COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

The Electronic Application of Duke Energy Kentucky, Inc. for a Certificate of Public Convenience and Necessity to Construct A 138-kV Transmission Line And Associated Facilities In Boone County (Hebron to Oakbrook Transmission Line Project)	))))))	Case No. 2024-00158

APPLICATION

Now comes Duke Energy Kentucky, Inc. (Duke Energy Kentucky or the Company), pursuant to KRS 278.020(2) and 807 KAR 5:001, Sections 8 and 9, and 807 KAR 5:120, and other applicable law, and hereby respectfully requests from the Kentucky Public Service Commission (Commission) an Order granting a Certificate of Public Convenience and Necessity (CPCN) authorizing the construction of approximately 2.1 miles of 138-kilovolt (kV) transmission line and the rebuild of approximately 1.5 miles of existing 69 kV transmission line to upgrade to 138 kV transmission line in Boone County, Kentucky (Hebron to Oakbrook Transmission Line Project).

The Company has previously sought approval for the Hebron to Oakbrook Transmission Line Project in Case No. 2023-00239.[1] By order dated January 11, 2024, the Commission held, among other things, that although the Company had ”met its burden to establish need for a new and upgraded transmission line in this region,” the Company’s

[1] *In the Matter of the Electronic Application of Duke Energy Kentucky, Inc., for a Certificate of Public Convenience and Necessity to Construct a 138-KV Transmission Line and Associated Facilities in Boone County (Hebron to Oakbrook Transmission Line Project* Case No. 2023-00239 (Ky. PSC Jan. 11, 2024).

Application should be denied on the basis that the Company did not demonstrate that its proposed line route was the reasonable, least-cost alternative (the Order).[2] The Commission urged Duke Energy Kentucky to quickly take action to rectify the shortcomings of its application in a new CPCN application. Following receipt of the Order, the Company commenced conducting further analysis of the alternative routes considered in the Company's route selection study to evaluate the costs and quantitative and qualitative scores of the various routes continue to support the preferred route. All information present in this filing have been updated with the most recent data. Duke Energy Kentucky presents these findings for the Commission's consideration herein.

In order to meet the growing needs of the Company's customers and to ensure a safe and reliable electric delivery system, the Company requests the Commission consider this Application as expeditiously as possible.

In support of this CPCN Application (Application), Duke Energy Kentucky respectfully states as follows:

Introduction

1. Pursuant to 807 KAR 5:001, Section 14(2), Duke Energy Kentucky is a Kentucky corporation originally incorporated on March 20, 1901, in good standing, and a public utility as that term is defined in KRS 278.010(3), and, therefore, is subject to the Commission's jurisdiction. Exhibit 1 is a copy of the Certificate of Good Standing.

2. Duke Energy Kentucky is engaged in the business of generation, purchasing, transmission, and distribution and sale of electric power, as well as furnishing natural gas utility services to various municipalities and unincorporated areas in Boone,

[2] Order pg. 9.

Bracken, Campbell, Gallatin, Grant, Kenton, and Pendleton Counties in the Commonwealth of Kentucky.

3. The Company's local office in Kentucky is Duke Energy Erlanger Ops Center, 1262 Cox Road, Erlanger, Kentucky 41018. The Company further states that its electronic mail address for purposes of this matter is KYfilings@duke-energy.com.

4. Copies of all orders, pleadings and other communications related to this proceeding should be sent to:

Rocco O. D'Ascenzo
Deputy General Counsel
Duke Energy Kentucky, Inc.
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Rocco.D'Ascenzo@duke-energy.com
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Background

5. Duke Energy Kentucky has identified, and as part of the Commission's decision in Case No 2023-00239, the Commission has affirmed, a need to construct a new 138 kV electric transmission line, approximately 2.1 linear miles in length, in Boone County, Kentucky extending from the existing Hebron Substation to the existing #15268 circuit and additionally rebuild another 1.5 of the existing #6763 circuit (the Project).

6. A map showing the proposed location of the Project is included in Exhibit 2. Exhibit 3 depicts a map of the Project's siting study area and Exhibit 4 includes map depicting the rebuild area. This Project remains necessary due to load growth and system reliability of the surrounding Duke Energy Kentucky transmission and distribution systems.

7. Boone County remains one of the fastest developing counties in the

Commonwealth of Kentucky.[3] Upon information and belief, this growth includes all three customer segments: residential; commercial; and industrial electric loads. This rapid growth has resulted in customer demand reaching near the limits of the Company's existing transmission system's capacity. The Company is projecting growth to continue in this area, necessitating additional capacity construction to meet projected demand.

The Hebron to Oakbrook Project

8. Duke Energy Kentucky seeks authority to construct and operate its proposed Hebron to Oakbrook Transmission Line Project consisting of a new single circuit 138 kilovolt (kV) transmission line, circuit #15264. The construction parameters have not changed from those presented in Case No. 2023-00239. The new circuit will utilize a portion of the existing #15268 69 kV transmission line circuit, a portion of the existing #6763 69 kV transmission line circuit, and approximately 2.1 linear miles of a proposed new transmission line portion. To accommodate the new circuit, reconfigurations to the existing #6763 circuit and the existing #15268 circuit will occur to minimize the new infrastructure required to create this new circuit. The #15268 circuit that is currently a three-terminal circuit between the Hebron, Constance, and Limaburg substations will be split so that after the project is complete, #15268 will only connect the Hebron and Constance Substation while a portion of the existing Tap to Limaburg will be incorporated in the proposed Hebron to Oakbrook circuit #15264. The #6763 circuit will be reconfigured so that a portion of the circuit between Limaburg and Oakbrook substation will be rebuilt and incorporated into the new Hebron to Oakbrook circuit #15264. Another portion of the #6763 circuit between the Oakbrook Substation and near interstate 71/75 will be retired,

[3] Kentucky Population Growth Rate (2010 - 2019) by County (indexmundi.com)

and the remaining portion of the circuit on the east side of the interstate will remain operational as it currently is built. Therefore, this proposed new circuit would start at the Hebron Substation and begin with a proposed new 2.1-mile section, connect to an existing portion of the #15268 circuit south of I-275 to the existing Limaburg Substation, and then utilize an approximately 1.5 mile section of the #6763 circuit which will be rebuilt in place to 138 kV capacity. The new circuit will be energized to 69 kV initially with future plans to energize to 138 kV.

9. Structure types and numbers will be determined during final engineering, which includes ground survey and geotechnical studies, and will depend upon terrain crossed, spans, turning angles, final right-of-way (ROW) acquisition, and other engineering considerations. Based upon preliminary engineering, the Company anticipates approximately 26 foundation-based galvanized steel poles and 50 direct embedded galvanized steel poles will be required. It is anticipated that angle and dead-end structures will utilize either guy wires and anchors or foundations. As much existing equipment will be reused as possible, the extent of which will be assessed when detailed design is being completed. For the transmission line and equipment, some existing poles may be reused if they have already been replaced with steel poles. The distribution equipment will also continue to be utilized where feasible. Duke Energy transmission line 138-kV standards are included in Confidential Exhibit 5.

10. The transmission line structure heights will vary depending on placement, terrain, and clearance requirements. The transmission engineering design has the average structure height above ground at approximately 80 feet. The proposed structures will have one 138-kV transmission circuit supporting a total of three phase conductors and one overhead ground/shield wire. In addition, the design incorporates potential distribution

under build to further enhance the distribution system in some of the locations. The phase conductors will utilize 954 kcmil aluminum conductor steel-reinforced (ACSR) conductor.

Request for Certificate of Public Convenience and Necessity

11. Duke Energy Kentucky is requesting a CPCN pursuant to KRS 278.020 and 807 KAR 5:001, Section 15, for its Hebron to Oakbrook Transmission Project for the reasons set forth above.

12. In accordance with KRS 278.020, No utility may construct or acquire any facility to be used in providing utility service to the public until it has obtained a CPCN from the Kentucky Public Service Commission.[4] To obtain a CPCN, the utility must demonstrate a need for such facilities and an absence of wasteful duplication.[5] "Need" requires:

> [A] showing of a substantial inadequacy of existing service, involving a consumer market sufficiently large to make it economically feasible for the new system or facility to be constructed or operated. [T]he inadequacy must be due either to a substantial deficiency of service facilities, beyond what could be supplied by normal improvements in the ordinary course of business; or to indifference, poor management or disregard of the rights of consumers, persisting over such a period of time as to establish an inability or unwillingness to render adequate service.[6]
>
> "Wasteful duplication" is defined as "an excess of capacity over need" and "an excessive investment in relation to productivity or efficiency,

[4] KRS 278.020(1)(a).
[5] *Kentucky Utilities Co. v. Pub. Serv. Comm 'n*, 252 S.W.2d 885 (Ky. 1952).
[6] *Id*. at 890.

> and an unnecessary multiplicity of physical properties."[7] To demonstrate that a proposed facility does not result in wasteful duplication, Duke Energy Kentucky must demonstrate that a thorough review of all reasonable alternatives has been performed. Although cost is a factor, selection of a proposal that ultimately costs more than an alternative does not necessarily result in wasteful duplication.[8] All relevant factors must be balanced.[9]

13. The Company previously sought approval for the Hebron to Oakbrook Transmission Line Project in Case No. 2023-00239. The Commission's January 11, 2024 Order held, among other things, that the Company had "met its burden to establish need for a new and upgraded transmission line in this region." Notwithstanding the finding that need has been established, the Commission denied the Company's Application on the basis that it failed to demonstrate that the proposed line route was the reasonable, least-cost alternative (the Order).[10] Accordingly, the Company respectfully submits that the purpose of this Application is to determine that the chosen route is the reasonable, least-cost alternative.

14. The Hebron to Oakbrook Transmission Project will not result in a wasteful duplication of facilities. The Hebron to Oakbrook Transmission Project will be located within Duke Energy Kentucky's electric service territory and is necessary to serve both increased load and new customers in the area. The existing facilities in the area are

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[7] *Id.*
[8] *See Kentucky Utilities Co. v. Pub. Serv. Comm'n*, 390 S.W.2d 168, 175 (Ky. 1965). *See also Case No. 2005-00089, Application of East Kentucky Power Cooperative, Inc. for a Certificate of Public Convenience and Necessity for the Construction of a 138 kV Electric Transmission Line in Rowan County, Kentucky* (Ky. PSC Aug. 19, 2005), final Order
[9] *Case No. 2005-00142, Joint Application of Louisville Gas and Electric Company and Kentucky Utilities Company for a Certificate of Public Convenience and Necessity for the Construction of Transmission Facilities in Jefferson, Bullitt, Meade, and Hardin Counties, Kentucky* (Ky. PSC Sept. 8, 2005).
[10] Order pg. 9.

insufficient to support the new load and customers in the area.

15. In response to the Commission's Order, the Company has undertaken a quantitative analysis to show a cost comparison between the reasonable and feasible alternatives contained in the Company's route selection study. The cost comparison is discussed in detail within the testimony of Duke Energy Kentucky witness Betsy Ewoldt. In summary, this analysis and supporting testimony demonstrates that while the preferred route (Route L) is the second lowest cost alternative, it is the most reasonable when factoring in the constructability and impacts on affected customers, land acquisition, and rights-of-way. The cost differential between the two lowest-cost alternative routes is approximately $600,000, which is less than 5% of the total cost of the new transmission line. The cost differential between the two routes is less than 2% of the overall project cost.

16. In accordance with 807 KAR 5:001 Section 12(2)(a)-(i). Duke Energy Kentucky is filing the following information in Exhibit 6, which is incorporated herein and made a part of this Application filed in this proceeding:

Exhibit 5 Page	**Description**	**807 KAR 5:001 Section Reference**
	Financial Exhibit	12(2)
1	Amount and kinds of stock authorized	12(2)(a)
1	Amount and kinds of stock issued and outstanding	12(2)(b)
1	Terms of preference or preferred stock	12(2)(c)
1	Brief description of each mortgage on property of Duke Energy Kentucky	12(2)(d)
1-2	Amount of bonds authorized and issued and related information	12(2)(e)
2	Notes outstanding and related information	12(2)(f)

2-3	Other indebtedness and related information	12(2)(g)
3	Dividend information	12(2)(h)
4-5	Detailed Income Statement and Balance Sheet	12(2)(i)

17. In accordance with Section 15(2)(a), the Application and supporting testimony provide the evidence to show that the Hebron to Oakbrook Transmission Project is required by public convenience or necessity. The Hebron to Oakbrook Transmission Project will allow Duke Energy Kentucky to continue to provide safe, reliable, and reasonable electric service to its customers.

18. In accordance with Section 15(2)(b), regarding the filing of franchise agreements, the Company states that it has previously filed with the Commission the applicable franchises from the proper public authorities. Additionally, to the extent a local city or municipality requires the Company obtain a construction permit, the Company will follow such local regulations and obtain any necessary local permits prior to beginning any work. Duke Energy Kentucky will apply for applicable state and federal permits needed for construction of the Project. Duke Energy Kentucky is not aware of any additional permits that will be necessary to complete construction.

19. In accordance with Section 15(2)(c), which requires the Company to provide a full description of the proposed location, route, or routes, including a description of the manner in which the facilities will be constructed, Duke Energy Kentucky respectfully states that the Hebron to Oakbrook Transmission Project will be constructed as described in the testimony accompanying this Application. Exhibit 7 includes a detailed cost breakdown of the Project and Exhibit 8 includes a copy of the siting study which depicts the full description of the route and alternative routes considered. Exhibit 9 shows

the proposed route and Exhibit 10 shows the alternative route segments considered as part of the route selection study and Exhibit 11 shows the affected parcels of the rebuild areas. Because the Company's proposal is applicable only in the Company's service territory, the Project will not compete with any other public utilities, corporations, or persons.

20. In accordance with 807 KAR 5:120 Sections 2(2)(a)-(c), requiring maps showing: a) the location of proposed transmission line centerline and right of way, and boundaries of each property crossed by the transmission line right-of-way as indicated on the property valuation administrator's maps, facilities and plans and specifications and drawings of the proposed plant, equipment, and facilities; b) sketches of proposed typical transmission line support structures, and; c) a separate map of the same scale showing alternative routes considered, Duke Energy Kentucky respectfully states that Confidential Exhibit 5 and Exhibits 9, 10, and 11 contain the required information.

21. In accordance with 807 KAR 5:120 Sections 2(3) Exhibit 12 includes a verified statement that, according to county property valuation administrator records, each property owner over whose property the transmission line right-of-way is proposed to cross has been sent by first-class mail, addressed to the property owner at the owner's address as indicated by the county property valuation administrator records, or hand delivered. The May 17, 2024, notice included the following information:

a. Notice of the proposed construction;

b. The docket number (Case No. 2024-00158) under which the Application will be processed;

c. The address and telephone number of the Commission's Executive Director;

d. A description of the property owner's rights to request a public hearing and the right to request intervention, and;

e. A description of the Project and a map of the proposed transmission line route.

22. In accordance with 807 KAR 5:120 Sections 2(4), Exhibit 13 includes a sample copy of the notice provided to a property owner and a list of the names and addresses of the property owners to whom the notice has been sent.

23. In accordance with 807 KAR 5:120 Sections 2(5), Exhibit 14 includes a copy of the notice of the intent to construct the proposed transmission line that has been published in a newspaper of general circulation in the county or counties in which the construction is proposed.

24. In accordance with 807 KAR 5:120 Sections 2(7), the Company states that Project does not involve sufficient capital outlay to materially affect the existing financial condition of the Company.

25. In accordance with Section 15(2)(e), the Company states that it proposes to finance the construction through continuing operations and debt instruments, as necessary.

26. In accordance with Section 15(2)(f), the Company states that the total estimated cost of the initial construction for the Project is approximately $36 million. The estimated annual ongoing cost of operation of the Hebron to Oakbrook Transmission Line Project once completed is expected to be approximately $10,000 (capital, operations, and maintenance (O&M)). Exhibit 7 contains a cost estimate for the Project.

27. Duke Energy Kentucky respectfully states that the Project is needed to provide reliability to growing customer load in Boone County, primarily new expansion at the Greater Cincinnati/Northern Kentucky Airport, as well as other anticipated load growth in the area. Exhibit 15 shows the proposed Project components and the existing system in the area of the Project. Exhibit 16 depicts the Project's location in reference to other

recently authorized transmission projects that are needed to support localized load growth in the area. Confidential Exhibit 17 includes information regarding customers' expansion projects that support the anticipated growth in the Company's service territory necessitating the system improvements. Confidential Exhibit 18 includes the planning analysis that modeled system conditions and overloads that can be avoided by completing this project.

28. In an effort to engage with and inform its customers regarding the Project, Duke Energy Kentucky conducted two virtual open house/information sessions to educate its customers about the Project and respond to questions. Exhibit 19 is a copy of the invitation and presentation for the informational meeting.

Testimony and Exhibits

29. Additional facts supporting this Application are set forth in the following Direct Testimony attached to this Application as Exhibits 20 through 22:

a. Yanthi W. Boutwell, General Manager of Midwest Transmission Resource & Project Management, provides the need for its construction, engineering components, anticipated schedule and cost for construction;[11]

b. Betsy Ewoldt, Lead Transmission Siting Manager, discusses the siting study that was performed, the proposed route, and permitting for construction of the line, and;[12]

[11] Exhibit 20.
[12] Exhibit 21.

c. Lisa D. Steinkuhl, Director of Rates and Regulatory Planning Ohio/Kentucky, discusses the financial aspects of the Company's Application.[13]

WHEREFORE, Duke Energy Kentucky respectfully requests that the Commission:

1) Issue a CPCN for the construction and implementation of the proposed Hebron to Oakbrook Transmission Line Project.
2) Grant all waivers requested and necessary and other relief to which the Company may be entitled.

Respectfully submitted,

/s/ Rocco D'Ascenzo

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Counsel for Duke Energy Kentucky, Inc.

[13] Exhibit 22.

CERTIFICATE OF SERVICE

This is to certify that the foregoing electronic filing is a true and accurate copy of the document in paper medium; that the electronic filing was transmitted to the Commission on June 27, 2024 that there are currently no parties that the Commission has excused from participation by electronic means in this proceeding; and that submitting the original filing to the Commission in paper medium is no longer required as it has been granted a permanent deviation.[14]

John G. Horne, II
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Utility Intervention and Rate Division
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/s/Rocco O. D'Ascenzo
Counsel for Duke Energy Kentucky, Inc.

[14] *In the Matter of Electronic Emergency Docket Related to the Novel Coronavirus COVID-19*, Order, Case No. 2020-00085 (Ky. PSC July 22, 2021).

List of Exhibits

Exhibit 1: Certificate of Good Standing

Exhibit 2: Project Location Map

Exhibit 3: Siting Study Area

Exhibit 4: Rebuild Area

Exhibit 5: Duke Energy 138-kV Transmission Line Standards – Confidential

Exhibit 6: Financial Statement

Exhibit 7: Project Cost Estimate

Exhibit 8: Siting Study

Exhibit 9: Proposed New Route

Exhibit 10: Alternative Route Segments

Exhibit 11: Proposed Rebuild Route

Exhibit 12: Verified Statement

Exhibit 13: Copy of Notices, Landowner Lists, and Landowner Maps

Exhibit 14: Newspaper Notice

Exhibit 15: Present System and Proposed Project Components

Exhibit 16: Project Location with Aero Projects

Exhibit 17: Distribution Planning Document of Growth – Confidential

Exhibit 18: Transmission Planning Analysis – Confidential

Exhibit 19: Virtual Open House/Public Meeting Letter and Materials

Exhibit 20: Yanthi W. Boutwell Testimony

Exhibit 21: Betsy Ewold Testimony

Exhibit 22: Lisa D. Steinkuhl Testimony

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

The Electronic Application of Duke Energy Kentucky, Inc. for a Certificate of Public Convenience and Necessity to Construct A 138-kV Transmission Line And Associated Facilities In Boone County (Hebron to Oakbrook Transmission Line Project)	))))))	Case No. 2024-00158

PETITION OF DUKE ENERGY KENTUCKY, INC. FOR CONFIDENTIAL TREATMENT OF INFORMATION CONTAINED IN ITS APPLICATION

Duke Energy Kentucky, Inc. (Duke Energy Kentucky or Company), by counsel, pursuant to 807 KAR 5:001, Section 13(2), KRS 61.878(1)(c), and other applicable law, moves the Public Service Commission of Kentucky (Commission) for an Order granting confidential treatment to certain information provided by Duke Energy Kentucky in its Application:

(1) Confidential Exhibit 5 – Duke Energy 138-kV Transmission Line Standards;

(2) Confidential Exhibit 17 – Distribution Planning Document of Growth; and,

(3) Confidential Exhibit 18 – Transmission Planning Analysis.

Specifically, Duke Energy Kentucky seeks confidential treatment of information referred to herein as the "Confidential Information," which, broadly speaking, includes information related to the Company's proprietary construction standards for its transmission system, the Company's load planning information detailing the Company's compilation of customer specific expansions and location of critical utility infrastructure,

and detailed system planning analysis.

I. MOTION FOR CONFIDENTIAL TREATMENT

a. Statutory Standard

Administrative Regulation 807 KAR 5:110, Section 5 sets forth the procedure by which certain information filed with the Commission shall be treated as confidential. Specifically, the party seeking confidential treatment must establish "each basis upon which the petitioner believes the material should be classified as confidential" in accordance with the Kentucky Open Records Act, KRS 61.878. *See* 807 KAR 5:110 Section 5(2)(a)(1).

The Kentucky Open Records Act exempts certain records from the requirement of public inspection. *See* KRS 61.878. In particular, KRS 61.878(1)(c)(1) excludes from the Open Records Act:

> "Records confidentially disclosed to an agency or required by an agency to be disclosed to it, generally recognized as confidential or proprietary, which if openly disclosed would permit an unfair commercial advantage to competitors of the entity that disclosed the records[.]"[1]

This exception "is aimed at protecting records of private entities which, by virtue of involvement in public affairs, must disclose confidential or proprietary records to a public agency, if disclosure of those records would place the private entities at a competitive disadvantage." Ky. OAG 97-ORD-66 at 10 (Apr. 17, 1997).

KRS 61.878(1)(c)(1) requires the Commission to consider three criteria in determining confidentiality: (1) whether the record is confidentially disclosed to an agency or required by an agency to be disclosed to it; (2) whether the record is generally recognized

[1] KRS 61.878(1)(c)(1)

as confidential or proprietary; and (3) whether the record, if openly disclosed, would present an unfair commercial advantage to competitors of the entity that disclosed the records.

