Transmission Zone M-3 Process
Pike County, Kentucky

Need Number: AEP-2020-AP028

Process Stage: Need Meeting 01/15/2021

Previously presented: Need Meeting 04/20/2020

Supplemental Project Driver: Equipment Condition/Performance/Risk

Specific Assumption Reference:

AEP Guidelines for Transmission Owner Identified Needs (AEP Assumptions Slide 13)

Problem Statement:

Line Name: Sprigg – Stone 46kV

Original Install Date (Age): 1940

Length of Line: 8.23 mi

Total structure count: 55

Original Line Construction Type: Wood

Majority Conductor Type: 3/0 ACSR 6/1 (Pigeon) and 2/0 COPPER

Momentary/Permanent Outages and Duration: 6 Momentary and 7 permanent Outage

CMI (last 5 years only): 1,119,129 minutes

Line conditions:

- 35 structures with at least one open condition, 64% of the structures on this circuit.
- 98 structure related conditions: rotted poles, crossarms and braces, woodpecker damage, bowed braces and loose braces, affecting the crossarm, knee/ vee brace, or pole including rot, split, woodpecker, damaged, loose, and bowed conditions
- 1 open conditions related to the broken strands on a jumper conductor
- 9 hardware related open conditions loose or broken guy wires

AEP Transmission Zone M-3 Process
Pike County, Kentucky

Proposed Solution:

In conjunction with the baseline work identified under B3288 presented in 12/18/2020 SRRTEP – West meeting which would install new 69kV line between Stone and New Camp via Orinoco substation, the following is proposed under this solution to address the identified needs on the Sprigg – Stone 46kV line.

Replace Belfry substation with Orinoco substation by installing a 69KV box bay and 12KV rural bay to be built in the clear southwest of existing Belfry station. Install 69/12kV 20 MVA transformer and two 12kV breakers. **Estimated Transmission Cost: $0.65 M**

Retire Belfry 46kV substation. **Estimated Transmission Cost: $0 M**

Retire 46kV equipment from Stone substation. **Estimated Transmission Cost: $0.07 M**

At Hatfield substation, replace MOAB Y with a 69KV Circuit Breaker towards Stone 69kV line via New Camp and Orinoco. **Estimated Transmission Cost: $0.85 M**

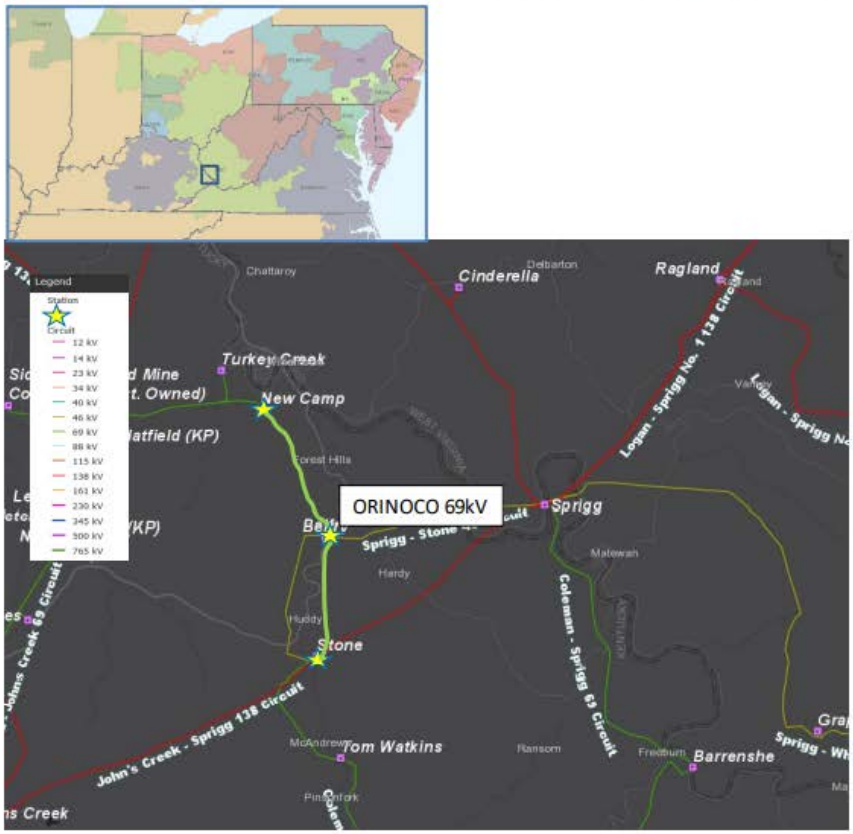
Retire the 46kV equipment at Sprigg station towards Stone (via Belfry). **Estimated Transmission Cost: $0.05 M**

