Exhibit	Exhibit	Exhibit
Booklet	Name	Description
Doomet		
		Certificate of Existence that Kentucky Power Company is a corporation duly
1	1 - Kentucky Power Company Certificate of Existence	incorporated and existing under KRS Chapter 14A and KRS Chapter 271B.
1	2 - Project Location Map	Map of the project's location.
1	3A - Proposed Route Map 1A	Includes the aerial background of the proposed route of this project.
	· · ·	
1	3B - Proposed Route Map 1B	Includes the topographic background of the proposed route of this project.
2	4A - Alternative Routes Map 2A	Includes the aerial background of the alternative routes of this project.
2	4B - Alternative Routes Map 2B	Includes the topographic background of the alternative route of this project.
	5 - Proposed Eastern 138kV Substation Location and	Includes station location and layout of the proposed Eastern 138 kV
2	Layout	substation.
3	6 - Garrett 138kV Substation Location and Layout	Includes station location and layout of the Garrett 138 kV substation.
3	7 - Soft Shell 138kV Substation Location and Layout	Includes station location and layout of the Soft Shell 138 kV substation.
3	8 - McKinney 46kV Substation Location and Layout	Includes station location and layout of the McKinney 46 kV substation.
	9 - Beaver Creek 138kV Substation Location and	
3	Layout	Includes station location and layout of the Beaver Creek 138 kV substation.
		Includes station location and layout of the proposed Snag Fork switching
3	10 - Snag Fork	structure.
		Includes a typical schematic, typical right-of-way cross section, and
		comparable existing structure photograph for a Monopole Dead End Single
3	11A - Monopole Dead End Single Circuit	Circuit.
		Includes a typical schematic, typical right-of-way cross section, and
		comparable existing structure photograph for a Proposed 138 H Frame Single
3	11B - Proposed 138 H Frame Single Circuit	Circuit.
_		Includes a typical schematic, typical right-of-way cross section, and
3	11C - Three Pole Single Circuit	comparable existing structure photograph for a Three Pole Single Circuit.
		Includes a typical schematic, typical right-of-way cross section, and
-		comparable existing structure photograph for a Self Supporting Lattice Single
3	11D - Self Supporting Lattice Single Circuit	Circuit.
		Includes a typical schematic, typical right-of-way cross section, and
_		comparable existing structure photograph for a Dead End Lattice Double
3	11E - Dead End Lattice Double Circuit	Circuit.
		Includes a typical schematic, typical right-of-way cross section, and
2	11E Managala David End Davida Circuit	comparable existing structure photograph for a Monopole Dead End Double
3	11F - Monopole Dead End Double Circuit 12A - Beaver Creek-Garrett 1	Circuit. Photograph of structure K336-11, which indicates pole splitting.
3	12B - Beaver Creek-Garrett 2	Photograph of structure K336-58, which indicates pole splitting.
3		Photograph of structure K336-58, which indicates crossaril splitting.
3	12C - Beaver Creek-Garrett 3	crossarm attachment.
3		Photograph of structure K337-12, which indicates two (2) broken insulators
3	12D - McKinney-Garrett 1	in string.
5		Photograph of structure K337-12, which indicates one (1) broken insulator in
3	12E - McKinney-Garrett 2	string.
3	12-F McKinney-Garrett 3	Photograph of structure K337-16, which indicates rot-top.
3	12-G McKinney-Garrett 4	Photograph of structure K337-24, which indicates severe Pole Splitting.
3	12-H Spring Fork Tap 1	Photograph of structure K335-9, which indicates pole cavities.
5		Photograph of structure K335-9, which indicates pole curries.
3	12I - Spring Fork Tap 2	in place.
•	·r···o - ···· - ·r =	Photograph of structure K335-10, which indicates flashover-arcing damage to
3	12J - Spring Fork Tap 3	insulator.
<u></u> з	13 - Notice To Landowners and Verification of	Includes verification of the mailing and the notice to landowners of the
3	Mailing	proposed construction of an electric transmission line project.
3	14 - Present System and Project Components	Map of the present system and proposed project components.
3	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	map of the present system and proposed project components.

Exhibit	Exhibit	Exhibit								
Booklet	Name	Description								
	15 - List of Landowners Within The ROW and 1,000	List of landowners within the right-of-way and list of landowners within the								
3	Foot Corridor	1,000-foot filing corridor.								
	16 - Major Components Of The Proposed Substation	List of the project's major components of the proposed substation work and								
3	Work And Their Purpose	their purpose.								
3	17A - Published Notice and Affidavit 1	Newspaper notice published in Floyd and Knott counties.								
3	17B - Published Notice and Affidavit 2	Newspaper notice published in Floyd, Knott, and Breathitt counties.								
3	18 - Public News Release	Announcement of the project with information available to the public.								
3	19 - Filing Requirements	List of filing requirements in this CPCN proceeding.								
4	20 - Siting Study	To identify the most suitable route for the Garrett Area 138 kV transmission line project and proposed site of the Eastern 138 kV Substation.								
	21 - AEP's Guidelines For Transmission Owner									
5	Identified Needs	Guidelines to determine the necessity of supplemental projects.								
		Public document at PJM that provides the Need, Solution, and cost estimate at								
5	22 - PJM Local Plan	the time of submittal.								
		Public document at PJM that provides the Alternative Solution or Reasonable								
5	23 - PJM Solution with Alternative	Alternative and cost estimate at the time of submittal.								

# **Siting Study**

for

# **Garrett Area Transmission Line Project**



Prepared by:

GAI Consultants, Inc. 385 East Waterfront Drive Homestead, Pennsylvania 15120



Date: September 2021

Revision: N/A



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#### ATTACHMENTS

Attachment A: Outreach Fact Sheet Attachment B: Route Development Maps Attachment C: Substation Site Study Attachment D: Data Collection Summary Attachment E: GIS Data Sources Attachment F: Agency Correspondence Attachment G: Constraints and Opportunities Summary Attachment H: Aerial Mapbook (Proposed Route)



Siting Study

## 1.0 **PROJECT DESCRIPTION**

Kentucky Power (the "Company") plans to upgrade the electric transmission grid in Knott and Floyd Counties, Kentucky (KY) by constructing an approximately 15-mile greenfield, double-circuit, 138 kilovolt (kV) transmission line. The Garrett Area Transmission Line Project (the "Project") will allow for the retirement of approximately 25 miles of existing transmission line that includes deteriorating wooden poles from the 1920s and 1940s. The overall project also includes constructing a new substation and upgrading several existing substations, which will strengthen the local electric system and increase electric reliability for area customers.

The Project will connect the existing Hays Branch Substation, the proposed Eastern Substation, the existing Garrett Substation, the existing Saltlick Substation, and the existing Soft Shell Substation and will be supported by a combination of steel H-frame, lattice tower, and three-pole structures. The final structure types will be dependent on engineering design and terrain. The typical height of the structures will be approximately 85 feet but will vary along the route depending on topography and constraints. To meet long-term maintenance and safety criteria, the Project will use a typical right-of-way (ROW) width of approximately 100 feet. This may vary along the route depending on Project needs, topography, and specific parcel uses and configurations. See the attached Outreach Fact Sheet (Attachment A) for additional information.

The Project will require filing a Certificate of Public Convenience and Necessity application with the Kentucky Public Service Commission (PSC). The Company anticipates filing the application with the PSC in October 2021.

The Company initiated the siting process for the Project in early 2020, with initial study segments being reviewed throughout 2020 and into 2021. Study segments were presented to the public on a Project-specific website with a 30-day comment period in March and April 2021. Pending issuance of all required federal, state and/or local permits, construction is expected to begin in the summer 2023 and be completed by the end of 2024. This Siting Study describes the transmission line route development process and the rational for the proposed route selection.

### 2.0 ROUTE DEVELOPMENT OVERVIEW

The Company's electrical planners started the route development process by defining the **Project Endpoints** which included the existing Hays Branch Substation, the proposed Eastern Substation, the existing Garrett Substation, the existing Saltlick Substation, and the existing Soft Shell Substation (see Attachment B, Map 1).

A **Substation Site Study** (See Attachment C) was completed for the proposed Eastern Substation to identify the most suitable site. The new substation must be located in proximity to the existing Hays Branch-Morgan Fork 138kV transmission line and the natural gas liquids extraction facility



currently serviced by the existing Hays Branch Substation. Approximately 10 study sites were initially identified, narrowed down to four alternative sites, and a Proposed Substation Site was selected. The proposed Eastern Substation Site is the most suitable due to its location and access options, which together minimize development, construction, and operation issues.

Next, the Siting Team defined the **Study Area** to develop transmission line routes. The Study Area encompasses the Project endpoints and the logical area in between (see Attachment B, Map 1). Given the geographic distribution of the various endpoints, the Project required a large Study Area in a trapezoidal shape. The Study Area is bounded by the existing Hays Branch Substation and Hays Branch-Morgan Fork 138kV transmission line in the northeast, and by the existing Soft Shell Substation to the southwest. To the southeast, the Study Area includes the communities of Garrett, Lackey, and Mousie with the boundary situated on the hilltops along State Route 550. To the northwest, the boundary was developed to include options for avoiding a large mining operation outside the Soft Shell Substation, as well as avoiding crossing into Magoffin County. In general, the Study Area is rural, mountainous, and largely undeveloped with the exception of small towns and developments situated along KY Route 80 (KY-80).

**Data Collection** (see Attachments D, E, and F) and **Constraints and Opportunities** reviews (see Attachment G) were completed for the Study Area. Readily available public data sources were used initially and supplemented with stakeholder input, non-public data, and field inspections. The majority of constraints within the Study Area are associated with the human environment, including development associated with the communities of Garrett and Eastern, and smaller pockets of development along major roadways. Additionally, natural resource extraction facilities are prominent in the area and include numerous underground pipelines in the vicinity of the Eastern Substation and a large coal mining operation outside the Soft Shell Substation. Given the size and rural location of the Project, large portions of the Study Area remain undeveloped, providing avenues to site transmission line routes that avoid the more densely developed areas to the greatest extent feasible.

The development of **Study Segments** was the next step (see Section 3.0), which are partial alignments connecting the Project endpoints while avoiding or minimizing constraints to the extent possible. To aid in the development of the Study Segments, the Project was broken down into four Focus Areas between the various Project endpoints. The Focus Areas included the Eastern-Hays Focus Area, Eastern-Garrett Focus Area, Garrett-Saltlick Focus Area, and Saltlick-Soft Shell Focus Area. Next, the various Study Segments identified within each Focus Area were assembled into logical **Alternative Routes** and a comparison was completed (see Section 4.0). Lastly, based on analysis and stakeholder input, the Siting Team identified a **Proposed Route.** The reasons for the Project's Proposed Route selection are summarized in Section 5.0.



## 3.0 STUDY SEGMENTS

As mentioned previously, Study Segments (see Attachment B - Map 2) are partial alignments connecting the Project Endpoints within the Study Area. The Study Segments are developed to meet the Project's functional requirements (engineering and construction) and, at the same time, minimize environmental and socioeconomic impacts and Project costs. Given that the Project's goal is to connect several Endpoints (substations), the siting of Study Segments was broken down into four Focus Areas between these substations: Eastern-Hays Branch, Eastern-Garrett, Garrett-Saltlick, Saltlick-Soft Shell. Each Focus Area has its own constraints and opportunities that were considered when developing Study Segments.

Hays Branch-Eastern is the northernmost and shortest Focus Area. It requires development of a transmission line between the existing Hays Branch Substation and the proposed Eastern Substation, which will be accomplished by developing a new transmission line that will tap the existing Hays Branch-Morgan Fork 138kV Transmission Line and continue to the Eastern Substation. Constraints within this Focus Area include the community of Eastern, several small cemeteries on ridgetops and side slopes, the floodplain associated with Right Fork Beaver Creek, and underground pipelines feeding the natural gas extraction facility currently serviced by the Hays Branch Substation. Five Study Segments (01-05) were developed as options connecting the Eastern Substation to the Hays Branch-Morgan Fork 138kV Transmission Line.

The Eastern-Garrett Focus Area is also located in the northern part of the Study Area. Within this Focus Area, a transmission line will be developed between the proposed Eastern Substation and the existing Garrett Substation. Given the geographic location of the substations, and the location of KY-80, two corridors emerged within the Focus Area as options for the siting of Study Segments: one to the west of KY-80 and one to the east. Constraints within the Focus Area include the community of Eastern and pockets of development along KY-80 and secondary roadways, as well as the Floyd Central High School. Three Study Segments were developed as options connecting the Eastern Substation to the Garrett Substation.

The Garrett-Saltlick Focus Area is located near the center of the Study Area. While Hays Branch-Eastern and Eastern-Garrett Focus Areas are situated in north/south orientations, the Garrett-Saltlick Focus Area has an east/west orientation, which requires the proposed transmission line to cross through the community of Garrett. The existing Spring Fork 46-kV Tap is located in this area and also sits in an east/west orientation, providing an opportunity for paralleling its existing ROW with the proposed transmission line. Eleven Study Segments were developed as options connecting the Garrett Substation to the Saltlick Substation.

Finally, the Saltlick-Soft Shell Focus Area is located in the southern half of the Study Area and is the longest section of transmission line. It is located in a north/south orientation generally



paralleling KY-80. This Focus Area is mainly undeveloped with the exception of the Knott County Sportsplex and a large coal mining operation in the vicinity of the Soft Shell Substation. Given the size of these facilities, complete avoidance is not feasible. Eleven Study Segments were developed as options connecting the Saltlick Substation to the Soft Shell Substation.

In total, 30 Study Segments were developed to connect the various Endpoints of the Project. These Study Segments were presented to the public with a request for comments via a Project-specific website which included a virtual open house, interactive overview map, fact sheet, updates and news releases, schedule information, and photographs of representative structures. At the conclusion of the 30-day comment period, the Company had received comments from approximately 48 landowners. A summary of comments are discussed in Section 4.0.

### 4.0 ALTERNATIVE ROUTE COMPARISON

At the conclusion of the 30-day comment period of the virtual open house, the Siting Team reviewed each Study Segment, constraint, and comment in detail to determine if any Study Segments should be revised or eliminated. One comment was received regarding the Hays Branch-Eastern Focus Area. The comment expressed concern over flooding in the area of the proposed Eastern Substation. No comments regarding the proposed transmission line were received. However, after additional scrutiny, the Siting Team determined that Study Segment 01 should be eliminated due to outage constraints with the tap location along the Hays Branch-Morgan Fork 138kV Transmission Line, proximity to the Right Fork Beaver Creek and a railroad tunnel, as well as uncertainty regarding the location of underground pipelines along the ridgetops in the vicinity. The remaining four Study Segments were combined into two Alternative Route options identified as Alternative Routes A and B (see Attachment B - Map 2 and Map 3).