Similarly, KRS 61.878(1)(m)(1) protects from disclosure, "Public records the disclosure of which would have a reasonable likelihood of threatening the public safety by exposing a vulnerability in preventing, protecting against, mitigating, or responding to a terrorist act and limited to…

> (f) Infrastructure records that expose a vulnerability referred to in this subparagraph through the disclosure of the location, configuration, or security of critical systems, including public utility critical systems. These critical systems shall include but not be limited to information technology, communication, electrical, fire suppression, ventilation, water, wastewater, sewage, and gas systems;"[2]

Finally, KRS 61.878(1)(d) provides protection for certain economic development purposes, excluding from disclosure: "Public records pertaining to a prospective location of a business or industry where no previous public disclosure has been made of the business' or industry's interest in locating in, relocating within or expanding within the Commonwealth…"[3]

The documents for which Duke Energy Kentucky is seeking confidential treatment, each of which is described in further detail below, satisfies each of these three statutory criteria enumerated in KRS 61.878(1)(c)(1), and/or constitutes critical utility infrastructure that is protected under 61.878(1)(m)(1)(f), or includes information about potential expansion or locations of new or existing businesses in the Commonwealth that the Company uses for its system planning. These documents include the following:

[2] KRS 61.878(1)(m)(1)
[3] KRS 61.878(1)(d)

b. Attachments for Which Confidential Treatment is Sought

i. Confidential Exhibit 5 – Duke Energy 138-kV Transmission Line Standards

Confidential Exhibit 5 contains standards and internal policies and procedures for the design and construction of Duke Energy Kentucky's transmission system. These policies and procedures are proprietary in nature and are not publicly available, thus satisfying the first element of the statutory standard for confidentiality of a proprietary record. In *Hoy v. Kentucky Indus. Revitalization Auth.*, 907 S.W.2d 766, 768 (Ky. 1995), the Kentucky Supreme Court held that documents detailing the "inner workings of a corporation (are) 'generally recognized as confidential or proprietary.'" Confidential Exhibit 5 satisfies this standard, as these transmission line standards have been developed by internal expertise and contain detailed information regarding the operations of the Company and Duke Energy Corporation and, therefore, meets the second element of the statutory standard. Confidential Exhibit 5 also satisfies the third element, as it contains commercially sensitive information that if it were to become publicly available, competitors, potential vendors, and transaction counterparties would have access to information regarding the Company's operations that would place it at a significant disadvantage in its operations as it competes for business or negotiates contracts.

Additionally, as this information depicts the construction specifications of Duke Energy Kentucky's transmission system, detailing its design standards and components, this information also constitutes electrical infrastructure that is protected under KRS 61.878(1)(m)(1)(f). Releasing this information would expose the Company's delivery system to potential risks and in turn, customers to harm as potential bad actors would have

keen insight into how the Company designs and configures its critical energy delivery system.

The Company requests that this Exhibit be afforded confidential treatment pursuant to KRS 61.878(1)(c)(1) and 61.878(1)(m)(1)(f), and additionally requests that this Exhibit be treated as confidential in its entirety pursuant to 807 KAR 5:001E, Section 13(2)(a)(3)(b).

ii. Confidential Exhibit 17 – Distribution Planning Document of Growth

Confidential Exhibit 17 contains confidential records and analysis that includes and contains detailed customer load information and their expansion strategies as well as sensitive economic development projects that are subject to non-disclosure agreements.

Confidential Exhibit 17 is not publicly available, thus satisfying the first element of the statutory standard for confidentiality of a proprietary record. This information represents confidential and proprietary information, that if released would place these entities at a commercial disadvantage versus their competitors and would potentially place the Company in violation of negotiated non-disclosure agreements. It should be considered confidential for reasons as defined under KRS 61.878(1)(d) as prospective locations of business or industry as well as potential utility infrastructure to serve such locations as contemplated under (m)(1). If publicly released, this information would provide details regarding potential business expansion in the Commonwealth and utility infrastructure that, in the wrong hands, could be exploited and used in ways that could create competitive advantages and security and potential public safety risks.

The Company requests that this Exhibit be afforded confidential treatment pursuant

to KRS 61.878(1)(c)(1), and additionally requests that this Exhibit be treated as confidential in its entirety pursuant to 807 KAR 5:001E, Section 13(2)(a)(3)(b).

iii. Confidential Exhibit 18 – Transmission Planning Analysis

Confidential Exhibit 18 contains confidential records and analysis, including the configuration of the Company's transmission system with loading, overloading scenarios, which if released would expose vulnerabilities of these critical systems.

Confidential Exhibit 18 is not publicly available, thus satisfying the first element of the statutory standard for confidentiality of a proprietary record. This information represents confidential and proprietary information in accordance with 61.878(1)(m)(1), that if released would provide details regarding utility infrastructure that, in the wrong hands, could be exploited and used in ways that could harm the public.

The Company requests that this Exhibit be afforded confidential treatment pursuant to KRS 61.878(1)(c)(1) and 61.878(1)(m)(1), and additionally requests that this Exhibit be treated as confidential in their entirety pursuant to 807 KAR 5:001E, Section 13(2)(a)(3)(b).

c. Request for Confidential Treatment

Duke Energy Kentucky respectfully requests that the Confidential Information be withheld from public disclosure for a period of twenty years. This will assure that the Confidential Information—if disclosed after that time—will no longer be commercially sensitive so as to impair the interests of the Company if publicly disclosed.

To the extent the Confidential Information becomes generally available to the public, whether through filings required by other agencies or otherwise, Duke Energy

Kentucky will notify the Commission and have its confidential status removed, pursuant to 807 KAR 5:001 Section 13(10)(a).

WHEREFORE, Duke Energy Kentucky, Inc., respectfully requests that the Commission classify and protect as confidential the specific information described herein.

Respectfully submitted,

/s/ Rocco D'Ascenzo

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Counsel for Duke Energy Kentucky, Inc.

CERTIFICATE OF SERVICE

This is to certify that the foregoing electronic filing is a true and accurate copy of the document in paper medium; that the electronic filing was transmitted to the Commission on June 27, 2024; that there are currently no parties that the Commission has excused from participation by electronic means in this proceeding; and that submitting the original filing to the Commission in paper medium is no longer required as it has been granted a permanent deviation.[4]

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/s/Rocco O. D'Ascenzo
Counsel for Duke Energy Kentucky, Inc.

[4]*In the Matter of Electronic Emergency Docket Related to the Novel Coronavirus COVID-19*, Order, Case No. 2020-00085 (Ky. PSC July 22, 2021).

Commonwealth of Kentucky
Michael G. Adams, Secretary of State

Michael G. Adams
Secretary of State
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Certificate of Existence

Authentication number: 313295
Visit https://web.sos.ky.gov/ftshow/certvalidate.aspx to authenticate this certificate.

I, Michael G. Adams, Secretary of State of the Commonwealth of Kentucky, do hereby certify that according to the records in the Office of the Secretary of State,

DUKE ENERGY KENTUCKY, INC.

DUKE ENERGY KENTUCKY, INC. is a corporation duly incorporated and existing under KRS Chapter 14A and KRS Chapter 271B, whose date of incorporation is March 20, 1901 and whose period of duration is perpetual.

I further certify that all fees and penalties owed to the Secretary of State have been paid; that Articles of Dissolution have not been filed; and that the most recent annual report required by KRS 14A.6-010 has been delivered to the Secretary of State.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Official Seal at Frankfort, Kentucky, this 14th day of June, 2024, in the 233rd year of the Commonwealth.

Michael G. Adams
Secretary of State
Commonwealth of Kentucky
313295/0052929

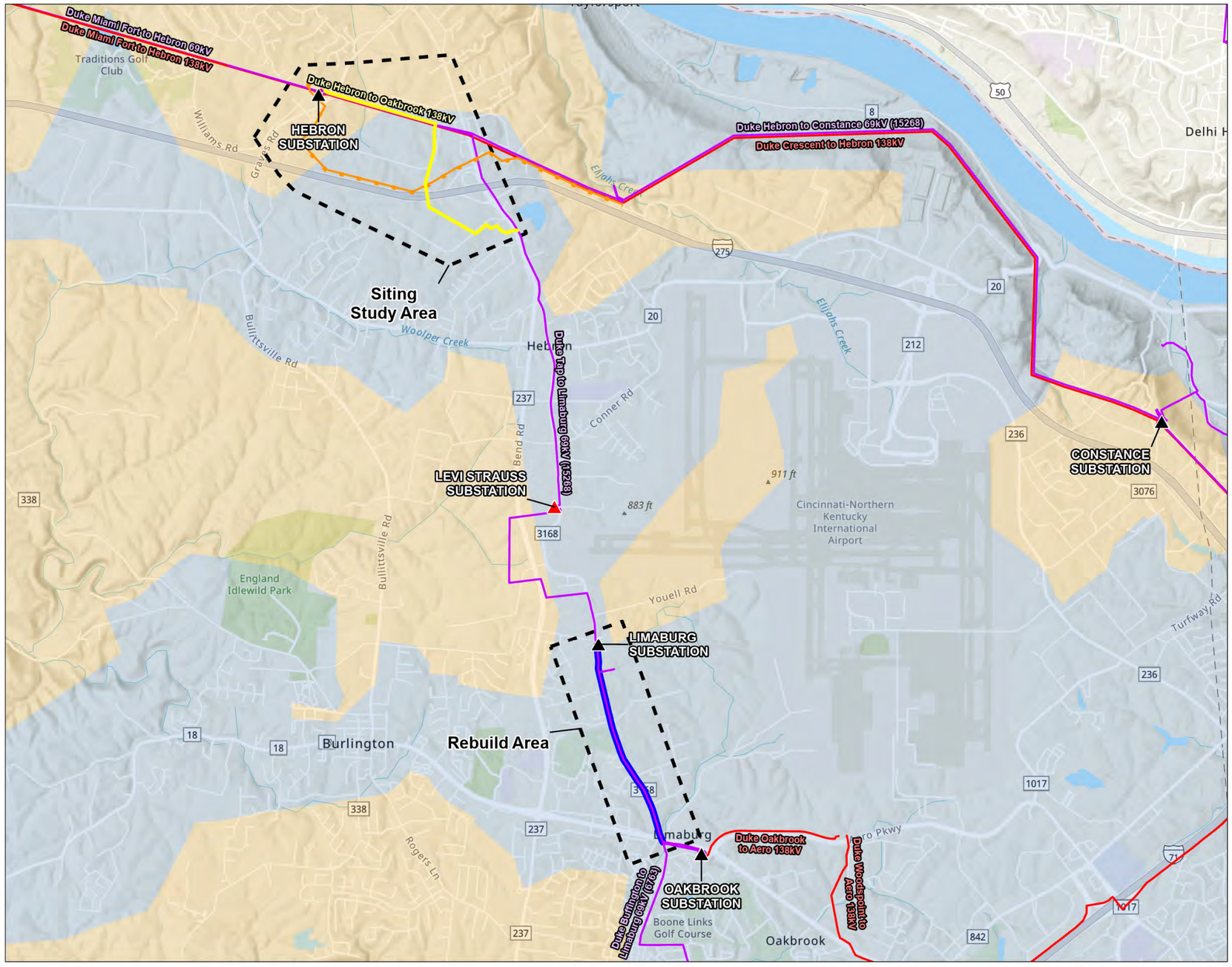


Figure No.
1

Title
Project Location

Client/Project 193708666
Duke Energy Kentucky
Hebron to Oakbrook 138 kV Transmission Line Project

Project Location
Boone Co., Kentucky

Prepared by PM on 2024-04-03
TR by SE on 2024-04-03
IR by TR on 2024-04-03

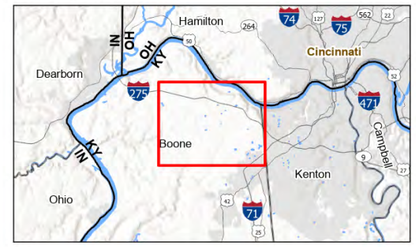
N

0 1,750 3,500 Feet
(At original document size of 11x17)
1:42,000

Legend
- Study Area
- Duke-owned Existing Substation
- Customer-owned Existing Substation
- Duke-owned Existing 69 kV Transmission Line*
- Duke-owned Existing 138 kV Transmission Line*
- Preferred Route
- Rebuild Section
- Proposed EKPC Transmission Line

Retail Electric Service Territory
- DUKE ENERGY KENTUCKY
- EAST KENTUCKY POWER COOP, INC

*Some Existing Transmission Line features are offset from actual alignment for visibility



Notes
1. Coordinate System: NAD 1983 StatePlane Kentucky North FIPS 1601 Feet
2. Data Sources: Stantec, Duke, USGS, NADS, PennWell, OSM, EKPC
3. Background: Esri Topographic Map

DUKE ENERGY®

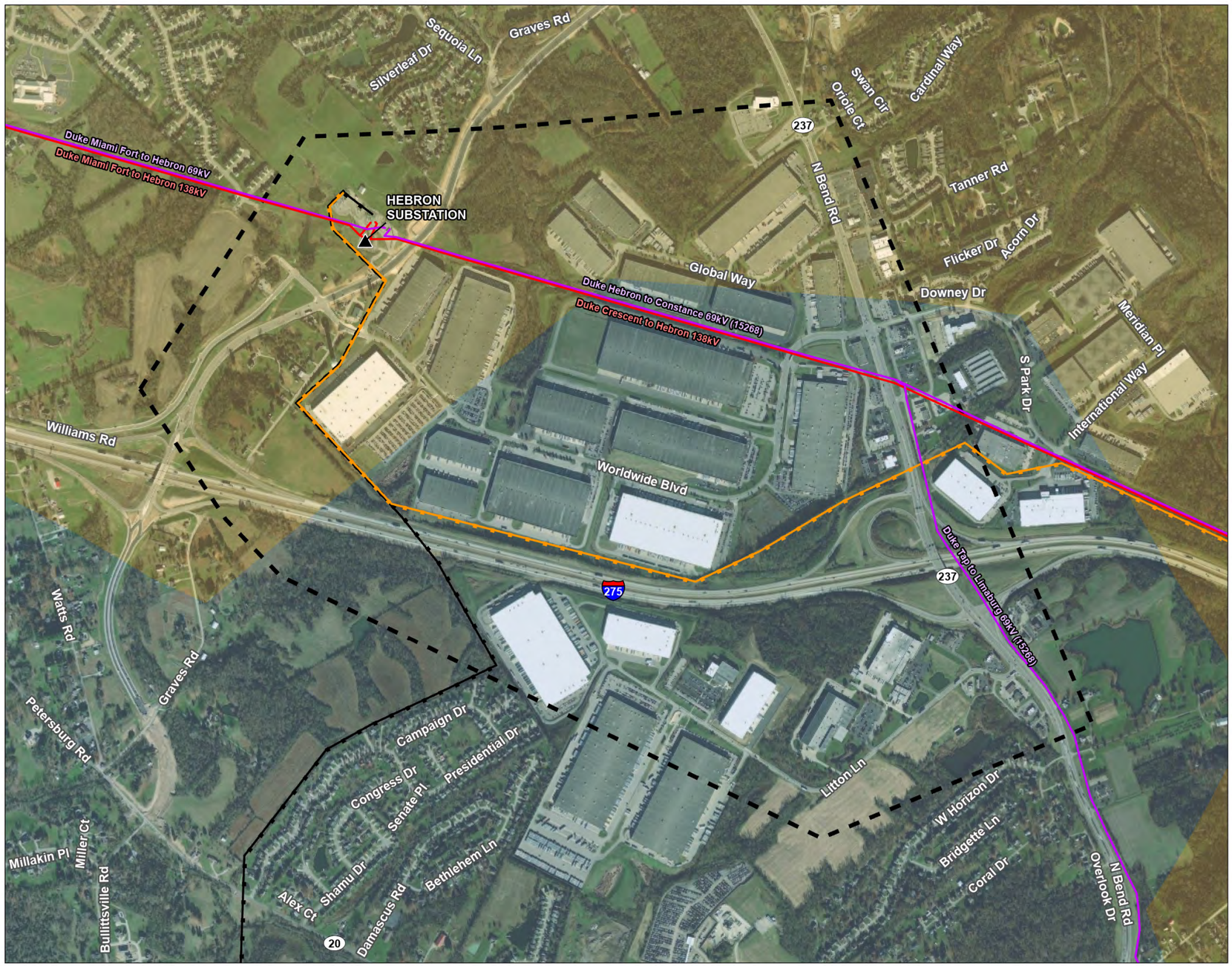


Figure No.
2

Title
Siting Study Area

Client/Project 193708666
Duke Energy Kentucky
Hebron to Oakbrook 138 kV Transmission Line Project

Project Location
Boone Co., Kentucky

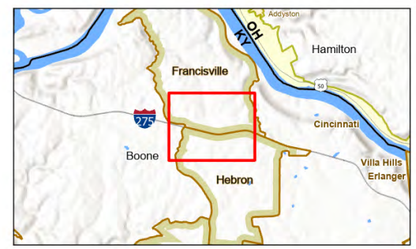
Prepared by PM on 2022-08-22
TR by BT on 2021-11-09
IR by TR on 2022-09-08

N

0 500 1,000 Feet
(At original document size of 11x17)
1:12,000

Legend
- Study Area
- Duke-owned Existing Substation
- Duke-owned Existing 69 kV Transmission Line
- Duke-owned Existing 138 kV Transmission Line
- Foreign Owned Existing Transmission Line
- Proposed EKPC Transmission Line

Retail Electric Service Territory
- DUKE ENERGY KENTUCKY
- EAST KENTUCKY POWER COOP, INC



Notes
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3. Background: Esri World Imagery

DUKE ENERGY®

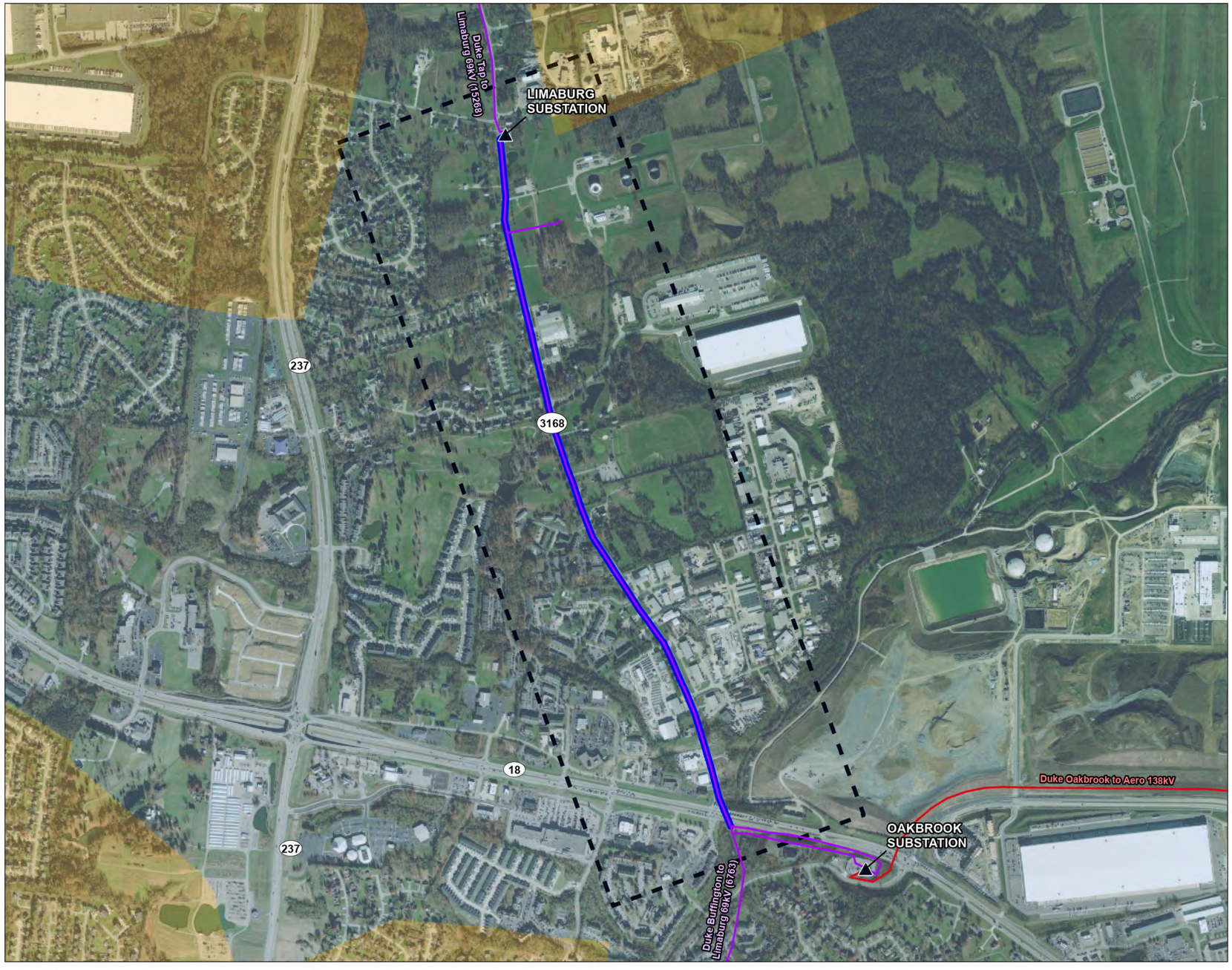


Figure No.
3

Title
Rebuild Project Area

Client/Project
Duke Energy Kentucky
Hebron to Oakbrook 138 kV Transmission Line Project
193708666

Project Location
Boone Co., Kentucky

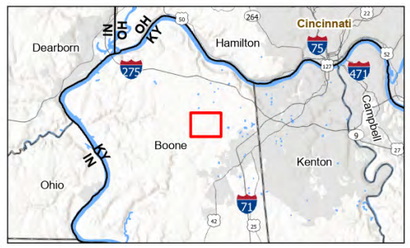
Prepared by PM on 2024-04-03
TR by SE on 2024-04-03
IR by TR on 2024-04-03

N

0 500 1,000 Feet
(At original document size of 11x17)
1:12,000

Legend
- Rebuild Area
- Duke-owned Existing Substation
- Duke-owned Existing 69 kV Transmission Line
- Duke-owned Existing 138 kV Transmission Line
- Rebuild Section

Retail Electric Service Territory
- DUKE ENERGY KENTUCKY
- EAST KENTUCKY POWER COOP, INC



Notes
1. Coordinate System: NAD 1983 StatePlane Kentucky North FIPS 1601 Feet
2. Data Sources: Stantec, Duke, USGS, NADS, PennWell, OSM, EKPC
3. Background: Esri World Imagery

DUKE ENERGY®

Page 1 of 1

CONFIDENTIAL PROPRIETARY TRADE SECRET

CONFIDENTIAL EXHIBIT 5

FILED UNDER SEAL

FINANCIAL EXHIBIT

(1) Section 12(2)(a) Amount and kinds of stock authorized.

1,000,000 shares of Capital Stock $15 par value amounting to $15,000,000 par value.

(2) Section 12(2)(b) Amount and kinds of stock issued and outstanding.

585,333 shares of Capital Stock $15 par value amounting to $8,779,995 total par value. Total Capital Stock and Additional Paid-in Capital as of March 31, 2024:

Capital Stock and Additional Paid-in Capital
As of March 31, 2024
($ per 1,000)

Capital Stock	$8,780
Premiums thereon	18,839
Total Capital Contributions from Parent (since 2006)	318,594
Contribution from Parent Company for Purchase of Generation Assets	140,061
Total Capital Stock and Additional Paid-in-Capital	$486,274

(3) Section 12(2)(c) Terms of preference or preferred stock, cumulative or participating, or on dividends or assets or otherwise.

There is no preferred stock authorized, issued or outstanding.

(4) Section 12(2)(d) Brief description of each mortgage on property of applicant, giving date of execution, name of mortgagor, name or mortgagee, or trustee, amount of indebtedness authorized to be secured, and the amount of indebtedness actually secured, together with any sinking fund provision.