Retire Turkey Creek Tap. **Estimated Transmission Cost: $0.76 M**

Retire the ~8.23 miles of the 46kV Sprigg – Stone 46 KV circuit. **Estimated Transmission Cost: $6.73 M**

Total Estimated Transmission Cost: $9.11 M

Ancillary Benefits:
- Removal of obsolete ~8.23 mi of 46kV transmission line and associated equipment



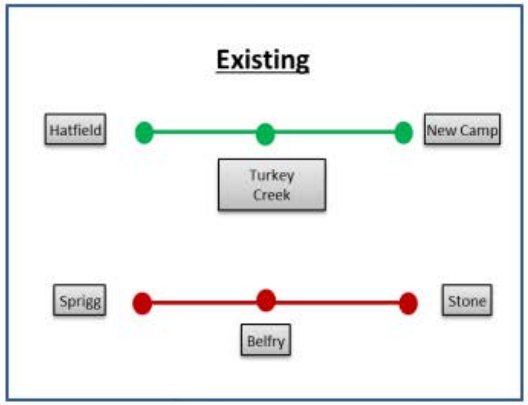
AEP Transmission Zone M-3 Process
Pike County, Kentucky

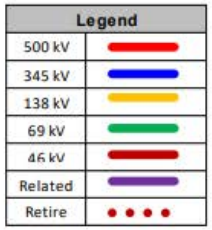
Alternative Solution:

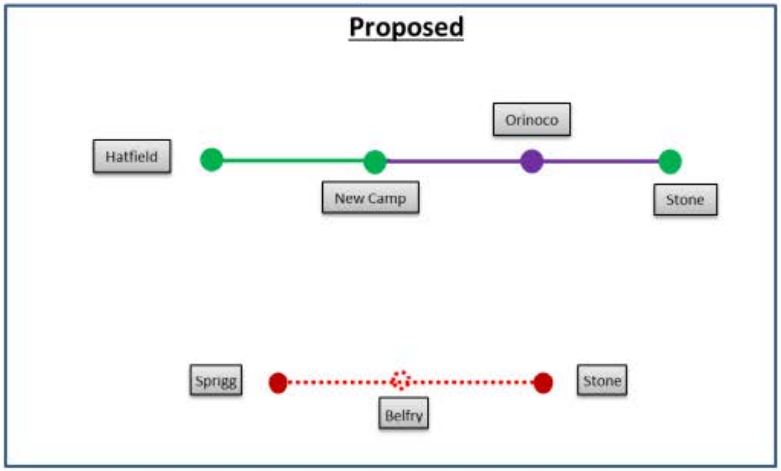
Rebuild 8.23 mi line between Sprigg and Stone to 69kV standards (operated at 46kV) via Belfry Station to address the identified asset needs. Retire the existing ~8.23 miles of the 46kV Sprigg – Stone 46 KV circuit

Total Estimated Transmission Cost: $32.1 M

Project Status: Scoping
Required In Service Date: 9/1/2025
Projected In Service Date: 12/31/2024