The Eastern-Garrett Focus Area received approximately five comments. A property owner crossed by Study Segment 06 provided comments expressing a negative view of the Project, while the remaining comments detailed constraints on individual parcels but did not express an unwillingness to negotiate. The Siting Team determined all three Study Segments were to be moved forward in the analysis. These Study Segments were combined into two Alternative Route options identified as Alternative Routes C and D (see Attachment B - Map 2 and Map 3).

Approximately 16 comments were received regarding the Study Segments proposed within the Garret-Saltlick Focus Area. While some comment cards were blank, the majority of comments were positive, with landowners informing the Siting Team of constraints on individual parcels and expressing a willingness to negotiate. Three landowners indicated in their comments they prefer the transmission line not impact their property. Review of the Study Segments and comments by the Siting Team resulted in the elimination of four Study Segments (10, 11, 12, and 13). Study



Segment 10, which was originally developed as a northernly option for avoiding the community of Garrett, was eliminated due to its length and more indirect route compared to other options. Study Segment 11 was eliminated due to engineering concerns with spanning KY-80 at a bridge location where it is also paralleled by a tall distribution line. The elimination of Study Segment 11 meant that Study Segments 12 and 13 were no longer necessary. The remaining Study Segments were combined into two Alternative Route options identified as Alternative Routes E and F (see Attachment B - Map 2 and Map 3).

The Saltlick-Soft Shell Focus Area received approximately 10 comments, three of which indicated a preference for the transmission line not to cross their property. A large mining operation crossed by several of the Study Segments indicated a preference for the more southeasterly Study Segments due to future mining plans. Other comments included requests for additional information and general notes about individual properties. Based on these comments, and additional engineering reviews, Study Segments 20, 21, 22, 23, and 29 were eliminated from consideration due to impact to future mining plans and/or route length. The remaining Study Segments were combined into four Alternative Route options identified as Alternative Routes G, H, I and J (see Attachment B - Map 2 and Map 3).

The following compares the Alternative Routes in each section of the Project.

### **Natural Environment**

The natural environment includes water, soil, sensitive species, and wildlife habitat. Potential impact identification is based on publicly available maps and data as well as coordination with federal, state and local agencies. Within the Eastern-Hays Branch Focus Area, Alternative Routes A and B are similar with respect to environmental concerns. Alternative Route A is slightly shorter and requires several acres less of tree clearing. However, Alternative Route A is located closer to the Right Fork Beaver Creek, thereby increasing the amount of 100-year floodplain in its ROW. Therefore, neither Alterative Route A nor B have a substantial advantage pertaining to environmental concerns.

Within the Eastern-Garrett Focus Area, given that Alternative Roue C is approximately 40 precent longer than Alternative Route D (4.2 vs 3.0 miles), its construction would require approximately 13.9 more acres of tree clearing (47.8 vs 33.9). Alternative Route C would also span an additional 1.7 acres of 100-year floodplain (3.5 vs 1.8) and an area identified as the DLT Enterprises Mitigation Site (401 Water Quality Certification Map Viewer Tool). Alternative Route D's exit from the Eastern Substation would parallel the exit of the Eastern-Hays Branch circuit, thereby reducing the amount of new ROW needed and associated forest fragmentation, when compared with Alternative Route C. Therefore, Alternative Route D would likely have less impact on the natural environment.



The Alternative Route options within the Garrett-Saltlick Focus Area (Alternative Routes E and F) are similar in length, with Alternative Route E being approximately 4.3 miles long and Alternative Route F being approximately 4.2 miles long. Therefore, the two Alternative Route options require a similar amount of tree clearing and span a similar number of 100-year floodplains. Both Alternative Routes also parallel an existing ROW for a similar length, helping to reduce forest fragmentation and tree clearing. Therefore, neither Alterative Route E nor F have a substantial advantage pertaining to environmental concerns.

The four Alternative Routes within the Saltlick-Soft Shell Focus Area are of similar length (ranging between 6.3 miles and 6.0 miles) and no large differences regarding environmental concerns are apparent. Alternative Routes G, H, and I cross the same amount of 100-year floodplain (0.4-acre), whereas Alternative Route J crosses 0.9-acre, a relatively small amount given the length of each Alternative Route. In regard to tree clearing, Alternative Route J would require the most with approximately 68 acres. However, the least amount of tree clearing (required by Alternative Route G) is 64 acres, thus the required tree clearing is similar across each Alternative Route option. Each Alternative Route option spans waterbodies identified as Outstanding State Resource Waters (OSRWs) due to the presence of threatened and/or endangered species, believed to be the Kentucky arrow darter (Etheostoma spilotum) based on data included in the KY Division of Water's 401 Water Quality Certification Map Viewer Tool. These waterbodies each drain to Laurel Fork Quicksand Creek. Four OSRWs are spanned by Alternative Route G, two by Alternative Routes H and I, and one by Alternative Route J. Impacting OSRWs requires an Individual 401 Water Quality Certification from the State. Therefore, Alternative Route options that have the potential to be least impactful to OSRWs (Alternative H, I, and J) would be preferred.

### **Human Environment**

The human use of the land and activities at a given location such as agricultural, forestry, residential, industrial, mining, commercial, institutional, scenic assets, and recreational uses constitute the human environment. Both Alternative Routes within the Eastern-Hays Branch Focus Area cross generally undeveloped, forested land that has historically been used for mining, or that currently contains underground pipelines supplying the local natural gas extraction facility. Alternative Route A passes near a cemetery depicted on topographic mapping. This cemetery is anticipated to be avoided by the final alignment, once its location is confirmed and delineated during archaeological investigations. Both Alternative Route options have the same number of residences within 500 feet of the centerline and cross the same number of landowners. Based on this information, neither Alternative Route within the Eastern-Hays Branch Focus Area has a substantial advantage pertaining to impact on the human environment.



Within the Eastern-Garrett Focus Area, the majority of the Alternative Routes cross undeveloped, forested slopes; some of which have been previously strip mined. Alternative Route D passes near an area identified as the Elk Horn Coal Hunting Access based on historic data. No impact to the property is anticipated. Alternative Route C parallels an existing underground pipeline following the ridgeline above the community of Eastern. Construction of Alternative Route C may require special construction techniques and protections to abate chemical interactions between the pipeline and transmission line. Additionally, Alternative Route C crosses 75 percent more individual landowners (28 vs. 16) and 43 percent more parcels (30 vs. 21) as compared to Alternative Route D. There are also 80 percent more residences within 500 feet of the centerline of Alternative Route C as compared to Alternative Route D (18 vs. 10).

Generally, the two Alternative Route options within the Garrett-Saltlick Focus Area are located on undeveloped, forested slopes and areas parallel to the existing Spring Fork 46kV Tap ROW. Each option spans KY-80 in an area of moderate residential development. Alternative Route F has 50 percent more residences within 500 feet of its centerline. These residences are located in a valley spanned by Alternative Route F and are not anticipated to be impacted (physically or visually) by its construction. Although the Alternative Routes cross a similar number of parcels (36 vs. 35), Alternative Route F crosses 13 percent fewer individual landowners.

The Alternative Route options within the Saltlick-Soft Shell Focus Area all cross similar topography and land use. Alternative Routes G and H cross areas of active mining northwest of KY-80, which are anticipated to continue and possibly expand in scale. Alternative Routes I and J each cross an area of previous mining southeast of KY-80. This area is currently being developed into the Knott County Sportsplex and additional mining is not anticipated. Although large in size, the sportsplex property is only developed in one area where an indoor sports facility and several outdoor facilities have been constructed. This area is approximately 1,500 feet from the centerline of Alternative Routes I and J, and no impact to the facilities is anticipated. Alternative Routes I and J have two additional residences within 250 feet of the centerline as compared to Alternative Routes G and H. However, Alternative Route I has the least number of residences within 500 feet of the centerline with 11. Alternative Route J has the most with 16, Alternative Routes G and H each have 12. Alternative Route J also crosses the least number of parcels (26) and the least number of individual landowners (17).

## Constructability

Constructability is the ability to efficiently and cost effectively engineer, acquire ROW, construct, operate, and maintain the proposed transmission line. Major factors include safety, steep topography, condensed ROWs, heavy angles, access, ability to parallel or use existing ROWs, environmental and socioeconomic features, proximity to major highways, etc.



As mentioned in previous sections, the Alternative Route options within the Eastern-Hays Branch Focus Area are very similar. In regard to constructability concerns, Alternative Route B is slightly longer, and would likely require additional structures as a result. It would also require at least one additional heavily angled structure (greater than 30 percent) and crosses approximately 37 percent more steep slopes (slopes in excess of 20 percent grade) as compared to Alternative Route A.

Similar concerns are associated with the Alternative Route options within the Eastern-Garrett Focus Area. Alternative Route C, being substantially longer, would require a higher number of structures and access roads as compared to Alternative Route D. Its construction would require twice the number of heavily angled structures (6 vs. 3), and it crosses approximately 44 percent more steep slopes.

Constructability concerns are similar regarding the two Alternative Route options within the Garrett-Saltlick Focus Area. Alternative Route E, although slightly longer, crosses a similar number of steep slopes and would require the same number of heavily angled structures as compared to Alternative Route F. Alternative Route E would require crossing the energized Spring Fork 46kV Tap in two locations, whereas Alternative Route F does not cross the line. Both Alternative Route options cross the Beaver Creek-Garrett 46kV line. Additionally, Alternative Route E briefly crosses areas previously mined for coal, however, the operation appears to be complete, and the land reclaimed.

Within the Saltlick-Soft Shell Focus Area, the four Alternative Route options have similar constructability concerns, with topography, current land use, and access being the most prominent. Alternative Route G (the longest option) crosses the edge of the limits of the mining operation being conducted on Western Pocahontas Properties. Although this route option would require the fewest heavily angled structures, its construction within the mining boundary would require construction crews to access the mining area and coordinate with the mine's activities. These activities can create permitting issues and delays. Additionally, being located on the edge of the mining operation creates the possibility that an expansion of the mine could require the shortest route option, having to access and work within the boundary of the mine creates the possibility of conflict with the mining operation. Alternative Routes I and J avoid the mining operation by staying south of KY-80. These two routes would require the same number of heavily angled structures (three), however Alternative Route I being the shortest of the two options means it may require less structures, access roads, and tree clearing.



## 5.0 PROPOSED ROUTE

Within the Hays Branch-Eastern Focus Area, neither Alternative Route A or B was selected and instead an intermediary "hybrid" route was selected that is between the two Alternative Route options considered. The hybrid was needed as this area will require LiDAR (Light Detection and Ranging) data to properly finalize structure placement, which was not available during the route selection process. Additionally, based on topographic mapping, a cemetery is located in the vicinity of Alternative Routes A and B but identification of the exact location will require further studies. By selecting a hybrid route and using a 1,000-foot corridor filing corridor, Kentucky Power will be able to engineer the most suitable route and avoid the cemetery without needing to submit an addendum to the PSC application once additional data are obtained.

Based on stakeholder input and analysis, the Siting Team identified the Proposed Route as the hybrid option within the Hays Branch-Eastern Focus Area, Alternative Route D within the Eastern-Garrett Focus Area, Alternative Route F within the Garrett-Saltlick Focus Area, and Alternative Route I within the Saltlick-Soft Shell Focus Area. Between Hays Branch and Eastern substations, the Proposed Route will allow engineering to place structures in the most conducive areas that avoid the cemetery, once LiDAR is obtained. Between Eastern and Garrett Substations, the Proposed Route is substantially shorter, impacts less parcels and individual landowners and requires fewer structures and access roads while avoiding the DLT Enterprises Mitigation Site. Between the Garrett and Saltlick Substations, the Proposed Route will cross fewer parcels while paralleling the existing Spring Fork 46kV Tap ROW without needing to span the energized transmission line. Between the Saltlick and Soft Shell Substations, the Proposed Route is the shortest option that doesn't impact the mining operation north of KY-80 and minimizes impact to OSRWs.

Collectively, the Siting Team determined the Proposed Route (Attachment B – Map 4 and Attachment H) meets the goal of minimizing impacts on land use and the natural and cultural resources along the Project, while avoiding circuitous routes, extreme costs, and non-standard design requirements.



**Metric Tables** 

Table 1. Natural Environment Evaluation Criteria												
		Hays Branch-Eastern		Eastern-Garrett		Garrett-Saltlick		Saltlick- Soft Shell				
Alternative Route	Unit	А	В	С	D	E	F	G	н	I.	L	
General												
Length	miles	1.2	1.4	4.2	3.0	4.3	4.2	6.3	6.0	6.1	6.3	
Water Resources												
Total streams crossed	count	2	2	4	4	6	5	13	9	9	9	
High/Exceptional/Special Protection streams crossed	count	0	0	0	0	0	0	4	2	2	1	
PFO/PSS wetlands in the ROW (NWI)	acres	0	0	0	0	0	0	0	0	0	0	
PEM wetlands in the ROW (NWI)	acres	0	0	0	0	0	0	0	0	0	0	
Waterbody crossings	feet	0	0	0	0	0	0	0	0	0	0	
FEMA-designated floodplain crossed by ROW	acres	2.0	1.7	3.5	1.8	1.9	2.4	0.4	0.4	0.4	0.9	
Geological and Soil Resources												
Prime and unique farmland soil in the ROW <sup>1</sup>	acres	0	0	0	0	0	0	0	0	0	0	
Farmland of statewide importance in the ROW <sup>2</sup>	acres	0	0	0	0	0	0	0	0	0	0	
Known caves or mines within 100-feet of the centerline	count	0	0	0	0	0	0	0	0	0	0	
Wildlife and Habitat												
Tree clearing required in the ROW (digitized based on aerial photography)	acres	13.3	15.6	47.8	33.9	49.0	46.7	64.4	64.9	65.0	68.3	
Designated natural areas crossed by the ROW	acres	0	0	0	0	0	0	0	0	0	0	
Designated natural areas within 250 feet of the ROW	count	0	0	0	0	0	0	0	0	0	0	

Garrett Area Transmission Line Project Siting Study

<sup>&</sup>lt;sup>1</sup> Prime farmland is land that has the best combination of physical and chemical characteristics for producing crops.

<sup>&</sup>lt;sup>2</sup> Soils that do not meet the prime farmland category but are still recognized for their productivity by states may qualify as soils of statewide importance.