Duke Energy Kentucky does not have any liabilities secured by a mortgage.

(5) Section 12(2)(e) Amount of bonds authorized, and amount issued, giving the name of the public utility which issued the same, describing each class separately, and giving the date of issue, face value, rate of interest, date of maturity and how secured, together with the amount of interest paid thereon during the last fiscal year.

The Company has thirteen outstanding issues of unsecured senior debentures issued under an Indenture dated December 1, 2004, between itself and Deutsche Bank Trust Company Americas, as Trustee, as supplemented by eight Supplemental Indentures. The Indenture

allows the Company to issue debt securities in an unlimited amount from time to time. The Debentures issued and outstanding under the Indenture are the following:

Supplemental Indenture	Date of Issue	Principal Amount Authorized and Issued	Principal Amount Outstanding	Rate of Interest	Date of Maturity	Interest Paid Year 2023
1st Supplemental	3/7/2006	65,000,000	65,000,000	6.20%	3/10/2036	4,030,000
3rd Supplemental	1/5/2016	45,000,000	45,000,000	3.42%	1/15/2026	1,539,000
3rd Supplemental	1/5/2016	50,000,000	50,000,000	4.45%	1/15/2046	2,225,000
4th Supplemental	9/7/2017	30,000,000	30,000,000	3.35%	9/15/2029	1,005,000
4th Supplemental	9/7/2017	30,000,000	30,000,000	4.11%	9/15/2047	1,233,000
4th Supplemental	9/7/2017	30,000,000	30,000,000	4.26%	9/15/2057	1,278,000
5th Supplemental	10/3/2018	40,000,000	40,000,000	4.18%	10/15/2028	1,672,000
5th Supplemental	12/12/2018	35,000,000	35,000,000	4.62%	12/15/2048	1,617,000
6th Supplemental	7/17/2019	40,000,000	40,000,000	4.32%	7/15/2049	1,728,000
7th Supplemental	9/15/2019	95,000,000	95,000,000	3.23%	10/1/2025	3,068,500
7th Supplemental	9/15/2019	75,000,000	75,000,000	3.56%	10/1/2029	2,670,000
8th Supplemental	9/15/2020	35,000,000	35,000,000	2.65%	9/15/2030	927,500
8th Supplemental	9/15/2020	35,000,000	35,000,000	3.66%	9/15/2050	1,281,000
			605,000,000			24,274,000

(6) Section 12(2)(f) Each note outstanding, giving date of issue, amount, date of maturity, rate of interest, in whose favor, together with amount of interest paid thereon during the last fiscal year.

Duke Energy Kentucky does not have any outstanding notes as of 3/31/2024.

(7) Section 12(2)(g) Other indebtedness, giving same by classes and describing security, if any, with a brief statement of the devolution or assumption of any portion of such indebtedness upon or by person or corporation if the original liability has been transferred, together with amount of interest paid thereon during the last fiscal year.

The Company has two series of Pollution Control Revenue Refunding Bonds issued under a Trust Indenture dated as of August 1, 2006 and a Trust Indenture dated as of December 1, 2008, between the County of Boone, Kentucky and Deutsche Bank National Trust Company as Trustee. The Company's obligation to make payments equal to debt service on the Bonds is evidenced by a Loan Agreement dated as of August 1, 2006 and December 1, 2008 between the County of Boone, Kentucky and Duke Energy Kentucky. The Bonds issued under the Indentures are below. On Nov 1, 2021, the Company bought in the Series 2008A bond, and remarketed the bond in June 2022.

Indenture	Date of Issue	Principal Amount Authorized and Issued	Principal Amount Outstanding	Rate of Interest	Date of Maturity	Interest Paid Year 2023
Series 2010	11/24/2010	26,720,000	26,720,000	3.86% (1)	8/1/2027	1,031,392
Series 2008A	12/01/2011	50,000,000	50,000,000	3.70% (2)	8/1/2027	1,850,000
			76,720,000			2,881,392

(1) The bonds were issued at a variable-rate and were swapped to a fixed rate of 3.86% for the life of the debt.

(2) Bonds were remarketed in June 2022 under a fixed-to-maturity interest rate mode (3.70% coupon).

The Company has no outstanding financing leases as of March 31, 2024.

The Company also has $55,860,000 of money pool borrowings outstanding as of March 31, 2024, $25,000,000 of which is classified as Long-Term Debt payable to affiliated companies. This obligation, which is short-term by nature, is classified as long-term due to Duke Energy Kentucky's intent and ability to utilize such borrowings as long-term financing.

(8) Section 12(2)(h) Rate and amount of dividends paid during the last five (5) previous fiscal years, and the amount of capital stock on which dividends were paid each year.

DIVIDENDS PER SHARE

Year Ending	Per Share	Total	No. of Shares	Par Value of Stock
31-Dec-19	0	0	585,333	8,779,995
31-Dec-20	0	0	585,333	8,779,995
31-Dec-21	0	0	585,333	8,779,995
31-Dec-22	0	0	585,333	8,779,995
31-Dec-23	0	0	585,333	8,779,995

(9) Section 12(2)(i) Detailed Income Statement and Balance Sheet.

See the attached pages for a detailed Income Statement for the three months ended March 31, 2024 and a detailed Balance Sheet as of March 31, 2024.

DUKE ENERGY KENTUCKY, INC.
CONDENSED STATEMENTS OF OPERATIONS
(Unaudited)
(In thousands)

	Three Months Ended March 31 2024
Operating Revenues	
Electric	124,218
Gas	57,880
Total operating revenues	**182,098**
Operating Expenses	
Fuel used in electric generation and purchased power	38,903
Natural gas purchased	23,669
Operation, maintenance and other	40,455
Depreciation and amortization	28,429
Property and other taxes	5,263
Goodwill and other impairment charges	-
Total operating expenses	**136,719**
Gains on Sales of Other Assets and Other, net	**94**
Operating Income	**45,473**
Other Income and Expenses, net	**2,113**
Interest Expense	**7,405**
Income Before Income Taxes	**40,181**
Income Tax Expense	**7,958**
Income From Continuing Operations	**32,223**
Income From Discontinued Operations, net of tax	**-**
Net Income	**32,223**

DUKE ENERGY KENTUCKY, INC.
Condensed Balance Sheets
(Unaudited)

(in thousands, except share amounts)	March 31, 2024
ASSETS	
Current Assets	
Cash and Cash Equivalents	1,522
Receivables (net of allowance for doubtful accounts)	88,315
Receivables from affiliated companies	19
Notes Receivables from affiliated companies	-
Inventory	68,072
Regulatory Assets	17,654
Other	7,602
Total Current Assets	183,184
Property, Plant and Equipment	
Cost	3,430,240
Less Accumulated Depreciation and Amortization	(1,148,818)
Generation Facilities To Be Retired	-
Net Property Plant and Equipment	2,281,422
Other Noncurrent Assets	
Regulatory Assets	109,107
Operating Lease Right-of-Use assets	7,328
Other	21,360
Total Other Noncurrent Assets	137,795
Total Assets	**2,602,401**
LIABILITIES AND COMMON STOCKHOLDERS' EQUITY	
Current Liabilities	
Accounts Payable	33,747
Accounts payable to affiliated companies	36,427
Notes payable to affiliated companies	30,860
Taxes Accrued	39,023
Interest Accrued	6,647
Current Maturities of Long-Term Debt	-
Asset Retirement Obligations	6,762
Regulatory Liabilities	17,344
Other	14,502
Total Current Liabilities	185,312
Long-Term Debt	**679,645**
Notes payable to affiliated companies	**25,000**
Other Noncurrent Liabilities	
Deferred Income Taxes	304,722
Asset Retirement Obligations	84,321
Regulatory Liabilities	102,776
Operating Lease Liabilities	7,396
Accrued Pension and Other Post-Retirement Benefit Costs	27,268
Other	23,391
Total Other Noncurrent Liabilities	549,874
Commitments and Contingencies	**-**
Equity	
Common Stock, $15.00 par value, 1,000,000 shares authorized and 585,333 shares outstanding	8,780
Additional Paid in Capital	477,494
Retained Earnings	676,296
Total Duke Energy Corporation Stockholders' Equity	1,162,570
Noncontrolling Interests	-
Total Liabilities and Equity	**2,602,401**

Detail Project: M21037401 Limaburg-Oakbrook RLE					
Category	Estimated Cost		FERC Account / Plant	Description	Estimated Cost
Labor	$ 9,474.70		355	Poles and Fixtures	$ -
Outside Services	$ 51,852.07		356	Overhead Conductors and Devices	$ -
Material	$ -		354	Towers and Fixtures	$ -
Indirects	$ 29,253.37		350	Land and Land Rights	$ 218,878.40
Contingency	$ 34,675.48		357	Underground Conduit	$ -
Grants and Easements	$ 93,622.78		358	Underground Conductors and Devices	$ -
Total	***$ 218,878.40***		***Total***		***$ 218,878.40***

Detail Project: M21037402 Hebron-Route 237 RLE					
Category	Estimated Cost		FERC Account / Plant	Description	Estimated Cost
Labor	$ 46,363.62		355	Poles and Fixtures	$ -
Outside Services	$ 268,825.28		356	Overhead Conductors and Devices	$ -
Material	$ -		354	Towers and Fixtures	$ -
Indirects	$ 216,850.24		350	Land and Land Rights	$ 5,540,436.26
Contingency	$ 877,735.36		357	Underground Conduit	$ -
Grants and Easements	$ 4,130,661.76		358	Underground Conductors and Devices	$ -
Total	***$ 5,540,436.26***		***Total***		***$ 5,540,436.26***

Detail Project: M19030902 Hebron to 15268C Tap-Install New 69 kV Line					
Category	Estimated Cost		FERC Account / Plant	Description	Estimated Cost
Labor	$ 87,040.00		355	Poles and Fixtures	$ 14,504,555.17
Outside Services	$ 6,618,498.00		356	Overhead Conductors and Devices	$ 1,091,740.83
Material	$ 4,512,799.00		354	Towers and Fixtures	$ -
Indirects	$ 2,431,104.00		350	Land and Land Rights	$ -
Contingency	$ 1,946,855.00		357	Underground Conduit	$ -
Grants and Easements			358	Underground Conductors and Devices	$ -
Total	***$ 15,596,296.00***		***Total***		***$ 15,596,296.00***

Detail Project: M19030903 Feeder 6763-Rebuild Oakbrook to Limaburg					
Category	Estimated Cost		FERC Account / Plant	Description	Estimated Cost
Labor	$ 95,553.00		355	Poles and Fixtures	$ 6,408,835.35
Outside Services	$ 5,535,325.00		356	Overhead Conductors and Devices	$ 1,503,307.85
Material	$ 1,561,106.00		354	Towers and Fixtures	
Indirects	$ 1,054,797.00		350	Land and Land Rights	
Contingency	$ 1,176,259.79		357	Underground Conduit	
Grants and Easements	$ -		358	Underground Conductors and Devices	
			108	Cost of Removal	$ 1,510,897.59
Total	***$ 9,423,040.79***		***Total***		***$ 9,423,040.79***

Detail Project: M190309DL1 F6763 Underbuild Limaburg					
Category	Estimated Cost		FERC Account / Plant	Description	Estimated Cost
Labor	$ -		364	Poles and Fixtures	$ 288,294.37
Outside Services	$ 843,370.98		365	Overhead Conductors and Devices	$ 908,626.60
Material	$ 106,591.65				
Indirects	$ 140,709.49				
Contingency	$ 155,565.19				
Grants and Easements	$ -		367	Underground Conductors and Devices	$ 49,316.34
Total	***$ 1,246,237.30***		***Total***		***$ 1,246,237.30***

Detail Project: M190309DL3 New 15264 Transfer					
Category	Estimated Cost	FERC Account / Plant	Description	Estimated Cost	
Labor	$ -				
Outside Services	$ 28,629.02	367	Overhead Conductors and Devices	$ 42,304.70	
Material	$ 3,618.35				
Indirects	$ 4,776.51				
Contingency	$ 5,280.81				
Grants and Easements	$ -				
Total	***$ 42,304.70***	***Total***		***$ 42,304.70***	

Detail Project: M19030901 Hebron Install 69kV CB					
Category	Estimated Cost	FERC Account / Plant	Description	Estimated Cost	
Labor	$ 118,725.00	355	Poles and Fixtures	$ -	
Outside Services	$ 1,499,802.00	356	Overhead Conductors and Devices	$ -	
Material	$ 642,035.00	354	Towers and Fixtures	$ -	
Indirects	$ 736,896.00	350	Land and Land Rights	$ -	
Contingency	$ 427,535.26	352	Structures and Improvements	$ 2,911,244.38	
Grants and Easements	$ -	353	Station Equipment	$ 513,748.88	
Total	***$ 3,424,993.26***	***Total***		***$ 3,424,993.26***	

Detail Project: M19030906 Limaburg Station Uprate					
Category	Estimated Cost	FERC Account / Plant	Description	Estimated Cost	
Labor	$ 10,298.00	355	Poles and Fixtures	$ -	
Outside Services	$ 90,042.00	356	Overhead Conductors and Devices	$ -	
Material	$ 4,140.00	354	Towers and Fixtures	$ -	
Indirects	$ 25,940.00	350	Land and Land Rights	$ -	
Contingency	$ 18,602.16	352	Structures and Improvements	$ 149,022.16	
Grants and Easements	$ -	353	Station Equipment	$ -	
Total	***$ 149,022.16***	***Total***		***$ 149,022.16***	

Detail Project: M19030907 Levi Strauss Station Uprate					
Category	Estimated Cost	FERC Account / Plant	Description	Estimated Cost	
Labor	$ 16,174.00	355	Poles and Fixtures	$ -	
Outside Services	$ 42,222.00	356	Overhead Conductors and Devices	$ -	
Material	$ 2,070.00	354	Towers and Fixtures	$ -	
Indirects	$ 26,637.00	350	Land and Land Rights	$ -	
Contingency	$ 12,423.73	352	Structures and Improvements	$ 99,526.73	
Grants and Easements	$ -	353	Station Equipment	$ -	
Total	***$ 99,526.73***	***Total***		***$ 99,526.73***	

Detail Project: M19030908 Oakbrook Sub 15264 Changes					
Category	Estimated Cost	FERC Account / Plant	Description	Estimated Cost	
Labor	$ 14,511.00	355	Poles and Fixtures	$ -	
Outside Services	$ 100,520.00	356	Overhead Conductors and Devices	$ -	
Material	$ 15,525.00	354	Towers and Fixtures	$ -	
Indirects	$ 46,067.00	350	Land and Land Rights	$ -	
Contingency	$ 25,192.22	352	Structures and Improvements	$ 201,815.22	
Grants and Easements	$ -	353	Station Equipment	$ -	
Total	***$ 201,815.22***	***Total***		***$ 201,815.22***	

Hebron to Oakbrook Reliability Project 138 kV Transmission Line Route Selection Study Report

Boone County, Kentucky

Project No. M210374

November 2, 2022

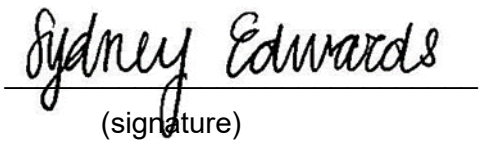
Prepared for:

Duke Energy Kentucky, Inc.
139 East Main Street
Cincinnati, OH 45202

Prepared by:

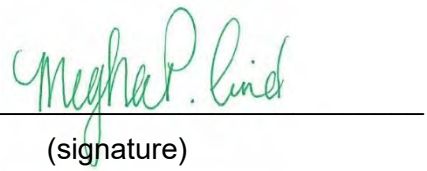
Stantec Consulting Services Inc.
11687 Lebanon Road
Cincinnati, OH 45251

This document entitled Hebron to Oakbrook 138 kV Transmission Line Route Selection Study was prepared by Stantec Consulting Services Inc. (“Stantec”) for the account of Duke Energy Kentucky, Inc. (the “Client”). Any reliance on this document by any third party is strictly prohibited. The material in it reflects Stantec’s professional judgment in light of the scope, schedule and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. In preparing the document, Stantec did not verify information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. Such third party agrees that Stantec shall not be responsible for costs or damages of any kind, if any, suffered by it or any other third party as a result of decisions made or actions taken based on this document.

Prepared by 

(signature)

Sydney Edwards

Reviewed by 

(signature)

Meghan Lind

Approved by 

(signature)

Tennile Rubin

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LIST OF FIGURES

Appendix A:

LIST OF APPENDICES

Executive Summary

Stantec Consulting Services Inc. (Stantec) was retained by Duke Energy Kentucky, Inc. (Duke Energy) to conduct a Route Selection Study for a new 138 kV transmission line from the Hebron Substation to the Oakbrook Substation located in the Cities of Francisville and Hebron in Boone County, Kentucky (the Project). As part of the Project, the current three-terminal circuit at the Hebron Substation will be split into two, two-terminal circuits, allowing for the retirement of circuit #6763 that currently feeds the Oakbrook Substation. Future plans include increasing the new line to 138 kV although it will initially be operated at 69 kV. The Project will alleviate reliability concerns and prepare for expected load growth within Boone County.

To select a Preferred Route for this new transmission line, a Siting Team followed a detailed siting process to review opportunities and constraints in the Study Area. The Route Selection Study included identification of an approximately 1.6-square mile Study Area, data collection, identification of Route Segments, identification of Route Alternatives, quantification of siting criteria for each Route Alternative, evaluation of qualitative factors, alternatives comparison, and the selection of a Preferred Route. The Study Area is primarily made up of industrial and commercial land uses with a few small areas of residential and undeveloped lands. Twenty-nine route alternatives were identified within the Study Area that require from 1.7 to 2.5 miles of new circuit. Primary factors driving the evaluation include engineering, land use, and ecological impacts. There are no anticipated impacts to cultural resources along any of the route alternatives. The main ecological drivers included wetlands, tree clearing, and streams crossed, mostly associated with Sand Run. There are a few residences, institutional, and sensitive land uses throughout the study area but most of the properties crossed are industrial and commercial businesses. Route length, steep slope crossings, length of existing utilities within ROW, and number of turn angles were the major drivers of the engineering challenges identified during the route analysis.

The Siting Team identified a Segment Network comprised of 27 Route Segments based on opportunities and constraints in the Study Area. After the Segment Network was developed, Duke Energy was informed by EKPC during the public outreach portion of the Study, that they also plan to construct a 69 kV transmission line within the Study Area and have a preferred route selected. This resulted in the removal of all segments that conflicted with EKPC's proposed route (Route Segments 11, 16, 17, and 18) from further consideration because there was not sufficient room to build both the EKPC line and this proposed transmission line along those segments. This reduced the potential route alternatives from 43 to 29. The remaining 29 route alternatives were all considered feasible and were evaluated for selection as the preferred route.

After the 29 route alternatives were identified, additional information about proposed development in the study area was discovered that impacted the route selection process. It was discovered that St. Elizabeth started constructing new medical office buildings along segments 20, 22, and 23 and has plans for more development on those properties that conflicts with being able to construct a transmission line. Therefore, based on the qualitative and quantitative review, route alternatives that utilized segments 20, 22, and 23 were not chosen as the preferred route.

Based on the comprehensive quantitative and qualitative evaluation, Route L was selected as the preferred route. This route is approximately 2.1 miles in length and utilizes segments 2, 5, 7, 13, 14, 15, 19, 21, and 24. While Route L scored 12th out of 29 potential routes, there were numerous

qualitative factors that resulted in it being selected as the preferred route. It was determined that routes that utilized segments 25 and 26 along North Bend Road north of Interstate 275 would require crossing over the new EKPC line along North Bend Road. The crossing of the EKPC line in this area would require potential pole heights of 150' to 160' near the Federal Aviation Administration (FAA) height threshold for Cincinnati/Northern Kentucky International Airport (CVG). The area around segment 12 crossing North Bend Road north of Interstate 275 is very congested with existing utilities and commercial business and would potentially require engineered poles that could significantly impact the gas station on the east side of North Bend Road as well as additional businesses. Routes that utilized segment 19 were identified as beneficial because it would allow Duke Energy Kentucky to relocate the existing transmission line within KYTC road right of way (ROW) and construct the new line without any new structures within KYTC ROW. Segments 21 and 24 were selected south of Interstate 275 to avoid impacting the development on St. Elizabeth's property. To traverse the industrial park, the team selected segments 2, 5, 7, 13, and 14, over segments 1, 3, and 10 to utilize the existing transmission corridor and reduce impacts to commercial buildings and existing infrastructure along Worldwide Boulevard.

Abbreviations

CPCN	Certificate of Public Convenience and Necessity
Duke Energy	Duke Energy Kentucky, Inc.
EKPC	Eastern Kentucky Power Cooperative
FEMA	Federal Emergency Management Agency
GIS	geographic information system
IPaC	U.S. Fish & Wildlife Service Information for Planning and Consultation
kV	kilovolt
KYTC	Kentucky Transportation Cabinet
NAIP	National Agriculture Imagery Program
NLAA	not likely to adversely affect
NRCS	Natural Resources Conservation Service
NHD	National Hydrography Dataset
NPS	National Park Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
PSC	Public Service Commission
ROW	right-of-way
Stantec	Stantec Consulting Services Inc.
T/E	threatened or endangered
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

1.0 INTRODUCTION

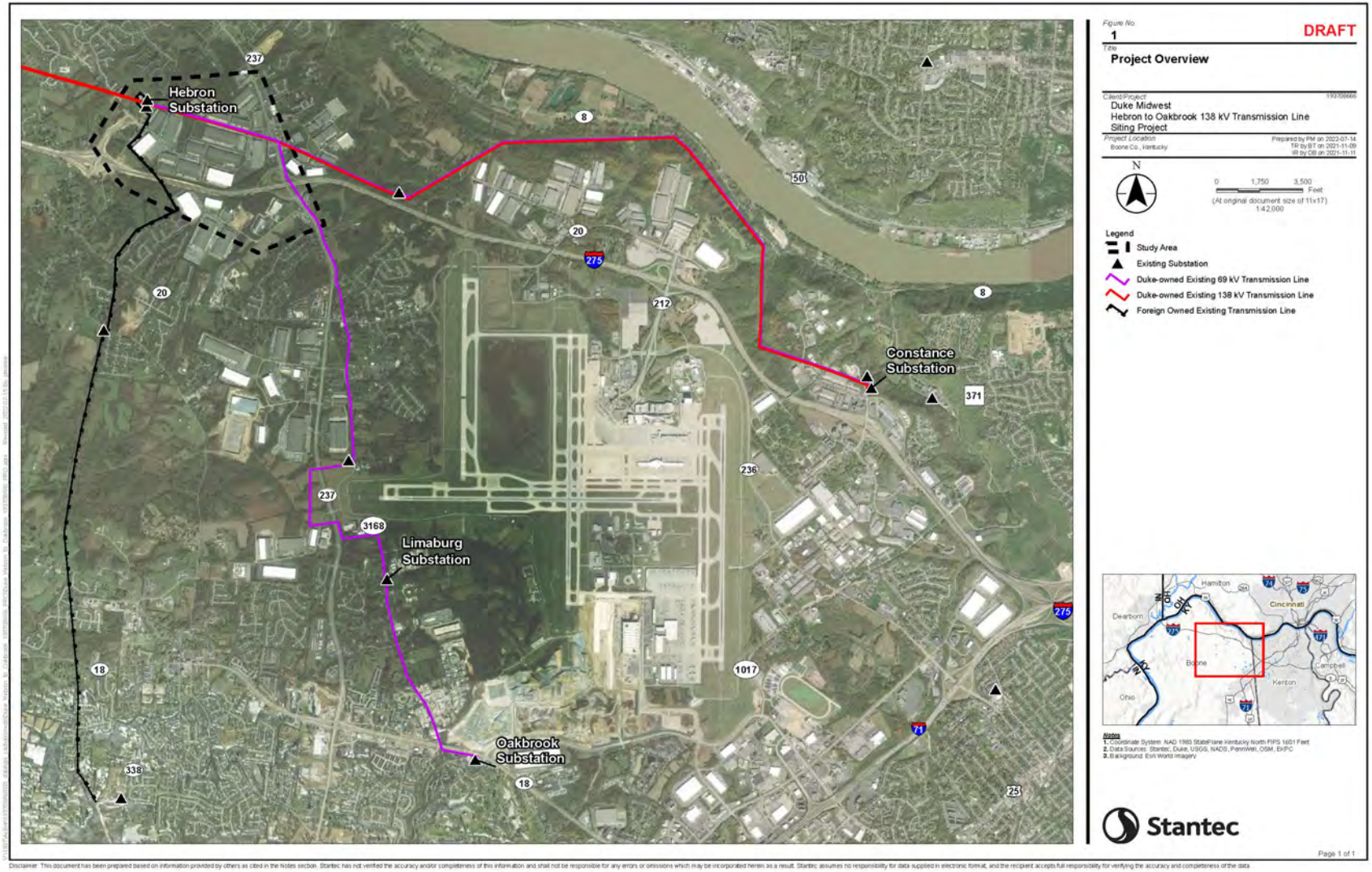
Duke Energy Kentucky, Inc. (Duke Energy) is planning a new 138 kilovolt (kV) transmission line in the Cities of Francisville and Hebron in Boone County, Kentucky. The new line will connect the existing Hebron Substation with the Oakbrook Substation via a tie-in with a Duke Energy-owned 69 kV line between Limaburg and Oakbrook Substations (the Project) (Figure 1). Duke Energy retained Stantec Consulting Services Inc. (Stantec) to complete a Route Selection Study to identify and evaluate potential routes for the proposed Project.