NEW CAMP AREA IMPROVEMENTS 138 kV TRANSMISSION PROJECT

Identifier from Project Description on Page 1 of Application	**Project Section**	**One Line Identifier**	**Description**	**One line Asset ID**	**Associated Assets**	**Purpose**	**Driver for Asset Replacement/Installation**
(A) Orinoco	Construct Greenfield Orinoco Substation	(1)	Construct new 69/12KV Distribution Station which will in part replace the existing Belfry Station. The new Station Location will be next to Belfry Branch Library on Route 119. This Station will contain two 69KV Box Bays with Line Switches, one facing towards Stone Station and the other facing Hatfield Station. A 20MVA Distribution Transformer, and a 12KV Rural Distribution Bay will be installed along with 3 Distribution Feeders with Breakers.	69KV Line MOS A00100	Single Phase CCVT	Under Fault conditions, these Line Motor Operated Switches with the assistance of remote end breakers, can be used to sectionalize the faulted portion of the Transmission Line out of service to restore power to the Distribution Transformer and 3 Feeder Breakers.	This project is being constructed to replace the existing 46KV system between Stone and Belfry Stations, and to retire Belfry Station entirely. The new 69KV electrical arrangement will provide looped service between Hatfield, New Camp, Orinoco, and Stone Stations which will increase reliability to customers, and replace aging assets.
				69KV Line MOS A00101	Single Phase CCVT		
				69/12KV Transformer #1	69KV High Side Switch A001N7, and Circuit Switcher A001N8. 12KV low side Circuit Breaker A001P2. 69KV and 12KV Surge Arresters.	To step the voltage down from 69KV Transmission voltage to 12KV Distribution Voltage; Switch A001N7 is used to isolate the transformer from the 69KV bus for maintenance or for Transformer or low side fault; Circuit Switcher A001N8 is to break load to the Transformer due to Transformer or low side fault; Circuit Breaker A001P2 is to isolate the Transformer for maintenance, or clear a 12KV Bus fault.	The Retirement of the existing 46KV System, and Belfry Substation necessitates this new station be constructed to support the Distribution loads previously fed from Belfry. The new system replacing the 46KV system will now be constructed at 69KV, which necessitates a new 69/12KV Transformer to step the transmission voltage down to the 12KV Distribution voltage.
				12KV Sharondale CB-A002D5	12KV Line, Bus, and Transfer Disconnect Switches, 12KV Line Surge Arresters, and 12KV Bus Regulators.	The purpose of the Distribution Feeder Breakers are to permit the interruption of fault current or load on the Distribution lines to protect Distribution facilities. They also interrupt potential faults on the 12KV Bus within the Substation to protect those facilities as well. Controls for these Breakers monitor current on the line, and provide automated protection of facilities as programmed.	These circuits are necessary to pick up area Distribution loads from retired Belfry Substation.
				12KV Hardy CB-A001P5			
				12KV Forrest Hills CB-A001P8			
(B) Stone	Stone Substation modifications	(2)	Remove the 46kV facilities at Stone substation including surge arresters, switch T1S1, grounding transformer and bus potential transformers. Convert the 46kV bus to 69kV and repurpose circuit breaker A for the 69kV side of the transformer and circuit breaker B to feed the new line to New Camp substation. Add a new 69kV circuit breaker for the existing Coleman line.	69kV circuit breaker A001C2	Breaker disconnect switches A001C1 and A001C3 (formerly AS2 and AS1). Switch T1S1 will be removed and bus potential transformers (CCVTs) will remain in service but will be connected to the 69kV leads of the transformer. New CCVTs will be added for the 69kV bus.	This was the original 69kV Coleman line circuit breaker A. It will remain in place and be repurposed for the 69kv side of the 138/69kV transformer. This arrangement will permit the 69kV bus to remain in service while the 138/69kV transformer is out due to a fault or for switching requirements.	This project is being constructed to replace the existing 46KV system between Stone and Belfry Stations, retire Belfry substation entirely and provide two way 69kV service to New Camp substation. The new 69KV electrical arrangement will provide looped service between Hatfield, New Camp, Orinoco, and Stone Stations which will increase reliability to customers, and replace aging assets.
				69kV circuit breaker A001C5	Breaker disconnect switches A001C4 and A001C6 (formerly BS1 and BS2). New 69kV surge arresters and CCVTs for the new Hatfield line.	This was the original 46kV Sprigg line circuit breaker B and will protect the 69kV bus for faults on the Hatfield line.	
				69kV circuit breaker A001C8	Disconnect switches A001C7 and A001C9. Coleman 69kV line surge arresters and CCVTs.	This is a new 69kV circuit breaker that will protect the 69KV bus for faults on the Coleman line. The surge arresters and CCVTs will be relocated to make room for the new circuit breaker.	
(C) New Camp	New Camp Substation Expansion	(3)	Expand the New Camp substation to include a new 69kV box bay to accommodate the existing line from Hatfield substation and the new line to the new Orinoco substation. Replace the load break switch and add potential transformers to the 12kV side of the 69-12KV transformer plus add surge arresters to both 12kV distribution feeders.	69kV MOS A00083	Single Phase CCVT	Under Fault conditions, these Line Motor Operated Switches with the assistance of remote end breakers, can be used to sectionalize the faulted portion of the Transmission Line out of service to restore power to the Distribution Transformer and 2 Feeder Breakers.	This install will allow for New Camp Station to be fed from two directions, rather than by a single (radial) 69KV line previously. This new Box Bay installation allows for looped service into New Camp Station from Stone and Hatfield Stations.
				69kV MOS A00084	Single Phase CCVT	Under Fault conditions, these Line Motor Operated Switches with the assistance of remote end breakers, can be used to sectionalize the faulted portion of the Transmission Line out of service to restore power to the Distribution Transformer and 2 Feeder Breakers.	
				Existing 69-12kV transformer	69kV bus CCVT, Mobile disconnect switch A00085, MOS A001A7 and CS A001A8	The new 69kV switch A001A7 is used to isolate the existing transformer from the 69KV bus thus allowing restoration of the loop between Hatfield and Stone substations while the new circuit switcher A001A8 is to interrupt the circuit due to a transformer or low side fault. The 69kV switch A00085 is to facilitate connection of a mobile transformer during required transformer maintenance or failure.	
				12kV MOS A00086	12kV potential transformers	This is a replacement and upgrade for the existing 12kV load break switch and is used in connection and removal of a mobile transformer for maintenance or replacement of the main station transformer. Installation of the 12kV potential transformers are used for voltage indication and in the switching and protection of the main transformer.	This switch upgrade replaces a type of switch that has been known to be hazardous to operate, and allows disconnecting the transformer from the 12KV Bus for maintenance purposes.
(D) Hatfield	Hatfield Substation- Add 69kV circuit breaker for the New Camp line	(4)	Replace MOS Y with a 69kV circuit breaker and add surge arresters and CCVTs for the New Camp line plus replace the single phase bus CCVT with a three phase installation.	69kV circuit breaker A002H2	Breaker disconnect switches A002H1 and A002H3. Surge arresters and CCVTs for the 69kV line to New Camp plus bus CCVTs.	This new Circuit Breaker will protect the new Stone Line from faults, as well as protect the Hatfield 69KV Bus from fault conditions. The disconnect switches will allow for visible disconnects for breaker maintenance.	Currently the New Camp 69kV substation is radially fed (one source only) from the Hatfield 69kV bus via switch Y. By replacing switch Y with a circuit breaker, the feed to New Camp will be incorporated into a loop system that provides two way service to both New Camp and Orinoco substations.
(E) Belfry	Belfry Substation Removal	(5)	Retire & remove Belfry Substation and all of it's assets including; Wooden Switch Structure and 46KV Switches 11 and 22, Wooden Box Bay Structure, Transformer #1 and associated high side Motor Operated Switch, and Ground Switch, low side load break switch, and two 12KV Feeders to Belfry, and Toler. Site to be returned to natural state.	46/12KV Transformer #1	Transformer High Side MOS X1 and Ground Switch Z, and Low Side Load Break Switch, and high & low side Surge Arresters.	46KV system in the area is being retired due to aging assets, and an increased number of outages. Belfry Transformer, Structures, Breakers and associated equipment are legacy assets that need to be replaced.	New 69/12KV Orinoco Substation will pick up Distribution loads previously fed from Belfry Substation, and add a 3rd Distribution Feeder as well. These new assets and 69KV looped service will add reliability to system.
				46KV Circuit Breaker A	Hookstick Bus, Line and Transfer Bus Disconnects.		
				46KV Circuit Breaker B	Hookstick Bus, Line and Transfer Bus Disconnects.		