		Table 2.	Human Enviro	nment Evaluat	tion Criteria						
		Hays Bran	ich-Eastern	Eastern	-Garrett	Garrett	-Saltlick		Saltlick-S	Soft Shell	
Alternative Route	Unit	А	В	С	D	E	F	G	Н	l I	J
General											
Length	miles	1.2	1.4	4.2	3.0	4.3	4.2	6.3	6.0	6.1	6.3
Number of parcels <sup>3</sup> crossed	count	12	12	30	21	36	35	27	28	26	33
Landowners within ROW	count	7	7	28	16	34	30	19	19	17	24
Residential											
Barns, outbuildings, sheds, garages and silos in the ROW (excludes	count	0	0	0	0	0	1	0	0	0	1
abandoned features)		0	0	0	0	0	L	0	0	0	1
Residences/single-family dwellings within ROW	count	0	0	0	0	0	0	0	0	0	0
Residences/single-family dwellings within 100 feet of centerline	count	0	0	0	0	2	4	0	0	1	1
Residences/single-family dwellings within 250 feet of centerline	count	0	0	4	3	8	14	5	5	7	7
Residences/single-family dwellings within 500 feet of centerline	count	5	5	10	18	30	45	12	12	11	16
Multi-family dwellings <sup>4</sup> within ROW	count	0	0	0	0	0	0	0	0	0	0
Multi-family dwellings within 250 feet of centerline	count	0	0	0	0	0	0	0	0	0	0
Multi-family dwellings within 500 feet of centerline	count	0	0	0	0	0	0	0	0	0	0
Commercial/Industrial											
Businesses/commercial buildings <sup>5</sup> within the ROW	count	0	0	0	0	0	0	0	0	0	0
Businesses/commercial buildings within 250 feet of the centerline	count	1	1	3	3	2	2	1	1	1	1
Businesses/commercial buildings within 500 feet of the centerline	count	2	2	4	5	2	2	1	1	1	1
Mining areas crossed	count	0	0	0	0	1	0	1	1	1	1
Quarries crossed	count	0	0	0	0	0	0	0	0	0	0
Agricultural											
Pasture/rangeland crossed in ROW (based on NLCD data)	acres	0.1	0.1	1.6	0.5	0.6	1.1	0.5	0.5	0.5	1.4
Cropland crossed in ROW (based on National Land Cover Database	acres	0	0	0	0	0	0	0	0	0	0
data)											
Tree farms/orchards crossed in ROW	acres	0	0	0	0	0	0	0	0	0	0
Agricultural easements crossed in ROW	acres	0	0	0	0	0	0	0	0	0	0
Community/Recreational Facilities											
Schools within 1,000 feet of centerline	count	1	1	1	1	0	0	0	0	0	0
Designated places of worship within 1,000 feet of centerline	count	0	0	0	0	1	3	0	0	0	1
Cemeteries within 250 feet of centerline	count	1	0	1	0	2	0	1	1	1	1
Hospitals and assisted living facilities within 250 feet of centerline	count	0	0	0	0	0	0	0	0	0	0
Parks and recreation areas crossed by the ROW	count	0	0	0	0	0	0	0	0	1	1
Scenic byways crossed	count	0	0	0	0	0	0	0	0	0	0
Protected Land		1	1		1						

<sup>&</sup>lt;sup>3</sup> The number of parcels crossed refers to the number of individual plots of owned land recorded by each County. The number of landowners within the ROW represents the number of individual landowners, who each may own one or more parcels. <sup>4</sup> Multi-family dwellings include townhome, condominium, apartment complexes, and duplexes.

<sup>&</sup>lt;sup>5</sup> Commercial development includes retail, service, office, restaurants, and lodging establishments.



Table 2. Human Environment Evaluation Criteria													
		Hays Branch-Eastern		Eastern-Garrett		Garrett-Saltlick		Saltlick-Soft Shell					
Alternative Route	Unit	А	В	С	D	E	F	G	Н	I	J		
Federal/state land crossed by ROW	acres	0	0	0	0	0	0	0	0	0	0		
Conservation easements crossed by the ROW	acres	0	0	1	0	0	0	0	0	0	0		
Local public lands crossed by ROW	acres	0	0	0	0	0	0	0	0	0	0		
Cultural Resources													
National Register of Historic Places (NRHP)-listed and eligible architectural resources within one mile of the centerline	count	0	0	0	0	0	0	0	0	0	0		
National Historic Landmarks within one mile of the centerline	count	0	0	0	0	0	0	0	0	0	0		
NRHP-listed Historic Districts within one mile of the centerline	count	0	0	0	0	0	0	0	0	0	0		
NRHP-listed and eligible archaeological sites within ROW	count	0	0	0	0	0	0	0	0	0	0		

#### Garrett Area Transmission Line Project Siting Study

		Table 3. C	onstructability	Evaluation C	Criteria						
		Hays Bran	ch-Eastern	Eastern	-Garrett	Garrett	-Saltlick		Saltlick-	Soft Shell	
Alternative Route	Unit	А	В	С	D	E	F	G	н	1	L
General											
Length	miles	1.2	1.4	4.2	3.0	4.3	4.2	6.3	6.0	6.1	6.3
Transportation Resources											
Interstate highways crossed	count	0	0	0	0	0	0	0	0	0	0
U.S. highways crossed	count	0	0	0	0	0	0	0	0	0	0
State highways crossed	count	1	1	3	2	3	3	3	3	2	1
Railroads crossed	count	1	1	1	1	2	2	0	0	0	0
Airports within one mile of the centerline	count	0	0	0	0	0	0	0	0	0	0
Utility Resources											
Oil and gas pipelines crossed	count	0	0	0	0	0	0	0	0	0	0
Oil and gas wells within 250 feet from edge of ROW	count	0	1	9	5	9	7	2	2	4	5
Communication towers within 1,000 feet of the centerline	count	0	0	0	0	0	0	0	0	1	2
Existing 46 kV Transmission Lines Crossed	count	0	0	1	1	3	1	0	0	0	0
Existing 138 kV Transmission Lines Crossed	count	0	0	0	0	0	0	1	1	1	1
Engineering and Geotechnical Considerations		_				_	_		_	_	
Steep slopes crossed by ROW (>20%), percent of total length	miles	0.8	1.1	3.6	2.5	3.9	3.7	5.4	5.2	5.1	5.5
Heavy angles, greater than 30 degrees	count	3	4	6	3	7	7	1	2	3	3
Rights-of-Way Rebuild/Parallel											
Existing 46 kV transmission lines paralleled	miles	0	0	0	0	1.5	1.6	0	0	0	0
Existing 138 kV transmission lines paralleled	miles	0	0	0	0	0	0	1.3	0.2	0	0
Oil and Gas Pipeline paralleled	miles	0	0	0.3	0	0	0	0	0	0	0

Garrett Area Transmission Line Project Siting Study



## **Attachment A: Outreach Fact Sheet**

# **GARRETT AREA** TRANSMISSION LINE PROJECT

Kentucky Power officials plan to upgrade the electric transmission grid in Floyd and Knott counties. The Garrett Area Transmission Line Project involves building approximately 15 miles of 138-kilovolt (kV) electric transmission line, building an electrical substation and improving several substations to enhance electric reliability for customers.



## WHAT

The project involves:

- Building about 15 miles of 138-kV transmission line
- · Retiring approximately 25 miles of transmission line
- Building the Eastern Substation
- · Expanding the Garrett Substation
- Making upgrades at the Hays Branch Substation, Saltlick Substation (East Kentucky Power Cooperative substation) and Soft Shell Substation

This project involves filing an application with the Kentucky Public Service Commission.

## PROJECT SCHEDULE

#### 2021 2022 2023 2024 2025 **PROJECT ANNOUNCEMENT & VIRTUAL OPEN HOUSE LAUNCH** March 2021..... LIVE VIRTUAL TOWN HALL EVENTS April 2021 ..... **RIGHT-OF-WAY ACTIVITIES BEGIN** Summer 2021..... FILE APPLICATION WITH KENTUCKY PUBLIC SERVICE COMMISSION Fall 2021..... TREE CLEARING BEGINS Summer 2023 ..... **CONSTRUCTION BEGINS** Summer 2023..... **PROJECT IN SERVICE** End of 2024

## WHY

This project allows crews to retire approximately 25 miles of transmission line that includes deteriorating wooden poles from the 1920s and 1940s. The existing line has experienced multiple power outages in recent years. The proposed power grid upgrades help to strengthen the local electric system and increase electric reliability for area customers.

## WHERE

The project begins at the Hays Branch Substation in Floyd County and continues about 1 mile southwest to the proposed Eastern Substation located along Route 80. From there the project continues about 4 miles south toward Garrett Substation west of Route 680. It continues about 4 miles west to Saltlick Substation near the Floyd/Knott county line. It then crosses the county line into Knott County and continues about 6 miles southwest to the Soft Shell Substation northeast of Route 1098.

\*Timeline subject to change.



## **TYPICAL STRUCTURES**

Crews plan to build the transmission line using a combination of structures such as steel H-frame poles, lattice towers and three-pole structures.

Structure Height: Approximately 85 feet\* Right-of-Way Width: Approximately 100 feet\*

At Kentucky Power, we are committed to meeting the energy needs of customers while protecting the environment and natural beauty of the region.



#### KENTUCKY POWER VALUES YOUR INPUT ABOUT THIS PROJECT. PLEASE SEND COMMENTS AND QUESTIONS TO:

## **JULIET CAPEHEART**

Project Outreach Specialist 833-760-0604 KentuckyPowerOutreach@aep.com KentuckyPower.com/Garrett



06/28/2021



## **Attachment B: Route Development Maps**





























## **Attachment C: Substation Siting Study**
# **Substation Siting Study**

# **Eastern 138 Kilovolt Substation Project**



Prepared by:

GAI Consultants, Inc. 385 East Waterfront Drive Homestead, Pennsylvania 15120



February 2021



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Site Selection Study

**Eastern 138 Kilovolt Substation Project** 

# 1.0 INTRODUCTION

Kentucky Power Company (Kentucky Power), a unit of American Electric Power (AEP), is proposing to construct a new 138 kilovolt (kV) transmission substation in Floyd County, Kentucky (KY). The Eastern 138 kV Substation Project (the Project) is required to establish a new 138 kV service point to a customer's natural gas liquids extraction facility in Eastern, KY. The Project is a component of the Garrett Area Improvements Project, which includes the development of a greenfield transmission line between the proposed Eastern 138 kV Substation (the Proposed Substation) and the existing Hays Branch Substation, currently served from the existing Hays Branch-Morgan Fork 138kV Transmission Line. Also associated with the Garrett Area Improvements Project is the development of a greenfield transmission line between the Proposed Substation, the existing Garrett Substation, the existing Saltlick Substation, and the existing Soft Shell Substation. Project details pertaining to the development of the greenfield transmission lines will be documented in a separate Siting Study Report. This Substation Siting Report provides a description of the process used to identify a site for the Proposed Substation.

## **1.1 Proposed Substation Description**

The Proposed Substation will require an approximately 300' by 140' gravel-fenced area and includes equipment approximately 60' tall (including lightning mitigation). See comparable photograph for the Proposed Substation below in Figure 1 and see Attachment A for the Proposed Substation layout plan. The site must be approximately three to four acres in size to accommodate the construction area (grading), the substation equipment, and any necessary stormwater controls. Depending on final site selection, a 1.20- to 1.40-mile-long greenfield transmission line to Kentucky Power's existing Hays Branch-Morgan Fork 138kV line will be required. Selection of the greenfield route is described in a separate Siting Study Report documenting the Garrett Area Improvements Project.



Figure 1: Comparable Proposed Substation

Site Selection Study



## **1.2** Proposed Substation General Location

AEP's planners and engineers define the general location for the Proposed Substation to meet the Project's electrical need requirements (the Study Area, shown on Figure 2 below). A new substation in this Study Area (i) reasonably addresses the identified electrical issues; (ii) is in proximity to the existing Hays Branch-Morgan Fork 138kV line; and (iii) is in proximity to the natural gas liquids extraction facility currently serviced by the existing Hays Branch Substation.





The Study Area is characterized by land use typical of the mountainous regions of Eastern, KY. The topography includes mountains, side slopes, floodplains, and valleys. The prominent valley within the Study Area includes the floodplain and floodway of Right Fork Beaver Creek, which occupies much of the level terrain. Human development within the Study Area consists of the residences and businesses established with the community of Eastern, KY. Also prominent within the Study Area is KY Route 80 (KY-80), the natural gas liquids extraction facility, and numerous underground pipelines feeding it. Undeveloped regions of the Study Area consist of forested mountain tops and side slopes, and agricultural areas generally located within floodplains.



# **1.3** Goals of the Substation Siting Study

The overall goal of the Eastern 138 kV Substation Siting Study (the Substation Siting Study) is to evaluate potential sites within the Study Area and identify a suitable substation site that represents a balance between impacts on the natural and human environments while meeting the engineering and operational needs of the Project in an effective manner. To the extent reasonable and practical, the proposed site is the site that:

- Considers safety in all aspects of the substation's construction, operation and maintenance.
- Is located in the defined Study Area (as described in Section 1.2) and in reasonable proximity to the existing Hays Branch Substation.
- Reasonably minimizes adverse impacts on the natural and human environments realized from construction of the proposed substation and associated transmission line entrances and exits.
- Meets the Project's site engineering and operational requirements, which can include, but are not limited to, the following: space and clearance requirements; access road requirements such as slopes, turning radius, and line of sight; site development requirements such as grading, existing contaminants, and geotechnical; distribution and transmission line exit requirements; and existing infrastructure conflicts such as sewer, gas, and water lines.
- Fairly considers the environmental impacts on the surrounding community and area imposed by both the substation and associated line routes.
- Typically has a willing seller; however, there are exceptions where this is not always practical or reasonable.
- Considers landowner and stakeholder input.
- Minimizes special design requirements and unreasonable costs to the greatest extent feasible.
- Can be constructed and operated in a safe, timely, cost-effective, and reliable manner.

Refer to the Garrett Area Improvements Project's Siting Study Report for additional siting guidelines used in development of the Project.



# 2.0 SUBSTATION SITE IDENTIFICATION PROCESS

The following provides a general overview of the typical process used to identify a suitable substation site for a project. The process is modified and adapted depending on location, regulatory requirements, and unique project needs.

The substation site identification process begins by assembling a multi-disciplinary team with a wide range of experiences. Team member expertise includes (but is not always limited to) transmission siting, environmental impact assessment, impact mitigation, engineering, construction management, project management, electrical system planning, and public relations (the Siting Team). The Siting Team includes AEP employees and outside consultants. Additional expertise is added depending on the project needs.

Next, constraints and opportunity features are mapped within the Study Area. The initial constraints and opportunity features are typically identified using readily available public data sources (property lines, existing land uses, natural resources, cultural resources, transportation facilities, existing utility and linear features, base mapping, etc.) and supplemented with stakeholder input and field inspections.

Once the Study Area and constraints and opportunity features are identified, the Siting Team identifies Study Sites (typically less than 10 sites) adhering to the goals outlined in Section 1.3 and a series of general siting and technical guidelines (see the Garrett Area Improvements Project's Siting Study Report). The number of Study Sites could be numerous, low, or even limited to one depending on the project.