As part of the Project, the current three-terminal circuit at the Hebron Substation will be split into two two-terminal circuits, allowing for the retirement of circuit #15268. Future plans include increasing the voltage of this new circuit between Hebron and Oakbrook to 138 kV although it will initially be operated at 69 kV. The future upgrade to 138 kV will require rebuilding portions of the existing circuit to handle the increased voltage. Because the future plan to operate this circuit to 138 kV, the plan is to construct this new line to 138 kV capacity to avoid rebuilding the line in the future. Since the line is expected to be over 1 mile in length and capable of handling 138 kV capacity, a certificate of public convenience and necessity (CPCN) from the Kentucky Public Service Commission (PSC) is required prior to construction.

1.1 PURPOSE AND NEED

The Project is planned to address expected load growth and reliability concerns within Boone County. This Project will add capacity for future growth in the region, increase reliability by providing alternatives for operations during planned or unexpected outages, allow flexibility for providing critical energy, and help maintain a robust system for supplying and delivering electric service. Future plans to account for expected load growth include energizing the new line to 138 kV. The Project is part of a larger reliability project that will include rebuilding an existing 69 kV transmission line and its associated equipment from Limaburg Substation along Limaburg Road in Hebron to Burlington Pike in Burlington.

Duke Energy has a state and federally mandated responsibility to provide reliable electric service. The Project will deliver safe, reliable electricity via an optimized route that minimizes project costs and impacts to existing utility infrastructure (substations and transmission lines) and property owners and minimizes or avoids impacts to the natural and built environment. The purpose of the Route Selection Study was to evaluate potential routes for the Project to alleviate reliability concerns and prepare for future growth while meeting these other objectives.



1.2 PROJECT DESCRIPTION AND REQUIREMENTS

1.2.1 Project Description

The Project will include a new transmission line between the Hebron Substation and Tap to Limaburg 69 kV line along Highway 237/North Bend Road in Boone County, Kentucky (**Appendix A, Figures A-1 and A-2**). The proposed line will be owned and operated by Duke Energy Kentucky.

1.2.2 Project Requirements

The siting guidelines below were applied throughout the route evaluation process:

1.2.2.1 System Planning Requirements

- Meet the electrical need and requirements in an economic and reliable way.

1.2.2.2 Engineering Requirements/Planning Considerations

- Secure right-of-way (ROW) width of 100 feet cross-country and 70 feet parallel and adjacent to road ROW.
- Evaluate paralleling existing utility and transportation corridors
- Avoid or minimize severance of parcel boundaries to extent practicable
- Avoid or minimize interference with existing land uses
- Avoid or minimize route angles greater than 30 degrees
- Avoid or minimize slopes steeper than 20%
- Avoid or minimize spans greater than 400 feet
- Minimize route length, circuity, cost, and special design requirements

1.2.2.3 Impacts to the Natural Environment and Land Use

Where possible:

- Avoid or minimize the removal or substantial interference with existing residences.
- Minimize the removal of existing barns, garages, commercial buildings, and other non-residential structures.
- Avoid or minimize interference with the use and operation of existing schools, recognized places of worship, cemeteries, and facilities used for cultural, historical, and recreational purposes.
- Maximize the sharing or paralleling of existing ROWs unless paralleling interferes with the safe operation or maintenance of the new line or existing facility.
- Avoid or minimize interference with economic activities, including agricultural and silvicultural activities.
- Avoid or minimize interference with existing/future land uses (planned developments/road construction activities)
- Avoid or minimize siting structures within Federal Emergency Management Agency (FEMA)-mapped floodways
- Avoid or minimize the crossing of environmentally and culturally sensitive lands, such as recreation lands; historic sites; national and state forests and parks; nature

preserves; conservation lands and easements; large reservoirs and large wetland complexes; critical habitat; and other unique or distinct natural resources.
- Where crossings of sensitive lands are unavoidable, maximize the use of existing crossings.
- Avoid crossing federal, state, and municipal lands.
- Avoid or minimize substantial visual impact on residential areas and public resources.
- Avoid or minimize interference with regulated airspace.

1.3 PROJECT TIMELINE AND REGULATORY APPROVALS

Duke Energy plans to begin construction on the Project in early 2024 with a goal of having the new line constructed and in service by December 2024. Because the future plan is to energize the line to 138 kV and the line is expected to be over 1 mile in length, the requirement for a CPCN from the Kentucky PSC is triggered.

Through coordination with the U.S. Fish and Wildlife Service (USFWS), several threatened or endangered (T/E) species have been identified as possibly existing within the Study Area. Upon selection of a Preferred Route, additional agency coordination may be required to determine the need for species/habitat surveys and if construction restrictions are necessary. County construction and environmental permits will need to be obtained prior to construction.

1.4 GOAL OF THE ROUTE SELECTION STUDY

The goal of the Route Selection Study was to evaluate potential routes and select a preferred route to prepare for expected load growth within Boone County and alleviate reliability concerns while considering Duke Energy's long-term business needs and avoiding or minimizing undesired impacts to the environment and community.

2.0 ROUTE SELECTION METHODOLOGY

At the beginning of the route selection process, a multidisciplinary Siting Team was established to evaluate the site requirements, opportunities, and constraints. The Siting Team was comprised of Duke Energy and Stantec staff experienced in siting, planning, public engagement, engineering, permitting, vegetation management, project management, asset protection, community and government relations, construction, and real estate.

2.1 STUDY AREA

In consultation with the Siting Team, a siting Study Area was established. The Study Area is defined as the area in which alternative routes can be identified to meet the Project's purpose and need while minimizing social and ecological impacts and Project costs.

2.2 SITING CRITERIA SELECTION AND DATA COLLECTION

Environmental, cultural, land use, social, and engineering data were collected and mapped in a geographic information system (GIS) to identify constraints and opportunities within the Study Area. Constraints are specific areas that should be avoided to the extent practicable during the route selection process. Opportunities are locations where the proposed line routes might be located while minimizing or avoiding adverse ecological or social impacts. After the Siting Team reviewed the specific opportunities and constraints in the Study Area, Project-specific siting criteria were established for identifying and evaluating Route Alternatives.

2.3 IDENTIFICATION OF ROUTE ALTERNATIVES

The Siting Team used the guidelines (see Section 1.2.2) and opportunities and constraints observed in the Study Area to develop a Segment Network. The Siting Team then reviewed this network to identify any fatal flaws, engineering feasibility and constructability issues, and data gaps. Members of the Siting Team reviewed segments in the field, and then combined them to create full-length Route Alternatives, which were used in the evaluation process.

2.4 ALTERNATIVE ROUTE EVALUATION

Once the Route Alternatives were identified, Stantec conducted a comparative analysis using Project-specific data, which included quantitative scoring and ranking based on the evaluation criteria (see Section 2.2). The quantitative analysis began by grouping the opportunities and constraint data assembled as part of the Project GIS into three tiers (criteria group, criteria, and sub-criteria). The data were then weighted with regards to sensitivity to electrical transmission line construction and operation. The weights assigned to the criteria were based on Project-specific considerations and the combined experience of the Siting Team.

Each sub-criterion was calculated by route and the raw data were normalized so that the data could be combined in the analysis. The following formula was used for the normalization:

Normalized value for criterion = value of criterion for route / maximum value for all routes

An example is provided below:

Properties with unique ownership crossed by ROW criterion for Route A = 24 / 27

Where: 24 is the number of properties with unique ownership for Route A

27 is the maximum number of properties with unique ownership for any route

A weighted multiplier was then applied to the normalized value to arrive at a score for that sub-criterion. The weighted multipliers for each sub-criterion were established by multiplying the criteria group, criteria, and sub-criteria weights together. For example, the weighted multiplier for the "Number of properties with unique ownership" sub-criterion was 0.0350, whereby the sub-criteria weight of 100 percent was multiplied by properties crossed criteria weight of 10 percent and the land use criteria group weight of 35 percent. The sub-criterion scores for each route were then added together to arrive at a composite score for that route, with lower scores being more favorable.

2.4.1 Public and Stakeholder Engagement

Project evaluation included two virtual open houses and a 30-day public comment period. Public engagement specialists prepared a virtual open house, which provided an overview of the Project need, details, schedule, and construction details, and an interactive map of the Route Alternatives. Details about the virtual open house were distributed by mail to property owners within 500 feet of the Routes. Comments could be submitted by comment form, email, or phone and were considered in the refinement of Route Alternatives.

2.5 SELECTION OF PREFERRED ROUTE

The Siting Team reviewed the evaluation results and public comments received, assessed potential impacts to the community and natural environment, and identified potential barriers or challenges to the construction and operation of the Route Alternatives. Using the quantitative and qualitative criteria, the Siting Team selected a Preferred Route that met the overall need of the Project while minimizing potential impacts to the extent possible.

3.0 ROUTE EVALUATION RESULTS

3.1 STUDY AREA DELINEATION

The Siting Team identified a 1.6-square mile Study Area for data collection and identification of Route Alternatives. The Study Area is primarily comprised of commercial and industrial buildings and associated facilities with some small residential developments and areas of fields and forest (**Appendix A**, **Figures A-1 and A-2**).

The Study Area encompassed the Hebron Substation in the northwest corner and is crossed by Interstate 275 east/west through the southern portion of the Study Area. Highway 237/North Bend Road forms the Study Area's eastern edge. The boundary extends south to include Litton Lane but largely excludes the residential areas to the south of Interstate 275. The northern boundary bisects a forested/agricultural area to include the industrial area to the north of Duke Energy's existing 69-kV and 138-kV transmission lines. The western boundary extends west of the Hebron Substation and around the new Graves Road and Interstate 275 interchange. There are small residential areas located in the western most portion of the Study Area, north of the Hebron Substation, and along the southern and eastern boundaries of the Study Area. There is a commercial district along Highway 237/North Bend Road that includes multiple restaurants and commercial facilities, two childcare facilities, a public library, a church, and a few primary care offices. Additionally, there is a fire station located immediately south of the existing Hebron Substation (**Appendix A, Figure A-6**).

There is one perennial stream, Sand Run, and multiple intermittent streams and potential waterbodies and wetlands within the Study Area (**Appendix A, Figure A-5**). There were no FEMA flood zones associated with Sand Run or any of the intermittent streams within the Study Area (**Appendix A, Figure A-5**).

According to the cultural and archeological review report, there were 15 previously recorded archaeological sites recorded within the Study Area (**Appendix A, Figure A-5**). All archaeological sites either do not meet National Register criteria or are considered totally disturbed[1]. There were 34 Kentucky Heritage Council Historic Resources identified within the Study Area (**Appendix A, Figure A-5**); none of them are listed on the National Register of Historic Places (NRHP) and most are likely ineligible or destroyed. Only one Historic Resource (BE 109, William Watts House) was determined eligible for the NRHP; however, the owner objected so the property was not listed, and the house now appears to have been demolished.

Numerous existing transmission lines, distribution lines, gas mains, sewer lines, stormwater lines, and water lines crisscross the Study Area to serve the industrial, commercial, and residential areas. Additionally, there are two planned projects within the Study Area. The Kentucky Transportation Cabinet (KYTC) is planning to conduct the Graves Road Widening Project in the western portion of the Study Area, near the existing Hebron Substation and the East Kentucky Power Cooperative (EKPC) is planning to build a new 69 kV transmission line that comes out of the Hebron substation to the south and follows Interstate 275 through the Study Area (**Appendix**

[1] While Figure A-5 states that the archaeological inventory sites are of undetermined eligibility, the report states that all are either destroyed or likely ineligible for listing.

A, Figure A-7). The topography is relatively hilly, with steep slopes (>20%) surrounding much of the existing infrastructure within the Study Area (**Appendix A, Figure A-7**).

3.2 ESTABLISHMENT OF EVALUATION CRITERIA

After the Study Area was delineated, the Siting Team collected constraint and opportunity data to support the identification and evaluation of Route Alternatives. The sources of the environmental, cultural, land use, social, and engineering data used in the study are provided in **Appendix B, Table 1**. Weights applied to each of the criteria are provided in **Appendix B, Table 2**. The evaluation criteria were selected by the Siting Team based on specifics of the Study Area and what would meet Project requirements for constructability, schedule, cost, and operations and maintenance while avoiding or minimizing undesired impacts to the environment and community.

There were no features present along any of the Route Alternatives for several of the sub-criteria, and therefore no data to measure (grayed sub-criteria text in **Appendix B, Table 2**). All criteria shown in **Appendix B** reflect the final, adjusted weights used in the analysis.

Agency correspondence was conducted to learn more about the Study Area. The Kentucky Energy and Environment Cabinet, Office of Kentucky Nature Preserves provided information from the Natural Heritage Program Database on T/E or special concern plants and animals or exemplary natural communities within the Study Area. In addition, Stantec reviewed the USFWS Information Planning and Consultation (IPaC) online system and obtained an official species list from the USFWS to identify any federally listed T&E species or mapped critical habitat within the Study Area.

The Siting Team contracted Weller & Associates, Inc. to complete a cultural and archeological literature review, including a review of the Kentucky Archaeological Inventory files, Boone County atlases, histories, and historic maps, and the NRHP, among other resources. A summary of the cultural resources within the study area is provided above in section 3.1.

3.3 IDENTIFICATION OF ROUTE ALTERNATIVES

The Siting Team identified a Segment Network comprised of 27 Route Segments based on opportunities and constraints in the Study Area (**Appendix A, Figure A-3**). The Route Segments were located primarily within the center and eastern edge of the Study Area within the industrial/commercial complex and the Highway 237/North Bend Road ROW. Numerous constraints were present in the western and northeastern portions of the Study Area. No segments were identified southwest of the Hebron Substation because of tight clearances between residential properties, road ROW, the KYTC Graves Road Widening Project, Hebron Fire Protect District Station 2, an existing EKPC transmission line, and a water tower. No segments were identified within the northeastern portion of the Study Area because of the presence of a library, Lakeside Church of Christ, residential areas, and the constrained nature the development along Highway 237 road ROW in this area. The Siting Team identified segments paralleling the existing transmission corridor. It was determined the segments should parallel along the northern side of the transmission corridor due to challenges of existing utilities and terrain on the south side.

Numerous segments were identified in the industrial/commercial complex. The industrial/commercial complex provided routing challenges because of exiting utilities and short

distances between built infrastructure. Southern segments were included to provide an additional option for crossing Interstate 275, away from the 237 interchange.

After the Segment Network was developed, Duke Energy was informed by EKPC during the public outreach portion of the Study, that they also plan to construct a 69 kV transmission line within the Study Area and have a preferred route selected. This resulted in the removal of all segments that conflicted with EKPC's proposed route (Route Segments 11, 16, 17, and 18) from further consideration (**Appendix A, Figure A-3**). These segments were removed because there is not adequate horizontal space parallel to EKPCs route to accommodate two new transmission lines parallel and adjacent to one another due to existing utilities and buildings. Additionally, collocating the new Hebron to Oakbrook transmission line on the same facilities is not preferred due to planning, operational, reliability, and safety concerns.

The Duke Energy and Stantec Siting Team leads, completed field reconnaissance of the Segment Network from public ROW on December 15, 2021. During the reconnaissance, sensitive receptors (residences, schools, and churches) were verified, and photographs were taken to document existing site conditions. A follow-up site visit was conducted on June 29, 2022 to confirm additional resources within the Study Area.

After the segments that paralleled EKPC's route were removed, the segments were combined into the 29 full-length Route Alternatives as depicted on in the **Figure A-4 inset (Appendix A)**.

Broadly speaking, Route Alternatives were grouped into two categories based on where they crossed Interstate 275, either within the clover leaf or west of the clover leaf.

In the clover leaf

Routes A, G, M, AC, and AI utilized the clover leaf. These Route Alternatives took various routes through/around the industrial/commercial complex north of Interstate 275 before connecting to Segment 12 to cross Highway 237/North Bend Road north of the clover leaf. They then paralleled Highway 237/North Bend Road through the clover leaf, rebuilding the existing line in place.

West of the clover leaf

Routes C-F, I-L, O-R, T-W, AE-AH, and AK-AN avoided the clover leaf interchange. These Route Alternatives took the same various routes through and around the industrial/commercial complex north of Interstate 275 but then connected to Segment 19 at the southern edge of the industrial/commercial complex to cross Interstate 275 west of the clover leaf. They then traversed the land south of Interstate 275 either by paralleling KYTC ROW or cutting directly across to Litton Lane. The routes then connected to the existing line at one of two tap points, one to the north of Litton Lane and one to the south of Litton Lane.

3.4 ALTERNATIVE ROUTE EVALUATION

The Route Alternatives were evaluated for ecological, land use, cultural, and engineering constraints. The Route Alternatives were weighted and ranked with the lower scoring considered more favorable. The scores were not considered to be the definitive ranking of the routes, but as a measure of how impactful the routes would be based on the criteria established for the comparison. The results of the quantitative analysis are provided in **Appendix B, Table 3 and Appendix B, Figure 1** and described in detail in Sections 3.4.2 to 3.4.5.

In addition to the quantitative analysis, qualitative factors were important for the Siting Team to consider during the evaluation of the Route Alternatives. These factors include observations from

field reconnaissance, comments from stakeholder interactions, and Siting Team experience. Stakeholder feedback is described below.

3.4.1 Public and Stakeholder Engagement

Duke Energy sent out a public engagement letter to individuals with property within 500 feet of the Route Alternatives and requested input on the Project during a 30-day comment period that began on March 7, 2022. Duke Energy also hosted two virtual open houses during which the public could provide comment. There were three comments received; the Siting Team took these into consideration when choosing the Preferred Route.

Based on public comments received regarding planned development in the Study Area, Duke Energy reached out to and held meetings with St. Elizabeth Physicians (St. Elizabeth) located at 1980 Litton Lane. They indicated that they are under active construction on the southern adjacent parcel (impacting Segment 20) with plans to develop the eastern adjacent parcel (impacting Segment 22) as well. A site visit confirmed this additional development. Based on a review of ongoing construction and conceptual site plans provided by St. Elizabeth, it was determined that developing segments 20 and 22 would directly impact the active construction and planned construction of the medical office buildings.

3.4.2 Ecological

Ecological resources including streams, wetlands, and forested lands, were factors in the analysis; there were no floodplains or protected species occurrences within the Study Area. Wetland and stream complexes were mainly associated with Sand Run in the north central portion of the Study Area but also included intermittent streams associated with storm water drainage; all routes crossed at least one stream. Forest impacts were also present mainly in the area of Sand Run and the currently undeveloped parcels located immediately south of Interstate 275 and in the north central portion of the Study Area (**Appendix A**, **Figure A-5)**. Forested land clearing was the most influential ecological factor in the quantitative analysis, with forested acres in ROW ranging from 1.19 to 9.62 acres with Routes that utilized Segment 4 having the highest impacts to forested lands (Routes A and C-F).

Duke Energy conducted agency consultation with Kentucky Natural Heritage Program and US Fish and Wildlife Service (USFWS). There were no records of Kentucky Natural Heritage Program monitored species within the Study Area. No impacts to listed mussel species are expected as no stream impacts are anticipated. Habitat for listed bat species potentially occurs within the Study Area and may be impacted by tree clearing activities. The USFWS provided the guidance document “Revised Conservation Strategy for Forest-Dwelling Bats In the Commonwealth of Kentucky” and recommended that Duke Energy conduct tree clearing activities in the winter during the unoccupied timeframe (November 15 - March 31).

3.4.3 Land Use

Land use constraints were also influential in the route analysis due to the presence of extensive industrial and commercial districts (**Appendix A**, **Figure A-6**). The Study Area is predominantly industrial development with some commercial development, residential properties, and undeveloped land. Institutional uses within the Study Area include the Boone County Public Library along the northern border of the Study Area, Lakeside Church of Christ and Children’s

House Hebron along Highway 237/North Bend Road north of Interstate 275, and St. Elizabeth and Elijah's Creek Kindercare along Highway 237/North Bend Road to the south of Interstate 275.

The majority of the Study Area is heavily constrained throughout by an existing industrial/commercial complex. Additionally, commercial development is extensive along Highway 237/North Bend Road and residential developments border the Study Area on all sides. The Boone County Public Library located along the northern border of the Study Area was considered a sensitive resource.

3.4.4 Cultural Resources

While historic and archaeological resources were identified in the Study Area (**Appendix A**, **Figure A-5**), all were deemed ineligible for listing on the NRHP or destroyed. Therefore, cultural resources were not a factor in the analysis (**Appendix B, Table 3**).

3.4.5 Engineering

All routes were considered constructable, though there were several engineering constraints within the Study Area that factored into the quantitative and qualitative analysis (**Appendix A, Figure A-7**). The number of turn angles ranged from 4 to 18 due to the heavily constrained nature of the Study Area. The Study Area also has significant portions of steep slopes throughout, most notably along the Sand Run corridor and surrounding Interstate 275 infrastructure. Segments that span the interstate would require long span lengths, with those crossing at the clover leaf requiring long spans at the clover leaf and at Highway 237/North Bend Road, affecting routes A, G, M, AC, and AI.