AMERICAN ELECTRIC POWER

BOUNDLESS ENERGY℠

July 22, 2022

Work Order No. T10111854 / T10109942
BPID No. P19305001 / P19305016

Geo-Hazard Desktop Study Memorandum
New Camp - Orinoco / Orinoco – Stone 69kV Transmission Lines
Belfry Area Transmission Line Project
Pike County, KY

Executive Summary

Two (2) new 69kV transmission lines, New Camp – Orinoco and Orinoco - Stone, are proposed between the existing Stone and New Camp stations. The new lines will meet at the proposed Orinoco station. AEP's Civil and Geotechnical Engineering (CGE) group performed a desktop geotechnical hazard (geo-hazard) assessment of the proposed alignments. Landslide and mine related geo-hazards are prevalent throughout the proposed alignments, both of which need to be considered during structure and access road siting, foundation design, and construction.

I. Objective

The purpose of this memorandum is to present the results of the geo-hazard desktop study for the proposed New Camp – Orinoco and Orinoco – Stone 69kV transmission lines.

II. Site and Project Description

The new 69kV transmission lines will total approximately 7 miles in length and replace the existing 46kV transmission line between Sprigg and Stone stations. The work will be near Belfry, KY in Pike County. The study area encompasses about 12.9 square miles roughly centering on the proposed transmission line routes. The geo-hazard desktop study evaluated the study area's general geology and risk for common geo-hazards including coal mining, landslides, scour/erosion, karst, and expansive soils.