The Siting Team conducts desktop reviews and field inspections of the Study Sites. Field inspections focus on the Study Sites and surrounding area from public roads (focusing on environmental constraints, visual impacts, construction needs, and engineering/operational requirements). As this process progresses, the Study Sites are refined or eliminated. The remaining sites are then elevated to Alternative Sites, which are studied in more detail.

AEP real estate specialists contact the landowners of Alternative Sites to measure interest in selling, collect input, and to obtain permissions to survey. Local officials and key stakeholders are interviewed as needed. Additionally, further studies and examinations are completed as needed. Depending on the project, this could include (but is not limited to) the following: conceptual grading plans, conceptual transmission line entrances and exits, geotechnical investigations including core bores, environmental and/or cultural resource field surveys, ground surveys, previous use research, contaminants investigations, title search, etc. Ultimately, through a quantitative and qualitative analysis and comparison of the Alternative Sites, the Siting Team identifies a Proposed Substation Site, which is the most suitable site that meets the goals of the Substation Siting Study (Section 1.3).



# 3.0 STUDY SITES

The Siting Team identified 10 Study Sites within the Study Area, as shown and labeled (Sites A to J) on Map 1 below. Following communication with the property owner, Study Site E was eliminated due to the parcel being considered for a new manufacturing plant. Study Site H was eliminated due to its proximity to several cemeteries as well as problematic topography that would likely require significant grading. Study Sites I and F were eliminated due to being located within the floodplain and floodway of Right Fork Beaver Creek. Study Site G was eliminated due to access concerns involving narrow, winding access through a small residential neighborhood that also crosses an ungated railroad crossing. Study Site G is also adjacent to a residence, partially located within a previously recorded archeological site, and is near a cemetery. Study Site J was eliminated due to poor topography and access, anticipated environmental impacts, and its proximity to residencies. As a result of desktop reviews and field inspections, four Study Sites (A, B, C, and D) were carried forward for further analysis.



Map 1 - Study Sites



#### Eastern 138 Kilovolt Substation Project Site Selection Study



Map 2 - Alternative Sites



#### Eastern 138 Kilovolt Substation Project Site Selection Study

# 4.0 ALTERNATIVE SITES

## 4.1 Alternative Site A Description - Eliminated

Alternative Site A is located adjacent and to the north of the Hays Branch-Morgan Fork 138kV line on a mostly forested parcel crossed by several underground pipelines. Highlights of the site include its development would have a low visual impact, it is not located within a floodplain, and it has few anticipated environmental impacts. Additionally, given its location directly adjacent to the Hays Branch-Morgan Fork 138kV line, its associated transmission line would be the shortest of any of the Alternative Sites considered.

Access to the site would use an existing, approximately 1,000-foot-long, dirt access road that has many challenges. The slope and curvature of the access road is not suitable for large vehicles, and the line of sight to the access road from its exit onto KY-80 would likely require installation of a deceleration lane. Additionally, access would require crossing multiple existing pipelines, and cathodic protection would likely be a necessary addition to the pipelines in the area. Finally, being located on the northern side of the Hays Branch-Morgan Fork 138kV line would require an extended outage that may not be feasible for the customer. Alternative Site A was eliminated from consideration for these reasons.



Photograph 1. Location of Alternative Site A, facing southeast, adjacent to the Hays Branch-Morgan Fork 138kV line.



Photograph 2. Access road to Alternative Site A, facing south, adjacent to large pipelines.





Map 3 - Alternative Site A

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## 4.2 Alternative Site B Description - Eliminated

Alternative Site B is located adjacent to KY-550 along a private roadway that provides access to three residences and a wastewater treatment plant. The site is located in a relatively flat area (in comparison to the surrounding landscape) and is outside the floodplain. Although access to the site is favorable due to its proximity to KY-550, its development would require the purchase of three residences (across two parcels) and the rerouting of access to the wastewater treatment plant. Additionally, the location of underground infrastructure associated with the wastewater treatment plant is unknown, and previous disturbance of the site appears to have placed two streams underground in unknown locations. The site is also one of the furthest sites from the existing Hays Branch 138kV substation. For these reasons, Alternative Site B was eliminated from consideration.



Photograph 3. Alternative Site B, facing northeast. Site development would require removal of residences.



Photograph 4. Taken from access road toward Alternative Site B, facing south. Site development would require relocation of access road and removal of residences.



#### Eastern 138 Kilovolt Substation Project Site Selection Study



Map 4 - Alternative Site B



Site Selection Study

## 4.3 Alternative Site C Description - Retained

Alternative Site C is located on a narrow strip of land between KY-80 and KY-550. The site is previously disturbed and may contain fill material, with portions of the site currently being used for equipment and material storage. The site is located within the mapped 100-year floodplain of Right Fork Beaver Creek; however, a floodplain study is needed to confirm flooding risk. Although the site is narrow, the Siting Team determined the substation could be designed to fit the available space. Ultimately, Alternative Site C's accessibility, topography, and central location deemed it the most suitable option for construction of the Proposed Substation.



Photograph 5. Taken from KY-550 facing southwest, showing the portion of Alternative Site C used for material and equipment storage.



Photograph 6. Taken from KY-550 facing southeast, showing the undeveloped portion of Alternative Site C.





Map 5 - Alternative Site C

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## 4.4 Alternative Site D Description - Eliminated

Alternative Site D is located north of the Hays Branch-Morgan Fork 138kV line on a parcel of mixed use (business, residential, and undeveloped field and forest). Development of the site would have a moderate visual impact as it is located within 500 feet of at least three residences and may require the relocation of an underground pipeline. Based on desktop analysis, no floodplains, wetlands, or streams are located in the vicinity of the site.

Access to the site would use County Road 1926 (CR-1926), an existing roadway that provides access to several residences. Access to CR-1926 from KY-80 would likely require the installation of a deceleration lane, and the slope of CR-1926 would not be suitable for large vehicles. Additionally, the site is located to the north of the Hays Branch-Morgan Fork 138kV line, which would likely require an extended outage that may not be feasible for the customer. For these reasons, Site D was eliminated from consideration.

Photographs of Alternative Site D were not available due to private property markings and limited publicly available vantages points.



Map 6 - Alternative Site D



Site Selection Study

#### 4.5 Alternative Site Comparison

## **Table 1: Alternative Site Comparison**

\* REQUIRED FIELD: <u>Fails</u> (site elimination), <u>Deficient</u> (requires mitigation), <u>Satisfactory</u> (average), <u>Good</u> (above expectations), or N/A Use the best available data for the evaluation such as desktop, field reviews, conceptual grading plans, exploratory studies, etc.

Alternative Site	Α	В	С	D
Engineering and Operational Requirements				
Site parcel(s) size (acres) and number of parcels (count)	8.0 1	7.5 3	5.0 3	7.5 2
Estimated site development area <sup>1</sup> (area of disturbance to construct substation) (acres)	4.0	4.0	4.0	4.0
Site contains a feature that immediately eliminates it from consideration (Y/N)	No	No	No	No
Sufficient size for standard design, stormwater, setbacks, etc.	✓	✓	✓	✓
Ability to minimize and balance cut and fill volumes	✓	✓	✓	✓
Ability of the site to promote proper drainage	✓	✓	✓	✓
Geotechnical Suitability: Geo-hazard or risk (landslides, karst, etc.) (Y/N)	No	No	No	No
Geotechnical Suitability: Specialty foundations and/or ground improvement required (Y/N)	No	No	No	No
Geotechnical Suitability: Significant rock excavation required (Y/N)	No	No	No	No
Ability to build a safe, efficient, and cost-effective access road to the site <sup>2</sup>	No	Yes	Yes	No
Ability to avoid previous use conflicts (e.g., mining, contaminants, pollutants, wells, landfills, etc.)	Yes	No	Yes	Yes
Ability to avoid existing infrastructure conflicts (oil, gas, or sewer pipelines)	No	No	Yes	No
Ability for AEP TFS to safely, efficiently operate and maintain the substation <sup>3</sup>	Yes	Yes	Yes	Yes
Ability to obtain any required regulatory and site development approvals (e.g., CPCN, zoning, development plan, comprehensive plan conformance) in timely manner	Yes	Yes	Yes	Yes
The site location addresses Transmission and Distribution operational needs	Yes	Yes	Yes	Yes
<b>OVERALL</b> ability to efficiently and cost effectively develop the site, obtain approvals, avoid non-standard designs and mitigations, build the substation, and operate and maintain (*)	Defi	Satis	Good	Defi
Natural Environment		1	1	
Protected species and habitats or natural areas on/near the site (count) <sup>4</sup>	4	4	4	4
Perennial streams, water bodies, springs on/near development area (count)	0	2	0	0
Estimated wetlands (National Wetlands Inventory) in development area (acres)	0.0	0.0	0.0	0.0
100-year FEMA floodplain in development area (acres)	0.0	0.5	5.0	0.0
Estimated tree clearing in development area (acres)	3.5	0.5	0.0	1.5
<b>OVERALL</b> ability to avoid or minimize natural environment impacts and acquire the necessary environmental permits in timely manner for the site development area (*)	Satis	Satis	Satis	Good



## Table 1: Alternative Site Comparison

\* REQUIRED FIELD: <u>Fails</u> (site elimination), <u>Deficient</u> (requires mitigation), <u>Satisfactory</u> (average), <u>Good</u> (above expectations), or N/A Use the best available data for the evaluation such as desktop, field reviews, conceptual grading plans, exploratory studies, etc.

Alternative Site	Α	В	С	D		
Human Environment						
Site's existing land use (Infrastructure, Residential, Industrial, etc.)	Infra	Res	Ind	Res		
Residences within 1,000 feet of development area (count)	6	49	45	18		
Community gathering place (school, daycare, church, etc.) within 1,000 feet (count)	0	0	0	0		
Cemetery(s) within 500 feet of development area (count)	0	2	0	0		
Listed and eligible archaeological sites on/near development area (count)	0	0	0	0		
Listed and eligible architectural resources and districts within ¼ mile of the site (count)	0	0	0	0		
Designated park, recreation, or scenic resources nearby (count)	0	0	1	0		
Avoids impacts on existing and proposed land uses and existing visual character	~	X	✓	$\mathbf{X}$		
<b>OVERALL</b> ability to avoid or minimize human environment impacts (*)	Good	Satis	Satis	Satis		
Associated Transmission Line Impacts <sup>5</sup>	Associated Transmission Line Impacts <sup>5</sup>					
A transmission line route to the site is feasible and reasonable	✓	✓	~	✓		
Associated transmission line length (miles)	0.1	1.5	1.25	0.25		
<b>OVERALL</b> ability to efficiently and cost-effectively develop a route to the site and reasonably avoid or minimize environmental impacts <sup>6</sup> (*)	Defi	Satis	Good	Defi		

#### Notes

- <sup>1</sup> Development Area: Estimated limits of disturbance to construct the substation includes the area for cut and fill earthwork, stormwater management, clearing, access roads, etc. For example, a 1.0 acre fenced substation could need 3.0 or more acres to develop. A conceptual grading plan might be required especially in more rugged terrain.
- <sup>2</sup> Permanent access is required to stations. Poor access can increase operation and maintenance costs, construction costs, and safety risks. Factors to consider include safety, slope percentage (<10% = challenging), bridging, railroad crossings, turn radius, maintenance, line-of-sight, night-time access, proximity to main public road, etc. Refer to Station Standards SS-700001 for more details.</p>
- <sup>3</sup> Ability in the future to safely access and maintain the station. Factors include location, access, clearances, non-standard design, poor line-ofsight, tiered yards, flooding, etc. Request review by Transmission Field Services (TFS).
- <sup>4</sup> All sites are located within the range of four federally listed species. No site is located within a Protected Species Habitat or Natural Area.
- <sup>5</sup> Associated Transmission Line: New transmission line extension from the existing transmission line source to the new substation.
- <sup>6</sup> The feasibility and high-level impacts from the associated transmission line route must be considered. Working with engineering, determine line exits, develop <u>conceptual</u> route (if feasible), and identify potential impacts for site comparison.



# 5.0 **PROPOSED SUBSTATION SITE**

The Siting Team recommends Alternative Site C as the Proposed Substation Site as it best addresses the goals outlined in Section 1.3. While Alternative Sites A, B, and D, are constructible, they are not recommended as the proposed substation site. Both Alternative Sites A and D are located on the northern side of the Hays Branch-Morgan Fork 138kV line, meaning their construction may require extended outages as compared to options on the southern side of the line. Additionally, both sites have access concerns including (but not limited to) the need for the installation of a deceleration lane on KY-80 and the existing access to each site not being suitable for large vehicles. Alternative Route B is the furthest option from the existing Hays Branch Substation, requiring a long conceptual route that would need to avoid the more developed areas of the Eastern, KY community. Its development would require the purchase of three residences and the rerouting of access to a wastewater treatment plant. Additionally, the location of underground infrastructure in the area is unknown, and previous disturbance of the site appears to have placed two streams underground into unknown locations.

Alternative Site C's associated constraints include floodplain and viewshed concerns as well as requiring a long transmission line to tap the Hays Branch-Morgan Fork 138kV line, and ultimately serve the Hays Branch Substation. Preliminary analysis identified the site as being located within the 100-year floodplain of Right Fork Beaver Creek. However, the Siting Team anticipates the floodplain in this area to be revised due to the elevation of KY-80, which separates Right Fork Beaver Creek from the site. Although there are approximately 45 residences within 1,000 feet of the site, and the site is adjacent to a track and field facility, viewshed changes to the residences of Eastern, KY and patrons of the track should be low due to the site currently being used for commercial purposes, including the storage of heavy equipment and construction materials. Finally, the longer conceptual route required to tap the Hays Branch-Morgan Fork 138kV line from the proposed site is necessary as the site is the closest viable location to the line that is not located on the line's northern side.

Collectively, the Siting Team believes the Proposed Substation Site meets the overall goals of the Project and represents a balance between impacts on the natural and human environments while meeting the operational needs of the Project in an effective manner.

The following was not conducted as part of this evaluation, and should be conducted prior to acquiring any property:

- Phase I Environmental Site Assessment
- Geotechnical borings and groundwater elevation
- Wetland delineation



- Threatened and Endangered species surveys
- Access road design and line of sight survey

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# Attachment A. Proposed Substation Layout Plan



					-			
16	TENTHS	10	20	30	INCHES	1	2	3

# LINE SIZES & TENSIONS:



B 3-- MCM @ ---# NESC H.L. T.O. HT --'-" 1-- MCM @ ---# NESC H.L. T.O. HT --'-" 3-- MCM @ ---# NESC H.L. T.O. HT --'-" 1-- MCM @ ---# NESC H.L. T.O. HT --'-"

# DETAILED SCOPING DOCUMENT PRELIMINARY

# GENERAL NOTES:

1. FOR CONSTRUCTION NOTES SEE AEP "TECHNICAL SPECIFICATION FOR SUBSTATION AND SWITCHING STATION CONSTRUCTION" #SS-160102.