Additionally, the numerous existing buildings, transmission and distribution lines, gas mains, sewer lines, water lines, stormwater lines, and other existing infrastructure throughout the Study Area made for highly congested routes within the industrial/commercial complex and along Highway 237/North Bend Road. Upon closer inspection of the Highway 237/North Bend Road crossing, proximity to an existing gas station was identified as an additional engineering constraint. For this Project, the sharing or paralleling of existing transmission ROW was considered a benefit. This most notably benefited routes that utilized Segment 2,5, and 7 (Routes G and I-L).

3.5 ROUTE SELECTION

Route selection was conducted focusing on a qualitative analysis of the Study Area. As discussed in Section 3.4.1, based on public comment and additional coordination with St. Elizabeth, it was determined that Duke Energy would be unable to place their transmission line on St. Elizabeth's property without direct impacts to the development under construction and additional development planned for these parcels. This included Routes C-E, I-K, O-Q, T-V, AE-AG, and AK-AM which each utilized Segment 20 and/or Segment 22 (**Appendix A, Figure A-4**).

While on the site visit, the Siting Team noted that Segment 12, which spanned Highway 237/North Bend Road north of Interstate 275, was going to be heavily constrained by existing infrastructure. Upon further investigation, it was observed that the segment would connect near a Shell gas station where there is already a lattice tower nearby and many existing utilities. Additionally, it was determined that the transmission line in this area would require an engineered pole within KYTC ROW which typically are not allowed within road ROW. The Team's prior siting experience has indicated that the engineering and coordination associated with placing a structure in this

area with the constraints associated with the gas station, KYTC, and other utilities would be costly and difficult to implement without significantly impacting the gas station's operations. Additional engineering constraints occur on the west side of Highway 237/North Bend Road near the Amazon facility including extensive existing utilities, retaining walls, and parking impacts (**Appendix A, Figures A-6 and A-7**). Overall, Segment 12 would be challenging to build as there are widespread engineering constraints limiting the ability to build new infrastructure without significant impacts to existing land uses.

The sequencing of the construction for the EKPC Project and the Oakbrook to Hebron transmission line needs to be accounted for during the siting process. EKPC's Project is planned to be constructed prior to the Oakbrook to Hebron Project. This will require the EKPC Project to cross above the existing 69 kV transmission line. When Duke Energy rebuilds to 138 kV (Segments 25 and 26), they would need to construct the line above the 69 kV EKPC line. This would require Duke Energy to have structures in this area that would be close to exceeding Federal Aviation Administration clearance standards associated with the nearby Cincinnati/Northern Kentucky International Airport, which is located 2 miles to the southeast. Therefore, Segments 12, 25, and 26 would potentially require significant FAA lighting requirements and thus cause a significant expense and challenge both during the design, build, and operation and maintenance of this transmission line. This includes Routes A, G, M, AC, and AI.

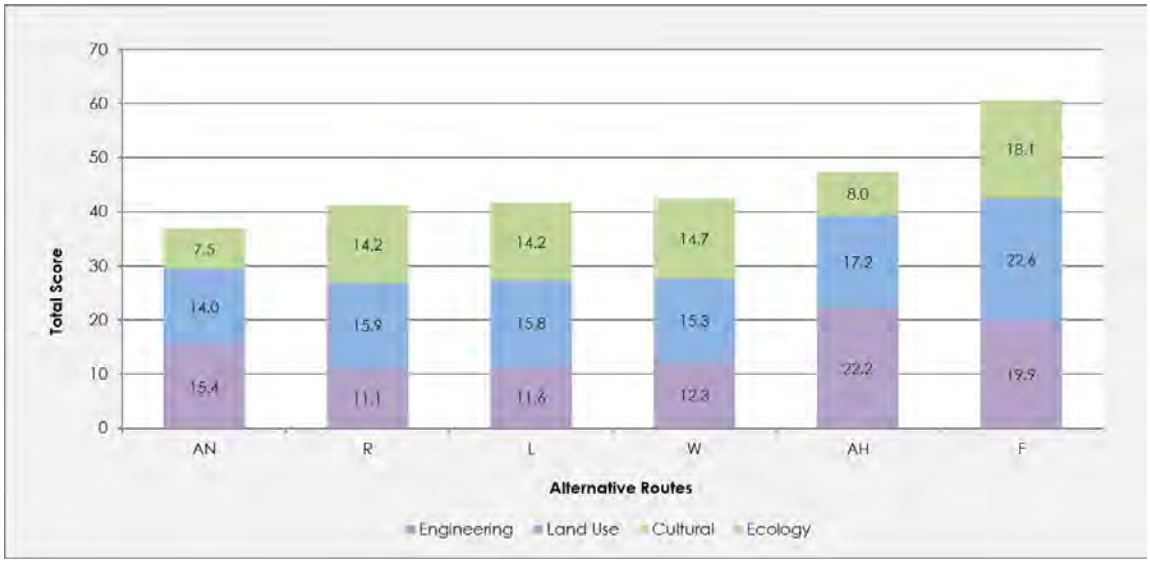
Due to the qualitative/quantitative concerns discussed above on Segments 12, 20, 22, 25, and 26 it was determined Segments 19 to 21 to 24 were the preferred last half of the route to connect to the existing transmission line.

After pairing down the segments discussed above, from highest ranked to lowest ranked, Routes AN, R, L, W, AH and F remained (Figure 2). Route F scored highest due to heavy ecological constraints associated with Sand Run and the forested parcels north of Duke Energy's existing transmission corridor, engineering constraints including route length, span length, and turn angles, and land use constraints including number of unique properties and amount of new easement required. Route AH also has extensive engineering constraints including steep slopes, existing utilities, turn angles, and route length. Routes R, L, and W all scored very similarly, with only 1.18 points separating the three routes.

Route AN scored lowest due to significantly reduced ecological impacts because the route avoids impacts to forested wetlands associated with Sand Run, crosses fewer streams, and would require less forested land clearing. However, Route AN scored higher in engineering because it did not utilize the existing transmission corridor and the existing utilities along Worldwide Boulevard. In addition to the other existing utilities along Worldwide Boulevard, engineering concerns not included in the quantitative analysis along the western stretch of Worldwide Boulevard include very tight clearances, an existing bus stop and streetlights, and impacts to traffic with trucks and employee vehicles continuously coming in and out of the business within the industrial/commercial complex.

Routes R, L, and W utilized the existing transmission corridor past Sand Run; however, Route W still utilized the constrained western stretch of Worldwide Boulevard. Route L utilized the longest stretch of the existing corridor which resulted in the fewest acres of new easement required. Additionally, the eastern portion of Worldwide Boulevard is wider and has more adjacent green space to allow for construction crew access to avoid traffic impacts and also has less existing above ground infrastructure that could conflict with the construction and operation of the transmission line. Therefore, Route L was chosen as the preferred route.

Figure 2. Distribution of Quantitative Route Analysis Scores



3.5.1 Description of Preferred Route

Route L was selected as the Preferred Route for the Project and is depicted in **Appendix A, Figure A-8**. Route L extends east out of the Hebron Substation, following Duke Energy's existing transmission line corridor for approximately 0.77 mile until it reaches Worldwide Boulevard. The route then turns south and parallels Worldwide Boulevard to the west for approximately 0.28 mile before it crosses Worldwide Boulevard in between the Wayfair warehouse and Amazon Fulfillment Center. The route then continues south for approximately 0.25 mile, crossing Interstate 275, before it turns southeast towards Litton Lane, which it crosses after an additional 0.38 mile. The Route then follows Litton Lane northeast until it reaches the businesses on the south side of Litton Lane. The Route goes around these businesses to the south, cutting between the Burger King and Domino's Pizza where it connects to the Tap to Limaburg 69 kV line along Highway 237/North Bend Road. In total, Route L is 2.05 miles long.

Route L utilized a longer portion of the existing Duke Energy transmission line corridor, minimizing the need for new ROW and minimizing impacts to new landowners. It avoids the highly congested western portion of Worldwide Boulevard where light posts, a bus stop, signs, consistent traffic, and engineering challenges associated with steep slopes are present. Route L also avoids crossing Interstate 275 within the clover leaf and would result in having no transmission structures

within KYTC ROW. Route L met the purpose and need for the Project while minimizing impacts to the community.

4.0 CONCLUSION

The Route Selection Study included the delineation of an approximately 1.6-square mile Study Area, data collection, identification of potential Route Segments and Route Alternatives, a quantitative and qualitative comparative evaluation of the Route Alternatives, and the selection of a Preferred Route. The Study Area is predominantly industrial and commercial. A total of 27 Route Segments were identified and combined into 29 Route Alternatives. All Route Alternatives were in Boone County, Kentucky.

Route Alternatives were pared down based on the challenge to construct Segment 12 due to extensive engineering constraints and planned construction on parcels owned by St. Elizabeth affecting Segments 20 and 22. This resulted in Route Segments 19 to 21 to 24 being chosen as the preferred last half of the route to connect to the existing Tap to Limaburg 69 kV line.

After pairing down the segments discussed above there were four routes with comparative scores, Route AN, L, R and W. The highest ranked route (Route AN) did not follow the existing transmission corridor and scored lower due to the avoidance of ecological impacts to forested wetlands associated with Sand Run. Qualitative concerns with Route AN include very tight clearances along Worldwide Boulevard, an existing bus stop and streetlights, and impacts to traffic with trucks and employee vehicles continuously coming in and out.

Routes R, L, and W utilized the existing transmission corridor past Sand Run; however, Route W still utilized the constrained western stretch of Worldwide Boulevard. Route L utilized the longest stretch of the existing corridor which results in the fewest acres of new easement required. Additionally, the eastern portion of Worldwide Boulevard is wider and has more adjacent green space to allow for construction crew access to avoid traffic impacts and also has less existing above ground infrastructure that would need to be moved. Therefore, Route L was chosen as the preferred route.

After the completion of the Route Selection Study, a public announcement of the Preferred Route will be provided to the property owners and key external stakeholders that were communicated with during the route evaluation step of the Route Selection Study. Then, the project team will begin preparing for transmission line engineering and easement negotiations with the affected property owners.

5.0 REFERENCES

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National Land Cover Database: Requirements, Research Priorities, Design, and Implementation Strategies, p. 108–123.

APPENDIX A

Constraints Mapping

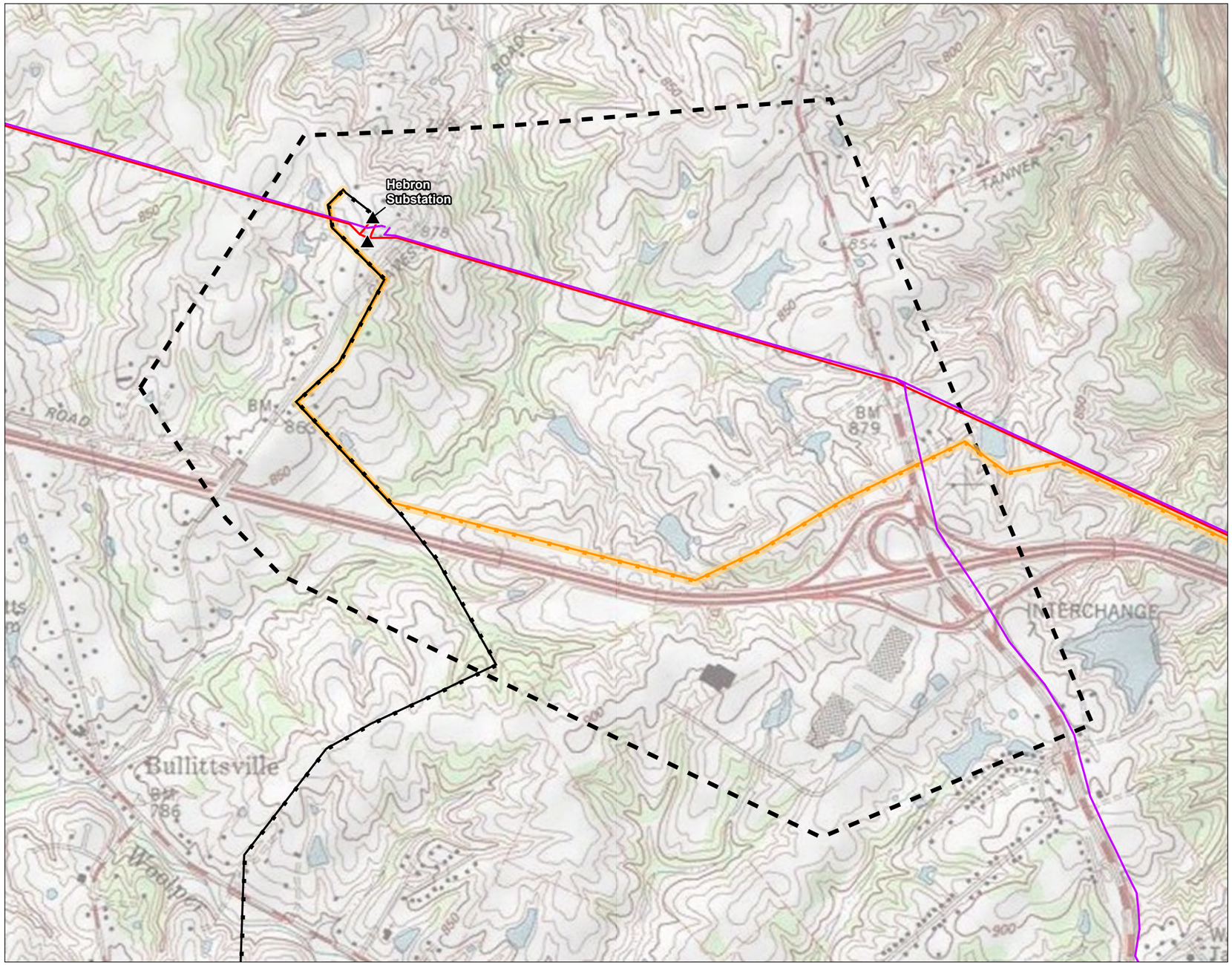


Figure No.
A-1

Title
Project Location and Topography

Client/Project
Duke Midwest
Hebron to Oakbrook 138 kV Transmission Line
Siting Project

193708666

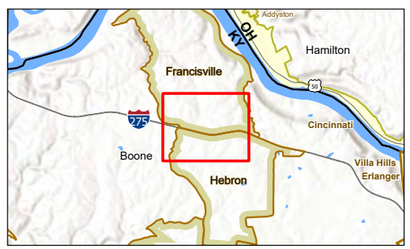
Project Location
Boone Co., Kentucky

Prepared by PM on 2021-11-09
TR by BT on 2021-11-09
IR by DB on 2021-11-11

N

0 500 1,000 Feet
(At original document size of 11x17)
1:12,000

Legend
- Study Area
- Existing Substation
- Duke-owned Existing 69 kV Transmission Line
- Duke-owned Existing 138 kV Transmission Line
- Foreign Owned Existing Transmission Line
- Proposed EKPC Transmission Line
- Proposed EKPC Transmission Line 100ft ROW



Notes
1. Coordinate System: NAD 1983 StatePlane Kentucky North FIPS 1601 Feet
2. Data Sources: Stantec, Duke, USGS, NADS, PennWell, OSM, EKCP
3. Background: USGS 7.5' Topographic Quadrangles

Stantec

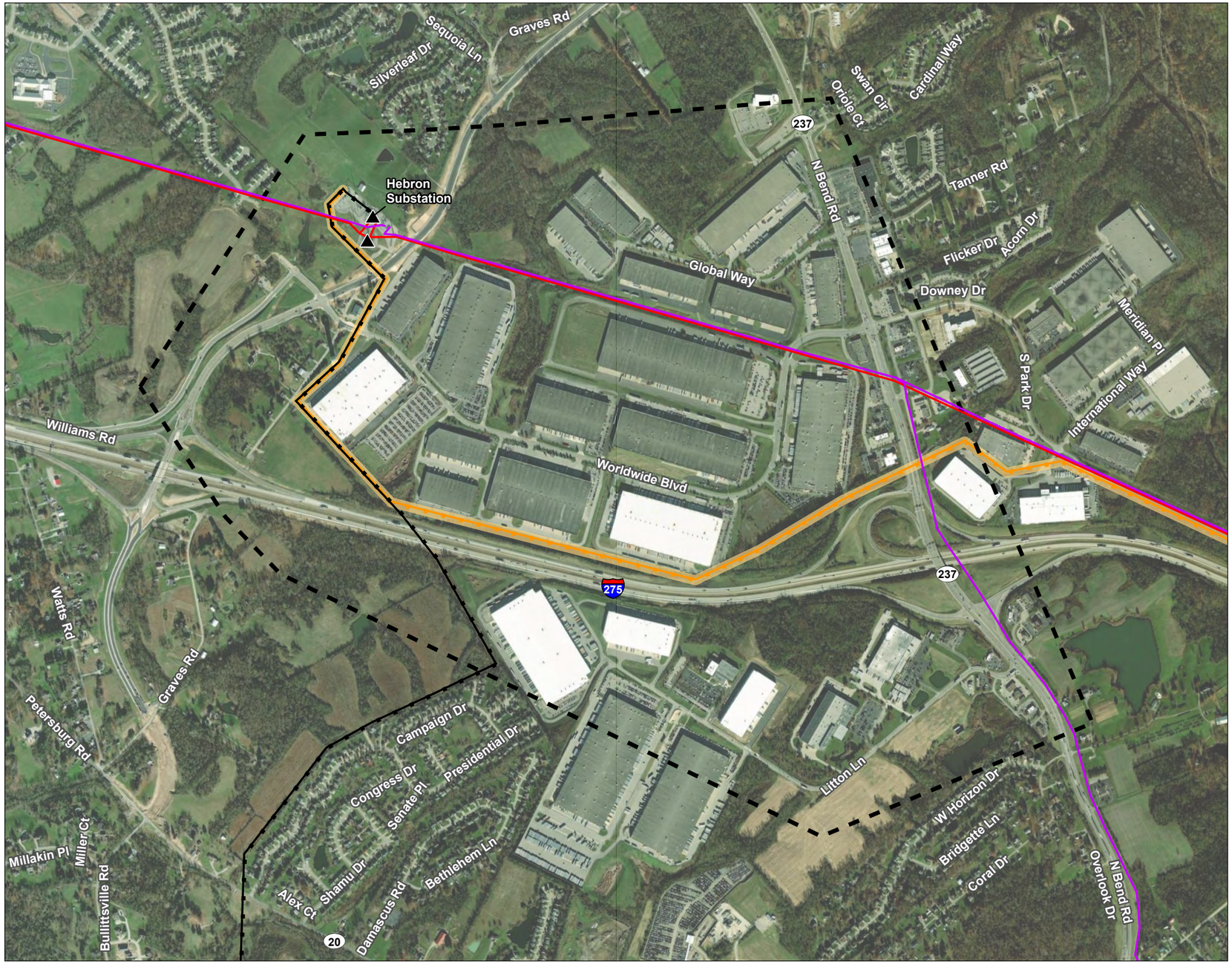


Figure No.
A-2

Title
Project Location - Orthophotography

Client/Project 193708666
Duke Midwest
Hebron to Oakbrook 138 kV Transmission Line
Siting Project

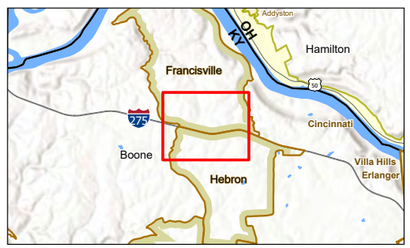
Project Location
Boone Co., Kentucky

Prepared by PM on 2021-11-09
TR by BT on 2021-11-09
IR by DB on 2021-11-11

N

0 500 1,000 Feet
(At original document size of 11x17)
1:12,000

Legend
- Study Area
- Existing Substation
- Duke-owned Existing 69 kV Transmission Line
- Duke-owned Existing 138 kV Transmission Line
- Foreign Owned Existing Transmission Line
- Proposed EKPC Transmission Line
- Proposed EKPC Transmission Line 100ft ROW



Notes
1. Coordinate System: NAD 1983 StatePlane Kentucky North FIPS 1601 Feet
2. Data Sources: Stantec, Duke, USGS, NADS, PennWell, OSM, EKPC
3. Background: Esri World Imagery

Stantec

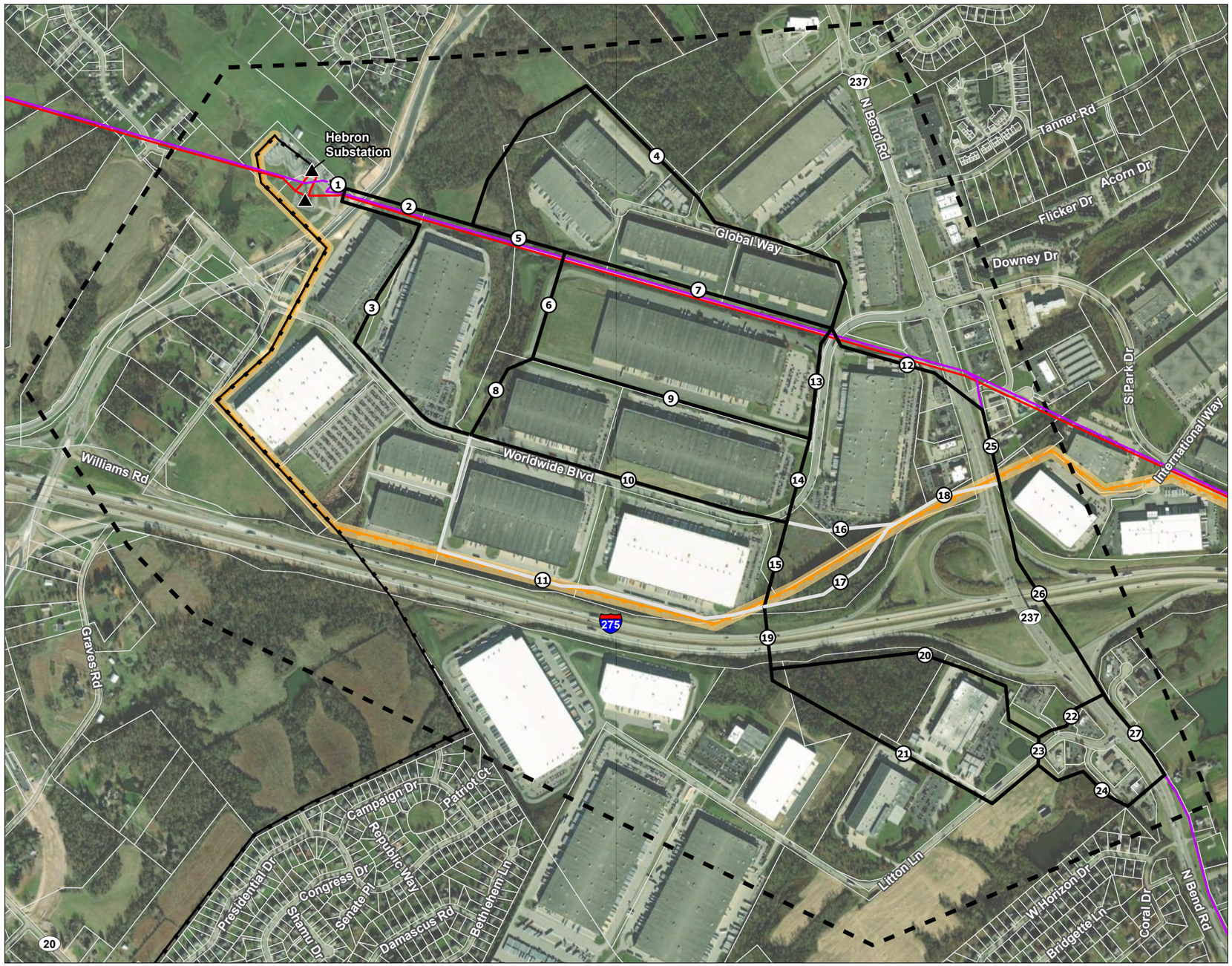


Figure No.
A-3

Title
Segment Network

Client/Project 193708666
Duke Midwest
Hebron to Oakbrook 138 kV Transmission Line
Siting Project