III. Terrain and Geology

The terrain throughout the study area is generally mountainous and steep with drainage ravines and valleys. The ground surface elevation varies from about 600 and 1,700 feet.

The study area is underlain by the Pennsylvanian-aged lower part of the Breathitt Formation. This bedrock formation is highly landslide prone. The slide activity is attributed to recent anthropogenic activity (likely pertaining to mining) in addition to late Cenozoic drainage reorganization, valley incision, and periglaciation (Kite at al., 2019). The Breathitt Formation is interbedded with several coal seams.

Coal seams in the study area include Pond Creek, Alma, Upper Elkhorn Number 3, Nosben, Williamson, Fire Clay, Taylor, Peach Orchard, and Winifrede in addition to smaller unnamed coal seams.

USDA NRCS Web Soil Survey (NRCS, 2022) reports the overburden throughout the alignment primarily consists of residuum, colluvium, and mine spoils or "earthy" fill. The soils generally have higher susceptibility to erosion (K factor between 0.41 – 0.50) and high soil slippage potential.

IV. Coal Mining

Approximately 75 percent of the study area has been mined (refer to the attached Vicinity Mining figure). Mining is reported in the Pond Creek and Williamson coal seams as well as other unreported coal seams. The reported mining occurred in the ridge tops. The impact of this mining activity is greatest where closer to the ground surface. Generally, the greater the depth of the mining activity, the less risk of mine subsidence and other mine-related risks. The presence of mine shafts and other features related to extensive mining activity mean there is higher potential for collapse and persistent groundwater seeps that can destabilize slopes.

AEP was made aware by the landowner of an Abandoned Mine Lands (AML) project to mitigate a mine blow out along the proposed alignment. The location is noted on the Vicinity Mining and Landslide Inventory figures. There is a high likelihood that other similar active or previous AML projects exist within the study area.

Even where mining activity did not occur, the presence of several coal seams presents a moderate risk because of their porous composition. Coal seams can convey substantial amounts of water that drain onto side slopes, increasing the landslide hazard where coal seams outcrop. The risk from mining activity is generally moderate throughout the study area, with locally higher risk areas. The mining risk can be mitigated by avoiding mine portals when siting access roads and structures, not placing fill where coal seams outcrop, careful water management near coal seams and mine portals, and considering depth/age/type of mining activity beneath access roads and structures for potential subsidence activity.

V. Landslide Risk

Approximately 15 percent of the study area is reportedly susceptible to debris flow. Another approximately 10 percent of the study area appears to have topography suspicious of historical landslide activity. The desktop study also revealed 44 landslides within the study area. These landslides are reported by the Kentucky Geological Survey and identified by AEP through review of publicly available LiDAR data and aerial imagery. The Landslide Inventory figures show the landslide features throughout the study area. The entire study area is at high risk for landslides, with certain areas at exceptionally higher risk than others including but not limited to areas of documented landslides, drainage ravines, and mine portals. Landslide risk can be mitigated by siting structures and access roads outside of "exceptionally higher risk" areas, proactive landslide mitigation, thorough site reconnaissance to identify unmapped landslide hazards, designing foundations for embedment loss / withstand active earth pressures related to slide movement, and careful water management.

VI. Scour and Erosion Risk

There are minor water features throughout the study area including creeks, branches, and streams. Therefore, there is some risk of flooding, scour, erosion, and/or meandering streams. This risk is enhanced in lower lying areas and within drainage ravines. This risk can be mitigated by selecting

structures in areas at lower risk for future scour and erosion. Where these higher risk areas can't be avoided, the foundations should be designed for potential future scour and erosion.

VII. Karst and Expansive Soils

Karst and expansive soils are not reported within the study area. Therefore, AEP's proposed infrastructure is not at risk due to these geo-hazards.

VIII. Conclusion

Based on the geo-hazard desktop study, the predominant geo-hazards within the study area are landslides, mining activity, and scour/erosion, in order of higher to lower risk.

IX. Limitations

This geo-hazard desktop study is based on readily and publicly available online resources. The possibility remains that unexpected conditions may be present. AEP's CGE group recommends completing site reconnaissance and subsurface exploration to further evaluate geo-hazards within the study area.

X. References

Commonwealth of Kentucky, "Kentucky Coal Mine Maps, KY Mine Mapping Information System", https://eppcgis.ky.gov/minemapping/ (visited May 16, 2022).