# LEGEND:

NUMBERS IN REFER TO COLUMN LINE DESIGNATION

# 

138KV ONE LINE DIAGRAM	Λ	E-1200
138KV ELEC. ASS'YS		E-2201-E-2205
FOUNDATION PLAN		E-3201
GROUNDING PLAN		E-3202
GRADING PLAN		E-3203 SH.A
CONDUIT & CABLE PLAN		E-3261

OLD DWG #:	STD DWG #:				
"THIS DRAWING IS THE PROPERTY OF AMERICAN ELECTRIC POWER AND IS LOANED UPON CONDITION THAT IT IS NOT TO BE COPIED OR REPRODUCED, IN WHOLE OR IN PART, OR USED FOR FURNISHING INFORMATION TO ANY PERSON WITHOUT THE WRITTEN CONSEN OF AMERICAN ELECTRIC POWER, OR FOR ANY PURPOSE DETRIMENTAL TO THEIR INTEREST, AND IS TO BE RETURNED UPON REQUEST					
KENTUCKY PO	KENTUCKY POWER COMPANY				
EASTERN STATION					
LANGLEY KENTUCKY					
138 KV					

# STATION LAYOUT PLAN

	SCALE: 1" = 15'	DR: PPG	ENG: PPG	CH:	
		WO#: 42962784	APPD:	DATE: 08/01/20	
	ELECTRIC POWER	1 RIVERSIDE PLAZA COLUMBUS, OH 43215	<sup>DWG.</sup> E-1201	Re 0	
#	BOUNDLESS ENERGY"	COLUMBUS, OH 43215		V <b>v</b>	
			D.1		



# **Attachment D: Data Collection Summary**

Data Source	Description				
GIS Data	See typical GIS data sources in the scope of work templates.				
Field Inspections	Siting Team members conducted field inspections throughout the Study Area and				
Field Inspections	along the proposed Study Segments in August 2020.				
	U.S. Fish and Wildlife Service's (USFWS), KY Ecological Services Office utilizing				
Federal Agencies	the Information, Planning and Consultation (IPAC) System – May 5, 2020				
rederal Agencies	U.S. Army Corps of Engineers (USACE) utilizing the Regulatory In-lieu Fee and				
	Bank Information Tracking System – August 2, 2021				
	KY Heritage Council (KHC) data request – February 2020				
	KY Office of State Archaeology (KOSA) data request - February 2020				
	• KY Division of Water (KDOW) online Water Quality Certification Viewer – August				
State Agencies	02, 2021.				
State Agencies	KY Department of Fish and Wildlife Resources (KDFWR) data request – May				
	2020				
	KY State Nature Preserves Commission (KSNPC) data request – February 2020				
	KY Transportation Cabinet email correspondence - June 2021				
Local Aganaias (Officials	Floyd and Knott County Officials – virtual presentation to officials by Siting				
Local Agencies/Officials	personnel – February 24, 2021				
Other Stakeholders	Western Pocahontas Properties (WPP) – May 2020				
	• Virtual Open House with 30-day public comment period held in March and April				
Open House(s)	2021.				
	Live Virtual Town Hall held at 12:00pm and 5:00pm on April 1, 2021				
Website and Mailed-In	Received approximately 48 public comments. Kentucky Power representatives				
	reviewed the comments and reached out to the authors to address concerns or				
Comments	discuss the Project further.				



Garrett Area Transmission Line Project Siting Study

# **Attachment E: GIS Data Sources**

Attachment E. GIS Data Sources				
Siting Criteria	Source	Description		
	Land Use	e		
Number of parcels crossed by the ROW	Knott County Property Value Administrator (March 2020)	Count of the number of parcels crossed by the ROW		
	Floyd County Property Value Administrator (March 2020)			
Number of residences within various distances of an Alternative Route centerline	Digitized from Google Earth (March 2020) and field verified from points of public access	Count of the number of residences within the ROW and within up to 500 feet of the centerline of the Alternative Routes		
Number of commercial buildings within various distances of an Alternative Route centerline	Digitized from Google Earth (March 2020) and field verified from points of public access	Count of the number of commercial buildings within the ROW and within up to 500 feet of the centerline of the Alternative Routes		
Number of NRHP-listed or eligible archeological sites within the ROW of an Alternative Route centerline	Data received as part of information request from the Kentucky Heritage Council and the Kentucky Office of State Archaeology (February 2020)	Previously identified archeological resources listed or eligible on the National Register of Historic Places (NRHP) acquired through the Kentucky Heritage Council and the Kentucky Office of State Archaeology		
Number of NRHP-listed or eligible historic architectural resources or historic districts within one mile of an Alternative Route centerline	Data received as part of information request from the Kentucky Heritage Council and the Kentucky Office of State Archaeology (February 2020)	Previously identified historic architectural resource sites and districts listed or eligible on the NRHP acquired through the Kentucky Heritage Council and the Kentucky Office of State Archaeology		
Institutional uses (schools, places of worship and cemeteries) within various distances of an Alternative Route centerline	Digitized from Google Earth (March 2020) and Esri base data (2015)	This dataset includes the locations of cemeteries, churches, hospitals, parks, and schools within varying distances of the centerline of the Alternative Routes.		

	Attachment E. GIS Data Sources				
Siting Criteria	Source	Description			
Airfield and heliports within one mile of an Alternative Route centerline	Esri base data (2021) and FAA Sectional Charts	Distance from airfields and heliports			
	Natural Environment				
Forest clearing within the ROW of an Alternative Route centerline	Digitized based on Google Earth (April 2019)	Acres of forest within the ROW of an Alternative Route centerline			
Number of National Hydrography Dataset (NHD) stream and waterbody crossings within the ROW of an Alternative Route centerline	USGS (2020)	The NHD is a comprehensive set of digital spatial data prepared by the USGS that contains information about surface water features such as lakes, ponds, streams, rivers, springs and wells			
Acres of National Wetland Inventory (NWI) wetland crossings within the ROW of an Alternative Route centerline	U.S. Fish and Wildlife Service (USFWS) (2020)	The NWI produces information on the characteristics, extent, and status of the Nation's wetlands and deepwater habitats			
Acres of 100-year floodplain crossing within the ROW of an Alternative Route centerline	U.S. Federal Emergency and Management Agency (FEMA) (2020)	Acres of 100-year floodplain within the ROW			
Threatened, endangered, rare or sensitive species occurrence within the Project	Data requests utilizing the USFWS IPaC tool (2021)	Known occurrences; locations of potential habitat based on land use			
vicinity	Data request to the Kentucky Department of Fish and Wildlife Resources (2020) and the Kentucky State Nature Preserves Commission (2020)				

Attachment E. GIS Data Sources				
Siting Criteria	Source	Description		
Prime and unique farmland soils and farmland of statewide importance within the ROW of an Alternative Route centerline	USDA-NRCS SSURGO Database (2020)	Soil associations crossed by the ROW characterized as prime and unique farmland or farmland of statewide importance		
	Technica	al		
Route length	Measured in GIS	Length of route in miles		
Heavy angle structures	Developed in GIS	Anticipated number of angled structures in excess of 30 degrees		
Number of road crossings	TIGER Road Data, US Census Bureau (2015), Google Earth aerial review (2021)	Count of federal, state and local roadway crossings		
Number of pipeline crossings	U.S. Department of Transportation National Pipeline Mapping System (2021)	Number of known pipelines crossed by the ROW of an Alternative Route		
Number of transmission line crossings	Kentucky Power	Number of high voltage (69 kV or greater) transmission lines crossed by the ROW of an Alternative Route		
Distance of steep slopes crossed	Derived from seamless Digital Elevation Models (DEMs) obtained from the U.S. Geologic Survey (2021)	Miles of slope greater than 20 percent crossed by the ROW of an Alternative Route		
Length of transmission line parallel	Kentucky Power	Miles of an Alternative Route parallel to existing high voltage transmission lines		
Length of pipeline parallel	U.S. Department of Transportation National Pipeline Mapping System (2021)	Miles of an Alternative Route parallel to existing pipelines		
Length of road parallel	TIGER Road Data, US Census Bureau (2015), Google Earth aerial review (2021)	Miles of an Alternative Route parallel to existing roadways		



# **Attachment F: Agency Correspondence**

IPaC

# IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

# Location

Floyd, Knott and Magoffin counties, Kentucky



# Local office

Kentucky Ecological Services Field Office

**└** (502) 695-0468**i** (502) 695-1024

J C Watts Federal Building, Room 265 330 West Broadway Frankfort, KY 40601-8670

http://www.fws.gov/frankfort/

# Endangered species

# This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

- 1. Draw the project location and click CONTINUE.
- 2. Click DEFINE PROJECT.
- 3. Log in (if directed to do so).
- 4. Provide a name and description for your project.
- 5. Click REQUEST SPECIES LIST.

Listed species<sup>1</sup> and their critical habitats are managed by the <u>Ecological Services Program</u> of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries<sup>2</sup>).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact <u>NOAA Fisheries</u> for <u>species under their jurisdiction</u>.

- 1. Species listed under the <u>Endangered Species Act</u> are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the <u>listing status page</u> for more information.
- 2. <u>NOAA Fisheries</u>, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

# Mammals

NAME

STATUS

Gray Bat Myotis grisescens

This species only needs to be considered if the following condition applies:

• The project area includes potential gray bat habitat.

No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6329

Indiana Bat Myotis sodalis

This species only needs to be considered if any of the following conditions apply:

- The project area includes known 'summer 1' habitat.
- The project area includes known 'summer 1 (outer-tier)' habitat.
- · The project area includes 'potential' habitat. All activities in this location should consider possible effects to this species.

There is final critical habitat for this species. Your location is outside the critical habitat.

https://ecos.fws.gov/ecp/species/5949

## Northern Long-eared Bat Myotis septentrionalis

This species only needs to be considered if the following condition applies:

 The specified area includes areas in which incidental take would not be prohibited under the 4(d) rule. For reporting purposes, please use the "streamlined consultation form," linked to in the "general project design guidelines" for the species.

No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045

Fishes	
NAME	STATUS
Kentucky Arrow Darter Etheostoma spilotum There is final critical habitat for this species. Your location overlaps the critical habitat. <u>https://ecos.fws.gov/ecp/species/9063</u>	Threatened

# Clams

NAME	STATUS
Clubshell Pleurobema clava No critical habitat has been designated for this species. <u>https://ecos.fws.gov/ecp/species/3789</u>	Endangered
Fanshell Cyprogenia stegaria No critical habitat has been designated for this species. <u>https://ecos.fws.gov/ecp/species/4822</u>	Endangered

Endangered

Threatened

Endangered

https://ecos.fws.gov/ipac/location/ZA4IPDLLDJFBVBDDU5OKFXUPGI/resources

5/5/2020	0	IPaC: Explore Location		Exhibit Page 66 of 1
N	orthern Riffleshell Epioblasma torulosa rangiar No critical habitat has been designated for this species/527		Endangered	
Pi	ink Mucket (pearlymussel) Lampsilis abrupta No critical habitat has been designated for this spe <u>https://ecos.fws.gov/ecp/species/7829</u>	cies.	Endangered	
	urple Cat's Paw (=purple Cat's Paw Pearlymuss bliquata obliquata No critical habitat has been designated for this spe <u>https://ecos.fws.gov/ecp/species/5602</u>		Endangered	
R	ough Pigtoe Pleurobema plenum No critical habitat has been designated for this species/ https://ecos.fws.gov/ecp/species/6894	cies.	Endangered	NC
SI	heepnose Mussel Plethobasus cyphyus No critical habitat has been designated for this spe https://ecos.fws.gov/ecp/species/6903	cies.	Endangered	
Si	nuffbox Mussel Epioblasma triquetra No critical habitat has been designated for this spe <u>https://ecos.fws.gov/ecp/species/4135</u>	cies.	Endangered	
	rustaceans		STATUS	
В	ig Sandy Crayfish Cambarus callainus		Threatened	

Big Sandy Crayfish Cambarus callainus There is proposed critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8285

# **Critical habitats**

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

This location overlaps the critical habitat for the following species:

NAME	TYPE
Kentucky Arrow Darter Etheostoma spilotum	Final
https://ecos.fws.gov/ecp/species/9063#crithab	

# Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described <u>below</u>.

- 1. The Migratory Birds Treaty Act of 1918.
- 2. The <u>Bald and Golden Eagle Protection Act</u> of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <a href="http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php">http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php</a>
- Measures for avoiding and minimizing impacts to birds <u>http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/</u> <u>conservation-measures.php</u>
- Nationwide conservation measures for birds <u>http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf</u>

MIGRATORY BIRD INFORMATION IS NOT AVAILABLE AT THIS TIME

# Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

<u>Nationwide Conservation Measures</u> describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. <u>Additional measures</u> and/or <u>permits</u> may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

# What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS <u>Birds of Conservation Concern (BCC)</u> and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the <u>Avian Knowledge Network</u> (<u>AKN</u>). The AKN data is based on a growing collection of <u>survey</u>, <u>banding</u>, <u>and citizen science datasets</u> and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (<u>Eagle Act</u> requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the <u>AKN Phenology Tool</u>.

# What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the <u>Avian Knowledge Network (AKN)</u>. This data is derived from a growing collection of <u>survey</u>, <u>banding</u>, <u>and citizen</u> <u>science datasets</u>.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

#### How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: <u>The Cornell Lab of Ornithology All About Birds Bird Guide</u>, or (if you are unsuccessful in locating the bird of interest there), the <u>Cornell Lab of Ornithology Neotropical Birds</u> guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

## What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

- 1. "BCC Rangewide" birds are <u>Birds of Conservation Concern</u> (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
- 2. "BCC BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
- 3. "Non-BCC Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the <u>Eagle Act</u> requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

# Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the <u>Northeast Ocean Data Portal</u>. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the <u>NOAA NCCOS</u> <u>Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf</u> project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the <u>Diving Bird Study</u> and the <u>nanotag studies</u> or contact <u>Caleb Spiegel</u> or <u>Pam</u> <u>Loring</u>.

## What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to <u>obtain a permit</u> to avoid violating the Eagle Act should such impacts occur.

## Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

# Facilities

# National Wildlife Refuge lands

Any activity proposed on lands managed by the <u>National Wildlife Refuge</u> system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

# Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

# Wetlands in the National Wetlands Inventory

Impacts to <u>NWI wetlands</u> and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local <u>U.S. Army Corps of</u> <u>Engineers District</u>.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

PEM1A PEM1C PEM1Fh PEM1Fx

FRESHWATER FORESTED/SHRUB WETLAND

<u> PFO1A</u>
<u>PSS1A</u>
<u>PF01C</u>
PSS1C

FRESHWATER POND

PUBHh PUBHx PAB4H	-10M
PUBF	10-
<b>PUBFx</b>	Th.
<b>PUBH</b>	
RIVERINE	$C() \vdash$
<b>R5UBH</b>	150
R4SBC	
<b>R3UBH</b>	()
R2UBH	C
<b>R3UBHx</b>	
R4SBCx	
	$\langle () \rangle$

A full description for each wetland code can be found at the National Wetlands Inventory website

## Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

## Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged
aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

## Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

TEORCONSULTAT

## U.S. Army Corps of Engineers Regulatory In-lieu Fee and Bank Information Tracking System August 02, 2021

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	* ILF-KDFWR-Meyer's Station Stream Restoration (ILF-I) (LRL-2012-637)	Public Commercial	Approved	KY 🥥				
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	Restoration Project (ILF-I) (LRL-2013-91)	Commercial	Approved	KI U	Barbouville Big Stone Gap			
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	Creek Restoration Project (ILF-I) (LRL-2014-500)	Commercial	Approved	KY 🥥				
	* ILF-KDFWR-Rogers Gap Stream Restoration (MOA) (LRL-2012-134)	Public Commercial	Approved	кү 🥥				

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## Kentucky Division of Water - Water Maps Portal 401 Water Quality Certification Map Viewer Tool August 02, 2021



## Leah Jackson

From:	James, Chris (KYTC-D12) <chris.james@ky.gov></chris.james@ky.gov>
Sent:	Wednesday, June 9, 2021 3:50 PM
То:	Leah Jackson
Cc:	Hale, Samuel S (KYTC-D12); Stallard, Terry R (KYTC-D12); Johnson, John M (KYTC-D12);
	Skeens, Dave R (KYTC-D12); Sammons, Dewey L (KYTC-D12)
Subject:	RE: Kentucky Power Project - KY 80 between KY 7 towards Prestonsburg
Attachments:	12_8703_00.kmz; 12_8703_00_Preliminary_RW_Plans.pdf

## **EXERCISE CAUTION: This is an External Email Message!**

\*\*Think before clicking on links, opening attachments, or responding\*\*

### Ms. Jackson,

Attached are two files that show information relating to the proposed KY 80 Ramp project near Garrett (KYTC Item Number 12-8703.00). The first is a Google Earth KMZ file that shows approximate construction limits, r/w lines, etc. Please note that this information is still "Preliminary-Subject to Change" as the design details are currently in development. The attached PDF is for the current "Preliminary R/W Plans" for the project and may allow you to see some of the information better (due to line style issues with Google Earth). These plans are also currently in development. Please let us know if you have any questions or if you need any additional information.

### Thanks,

Chris James, PE KYTC District 12 Design Section Supervisor 109 Loraine Street | Pikeville, KY 41501 P 606.433.4117 C 606.794.5564

From: Johnson, John M (KYTC-D12) <JohnM.Johnson@ky.gov>
Sent: Wednesday, June 9, 2021 3:02 PM
To: James, Chris (KYTC-D12) <Chris.James@ky.gov>
Cc: Leah Jackson <L.Jackson@gaiconsultants.com>; Hale, Samuel S (KYTC-D12) <Samuel.Hale@ky.gov>; Stallard, Terry R (KYTC-D12) <Terry.Stallard@ky.gov>
Subject: FW: Kentucky Power Project - KY 80 between KY 7 towards Prestonsburg

Chris,

Can you forward a kmz file of this project to Ms. Jackson. Her firm is working on a project for AEP Transmission and was wanting to look and see if there are any conflicts with our project.

Thanks,

jmj

From: Leah Jackson <L.Jackson@gaiconsultants.com>
Sent: Monday, June 7, 2021 1:19 PM
To: Johnson, John M (KYTC-D12) <JohnM.Johnson@ky.gov>; Hale, Samuel S (KYTC-D12) <Samuel.Hale@ky.gov>
Subject: RE: Kentucky Power Project - KY 80 between KY 7 towards Prestonsburg

Thanks John. Is there a phone number I can reach you at? I only have email addresses at the moment.

From: Johnson, John M (KYTC-D12) <<u>JohnM.Johnson@ky.gov</u>>
Sent: Monday, June 7, 2021 1:14 PM
To: Leah Jackson <<u>L.Jackson@gaiconsultants.com</u>>; Hale, Samuel S (KYTC-D12) <<u>Samuel.Hale@ky.gov</u>>
Subject: RE: Kentucky Power Project - KY 80 between KY 7 towards Prestonsburg

## **EXERCISE CAUTION: This is an External Email Message!**

\*\*Think before clicking on links, opening attachments, or responding\*\*

Feel free to contact me and we can get together

jmj

From: Leah Jackson <L.Jackson@gaiconsultants.com>
Sent: Monday, June 7, 2021 1:09 PM
To: Hale, Samuel S (KYTC-D12) <Samuel.Hale@ky.gov>
Cc: Johnson, John M (KYTC-D12) <JohnM.Johnson@ky.gov>
Subject: Kentucky Power Project - KY 80 between KY 7 towards Prestonsburg

Hello Samuel,

Thank you for reaching out to Kentucky Power regarding the Garrett Area Improvements Project. I apologize for the delay in contacting you. You had left the following comment regarding the Project.

Comments: KYTC has a project in design on KY 80 between KY 7 and the top of the hill towards Prestonsburg. Please contact me or John M. Johnson at KYTC District 12, 109 Loraine St. Pikeville.

I was hoping we could discuss any concerns you may have with our study segments and your projects. Please feel free to write back or call me at the number in my signature.

Thank you!

Leah M. Jackson D 412.399.5335 M 724.332.1070



## GAI Consultants

ENGINEERING, PLANNING, AND ENVIRONMENTAL CONSULTING SINCE 1958

GAI CONSULTANTS CONFIDENTIALITY NOTICE: This communication contains confidential information belonging to the sender and may be legally privileged. This communication is solely for the use of its intended recipient. If you are not the intended recipient, inform the sender of the error and remove this email from your system. If this transmission includes any technical information, design data, and/or recommendations, they are provided only as a matter of convenience and may not be used for final design and/or construction.

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KY 80 Ramp - Typical Section Sta. 10+00 - 16+50