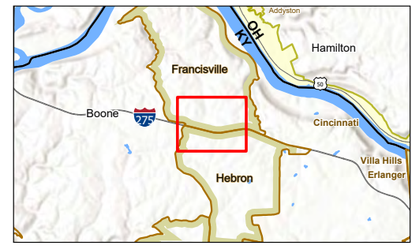
Project Location
Boone Co., Kentucky

Prepared by PM on 2022-07-14
TR by BT on 2021-11-09
IR by TR on 2021-07-21

N

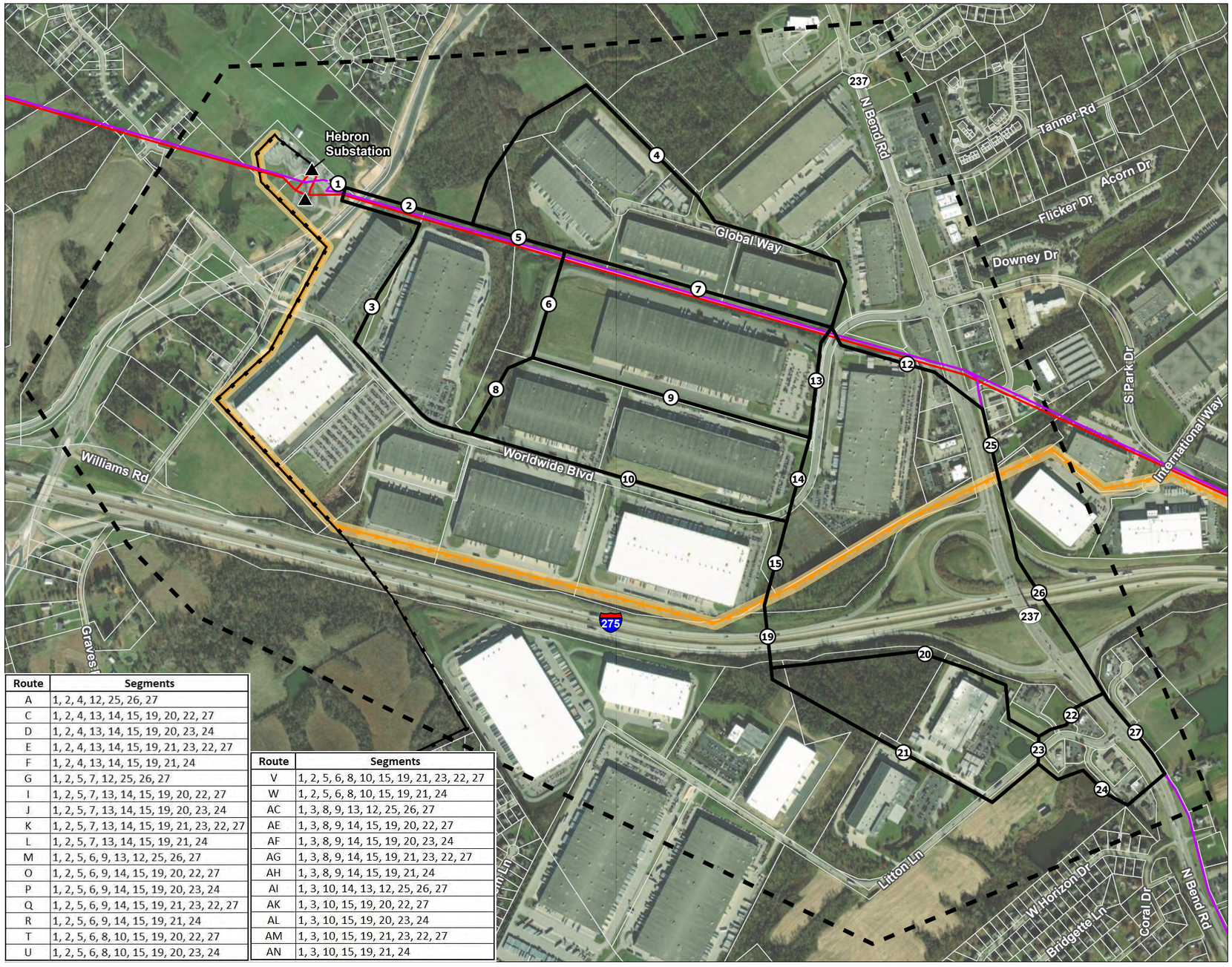
0 400 800 Feet
(At original document size of 11x17)
1:9,600

Legend
- Study Area
- Existing Substation
- Segment Network
- Segments Removed From Study (EKPC Conflict)
- Duke-owned Existing 69 kV Transmission Line
- Duke-owned Existing 138 kV Transmission Line
- Foreign Owned Existing Transmission Line
- Proposed EKPC Transmission Line
- Proposed EKPC Transmission Line 100ft ROW
- Parcel Boundary



Notes
1. Coordinate System: NAD 1983 StatePlane Kentucky North FIPS 1601 Feet
2. Data Sources: Stantec, Duke, USGS, NADS, PennWell, OSM, EKPC
3. Background: Esri World Imagery

Stantec



Route	Segments
A	1, 2, 4, 12, 25, 26, 27
C	1, 2, 4, 13, 14, 15, 19, 20, 22, 27
D	1, 2, 4, 13, 14, 15, 19, 20, 23, 24
E	1, 2, 4, 13, 14, 15, 19, 21, 23, 22, 27
F	1, 2, 4, 13, 14, 15, 19, 21, 24
G	1, 2, 5, 7, 12, 25, 26, 27
I	1, 2, 5, 7, 13, 14, 15, 19, 20, 22, 27
J	1, 2, 5, 7, 13, 14, 15, 19, 20, 23, 24
K	1, 2, 5, 7, 13, 14, 15, 19, 21, 23, 22, 27
L	1, 2, 5, 7, 13, 14, 15, 19, 21, 24
M	1, 2, 5, 6, 9, 13, 12, 25, 26, 27
O	1, 2, 5, 6, 9, 14, 15, 19, 20, 22, 27
P	1, 2, 5, 6, 9, 14, 15, 19, 20, 23, 24
Q	1, 2, 5, 6, 9, 14, 15, 19, 21, 23, 22, 27
R	1, 2, 5, 6, 9, 14, 15, 19, 21, 24
T	1, 2, 5, 6, 8, 10, 15, 19, 20, 22, 27
U	1, 2, 5, 6, 8, 10, 15, 19, 20, 23, 24

Route	Segments
V	1, 2, 5, 6, 8, 10, 15, 19, 21, 23, 22, 27
W	1, 2, 5, 6, 8, 10, 15, 19, 21, 24
AC	1, 3, 8, 9, 13, 12, 25, 26, 27
AE	1, 3, 8, 9, 14, 15, 19, 20, 22, 27
AF	1, 3, 8, 9, 14, 15, 19, 20, 23, 24
AG	1, 3, 8, 9, 14, 15, 19, 21, 23, 22, 27
AH	1, 3, 8, 9, 14, 15, 19, 21, 24
AI	1, 3, 10, 14, 13, 12, 25, 26, 27
AK	1, 3, 10, 15, 19, 20, 22, 27
AL	1, 3, 10, 15, 19, 20, 23, 24
AM	1, 3, 10, 15, 19, 21, 23, 22, 27
AN	1, 3, 10, 15, 19, 21, 24

Figure No.
A-4

Title
Route Alternatives

Client/Project 193708666
Duke Midwest
Hebron to Oakbrook 138 kV Transmission Line
Siting Project

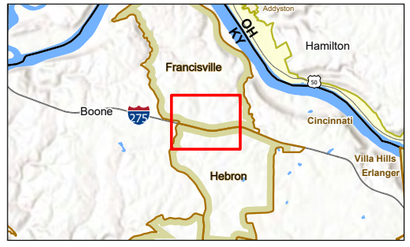
Project Location
Boone Co., Kentucky

Prepared by PM on 2021-11-09
TR by BT on 2021-11-09
IR by DB on 2021-11-11

N

0 400 800 Feet
(At original document size of 11x17)
1:9,600

Legend
- Study Area
- Existing Substation
- Segment Network
- Duke-owned Existing 69 kV Transmission Line
- Duke-owned Existing 138 kV Transmission Line
- Foreign Owned Existing Transmission Line
- Proposed EKPC Transmission Line
- Proposed EKPC Transmission Line 100ft ROW
- Parcel Boundary



Notes
1. Coordinate System: NAD 1983 StatePlane Kentucky North FIPS 1601 Feet
2. Data Sources: Stantec, Duke, USGS, NADS, PennWell, OSM, EKPC
3. Background: Esri World Imagery

Stantec

Figure No.
A-5

Title
Environmental and Cultural Resources

Client/Project
Duke Midwest
Hebron to Oakbrook 138 kV Transmission Line
Siting Project

193708666

Project Location
Boone Co., Kentucky

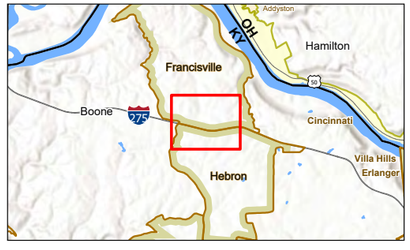
Prepared by PM on 2021-11-04
TR by BT on 2021-11-09
IR by DB on 2021-11-11

N

0 400 800 Feet
(At original document size of 11x17)
1:9,600

Legend
- Study Area
- Existing Substation
- Segment Network
- Duke-owned Existing 69 kV Transmission Line
- Duke-owned Existing 138 kV Transmission Line
- Foreign Owned Existing Transmission Line
- Proposed EKPC Transmission Line
- Proposed EKPC Transmission Line 100ft ROW
- Historic Structure - Eligibility Undetermined
- Archaeological Inventory Site - Eligibility Undetermined
- Potential Contamination Site
- Water Well
- 303d Impaired Stream
- National Wetlands Inventory Feature

National Hydrography Dataset
- Perennial Stream
- Intermittent Stream
- Waterbody



Notes
1. Coordinate System: NAD 1983 StatePlane Kentucky North FIPS 1601 Feet
2. Data Sources: Stantec, Duke, USGS, NADS, PennWell, OSM, EPA, USFWS, Weller, EKPC
3. Background: Esri World Imagery

Stantec

Figure No.
A-6

Title
Land Use and Social Constraints

Client/Project 193708666
Duke Midwest
Hebron to Oakbrook 138 kV Transmission Line
Siting Project

Project Location
Boone Co., Kentucky

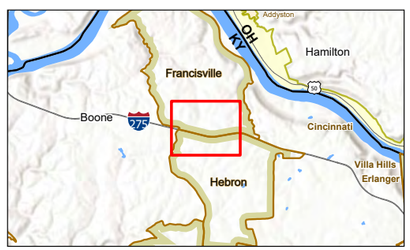
Prepared by PM on 2021-11-04
TR by BT on 2021-11-09
IR by DB on 2021-11-11

N

0 400 800 Feet
(At original document size of 11x17)
1:9,600

Legend
- Study Area
- Existing Substation
- Segment Network
- Duke-owned Existing 69 kV Transmission Line
- Duke-owned Existing 138 kV Transmission Line
- Foreign Owned Existing Transmission Line
- Proposed EKPC Transmission Line
- Proposed EKPC Transmission Line 100ft ROW
- School
- Place of Worship
- Child Care Facility
- Fire Station
- Parcel Boundary

Structure Use
- Commercial & Industrial
- Community Facility
- Residential
- Outbuilding



Notes
1. Coordinate System: NAD 1983 StatePlane Kentucky North FIPS 1601 Feet
2. Data Sources: Stantec, Duke, USGS, NADS, PennWell, OSM, Esri, HIFLD, Microsoft, EKPC
3. Background: Esri World Imagery

Stantec

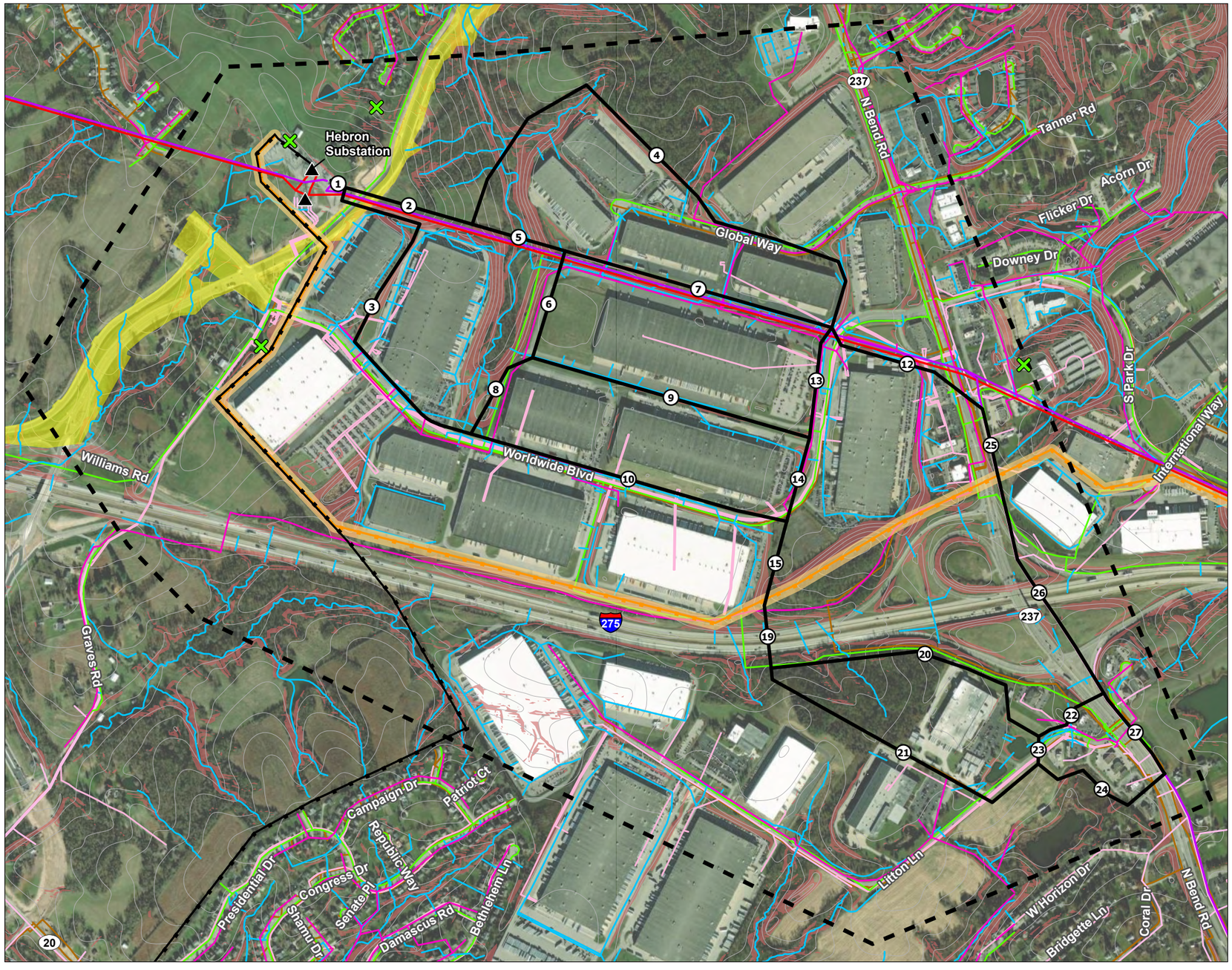


Figure No.
A-7

Title
Engineering Constraints

Client/Project 193708666
Duke Midwest
Hebron to Oakbrook 138 kV Transmission Line
Siting Project

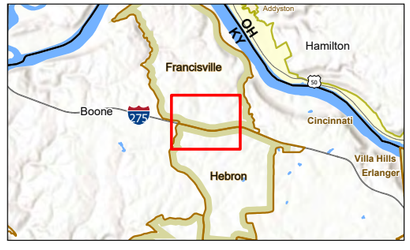
Project Location
Boone Co., Kentucky

Prepared by PM on 2021-11-04
TR by BT on 2021-11-09
IR by DB on 2021-11-11

N

0 400 800 Feet
(At original document size of 11x17)
1:9,600

Legend
- Study Area
- Existing Substation
- Segment Network
- Duke-owned Existing 69 kV Transmission Line
- Duke-owned Existing 138 kV Transmission Line
- Foreign Owned Existing Transmission Line
- Proposed EKPC Transmission Line
- Proposed EKPC Transmission Line 100ft ROW
- Duke Existing Distribution Line
- Duke Existing Gas Main
- Tall Structure
- Sewer Line
- Stormwater Line
- Water Line
- KYDOT Graves Rd Widening Project
- 10ft Elevation Contour
- Slope Greater Than 20%



Notes
1. Coordinate System: NAD 1983 StatePlane Kentucky North FIPS 1601 Feet
2. Data Sources: Stantec, Duke, USGS, NADS, PennWell, OSM, FAA, USDA, FEMA, EKPC
3. Background: Esri World Imagery

Stantec

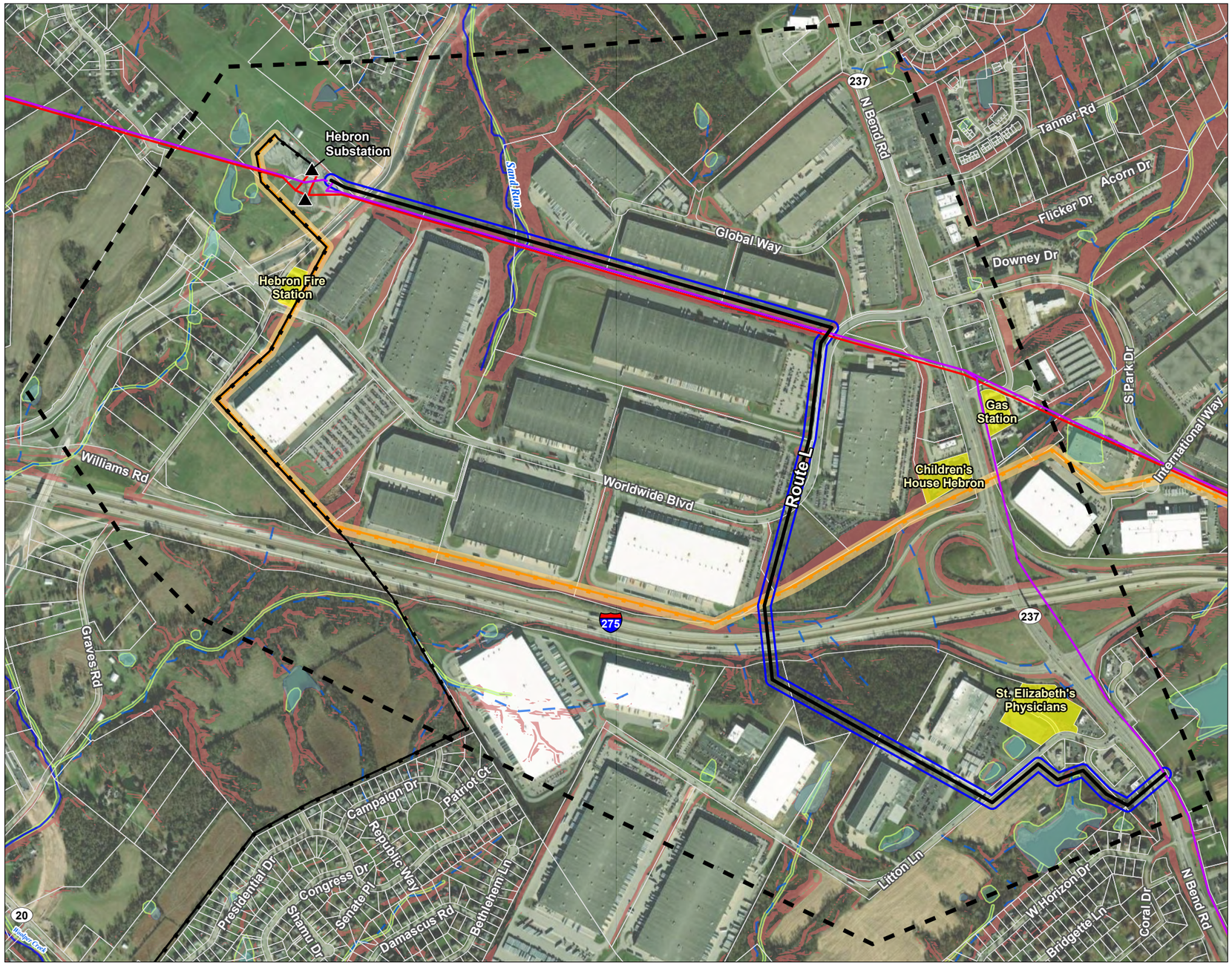


Figure No.
A-8

Title
Preferred Route

Client/Project 193708666
Duke Midwest
Hebron to Oakbrook 138 kV Transmission Line
Siting Project

Project Location
Boone Co., Kentucky

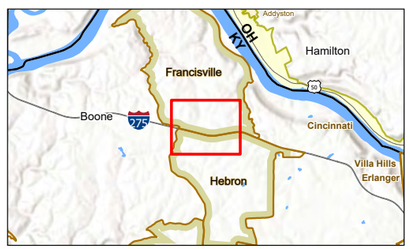
Prepared by PM on 2022-07-11
TR by BT on 2021-11-09
IR by TR on 2022-07-11

N

0 400 800 Feet
(At original document size of 11x17)
1:9,600

Legend
- Study Area
- Existing Substation
- Route L
- Preferred Route ROW
- Duke-owned Existing 69 kV Transmission Line
- Duke-owned Existing 138 kV Transmission Line
- Foreign Owned Existing Transmission Line
- Proposed EKPC Transmission Line
- Proposed EKPC Transmission Line 100ft ROW
- Parcel Boundary
- Routing Land Use Constraints
- Slope Greater Than 20%
- National Wetlands Inventory Feature

National Hydrography Dataset
- Perennial Stream
- Intermittent Stream
- Waterbody



Notes
1. Coordinate System: NAD 1983 StatePlane Kentucky North FIPS 1601 Feet
2. Data Sources: Stantec, Duke, USGS, NADS, PennWell, OSM, USFWS
3. Background: Esri World Imagery

Stantec

APPENDIX B

Tables

Table 1. Data Sources

Category	Sub-Category	Source	Published Date of Data*
Ecological Resources	Potential Environmental Contamination	United States Environmental Protection Agency	11/5/2020
	Critical Habitat	USFWS	2/17/2021
	Wetlands	USFWS National Wetlands Inventory (NWI)	2/25/2021
	Streams & Waterbodies	United States Geological Survey (USGS) National Hydrography Dataset (NHD)	2/25/2021
	Impaired Waters	United States Environmental Protection Agency	5/1/2015
	Protected Species	USFWS	11/17/2021
Land Use	Existing infrastructure	Duke Energy	11/23/2021
		PennWell Map Search	9/28/2020
	Roads	ArcGIS North America Detailed Streets	11/19/2020
	Pipelines	National Pipeline Mapping System	11/2/2021
		US Energy Information Administration (USEIA) Homeland Infrastructure Foundation-Level Data (HIFLD)	2/1/2018
	Railroads	Homeland Infrastructure Foundation-Level Data (HIFLD)	4/9/2019
	Building Footprints	Microsoft	4/29/2020
	Institutions (hospitals, places of worship, schools, daycares)	ESRI	11/1/2021
	Land Use	National Land Cover Dataset (NLCD)	2019
		U.S. Department of Agriculture (USDA) National Agriculture Imagery Program	2019
	Soils	Natural Resources Conservation Services	12/11/2018
	Protected Lands	USGS Protected Areas Database – US	2/19/2021
		National Conservation Easement Database (NCED)	8/28/2020
	Cell Towers and Antennas	Homeland Infrastructure Foundation-Level Data	4/7/2021
	Planned Projects	Boone County	11/11/2021

Category	Sub-Category	Source	Published Date of Data*
	Municipal Utilities (Sewer, Stormwater, Fiber Lines)	Boone County	11/16/2021
Cultural	Archaeological and Cultural Resources	State Historic Preservation Office (SPHO) (Weller & Associates, Inc. Report)	12/3/2021
	Cultural Resources	National Park Service (NPS) National Register of Historic Places (NRHP)	9/17/2020
	Historic or Scenic Byways	Federal Highway Administration	5/26/2017
	Cemeteries	Environmental Systems Research Institute (ESRI)	2/11/2020
		SHPO (Weller & Associates, Inc. Report)	12/3/2021
	Historic Structures	SHPO (Weller & Associates, Inc. Report)	12/3/2021
	Parcel Data	Duke Energy	11/9/2021
	Elevation and Slope	USDA	2002-2017
	Flood Areas	FEMA Flood Hazard Map	11/1/2021
	Airports and Airport Equipment	Federal Aviation Administration (FAA)	5/24/2021
	Karst Geology	USFWS	2014
	Geological Areas	USGS	6/18/2018
	Aerial imagery	U.S. Department of Agriculture (USDA) National Agriculture Imagery Program	2019

*Data acquisition date used when vintage date unavailable.