Kentucky Geological Survey, "Landslide Information Map", https://kgs.uky.edu/arcgis/rest/services/Hazards/LandslideInformationMap/MapServer (visited May 16, 2022).

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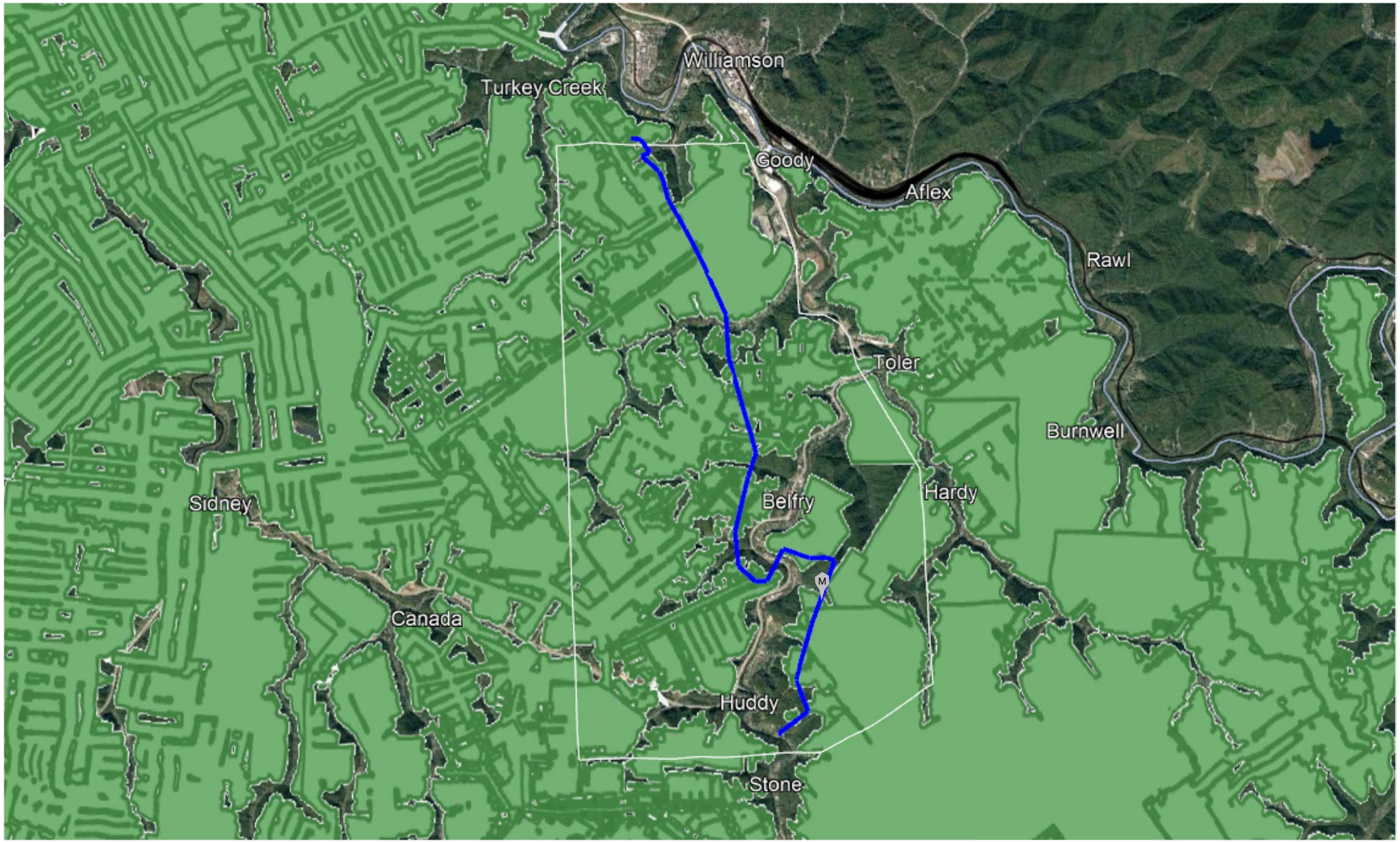
CONCEPTUAL ALIGNMENT