## SEE X - SECTIONS FOR SLOPES OUTSIDE SHOULDERS LIMITS

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STA 21+00.00     Floyd     12.8703.00       ELEV = 780.71'     800     795	Image: STA 21+00.00     Image: STA 21+00.00       ELEV = 780.71'     Floyd       12.8703.00       795	STA 21+00.00     Floyd     12.8703.00       ELEV = 780.71'     810     795	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Image: start 21+00.00     Image: start 21+00.00       ELEV = 780.71'     Floyd       12.8703.00       810       795
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In =     IO VERTICAL       In =     IO VERTICAL       Flord     12.8703.00       In =     10	SCALE:     I = 10 VERTICAL       I = 10 VERTICAL     Floyd       1 = 100     785       770     785       Floyd     785       780     775       770     785       Floyd     755       Floyd     755       Floyd     755       Floyd     755       760     755       Floyd     750       Floyd     755       740     740	SCALE: 1" = 10 VERTICAL Flore 128703.00 STA 21+00.00 STA 21+00.00 ST	SCALE: 1" = 50 HORIZONTAL Floyd 12.8703.00 1.12703.0	SCALE: 1" = 50 HORIZONTAL Figd 12.8703.00 Figd 12.8703.
In =     10     Flore     12.8703.00       In =     10     0     12.8703.00     12.8703.00       In =     10     10     12.1     10       In =     10     10     10     10       In =     100     10     10     10 <td>SCALE: I." = 10 VERTICAL I." = 10 VERTICAL Floyd 12.8703.00 I.</td> <td>SCALE: 1" = 10 VERTICAL Foyd 12.8703.00 STA 21+00.00 STA 21+00.00 STA 21+00.00 STA 21+00.00 STA 21+00.00 Flue SSD= 2057' 745 735 745</td> <td>SCALE: 1" = 50 HORIZONTAL Floyd 12.8703.00 Floyd 775 Floyd 775 F</td> <td>SCALE: 1" = 50 HORIZONTAL Flore Flo</td>	SCALE: I." = 10 VERTICAL I." = 10 VERTICAL Floyd 12.8703.00 I.	SCALE: 1" = 10 VERTICAL Foyd 12.8703.00 STA 21+00.00 STA 21+00.00 STA 21+00.00 STA 21+00.00 STA 21+00.00 Flue SSD= 2057' 745 735 745	SCALE: 1" = 50 HORIZONTAL Floyd 12.8703.00 Floyd 775 Floyd 775 F	SCALE: 1" = 50 HORIZONTAL Flore Flo
I" = 10 VERTICAL     Flord     128703.00       I" = 10 VERTICAL     Flord     128703.00       I" = 10 VERTICAL     Flord     128703.00       III = 100 VERTICAL     STA 21+00.00     805       STA 21+00.00     STA 21+00.00     795       III = 100 VERTICAL     Sta 21+00.00     795       III = 100 VERTICAL     785     785       FIEV = 783.89°     755     765       FIEV = 783.89°     755     745       III = 100 VERTICAL     740     740	Floyd     12.8703.00       Image: Schedule of the second se	SCALE: 1" = 10 VERTICAL Floyd 12.8703.00 1.2.8703.00 1	SCALE: 1" = 50 HORIZONTAL       Floyd     12.8703.00	SCALE:     1" =     50 HORIZONTAL     COUNTY OF     TEM NO.       Floyd     12.8703.00     12.8703.00     12.8703.00       A     A     A     A     12.8703.00       A     A     A     A     12.8703.00     12.8703.00       A     A     A     A     790     800       A     A     A     A     790     780       STEL     A     790     785     786     775       FUI 21+50.000     FLEV=1783.89'     755     755     755       FUEV=1783.89'     750     12.150.00     755       FUEV=1783.89'     750     740     740
In =     IO VERTICAL       In =     IO VERTICAL <td< td=""><td>Schell     I     =     10     VERTICAL       II     II     II     III     III       II     III     III     III     III       III     IIII     IIII     IIII     IIII       IIII     IIIII     IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII</td><td>SCALE: 1" = 10 VERTICAL Floyd 12.8703.00 1.2.8703.00 1.2.8703.00 STA 21+00.00 STA 21+00.00 STA</td><td>SCALE: 1" = 50 HORIZONTAL Floyd 12.8703.00 Floyd 12.8703.00 Flo</td><td>SCALE: 1" = 50 HORIZONTAL 1" = 10 VERTICAL Floyd 128703.00 129703.00 1297</td></td<>	Schell     I     =     10     VERTICAL       II     II     II     III     III       II     III     III     III     III       III     IIII     IIII     IIII     IIII       IIII     IIIII     IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	SCALE: 1" = 10 VERTICAL Floyd 12.8703.00 1.2.8703.00 1.2.8703.00 STA 21+00.00 STA	SCALE: 1" = 50 HORIZONTAL Floyd 12.8703.00 Floyd 12.8703.00 Flo	SCALE: 1" = 50 HORIZONTAL 1" = 10 VERTICAL Floyd 128703.00 129703.00 1297
In a low central     Flore     12.8703.00       In a low central     12.8703.00     12.8703.00       In a low central     STA 21+00.00     80.5       In a low central     STA 21+00.00     79.5       In a low central     Flore     79.5       In a low central     Flore     78.6       In a low central     Flore     74.0       In a low central     Flore     73.5	Production     Floyd     128703.00       Image: State of the stat	SCALE: I." = 50 HORICAL Flogd 128703.00 1	SCALE: 1" = 50 HORIZONTAL I" = 10 VERTICAL Floyd 128703.00 12970 129	SCALE: 1" = 50 HORIZONTAL 1" = 10 VERTICAL Floyd 12.8703.00 12.
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Image: Property of the system     Floyd     12.8703.00       Image: Property of the system     12.8703.00     12.8703.00       Image: Property of t	SCALE:     I'' =     10     Floyd     12,8703.00       Floyd     12,8703.00     12,8703.00     12,8703.00       SELE     795     805     805       SELE     790     795     785       PVI 21 + 50.00     770     780     710       SELE     780     715     765       PVI 21 + 50.00     175     765       SED = 7007     745     745       730     735	SCALE:     I" =     50 HORIZONTAL       Floyd     12.8703.00       STA 21+00.00     810       STA 21+00.00     805       STA 21+00.00     805       STA 21+00.00     795       Floyd     795       755       Floyd     750       Floyd     755       Floyd     755       Floyd     730	SCALE: 1" = 50 HORIZONTAL       Floyd     128703.00       Floyd     128703.00       Floyd     128703.00       Scale     00       Scale     00       Scale     00       Scale     00       Scale     00       Scale     10       Scale     00       Scale     00       Scale     795       Scale     7165       Scale     700       Scale     730	SCALE: 1" = 50 HORIZONTAL       COUNTY OF Floyd       TEM NO.         Floyd       128703.00       128703.00         Image: Scale of the state of t
Image: second	SCALE:     I'' =     10     Floyd     12.8703.00       I'' =     10     0.001     12.8703.00     12.8703.00       I'' =     10     10     10     10       I'' =     10     10     10     10       I'' =     10     10     10     12.8703.00       I'' =     10     10     10     10       I'' =     10     10     10.00     10.00       I'' =     10     10     10.00     10.00       I'' =     10     10.00     10.00     10.00       I'' =     10     10.00     10.00     10.00       I'' =     10.00     10.00     10.00     10.00	SCALE:     I'' =     50 HORIZONTAL       Floyd     12.8703.00       STA     21+00.00       STA     21+00.00       STA     795       STA     795       STA     795       Floyd     795       STA     790       STA     795       STA     795       STA     795       STA     795       STA     796       770     788       PVI 21+50.00     755       ELE 100°     755       ELE 100°     755       SSD= 2057'     740       730     730	SCALE: 1" = 50 HORIZONTAL Floyd 12,8703,00 Floyd 12,8703,00 Flo	SCALE: 1" = 50 HORIZONTAL     Floyd     TEM NO.       I" = 10 VERTICAL     Floyd     12.2703.00       III = 10 VERTICAL     0011     80.0       III = 10 VERTICAL     12.11     80.5       III = 100     12.11     80.5       III = 100     79.5     78.6       III = 100     77.0     78.6       III = 100     75.5     71.6       III = 100     73.0     73.5
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I = 10     Flore     128703.00       I = 10     VERTICAL     Flore     810       I = 10     I = 100     STEA 21+00.00     805       STA 21+00.00     STEA 21+780     795       I = 100     780     785       I = 100     755     715       I = 100     735     735	SCALE: $I = 10$ VERTICAL I = 10 VERTICAL $I = 100$ $I = 100^{-1}$ $I = 100^{-1}$ $I = 10^{-1}$ $I = 10^{-1$	SCALE: $I'' = 10$ VERTICAL I' = 10 VERTICAL I'' = 10 VERTICAL I'' = 10 VERTICAL I'' = 10 VERTICAL I'' = 100 I'' = 100 I''' = 100 I'''' = 100 I''''''''''''''''''''''''''''''''''''	SCALE: 1" = 50 HORIZONTAL Flow the transverse to trans	SCALE: 1" = 50 HORIZONTAL Floyd 128703.00 Floyd 128703.
Image: Property of the system     Flore     128703.00       Image: Property of the system     128703.00     1785       Image: Property of the system     1760     1765       Image: Property of the system     1760     1755       Image: Property of the system     1755     1760       Image: Property of the system     1755     1745       Image: Property of the system     1730     1725       Image: Property of the system     1725     1720	SCALE: $I = 10$ VERTICAL Flore 128703.00 Flore 128703.	SCALE: 1" = 50 HERIZCAL Floyd 12.8703.00 12.8703.00 12.8703.00 12.8703.00 12.8703.00 12.8703.00 12.8703.00 12.8703.00 12.8703.00 12.8703.00 14.0 12.8703.00 14.0 15.5 PVI 21+50.00 15.5 PVI 21+50.00 15.5 PVI 21+50.00 15.5 PVI 21+50.00 15.5 PVI 21+50.00 15.5 PVI 21+50.00 15.5 PVI 21+50.00 15.5 17.	SCALE: 1" = 50 HORIZONTAL Floyd 128703.00 2017 C 10 VERTICAL 10 VE	SCALE: 1" = 50 HORIZONTAL Floyd 123703.00 Floyd 123703.
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Image: state of the state o	SCALE: $I^{*} = 10$ VERTICAL $I^{*} = 10$ VERTICAL Flord 128703.00 $I^{*} = 10$ VERTICAL $I^{*} = 100$	SCALE: 1" = 10 VERTICAL Flore 1 = 10 VERTICAL Flore 1 = 200 STA 21+00.00 STA 21+00.00 STA 21+00.00 STA 21+00.00 STA 21+00.00 FLEV = 780.71' 800 790 790 790 790 790 790 790 7	SCALE: 1" = 50 HORIZONTAL Flow trans. Flow territorial territori territorial territorial	SCALE: 1" = 50 HORIZONTAL Find 128703.00 Find 128703.00 Find 128703.00 Find 128703.00 Find 128703.00 Find 128703.00 Find 128703.00 Find 12870 Find 128703.00 Find 12870 Find 128703.00 Find 12870 Find 128703.00 Find 12870 Find 128703.00 Find 12870 Find 128703.00 Find 128703 Find 128703.00 Find 128703 Find 1287
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Image: Property of the system     Flow     128703.00       Image: Property of the system     128703.00     810       Image: Property of the system     800     805       Image: Property of the system     795     795       Image: Property of the system     785     775       Image: Property of the system     765     765       Image: Property of the system     750     755       Image: Property of the system     750     755       Image: Property of the system     750     750       Image: Property of the system     730     725       Image: Property of the system     715     720	SCALE: 1. = 10 VERTICAL Flore 12.8703.00 TA 21+ TA 21+ TRO TA 21+ TRO TA 21+ TRO TRS TA 21+ TRO TRS TA 21+ TRS TRS TRS TRS TRS TRS TRS TRS	SCALE: 1" = 10 VERTICAL 1" = 10 VERTICAL Flore 12,8703.00 12,9703.00 12,9703.00 12,9703.00 12,9703.00 12,9703.00 12,9703.00 12,9703.00 12,9703.00 12,9703.00 12,9703.00 12,9705.00 12,9705.00 13,00 14,00	SCALE: 1" = 50 HORIZONTAL 1" = 10 VERTICAL Floyd 1287000 128700 128700 128700 128700 12870 129	SCALE: 1" = 50 HORIZONTAL Floyd 12870300 Floyd 790 Floyd 790 Floyd 12870300 Floyd 790 Floyd 79
Find     12.8703.00       1     1	Schell I.     I     I     I     I     I       I     I     I     I     I     I     I       I     I     I     I     I     I     I       I     I     I     I     I     I     I       I     I     I     I     I     I     I       I     I     I     I     I     I     I       I     I     I     I     I     I     I       I     I     I     I     I     I     I       I     I     I     I     I     I     I       I     I     I     I     I     I     I       I     I     I     I     I     I     I       I     I     I     I     I     I     I       I     I     I     I     I     I     I       I     I     I     I     I     I     I       I     I     I     I     I     I     I       I     I     I     I     I     I     I       I     I     I     I     I     I       I	SCALE: I." = 50 HORIZONIAL Flore 128703.00 128703.00 STA 21+00.00 STA 21+00.00 ST	SCALE: 1" = 50 HORIZONTAL Floyd 12870800 Floyd 12870800 Floyd 12870800 Floyd 12870800 Floyd 12870800 Floyd 1287080 Floyd 1287080 Floyd 1287080 Floyd 1287080 Floyd 128708 Floyd 128708 Floyd 12870 Floyd 128700 Floyd 128700 Floyd 128700 Fl	SCALE: 1" = 50 HCRIZONTAL Floyd 12870300 Floyd 12870300 Floyd 12870300 Floyd 12870300 Floyd 12870300 Floyd 12870300 Floyd 12870300 Floyd 12870300 Floyd 12870 Floyd 128700 Floyd 12870 Floyd 12870 Floyd
Flore         Tage         Tage <t< td=""><td>SCHELE I'' = 10 VERTICAL Field 128703.00 1 28703.00 1 28703.00</td><td>SCALE: 1" = 50 HORIZONIAL Flore Flo</td><td>SCALE: 1" = 50 VERTICAL I" = 10 VERTICAL Flore F</td><td>SCALE: 1" = 50 HORIZONTAL Figure 10 VERTICAL Figure 10 VERTICAL</td></t<>	SCHELE I'' = 10 VERTICAL Field 128703.00 1 28703.00 1 28703.00	SCALE: 1" = 50 HORIZONIAL Flore Flo	SCALE: 1" = 50 VERTICAL I" = 10 VERTICAL Flore F	SCALE: 1" = 50 HORIZONTAL Figure 10 VERTICAL Figure 10 VERTICAL
Find         123703.00           Image: State stat	SCALE: 1" = 10 VERTICAL Field 128703.00 1. 1 1 10 10 10 10 10 10 10 10 10 10 10 10	SCALE: 1" = 50 VERTICAL 1" = 10 VERTICAL Flore 128703.00 129703.00 129705	SCALE: 1" = 50 VERTICAL 1" = 10 VERTICAL Floyd 1280300 1280300 1280300 1280300 1280300 1280300 1280300 1280300 1280300 1280300 1280300 1280300 1280300 1280300 1280300 1280300 1280300 128030 1280300 12803 128030 12803	SCALE: 1" = 50 HORIZONTAL Floyd 12870300 Floyd 785 Floyd 12870 Floyd 12870 Fl
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Find         12870300           11 = 10 VERTICAL         Find         12870300           11 = 100         5TA 21+00.00         805           5TA 21+00.00         795         795           ELLEV = 780.71'         805         795           PVI 21+50.00         775         785           SD = 7057'         745         755           FEEV = 783.89'         750         750           1 = 100'         555         745           730         735         735           730         725         730           710         710         710	Schell         I         = 10 VERTICAL         Find         123703.00           I	SCALE: 1" = 10 VERTICALIAL Flore 1 = 10 VERTICALIAL Flore 1 = 10 VERTICALIAL Flore 1 = 100 VERTICALIAL STA 211+00.00 STA 211+00.00 STA 211+00.00 STA 211+00.00 FLEV = 780.71' SSD= 2057' 745 SSD= 2057' 745 730 735 735 735 735 735 735 735 735	SCALE: 1" = 50 VERTICAL 1" = 10 VERTICAL Flore 1 1 = 10 VERTICAL Flore 1 1 = 10 VERTICAL 1 = 100	SCALE: 1" = 50 HERIZONTAL Floyd 12870300 Floyd 12870 Floyd 128700 Floyd 12870 Floyd 128700 Floyd 12870
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Find         12.8703.00           1         1         0.00         11         80.5           1         1         1         1.000         780.711         80.5           1         1         1.000         11         80.5         79.5           1         1         1.000         780.711         80.5         80.0           1         1         1.000         780.711         80.5         79.5           1         1         1.000         780.711         80.5         79.5           1         1         1.000         780.715         71.5         71.5           1         1         1.000         1.000         71.5         71.5           1         1         1.000         1.000         75.5         71.6           1         1         1.000         75.5         74.5         74.0           1         1         1.000         73.5         73.0         73.0           1         1         1.000         1.000         71.0         71.0           1         1         1.000         1.000         72.0         72.0         71.0           1         1         1.000 </td <td>Scher, I. = 10 VERTICALITAL         Floyd         128703.00           I. =         00         01         810           I. =         00         1         800           I. =         1         1         1         800           I. =         1         1         1         1           I. =         1         1         1         1           I. =         1         1         1         1           I. =         1         1         1         1         1           I. =         1         1         1         1         1         1           I. =         1         1         1         1         1         1         1           I. =         1</td> <td>SCALE: 1' = 50 VERTICALIAL Flore 12870300 1 2870300 1 287030 1 287030 1 287030 1 287030 1 287030 1 287030 1 287030 1 2800 1 2800</td> <td>SCALE: 1" = 50 HORIZONTAL Flore Flo</td> <td>SCALE: 1" = 50 HCRIZONTAL Floyd 12870300 Floyd 12870300 Floyd 12870300 Floyd 12870300 Floyd 12870300 Floyd 12870300 Floyd 12870300 Floyd 12870 Floyd 128</td>	Scher, I. = 10 VERTICALITAL         Floyd         128703.00           I. =         00         01         810           I. =         00         1         800           I. =         1         1         1         800           I. =         1         1         1         1           I. =         1         1         1         1           I. =         1         1         1         1           I. =         1         1         1         1         1           I. =         1         1         1         1         1         1           I. =         1         1         1         1         1         1         1           I. =         1	SCALE: 1' = 50 VERTICALIAL Flore 12870300 1 2870300 1 287030 1 287030 1 287030 1 287030 1 287030 1 287030 1 287030 1 2800 1 2800	SCALE: 1" = 50 HORIZONTAL Flore Flo	SCALE: 1" = 50 HCRIZONTAL Floyd 12870300 Floyd 12870300 Floyd 12870300 Floyd 12870300 Floyd 12870300 Floyd 12870300 Floyd 12870300 Floyd 12870 Floyd 128
Find         Table To VENTICAL           Find         12870300           Image: State S	Find         Find         12870300           Image: Second state	SCALE: 1: = 50 VERTICALINAL Flore       Flore       1       12870300         I: = 100 VERTICAL       800       1       12870300       12870300         I: = 100 VERTICAL       800       795       785       785         VILLE: V       780,71       800       775       775         VILLE: V       780,71       785       760       765         VILLE: 100       550       165       760       755         VILLE: 100       725       740       735       735         VILL: 100       730       725       725       725         VILL: 100       725       735       735       735         VILL: 100       725       725       725       725         VILL: 100       725       735       735       735         VILL: 100       725       725       725       725         100       725       725 <t< td=""><td>SCALE:     I" =     50 HERIZONIAL Flore     Count of the display     Instruction       Image: I</td><td>SCALE: 1" = 50 HORIZONTAL Four of Four of Fou</td></t<>	SCALE:     I" =     50 HERIZONIAL Flore     Count of the display     Instruction       Image: I	SCALE: 1" = 50 HORIZONTAL Four of Four of Fou
Ford         1: =         TO VERTICAL         Ford         1: 2.000           Image: state stat	Scheel I" = 10 VERTICAULAL Flord         Flord         12870300           Image: State St	Scale:         1" = 50 VERTICALIAL           Flord         1           In the second	SCALE: J" = 50 VERTICAL Found to the normalization of the normalization	SCALE: 1" = 50 HORIZONTAL Foud TEM 10. Foud 1287000 Foud 1287000 Foud 1287000 STA 21+00.00 STA 21+00.00 T00 STA 21+0.00 STA 21+0.00 T00 STA 21+0.00 T00 T00 T00
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Ford         12 870300           1         0         12 870300           1         1         1         12 870300           1         1         1         1         1           1         1         1         1         1         1           1         1         1         1         1         1         1           1         1         1         1         1         1         1         1           1	Scheric I." = 10 VERTICALIVAL         Find         12870300           Find         12870300         12870300         12870300           STALE         STALE         790         795           STALE         790         785         785           PMI 21+50.00         776         785         785           SSD= 2057*         745         765         765           SSD= 2057*         745         735         735           730         735         725         725           730         735         725         725           700         700         700         700	Scale     In = 10     VERTICALIAL       Flord     12870300       1     00 <sup>11</sup> 2     1000       1     12870300       514     790       514     790       514     790       514     790       514     790       514     790       514     790       514     790       514     790       514     790       514     790       514     790       514     790       514     790       515     710       500=     750       1=100     730       730     735       730     725       710     700	SCALE: J" = 50 VERTICAL Found 10 Found 10 F	SCALE: 1" = 50 HORIZONTAL Foyd 1287000 Foyd 1287000 1287000 1287000 1287000 1287000 1287000 128700 1287000 128700 128700 128700 128700 128700 128700 128700 12870 128700 12870 1290
Ford         T.2.000           1         10         12,8703,00         12,8703,00           1         1         1,1400,00         12,8703,00         12,8703,00           1         1         1,1400,00         12,8703,00         12,8703,00         12,8703,00           1         1         1,1400,00         12,8703,00 <td>SCALES I" = 10 VERTICALIAL         Flord         12.9703.00           I" = 10 VERTICALIAL         Flord         12.9703.00           Image: STA 21+00.00         STA 21+00.00         80.5           STA 21+00.00         STA 21+00.00         79.5           STA 21+00.00         77.5         79.5           STA 21+00.00         77.5         77.5           Sta 21+00         75.5         77.5           ELEV         76.0         76.5           Sta 20+ 78.5         76.5           Sta 20+ 78.5         77.5           Tota 20, 77.1         77.5           Tota 20, 77.5         77.5           Tota 20, 77.5</td> <td>SCALE: I" = 50 VERTICAL I" = 10 VERTICAL Flord 12870300 STA 21+00.00 STA 21+00.00 STA 21+00.00 STA 21+00.00 STA 21+00.00 STA 21+00.00 STA 21+00.00 STA 21+00 STA 20+00 STA 20+000 STA 20+000 STA 20+000 STA 20+000 STA 20+000 STA</td> <td>SCALE: J" = 50 VERTICAL Flore</td> <td>SCALE: 1" = 50 HORIZONTAL Flow d TEN 40. Flow d TEN 40. Flo</td>	SCALES I" = 10 VERTICALIAL         Flord         12.9703.00           I" = 10 VERTICALIAL         Flord         12.9703.00           Image: STA 21+00.00         STA 21+00.00         80.5           STA 21+00.00         STA 21+00.00         79.5           STA 21+00.00         77.5         79.5           STA 21+00.00         77.5         77.5           Sta 21+00         75.5         77.5           ELEV         76.0         76.5           Sta 20+ 78.5         76.5           Sta 20+ 78.5         77.5           Tota 20, 77.1         77.5           Tota 20, 77.5	SCALE: I" = 50 VERTICAL I" = 10 VERTICAL Flord 12870300 STA 21+00.00 STA 21+00.00 STA 21+00.00 STA 21+00.00 STA 21+00.00 STA 21+00.00 STA 21+00.00 STA 21+00 STA 20+00 STA 20+000 STA 20+000 STA 20+000 STA 20+000 STA 20+000 STA	SCALE: J" = 50 VERTICAL Flore	SCALE: 1" = 50 HORIZONTAL Flow d TEN 40. Flow d TEN 40. Flo
Ford         12.8703.00           1         1         0.00         12.8703.00           1         1         0.00         11.10         80.0           1         1         1.14         80.0         79.0           1         1         1.14         79.0         79.0           1         1         1.14         79.0         79.0           1         1         1.14         79.0         79.0           1         1         1.14         79.0         79.0           1         1         1.14         79.0         79.0           1         1         1.14         78.0         79.0           1         1         1.14         78.0         78.0           1         1         1.14         78.0         76.5           1         1.14         1.14         76.0         75.0           1         1.10         73.0         73.0         73.0           1         1         1.14         73.0         72.0           1         1         1.10         70.0         70.0           1         1         1.10         70.0         70.0	Scheller In = 10 VERTICALIAL Ingd         Flore (12,003,00)           Ingd         1,2003,00)           Ingl         1,2003,00) <tr< td=""><td>Scale:         1° =         50 VERTICALIAL           I° =         10 VERTICAL         I           I° =         10 VERTICAL         I° =           I° =         10 VERTICAL         I° =           I° =         I° =         I° =           I° =</td><td>SCALE: J" = 50 VERTICAL Food 10 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 1287030 12870300 128703 128703 129703 1</td><td>SCALE: 1" = 50 HORIZONTAL Found 10 000 Found 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 1287030 12870300 128703 1287030 1287030 128703 129703 12970</td></tr<>	Scale:         1° =         50 VERTICALIAL           I° =         10 VERTICAL         I           I° =         10 VERTICAL         I° =           I° =         10 VERTICAL         I° =           I° =         I° =         I° =           I° =	SCALE: J" = 50 VERTICAL Food 10 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 1287030 12870300 128703 128703 129703 1	SCALE: 1" = 50 HORIZONTAL Found 10 000 Found 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 1287030 12870300 128703 1287030 1287030 128703 129703 12970
Four         Four         12.8703.00           Image: State of the s	Scheel 1" = 10 VERTICALIAL         Flore         128703.00           1         1         128703.00         128703.00           1         1         128703.00         128703.00           1         1         128703.00         128703.00           1         1         128703.00         128703.00           1         1         128703.00         128703.00           1         1         128703.00         128703.00           1         1         128703.00         128703.00           1         1         128703.00         128703.00           1         1         128703.00         128703.00           1         1         128703.00         128703.00           1         1         128703.00         128703.00           1         1         128703.00         128703.00           1         1         128703.00         128703.00           1         128703.00         128703.00         128703.00           1         128703.00         128703.00         128703.00           1         129703.71         1245         128703.00         128703.00           1         129703.71         1245         128703.00	SALE:         1° =         50 VERTICALIAL           Flord         12870300           1         0.00           1         0.00           1         12870300           1         1290           1         1290           1	SCALE: J" = 50 VERTICAL Flore	SCALE: 1" = 50 HERTICAL Flow d TTEM 40. Flow d TTEM 40.
Ford         12 870300           Ford         12 870300           STA 21+00.00         711           STA 21+00.00         795           SD 700         785           SD 700         755           ELEV 783.99         750           SD 705         740           730         735           730         725           720         715           710         715           710         710           700         700	SCALE I         SUPERICALIAL         Flore         12,9703.00           Image: State of the state	SCALE:         I" =         50 VERTICALIVAL           Flord         12870300           In a         0           <	SCALE: J" = 50 VERTICAL Flore	SCALE: 1" = 50 HORIZONTAL Flow TREMO. Flow 1287000 Flow 1287000 Flow 128700 Flow 128700 Flow 128700 Flow 128700 Flow 12870 Flow 128700 Flow 12870 Flow 12870 Flow 12870 Flow 128700 Flow
Flore         Flore         12 870300           Image: Flore         1	Schultz II         = DV VERTICALIAL II         Flore         12,300,00           II         II         III         IIII         IIII         IIIII         IIIIIII         IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	SCALE:         1:         =         50 VERTICALIVAL           Image: State of the sta	SCALE: J" = 50 VERTICAL Flore For VERTICAL Flore	SCALE: 1" = 50 HERTICAL Found The MO. Found The M
Flag         Flag         12 80000           1         1         1         10         12 80000           1         1         1         10         10         10         10           1         1         1         1         10         10         10         10           1         1         1         1         10         10         10         10           1         1         1         1         10	SCHEEL I" = 10 VERTICALIVAL         Flore         12 870300           Indication         Indication         Indication         Indication         Indication           Indication         Indication         Indication         Indication         Indication         Indication           Indication	SUBLE:         1" =         50 VERTICALINAL           Flord         128703.00           Interview         810           STA 21+00.001'         805           STA 21+00.001'         805           STA 21+00.001'         805           STA 21+00.001'         805           STA 21+00.001'         790           STA 21+00.001'         790           FEUE         790           STA 21+00.001'         790           STA 21+00.001'         805           STA 21+00.001'         805           STA 21+00.001'         790           FEUE         790           Sta 21+00.001         765           FEUE         750           FEILE         793.001           Sta 2057'         745           730         735           735         735           730         720           710         705           700         705           700         705           700         700           690         690	SCALE: J" = 50 VERTICAL Flore 128703.00 Flore 128703.00 STA 211+00.00 <sup>-1-1</sup> STA 21+00.00 <sup>-1-1</sup> Sta 21+00 <sup>-1-1</sup> Sta	SCALE: J." = 50 HORIZONTAL Flow TERNAL Flow TERNAL Flo
Flore         12 8703.00           Image: State 21+00.00         State 21+00.00         80.0           State 21+00.00         711         80.0           State 21+00.00         79.5         79.5           Image: State 21+00.00         77.0         78.5           State 21+00.00         78.5         78.5           Image: State 21+00.00         78.5         76.5           Image: State 21+00         75.5         76.5           Image: State 21+00         75.5         76.5           Image: State 21+00         75.5         74.0           Image: State 21+00         75.5         74.0           Image: State 21+00         75.5         72.0           Image: State 21+00         73.5         73.0           Image: State 21+00         72.0         71.0           Image: State 21+00         72.0         71.0           Image: State 21+00         70.5         70.0           Image: State 21+00         70.5	Figure         10         12870300           Image: State of the sta	SCALE:         I::         I O VERTICALIAL         Flore         12870300           I::         I         I         III         IIII         III         III         III         III         III         III         IIII         IIII         IIII         IIII         IIII         IIII         IIII         IIIII         IIIII         IIIIIII         IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	SCALE: 1" = 50 VERTICAL Food 12870300 10 000711 Food 12870300 10 000711 Food 12870300 5TA 211+00.00711 805 800 5TA 211+00.00 5TA 211+00.00 5TA 211+00.00 5TA 211+00.00 5TA 211+00.00 5TA 211+00.00 5TA 211+00.00 5TA 211+00.00 795 FLEV = 783.89 750 FLEV= 783.89 750 FLEV= 783.89 750 FLEV= 783.89 750 5SD= 2057' 740 735 730 725 710 725 715 710 725 710 725 710 725 710 725 710 726 710 725 710 725 710 725 710 725 710 725 725 710 726 726 720 715 720 715 726 726 726 726 726 726 726 725 726 726 726 726 726 726 726 726	SCALE: J" = 50 HORIZONTAL Find 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 12870300 1287030 170 175 1765 106 106 106 106 106 106 106 106
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N2 7 <u>87.0</u> + 787.06	730	735	740	745	750	755	760	765	770	775	087					805	810	815	820	825	830	835	840	845	850	855	098	865	870	875	088	885	068	268	006	
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O ₩ <u>793.1</u> + 793.15													6.08%																							
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PARCEL	OWNER(S)		IUIAL ARE	A OF TRACT	PERMANENT
NO.			ACRES	SQ. FT.	ACRES
P1	ELKHORNCOAL CORPORATION		20.41		7.21
P2	DLT ENTERPRISES, INC.	1	158.14		3.14
P3	DIVERSIFIED GAS & OIL PLC.				