Table 2. Criteria Group, Criteria, and Sub-Criteria Weights

Criteria Group & Weight		Criteria & Weight		Sub-Criteria & Weight	
Ecology	30%	Wetlands	20%	Acres of PFO/PSS wetlands in ROW	70%
				Acres of PEM, PAB, PUB wetlands and riverine in ROW	30%
		Streams	20%	Number of streams crossed by centerline	100%
		Forest	35%	Acres of forested land within ROW	100%
		Protected Species	5%	Count of Federal & state T&E occurrences within 1,000 feet of centerline	100%
		Floodplain	20%	Linear feet of floodway crossed by centerline	85%
				Linear feet of 100-year floodplain crossed by centerline	15%
Land Use	35%	Residences	25%	Number of residences within the ROW	0%
				Number of residences within 200 feet of ROW	60%
				Number of residences between 200-500 feet of ROW	40%
		Business/Commercial/ Industrial	15%	Number of businesses, commercial, and industrial buildings within 250 feet of centerline	100%
		Properties Crossed	10%	Number of properties crossed by ROW	100%
		Institutional Land Use	15%	Number of institutional uses crossed by ROW	70%
				Number of institutional uses within 1,000 feet of centerline	30%
		Sensitive Lands	20%	Acres of sensitive lands within ROW	70%
				Acres of sensitive lands within 1,000 feet of centerline	30%
		Agricultural & Industrial Uses	5%	Acres of agricultural and other industrial uses in ROW	100%
		New easement required	10%	Acres of new easement required	100%
Cultural	0%	NRHP Listed Resources	40%	Number of NRHP listed resources within 1,000 feet of centerline	100%
		State Architectural Resources	30%	Number of state historic resources within 1,000 feet of centerline	100%
		Archaeological Sites	15%	Number of known archaeological resources in ROW	100%
		Cemeteries	15%	Number of cemeteries in ROW	100%

Criteria Group & Weight		Criteria & Weight		Sub-Criteria & Weight	
Engineering	35%	Route Length	20%	Length of route in linear feet	100%
		Highway & Rail Crossings	10%	Number of highway, road, or railroad crossings	100%
		Slope	15%	Linear feet of centerline within slope >20%	100%
		Angles	20%	Number of turn angles >20 degrees	100%
		Span	5%	Linear feet of longest span (if a span greater than 400 feet is required)	100%
		Other Linear Utilities	20%	Length or Route with underground utilities in ROW	100%
		Paralleling Linear Infrastructure	10%	Percent of centerline not paralleling existing transmission ROW	100%

PAB- Palustrine Aquatic Bed, PEM- Palustrine Emergent Wetland, PFO- Palustrine Forested Wetland, PSS- Palustrine Scrub/Shrub Wetland, T&E- Threatened and Endangered Species. Wetland types based on Cowardin classification (Cowardin et al. 1979). Sub-criteria with gray shading indicate there were no data recorded for any of the routes.

Table 3. Weighted Results Table

Route	Segments	Route Length (mi)	ECOLOGY CRITERIA GROUP																		
			Streams			Wetlands						Forest			Floodplain						Protected Species		
			Stream crossings by centerline (count)			PFO & PSS wetlands in ROW (acres)			PEM, PAB, PUB and riverine in ROW (acres)			Forested land in ROW (acres)			Floodway crossed by centerline (feet)			100-Year floodplain crossed by centerline (feet)			Federal and state threatened and endangered species occurrences within 1,000 feet of centerline (count)		
	Criteria Group Weight:		30%			30%			30%			30%			30%			30%			30%		
	Criteria Weight:		20%			20%			20%			35%			20%			20%			5%		
	Sub-Criteria Weight:		100%			70%			30%			100%			85%			15%			100%		
	Weighted Multiplier:		0.0600			0.0420			0.0180			0.1050			0.0510			0.0090			0.0150		
			Value	Normalized	Weighted Value	Value	Normalized	Weighted Value	Value	Normalized	Weighted Value	Value	Normalized	Weighted Value	Value	Normalized	Weighted Value	Value	Normalized	Weighted Value	Value	Normalized	Weighted Value
ROUTES																							
A	1, 2, 4, 12, 25, 26, 27	1.99	2	25	1.50	0.06	100	4.20	0.00	0	0.00	5.08	46	4.85	0.00	0	0.00	0.00	0	0.00	0	0	0.00
C	1, 2, 4, 13, 14, 15, 19, 20, 22, 27	2.37	4	75	4.50	0.06	100	4.20	0.00	0	0.00	9.35	97	10.16	0.00	0	0.00	0.00	0	0.00	0	0	0.00
D	1, 2, 4, 13, 14, 15, 19, 20, 23, 24	2.37	5	100	6.00	0.06	100	4.20	0.05	100	1.80	9.62	100	10.50	0.00	0	0.00	0.00	0	0.00	0	0	0.00
E	1, 2, 4, 13, 14, 15, 19, 21, 23, 22, 27	2.43	2	25	1.50	0.06	100	4.20	0.00	0	0.00	8.21	83	8.75	0.00	0	0.00	0.00	0	0.00	0	0	0.00
F	1, 2, 4, 13, 14, 15, 19, 21, 24	2.35	3	50	3.00	0.06	100	4.20	0.05	100	1.80	8.48	87	9.08	0.00	0	0.00	0.00	0	0.00	0	0	0.00
G	1, 2, 5, 7, 12, 25, 26, 27	1.69	2	25	1.50	0.05	84	3.55	0.00	0	0.00	2.53	16	1.67	0.00	0	0.00	0.00	0	0.00	0	0	0.00
I	1, 2, 5, 7, 13, 14, 15, 19, 20, 22, 27	2.07	4	75	4.50	0.05	84	3.55	0.00	0	0.00	6.80	66	6.98	0.00	0	0.00	0.00	0	0.00	0	0	0.00
J	1, 2, 5, 7, 13, 14, 15, 19, 20, 23, 24	2.07	5	100	6.00	0.05	84	3.55	0.05	100	1.80	7.06	70	7.32	0.00	0	0.00	0.00	0	0.00	0	0	0.00
K	1, 2, 5, 7, 13, 14, 15, 19, 21, 23, 22, 27	2.13	2	25	1.50	0.05	84	3.55	0.00	0	0.00	5.66	53	5.56	0.00	0	0.00	0.00	0	0.00	0	0	0.00
L	1, 2, 5, 7, 13, 14, 15, 19, 21, 24	2.05	3	50	3.00	0.05	84	3.55	0.05	100	1.80	5.93	56	5.90	0.00	0	0.00	0.00	0	0.00	0	0	0.00
M	1, 2, 5, 6, 9, 13, 12, 25, 26, 27	2.02	2	25	1.50	0.05	84	3.55	0.00	0	0.00	2.53	16	1.67	0.00	0	0.00	0.00	0	0.00	0	0	0.00
O	1, 2, 5, 6, 9, 14, 15, 19, 20, 22, 27	2.08	4	75	4.50	0.05	84	3.55	0.00	0	0.00	6.80	66	6.98	0.00	0	0.00	0.00	0	0.00	0	0	0.00
P	1, 2, 5, 6, 9, 14, 15, 19, 20, 23, 24	2.08	5	100	6.00	0.05	84	3.55	0.05	100	1.80	7.06	70	7.32	0.00	0	0.00	0.00	0	0.00	0	0	0.00
Q	1, 2, 5, 6, 9, 14, 15, 19, 21, 23, 22, 27	2.14	2	25	1.50	0.05	84	3.55	0.00	0	0.00	5.66	53	5.56	0.00	0	0.00	0.00	0	0.00	0	0	0.00
R	1, 2, 5, 6, 9, 14, 15, 19, 21, 24	2.06	3	50	3.00	0.05	84	3.55	0.05	100	1.80	5.93	56	5.90	0.00	0	0.00	0.00	0	0.00	0	0	0.00
T	1, 2, 5, 6, 8, 10, 15, 19, 20, 22, 27	2.16	4	75	4.50	0.05	84	3.55	0.00	0	0.00	7.19	71	7.47	0.00	0	0.00	0.00	0	0.00	0	0	0.00
U	1, 2, 5, 6, 8, 10, 15, 19, 20, 23, 24	2.17	5	100	6.00	0.05	84	3.55	0.05	100	1.80	7.46	74	7.81	0.00	0	0.00	0.00	0	0.00	0	0	0.00
V	1, 2, 5, 6, 8, 10, 15, 19, 21, 23, 22, 27	2.22	2	25	1.50	0.05	84	3.55	0.00	0	0.00	6.05	58	6.05	0.00	0	0.00	0.00	0	0.00	0	0	0.00
W	1, 2, 5, 6, 8, 10, 15, 19, 21, 24	2.14	3	50	3.00	0.05	84	3.55	0.05	100	1.80	6.32	61	6.39	0.00	0	0.00	0.00	0	0.00	0	0	0.00
AC	1, 3, 8, 9, 13, 12, 25, 26, 27	2.23	1	0	0.00	0.00	0	0.00	0.00	0	0.00	1.55	4	0.45	0.00	0	0.00	0.00	0	0.00	0	0	0.00
AE	1, 3, 8, 9, 14, 15, 19, 20, 22, 27	2.30	3	50	3.00	0.00	0	0.00	0.00	0	0.00	5.82	55	5.77	0.00	0	0.00	0.00	0	0.00	0	0	0.00
AF	1, 3, 8, 9, 14, 15, 19, 20, 23, 24	2.30	4	75	4.50	0.00	0	0.00	0.05	100	1.80	6.09	58	6.10	0.00	0	0.00	0.00	0	0.00	0	0	0.00
AG	1, 3, 8, 9, 14, 15, 19, 21, 23, 22, 27	2.36	1	0	0.00	0.00	0	0.00	0.00	0	0.00	4.68	41	4.35	0.00	0	0.00	0.00	0	0.00	0	0	0.00
AH	1, 3, 8, 9, 14, 15, 19, 21, 24	2.28	2	25	1.50	0.00	0	0.00	0.05	100	1.80	4.95	45	4.68	0.00	0	0.00	0.00	0	0.00	0	0	0.00
AI	1, 3, 10, 14, 13, 12, 25, 26, 27	2.27	1	0	0.00	0.00	0	0.00	0.00	0	0.00	1.19	0	0.00	0.00	0	0.00	0.00	0	0.00	0	0	0.00
AK	1, 3, 10, 15, 19, 20, 22, 27	2.07	3	50	3.00	0.00	0	0.00	0.00	0	0.00	5.46	51	5.32	0.00	0	0.00	0.00	0	0.00	0	0	0.00
AL	1, 3, 10, 15, 19, 20, 23, 24	2.08	4	75	4.50	0.00	0	0.00	0.05	100	1.80	5.73	54	5.66	0.00	0	0.00	0.00	0	0.00	0	0	0.00
AM	1, 3, 10, 15, 19, 21, 23, 22, 27	2.13	1	0	0.00	0.00	0	0.00	0.00	0	0.00	4.32	37	3.90	0.00	0	0.00	0.00	0	0.00	0	0	0.00
AN	1, 3, 10, 15, 19, 21, 24	2.05	2	25	1.50	0.00	0	0.00	0.05	100	1.80	4.59	40	4.23	0.00	0	0.00	0.00	0	0.00	0	0	0.00
Min			1	--	--	0.00	--	--	0.00	--	--	1.19	--	--	0.0	--	--	0.00	--	--	0	--	--
Max			5	--	--	0.06	--	--	0.05	--	--	9.62	--	--	0.0	--	--	0.00	--	--	0	--	--
Range			4	--	--	0.06	--	--	0.05	--	--	8.43	--	--	0.0	--	--	0.00	--	--	0	--	--
Criteria Description:			National Hydrography Dataset perennial (46006) and intermittent (46003) streams. Visually inspected other stream categories for evidence of stream channel on aerial. Stream feature presence verified during field reconnaissance where possible.			National Wetland Inventory Data PFO and PSS wetlands. Wetland feature presence not verified during field reconnaissance.			National Wetland Inventory Data PEM, PAB, PUB and Riverine wetlands. Wetland feature presence not verified during field reconnaissance.			Forested land digitized from most recent Aerial Imagery (NAIP).			FEMA Flood Hazard Dataset features that have a determined flood zone sub-type as Floodway.			FEMA Flood Hazard Dataset features that have a determined flood zone type as A.			1000 ft buffer of centerline that intersects federal and state threatened and endangered species polygons.		

Table 3. Weighted Results Table

Route	Segments	Route Length (mi)	LAND USE CRITERIA GROUP																	
			Institutional Land Use						Sensitive Areas						Agriculture & Industrial Uses			Easement Required		
			Institutional uses within ROW (count)			Institutional uses within 1,000 feet of ROW (count)			Sensitive areas within ROW (acres)			Sensitive areas within 1,000 feet of ROW (acres)			Agricultural and Industrial land use in ROW (acres)			New easement required (acres)		
	Criteria Group Weight:		35%			35%			35%			35%			35%			35%		
	Criteria Weight:		15%			15%			20%			20%			5%			10%		
	Sub-Criteria Weight:		70%			30%			70%			30%			100%			100%		
	Weighted Multiplier:		0.0368			0.0158			0.0490			0.0210			0.0175			0.0350		
			Value	Normalized	Weighted Value	Value	Normalized	Weighted Value	Value	Normalized	Weighted Value	Value	Normalized	Weighted Value	Value	Normalized	Weighted Value	Value	Normalized	Weighted Value
ROUTES																				
A	1, 2, 4, 12, 25, 26, 27	1.99	0	0	0.00	5	100	1.58	0.00	0	0.00	17.06	100	2.10	13.33	23	0.40	15.15	36	1.26
C	1, 2, 4, 13, 14, 15, 19, 20, 22, 27	2.37	1	100	3.68	3	33	0.53	0.00	0	0.00	17.06	100	2.10	17.56	74	1.30	24.90	90	3.14
D	1, 2, 4, 13, 14, 15, 19, 20, 23, 24	2.37	1	100	3.68	3	33	0.53	0.00	0	0.00	17.06	100	2.10	18.24	83	1.44	26.78	100	3.50
E	1, 2, 4, 13, 14, 15, 19, 21, 23, 22, 27	2.43	1	100	3.68	3	33	0.53	0.00	0	0.00	17.06	100	2.10	18.33	84	1.46	25.36	92	3.23
F	1, 2, 4, 13, 14, 15, 19, 21, 24	2.35	0	0	0.00	4	67	1.05	0.00	0	0.00	17.06	100	2.10	18.42	85	1.48	26.24	97	3.39
G	1, 2, 5, 7, 12, 25, 26, 27	1.69	0	0	0.00	4	67	1.05	0.00	0	0.00	0.71	4	0.09	11.48	0	0.00	8.58	0	0.00
I	1, 2, 5, 7, 13, 14, 15, 19, 20, 22, 27	2.07	1	100	3.68	2	0	0.00	0.00	0	0.00	0.71	4	0.09	15.68	51	0.90	18.32	54	1.87
J	1, 2, 5, 7, 13, 14, 15, 19, 20, 23, 24	2.07	1	100	3.68	2	0	0.00	0.00	0	0.00	0.71	4	0.09	16.36	60	1.04	20.21	64	2.24
K	1, 2, 5, 7, 13, 14, 15, 19, 21, 23, 22, 27	2.13	1	100	3.68	2	0	0.00	0.00	0	0.00	0.71	4	0.09	16.46	61	1.06	18.78	56	1.96
L	1, 2, 5, 7, 13, 14, 15, 19, 21, 24	2.05	0	0	0.00	3	33	0.53	0.00	0	0.00	0.71	4	0.09	16.54	62	1.08	19.66	61	2.13
M	1, 2, 5, 6, 9, 13, 12, 25, 26, 27	2.02	0	0	0.00	4	67	1.05	0.00	0	0.00	0.00	0	0.00	15.44	48	0.85	14.10	30	1.06
O	1, 2, 5, 6, 9, 14, 15, 19, 20, 22, 27	2.08	1	100	3.68	2	0	0.00	0.00	0	0.00	0.00	0	0.00	15.82	53	0.93	21.20	69	2.43
P	1, 2, 5, 6, 9, 14, 15, 19, 20, 23, 24	2.08	1	100	3.68	2	0	0.00	0.00	0	0.00	0.00	0	0.00	16.50	61	1.07	23.09	80	2.79
Q	1, 2, 5, 6, 9, 14, 15, 19, 21, 23, 22, 27	2.14	1	100	3.68	2	0	0.00	0.00	0	0.00	0.00	0	0.00	16.59	62	1.09	21.66	72	2.52
R	1, 2, 5, 6, 9, 14, 15, 19, 21, 24	2.06	0	0	0.00	3	33	0.53	0.00	0	0.00	0.00	0	0.00	16.68	64	1.11	22.54	77	2.68
T	1, 2, 5, 6, 8, 10, 15, 19, 20, 22, 27	2.16	1	100	3.68	2	0	0.00	0.00	0	0.00	0.00	0	0.00	16.82	65	1.14	20.65	66	2.32
U	1, 2, 5, 6, 8, 10, 15, 19, 20, 23, 24	2.17	1	100	3.68	2	0	0.00	0.00	0	0.00	0.00	0	0.00	17.50	73	1.29	22.54	77	2.68
V	1, 2, 5, 6, 8, 10, 15, 19, 21, 23, 22, 27	2.22	1	100	3.68	2	0	0.00	0.00	0	0.00	0.00	0	0.00	17.59	75	1.30	21.11	69	2.41
W	1, 2, 5, 6, 8, 10, 15, 19, 21, 24	2.14	0	0	0.00	3	33	0.53	0.00	0	0.00	0.00	0	0.00	17.68	76	1.32	22.00	74	2.58
AC	1, 3, 8, 9, 13, 12, 25, 26, 27	2.23	0	0	0.00	4	67	1.05	0.00	0	0.00	0.00	0	0.00	18.43	85	1.48	17.11	47	1.64
AE	1, 3, 8, 9, 14, 15, 19, 20, 22, 27	2.30	1	100	3.68	2	0	0.00	0.00	0	0.00	0.00	0	0.00	18.81	90	1.57	24.21	86	3.01
AF	1, 3, 8, 9, 14, 15, 19, 20, 23, 24	2.30	1	100	3.68	2	0	0.00	0.00	0	0.00	0.00	0	0.00	19.49	98	1.71	26.10	96	3.37
AG	1, 3, 8, 9, 14, 15, 19, 21, 23, 22, 27	2.36	1	100	3.68	2	0	0.00	0.00	0	0.00	0.00	0	0.00	19.58	99	1.73	24.67	88	3.09
AH	1, 3, 8, 9, 14, 15, 19, 21, 24	2.28	0	0	0.00	3	33	0.53	0.00	0	0.00	0.00	0	0.00	19.67	100	1.75	25.55	93	3.26
AI	1, 3, 10, 14, 13, 12, 25, 26, 27	2.27	0	0	0.00	4	67	1.05	0.00	0	0.00	0.00	0	0.00	18.88	90	1.58	15.93	40	1.41
AK	1, 3, 10, 15, 19, 20, 22, 27	2.07	1	100	3.68	2	0	0.00	0.00	0	0.00	0.00	0	0.00	16.08	56	0.98	19.87	62	2.17
AL	1, 3, 10, 15, 19, 20, 23, 24	2.08	1	100	3.68	2	0	0.00	0.00	0	0.00	0.00	0	0.00	16.77	65	1.13	21.76	72	2.53
AM	1, 3, 10, 15, 19, 21, 23, 22, 27	2.13	1	100	3.68	2	0	0.00	0.00	0	0.00	0.00	0	0.00	16.85	66	1.15	20.33	65	2.26
AN	1, 3, 10, 15, 19, 21, 24	2.05	0	0	0.00	3	33	0.53	0.00	0	0.00	0.00	0	0.00	16.94	67	1.17	21.21	69	2.43
Min			0	--	--	2	--	--	0.00	--	--	0	--	--	11.48	--	--	8.58	--	--
Max			1	--	--	5	--	--	0.00	--	--	17	--	--	19.67	--	--	26.78	--	--
Range			1	--	--	3	--	--	0.00	--	--	17	--	--	8.19	--	--	18.21	--	--
	Criteria Description:		Schools, hospitals, churches, child care institutional land uses within ROW. For example, two buildings in a school complex would be counted as one. Institutions were verified during field reconnaissance.			Schools, hospitals, churches, child care institutional land uses within 1000 ft of centerline. For example, two buildings in a school complex would be counted as one. Institutions were verified during field reconnaissance.			Parks, preserves, trails, agency-managed areas, golf courses and airport property within ROW. Included public library. Confirm with Duke.			Parks, preserves, trails, agency-managed areas, golf courses, and airport property within 1,000 feet of ROW. Included public library. Confirm with Duke.			Agricultural and Industrial land use was determined NAIP imagery.			Total ROW area. Variable width ROW along exiting transmission and roadways.		