MINED AREAS

AML PROJECT SITE



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KENTUCKY POWER COMPANY NEW CAMP STUDY AREA WILLIAMSON KENTUCKY			
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AMERICAN ELECTRIC POWER 1 RIVERSIDE PLAZA COLUMBUS, OH 43215	WO#:	APPD:	DATE: 06-21-22
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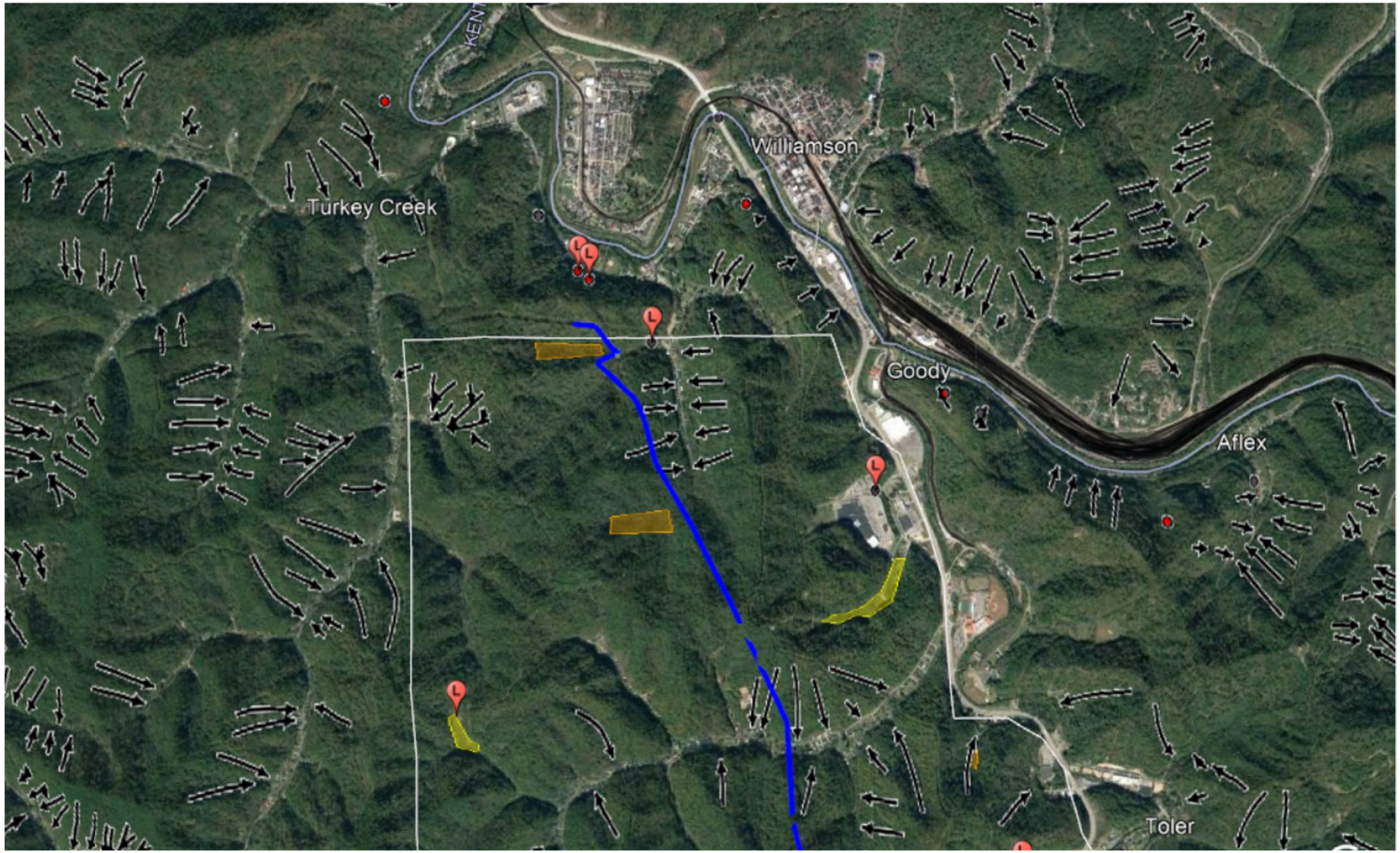
CONCEPTUAL ALIGNMENT

AREAS SUBJECT TO DEBRIS FLOW (KGS)

ANTHROPOGENIC FEATURES (DESKTOP STUDY)

HIGHER RISK FOR LANDSLIDE (DESKTOP STUDY)

EXISTING OR HISTORICAL LANDSLIDE (DESKTOP STUDY AND KGS)



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KENTUCKY POWER COMPANY

NEW CAMP STUDY AREA

WILLIAMSON KENTUCKY

LANDSLIDE INVENTORY (1 OF 2)

SCALE: NONE	DR: H. INGRAM	ENG: K. BACKLUND	CH: K. BACKLUND
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CONCEPTUAL ALIGNMENT