## **RIGHT OF WAY SUMMARY**

	EL CENENTO				1		1		1						
R/W ACQUIRED	EASEMENTS PERMANENT TEMPORARY		EA SEVERED	RIGHT	EXCESS F	URCHASED	PORTION N	REMAINING	SEWER	SEWER SI AFFECI	YSTEM TED JECT	NUMBER	RED		
SQ. FT.	SQ. FT. SQ. FT.	ACRES SQ.	T. ACRE	S SQ. FT.	ACRES	SQ. FT.	ACRES	SQ. FT.	TYPE		NO C	R F		SOURCE OF TITLE	REMARKS*
	81,955						13.20		5				1	DB 133, PG 299 DB 28, PG 177	
	421, 716.2						155.00		5					DB 412, PG 81 DB 453, PG 126	
															EQT MARTIN, ALEX #297 GAS WELL



TYPE SEWER SYSTEM 1. PRIVATE - INDIVIDUAL 2. PRIVATE - MULTI PARTY 3. PUBLIC

4. NONE 5. NOT APPLICABLE

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COUNTY OF	ITEM NO.	SHEET NO.
Floyd	12.8703.00	R7

BUILDINGS ACQUIRED CODE C - COMMERCIAL R - RESIDENTIAL

F - FARM

S - STORAGE

\*INCLUDES HAZARDOUS WASTE (UST - UNDERGROUND STORAGE TANKS)

ROW SUMMARY SHEET





## Attachment G: Constraints and Opportunities Summary

CONSTRAINTS		
Recreational and Aesthetic Resources	Alternative Routes I and J cross the Knott County Sportsplex, however the routes generally parallel KY-80 and no impacts to the development potential of the facility are anticipated. Additionally, the routes avoid the only currently developed region of the facility. Desktop review identified Elk Horn Coal Hunting Access areas within the Study Area, however none are anticipated to be impacted by the Project. The majority of the Project will occur on undeveloped forested tracts and is not anticipated to be highly visible to the community.	
Cultural, Tribal, and Historic Resources	There are no NRHP listed resources located within the Study Area. Numerous cemeteries are located within the Study Area, however none are anticipated to be impacted as part of the Project. Although archaeological and architectural surveys will be required, there is a low probability of identifying significant cultural resources along the Project route due to terrain, disturbed area from coal mining, and lack of architectural features.	
Land Use and ROW	<ul> <li>Residences: No substantial residential impact is anticipated due to lack of development. Valleys can be spanned with sufficient blowout without the need to acquire properties.</li> <li>Land use: The majority of the Study Area is generally rugged forest, with narrow valleys sparsely developed with residential structures and outbuildings. More densely developed areas are limited to the communities of Eastern and Garrett, with development extending outwards from the community centers along the major roadways in the Study Area including KY-80, KY-550, KY-7, and KY-777. Crossings of the more densely developed roadways are generally perpendicular and brief, spanning ridgetop to ridgetop.</li> </ul>	
Public Lands and Protected Easements	Desktop review identified Elk Horn Coal Hunting Access areas within the Study Area, however none are anticipated to be impacted by the Project. Additionally, the DLT Enterprises Mitigation Site is located with the Study Area, however the Proposed Route avoids the site.	
Natural Resources	<ul> <li>Bats: USFWS IPAC System (May 2020, Attachment F) indicated the Project is located within the overall ranges of the federally-listed gray bat (<i>Myotis grisescens</i>), Indiana bat (<i>Myotis sodalis</i>), and northern long-eared bat (<i>Myotis septentrionalis</i>).</li> <li>Aquatic Species: USFWS IPAC System (May 2020, Attachment F) indicated the Project is located within the overall ranges of seven federally-listed mussel species, one federally-listed fish species, and one federally-listed crustacean. However, the Project is not anticipated to impact streams capable of supporting these aquatic species and any runoff will be abated with erosion and sediment control measures.</li> <li>Anticipated Studies: Wetland/stream delineations and bat studies (mist net surveys, habitat assessment, portal searches, and/or portal trapping) will be necessary.</li> </ul>	





CONSTRAINTS		
Transportation and Other Infrastructure	The Study Area is segmented east to west by the existing Spring Fork 46kV Tap and the Beaver Creek-Harbert-Spicewood 138kV line. Other transmission lines within the Study Area include the Soft Shell 138kV Extension, Bonnyman-Soft Shell 138kV line, Beaver Creek-Garrett 46kV line, McKinney-Garrett 46 kV line, and Hays Branch-Morgan Fork 138kV line.	
	Study Segments were proposed that parallel the existing ROW of the Spring Fork 46kV Tap and the Soft Shell Extension. No other transmission line within the Study Area was oriented in a way that allowed for paralleling.	
Local Zoning	No local Zoning requirements.	
Requirements		
Constructability	Rugged terrain will likely require long access roads and substantial grading to create work pads for construction. Numerous existing and/or previous coal mine access roads and ATV trails occur in the area and can likely be utilized for the Project but may require upgrades.	
OPPORTUNITIES		
Opportunity Features	Opportunities within the study for routing a transmission line are limited. There are no existing linear features with the same northeast-southwest orientation that could be paralleled for the entire route. However, three Study Segments were proposed that parallel existing ROW to the greatest extent feasible.	



## Attachment H: Aerial Mapbook (Proposed Route)



Case No. 2021-00346 Exhibit 20 ae 88 o Printer -Sheet 1 Sheet 2 -Sheet 3 Sheet 4 -Sheet 5 Drift Drift Minnie McDowell Ite 122 McDowell East McDowel Orkn Price DETAILED MAPBOOK SHEET INDEX Garrett Area G KENTUCKY Transmission Line Project \_\_\_\_ gai consultants Kentucky Power

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Case No. 2021-00346 Exhibit 20



















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# DETAILED MAPBOOK SHEET 22 OF 24 Garrett Area G KENTUCKY Transmission Line Project \_\_\_\_ Kentucky Power gai consultants DRAWN BY: EFJ DATE: 9/16/2021 CHECKED: LMJ APPROVED: LMJ

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