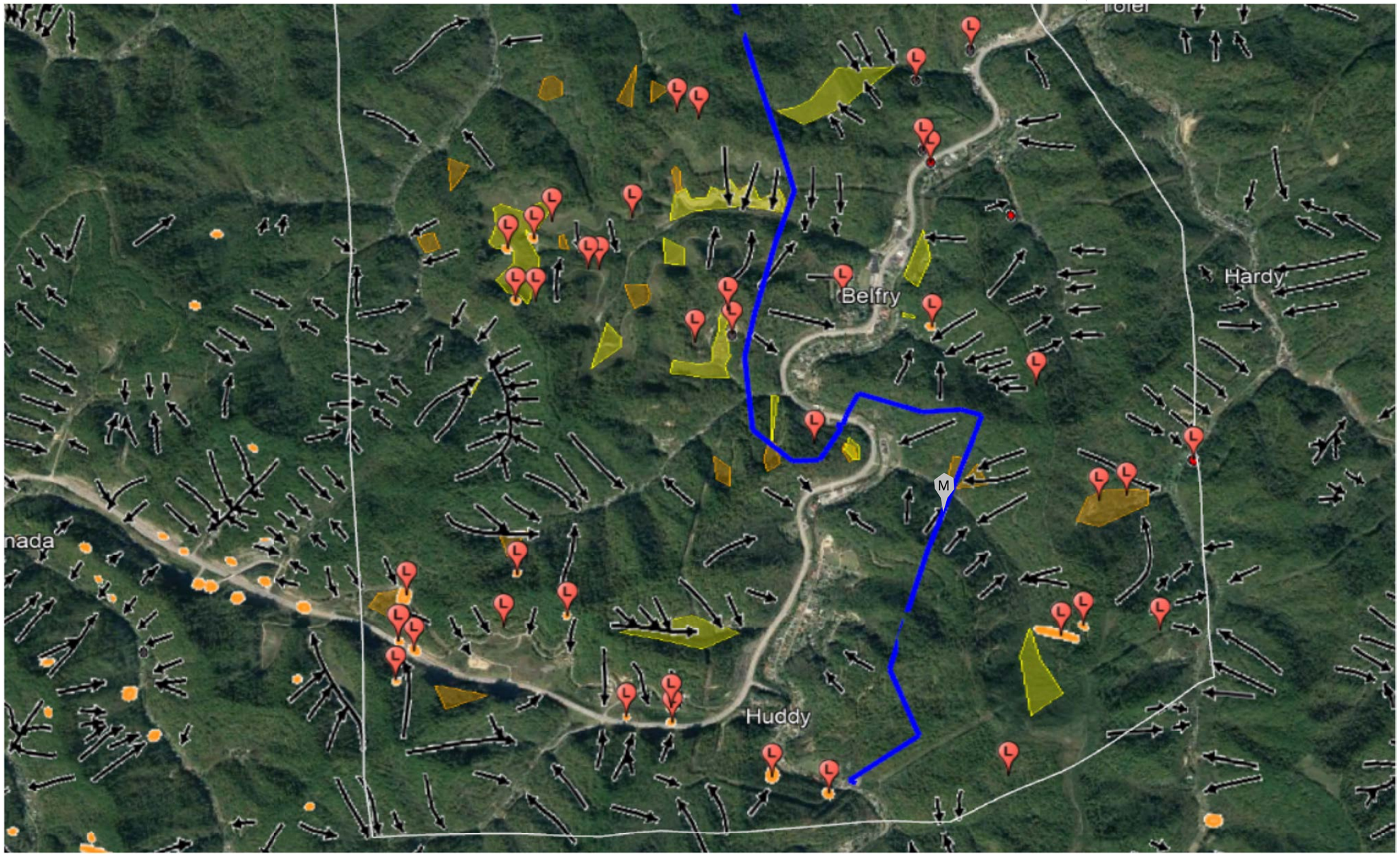
AREAS SUBJECT TO DEBRIS FLOW (KGS)

ANTHROPOGENIC FEATURES (DESKTOP STUDY)

HIGHER RISK FOR LANDSLIDE (DESKTOP STUDY)

EXISTING OR HISTORICAL LANDSLIDE (DESKTOP STUDY AND KGS)

AML PROJECT SITE



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NEW CAMP STUDY AREA
WILLIAMSON KENTUCKY

LANDSLIDE INVENTORY (2 OF 2)

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	WO#:	APPD:	DATE: 08-21-22

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