Table 3. Weighted Results Table

Route	Segments	Route Length (mi)	LAND USE CRITERIA GROUP														
			Residences									Business/Commercial/Industrial			Properties Crossed		
			Residential buildings within ROW (count)			Residential buildings within 200 feet of edge of ROW (count)			Residential buildings within 200-500 feet of edge of ROW (count)			Business, Commercial, and Industrial Buildings within 250 Feet of Centerline			Properties with unique ownership crossed by ROW (count)		
	Criteria Group Weight:		**35%**			**35%**			**35%**			**35%**			**35%**		
	Criteria Weight:		**25%**			**25%**			**25%**			**15%**			**10%**		
	Sub-Criteria Weight:		**0%**			**60%**			**40%**			**100%**			**100%**		
	Weighted Multiplier:		**0.0000**			**0.0525**			**0.0350**			**0.0525**			**0.0350**		
			Value	Normalized	Weighted Value	Value	Normalized	Weighted Value	Value	Normalized	Weighted Value	Value	Normalized	Weighted Value	Value	Normalized	Weighted Value
ROUTES																	
A	1, 2, 4, 12, 25, 26, 27	1.99	0	0	0.00	3	50	2.63	3	7	0.25	23	100	5.25	24	70	2.45
C	1, 2, 4, 13, 14, 15, 19, 20, 22, 27	2.37	0	0	0.00	2	0	0.00	2	0	0.00	21	71	3.75	24	70	2.45
D	1, 2, 4, 13, 14, 15, 19, 20, 23, 24	2.37	0	0	0.00	4	100	5.25	16	100	3.50	19	43	2.25	27	100	3.50
E	1, 2, 4, 13, 14, 15, 19, 21, 23, 22, 27	2.43	0	0	0.00	2	0	0.00	2	0	0.00	22	86	4.50	25	80	2.80
F	1, 2, 4, 13, 14, 15, 19, 21, 24	2.35	0	0	0.00	4	100	5.25	16	100	3.50	20	57	3.00	25	80	2.80
G	1, 2, 5, 7, 12, 25, 26, 27	1.69	0	0	0.00	3	50	2.63	3	7	0.25	21	71	3.75	21	40	1.40
I	1, 2, 5, 7, 13, 14, 15, 19, 20, 22, 27	2.07	0	0	0.00	2	0	0.00	2	0	0.00	19	43	2.25	21	40	1.40
J	1, 2, 5, 7, 13, 14, 15, 19, 20, 23, 24	2.07	0	0	0.00	4	100	5.25	16	100	3.50	17	14	0.75	24	70	2.45
K	1, 2, 5, 7, 13, 14, 15, 19, 21, 23, 22, 27	2.13	0	0	0.00	2	0	0.00	2	0	0.00	20	57	3.00	22	50	1.75
L	1, 2, 5, 7, 13, 14, 15, 19, 21, 24	2.05	0	0	0.00	4	100	5.25	16	100	3.50	18	29	1.50	22	50	1.75
M	1, 2, 5, 6, 9, 13, 12, 25, 26, 27	2.02	0	0	0.00	3	50	2.63	3	7	0.25	21	71	3.75	22	50	1.75
O	1, 2, 5, 6, 9, 14, 15, 19, 20, 22, 27	2.08	0	0	0.00	2	0	0.00	2	0	0.00	18	29	1.50	22	50	1.75
P	1, 2, 5, 6, 9, 14, 15, 19, 20, 23, 24	2.08	0	0	0.00	4	100	5.25	16	100	3.50	16	0	0.00	25	80	2.80
Q	1, 2, 5, 6, 9, 14, 15, 19, 21, 23, 22, 27	2.14	0	0	0.00	2	0	0.00	2	0	0.00	19	43	2.25	23	60	2.10
R	1, 2, 5, 6, 9, 14, 15, 19, 21, 24	2.06	0	0	0.00	4	100	5.25	16	100	3.50	17	14	0.75	23	60	2.10
T	1, 2, 5, 6, 8, 10, 15, 19, 20, 22, 27	2.16	0	0	0.00	2	0	0.00	2	0	0.00	18	29	1.50	20	30	1.05
U	1, 2, 5, 6, 8, 10, 15, 19, 20, 23, 24	2.17	0	0	0.00	4	100	5.25	16	100	3.50	16	0	0.00	23	60	2.10
V	1, 2, 5, 6, 8, 10, 15, 19, 21, 23, 22, 27	2.22	0	0	0.00	2	0	0.00	2	0	0.00	19	43	2.25	21	40	1.40
W	1, 2, 5, 6, 8, 10, 15, 19, 21, 24	2.14	0	0	0.00	4	100	5.25	16	100	3.50	17	14	0.75	21	40	1.40
AC	1, 3, 8, 9, 13, 12, 25, 26, 27	2.23	0	0	0.00	3	50	2.63	3	7	0.25	22	86	4.50	20	30	1.05
AE	1, 3, 8, 9, 14, 15, 19, 20, 22, 27	2.30	0	0	0.00	2	0	0.00	2	0	0.00	19	43	2.25	20	30	1.05
AF	1, 3, 8, 9, 14, 15, 19, 20, 23, 24	2.30	0	0	0.00	4	100	5.25	16	100	3.50	17	14	0.75	23	60	2.10
AG	1, 3, 8, 9, 14, 15, 19, 21, 23, 22, 27	2.36	0	0	0.00	2	0	0.00	2	0	0.00	20	57	3.00	21	40	1.40
AH	1, 3, 8, 9, 14, 15, 19, 21, 24	2.28	0	0	0.00	4	100	5.25	16	100	3.50	18	29	1.50	21	40	1.40
AI	1, 3, 10, 14, 13, 12, 25, 26, 27	2.27	0	0	0.00	3	50	2.63	3	7	0.25	22	86	4.50	20	30	1.05
AK	1, 3, 10, 15, 19, 20, 22, 27	2.07	0	0	0.00	2	0	0.00	2	0	0.00	18	29	1.50	17	0	0.00
AL	1, 3, 10, 15, 19, 20, 23, 24	2.08	0	0	0.00	4	100	5.25	16	100	3.50	16	0	0.00	20	30	1.05
AM	1, 3, 10, 15, 19, 21, 23, 22, 27	2.13	0	0	0.00	2	0	0.00	2	0	0.00	19	43	2.25	18	10	0.35
AN	1, 3, 10, 15, 19, 21, 24	2.05	0	0	0.00	4	100	5.25	16	100	3.50	17	14	0.75	18	10	0.35
Min			0	--	--	2	--	--	2	--	--	16	--	--	17	--	--
Max			0	--	--	4	--	--	16	--	--	23	--	--	27	--	--
Range			0	--	--	2	--	--	14	--	--	7	--	--	10	--	--
Criteria Description:			Occupied single family and multi-family residential dwellings. Dwelling type was verified during field reconnaissance.			Occupied single family and multi-family residential dwellings. Dwelling type was verified during field reconnaissance.			Occupied single family and multi-family residential dwellings. Dwelling type was verified during field reconnaissance.			Structure type was verified during field reconnaissance.			Parcels that intersect the ROW dissolved by owner (one owner with multiple parcels counted once).		

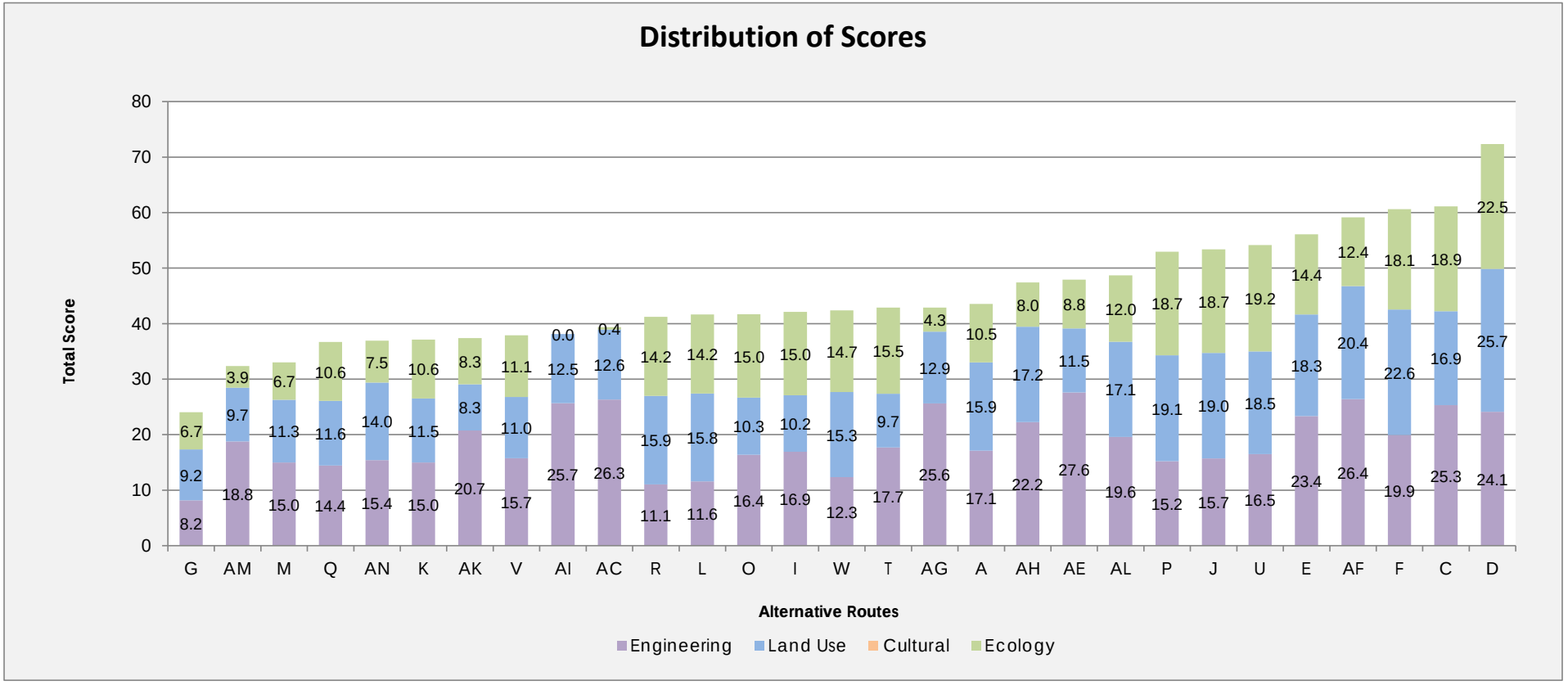
Table 3. Weighted Results Table

Route	Segments	Route Length (mi)	CULTURAL CRITERIA GROUP											
			NRHP Listed Resources			State Listed Resources			Archaeological Sites			Cemeteries		
			NRHP listed resources within 1,000 feet of centerline (count)			State listed resources within 1,000 feet of centerline (count)			Known archaeological sites within ROW (count)			Cemeteries within ROW (count)		
	Criteria Group Weight:		0%			0%			0%			0%		
	Criteria Weight:		40%			30%			15%			15%		
	Sub-Criteria Weight:		100%			100%			100%			100%		
	Weighted Multiplier:		0.0000			0.0000			0.0000			0.0000		
			Value	Normalized	Weighted Value	Value	Normalized	Weighted Value	Value	Normalized	Weighted Value	Value	Normalized	Weighted Value
ROUTES														
A	1, 2, 4, 12, 25, 26, 27	1.99	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
C	1, 2, 4, 13, 14, 15, 19, 20, 22, 27	2.37	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
D	1, 2, 4, 13, 14, 15, 19, 20, 23, 24	2.37	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
E	1, 2, 4, 13, 14, 15, 19, 21, 23, 22, 27	2.43	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
F	1, 2, 4, 13, 14, 15, 19, 21, 24	2.35	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
G	1, 2, 5, 7, 12, 25, 26, 27	1.69	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
I	1, 2, 5, 7, 13, 14, 15, 19, 20, 22, 27	2.07	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
J	1, 2, 5, 7, 13, 14, 15, 19, 20, 23, 24	2.07	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
K	1, 2, 5, 7, 13, 14, 15, 19, 21, 23, 22, 27	2.13	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
L	1, 2, 5, 7, 13, 14, 15, 19, 21, 24	2.05	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
M	1, 2, 5, 6, 9, 13, 12, 25, 26, 27	2.02	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
O	1, 2, 5, 6, 9, 14, 15, 19, 20, 22, 27	2.08	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
P	1, 2, 5, 6, 9, 14, 15, 19, 20, 23, 24	2.08	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
Q	1, 2, 5, 6, 9, 14, 15, 19, 21, 23, 22, 27	2.14	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
R	1, 2, 5, 6, 9, 14, 15, 19, 21, 24	2.06	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
T	1, 2, 5, 6, 8, 10, 15, 19, 20, 22, 27	2.16	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
U	1, 2, 5, 6, 8, 10, 15, 19, 20, 23, 24	2.17	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
V	1, 2, 5, 6, 8, 10, 15, 19, 21, 23, 22, 27	2.22	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
W	1, 2, 5, 6, 8, 10, 15, 19, 21, 24	2.14	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
AC	1, 3, 8, 9, 13, 12, 25, 26, 27	2.23	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
AE	1, 3, 8, 9, 14, 15, 19, 20, 22, 27	2.30	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
AF	1, 3, 8, 9, 14, 15, 19, 20, 23, 24	2.30	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
AG	1, 3, 8, 9, 14, 15, 19, 21, 23, 22, 27	2.36	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
AH	1, 3, 8, 9, 14, 15, 19, 21, 24	2.28	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
AI	1, 3, 10, 14, 13, 12, 25, 26, 27	2.27	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
AK	1, 3, 10, 15, 19, 20, 22, 27	2.07	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
AL	1, 3, 10, 15, 19, 20, 23, 24	2.08	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
AM	1, 3, 10, 15, 19, 21, 23, 22, 27	2.13	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
AN	1, 3, 10, 15, 19, 21, 24	2.05	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
Min			0	--	--	0	--	--	0	--	--	0	--	--
Max			0	--	--	0	--	--	0	--	--	0	--	--
Range			0	--	--	0	--	--	0	--	--	0	--	--
Criteria Description:			National Register of historic places data. Sites need to be listed to qualify for this calculation. Weller data request.			Weller data request.			Weller data request.			Weller data request.		

Table 3. Weighted Results Table

Route	Segments	Route Length (mi)	ENGINEERING CRITERIA GROUP																	
			Route Length			Highway and Rail Crossings			Steep Slopes			Turn Angles			Span Length			Other Linear Utilities			Paralleling Existing Transmission		
			Route length (feet)			Highway or railroad crossings (count)			Route length with slope >20% (feet)			Turn angles > 20 degrees (count)			Span length in excess of 400 feet (feet)			Other Linear Utilities within Proposed ROW			Percentage of line not paralleling existing transmission ROW		
	Criteria Group Weight:		**35%**			**35%**			**35%**			**35%**			**35%**			**35%**			**35%**		
	Criteria Weight:		**20%**			**10%**			**15%**			**20%**			**5%**			**20%**			**10%**		
	Sub-Criteria Weight:		**100%**			**100%**			**100%**			**100%**			**100%**			**100%**			**100%**		
	Weighted Multiplier:		**0.0700**			**0.0350**			**0.0525**			**0.0700**			**0.0175**			**0.0700**			**0.0350**		
			Value	Normalized	Weighted Value	Value	Normalized	Weighted Value	Value	Normalized	Weighted Value	Value	Normalized	Weighted Value	Value	Normalized	Weighted Value	Value	Normalized	Weighted Value	Value	Normalized	Weighted Value
ROUTES																							
A	1, 2, 4, 12, 25, 26, 27	1.99	10,506	41	2.85	4	100	3.50	1926	42	2.19	10	43	3.00	517	100	1.75	5280.7	30	2.08	51.0	49	1.73
C	1, 2, 4, 13, 14, 15, 19, 20, 22, 27	2.37	12,516	92	6.42	2	0	0.00	2335	59	3.11	17	93	6.50	285	44	0.77	7511.4	77	5.39	85.1	89	3.11
D	1, 2, 4, 13, 14, 15, 19, 20, 23, 24	2.37	12,535	92	6.46	2	0	0.00	2095	49	2.57	18	100	7.00	285	44	0.77	6518.2	56	3.92	91.6	96	3.38
E	1, 2, 4, 13, 14, 15, 19, 21, 23, 22, 27	2.43	12,840	100	7.00	2	0	0.00	2296	58	3.03	16	86	6.00	285	44	0.77	6190.3	49	3.43	85.5	89	3.13
F	1, 2, 4, 13, 14, 15, 19, 21, 24	2.35	12,420	89	6.25	2	0	0.00	2055	47	2.48	15	79	5.50	285	44	0.77	4928.9	22	1.56	91.5	96	3.37
G	1, 2, 5, 7, 12, 25, 26, 27	1.69	8,901	0	0.00	4	100	3.50	1978	44	2.31	4	0	0.00	334	56	0.98	4813.3	20	1.39	8.6	0	0.00
I	1, 2, 5, 7, 13, 14, 15, 19, 20, 22, 27	2.07	10,911	51	3.57	2	0	0.00	2387	62	3.23	11	50	3.50	102	0	0.00	7044.0	67	4.70	55.5	55	1.91
J	1, 2, 5, 7, 13, 14, 15, 19, 20, 23, 24	2.07	10,930	52	3.61	2	0	0.00	2147	51	2.69	12	57	4.00	102	0	0.00	6050.7	46	3.22	63.0	63	2.21
K	1, 2, 5, 7, 13, 14, 15, 19, 21, 23, 22, 27	2.13	11,235	59	4.15	2	0	0.00	2348	60	3.14	10	43	3.00	102	0	0.00	5722.8	39	2.74	56.8	56	1.96
L	1, 2, 5, 7, 13, 14, 15, 19, 21, 24	2.05	10,815	49	3.40	2	0	0.00	2108	50	2.60	9	36	2.50	102	0	0.00	4461.5	12	0.87	62.6	63	2.20
M	1, 2, 5, 6, 9, 13, 12, 25, 26, 27	2.02	10,646	44	3.10	4	100	3.50	1832	38	1.98	6	14	1.00	334	56	0.98	5908.2	43	3.01	42.9	40	1.39
O	1, 2, 5, 6, 9, 14, 15, 19, 20, 22, 27	2.08	10,976	53	3.69	2	0	0.00	1897	41	2.13	12	57	4.00	102	0	0.00	6459.1	55	3.83	76.0	78	2.74
P	1, 2, 5, 6, 9, 14, 15, 19, 20, 23, 24	2.08	10,995	53	3.72	2	0	0.00	1657	30	1.59	13	64	4.50	102	0	0.00	5465.9	34	2.36	83.4	87	3.04
Q	1, 2, 5, 6, 9, 14, 15, 19, 21, 23, 22, 27	2.14	11,300	61	4.26	2	0	0.00	1858	39	2.04	11	50	3.50	102	0	0.00	5138.0	27	1.87	76.7	79	2.77
R	1, 2, 5, 6, 9, 14, 15, 19, 21, 24	2.06	10,880	50	3.52	2	0	0.00	1618	29	1.50	10	43	3.00	102	0	0.00	3876.7	0	0.00	83.2	87	3.03
T	1, 2, 5, 6, 8, 10, 15, 19, 20, 22, 27	2.16	11,414	64	4.47	2	0	0.00	1231	12	0.63	14	71	5.00	102	0	0.00	7118.4	69	4.81	76.9	79	2.78
U	1, 2, 5, 6, 8, 10, 15, 19, 20, 23, 24	2.17	11,433	64	4.50	2	0	0.00	991	2	0.09	15	79	5.50	102	0	0.00	6125.2	48	3.34	84.0	88	3.07
V	1, 2, 5, 6, 8, 10, 15, 19, 21, 23, 22, 27	2.22	11,738	72	5.04	2	0	0.00	1192	10	0.54	13	64	4.50	102	0	0.00	5797.3	41	2.85	77.6	80	2.80
W	1, 2, 5, 6, 8, 10, 15, 19, 21, 24	2.14	11,318	61	4.30	2	0	0.00	952	0	0.00	12	57	4.00	102	0	0.00	4536.0	14	0.98	83.9	87	3.06
AC	1, 3, 8, 9, 13, 12, 25, 26, 27	2.23	11,795	73	5.14	4	100	3.50	3219	97	5.10	11	50	3.50	334	56	0.98	7974.9	87	6.08	58.4	58	2.03
AE	1, 3, 8, 9, 14, 15, 19, 20, 22, 27	2.30	12,125	82	5.73	2	0	0.00	3284	100	5.25	17	93	6.50	102	0	0.00	8525.8	99	6.90	88.0	92	3.23
AF	1, 3, 8, 9, 14, 15, 19, 20, 23, 24	2.30	12,144	82	5.76	2	0	0.00	3043	90	4.71	18	100	7.00	102	0	0.00	7532.6	77	5.42	94.6	100	3.50
AG	1, 3, 8, 9, 14, 15, 19, 21, 23, 22, 27	2.36	12,449	90	6.31	2	0	0.00	3245	98	5.16	16	86	6.00	102	0	0.00	7204.7	71	4.94	88.3	93	3.24
AH	1, 3, 8, 9, 14, 15, 19, 21, 24	2.28	12,029	79	5.56	2	0	0.00	3004	88	4.62	15	79	5.50	102	0	0.00	5943.3	44	3.07	94.6	100	3.50
AI	1, 3, 10, 14, 13, 12, 25, 26, 27	2.27	11,988	78	5.49	4	100	3.50	3013	88	4.64	8	29	2.00	334	56	0.98	8596.0	100	7.00	59.1	59	2.05
AK	1, 3, 10, 15, 19, 20, 22, 27	2.07	10,934	52	3.61	2	0	0.00	2361	60	3.17	14	71	5.00	102	0	0.00	7773.8	83	5.78	86.7	91	3.17
AL	1, 3, 10, 15, 19, 20, 23, 24	2.08	10,980	53	3.70	2	0	0.00	2121	50	2.63	15	79	5.50	102	0	0.00	6780.6	62	4.31	93.8	99	3.47
AM	1, 3, 10, 15, 19, 21, 23, 22, 27	2.13	11,258	60	4.19	2	0	0.00	2322	59	3.09	13	64	4.50	102	0	0.00	6452.7	55	3.82	87.0	91	3.19
AN	1, 3, 10, 15, 19, 21, 24	2.05	10,838	49	3.44	2	0	0.00	2082	48	2.54	12	57	4.00	102	0	0.00	5191.3	28	1.95	94.0	99	3.47
Min			8901	--	--	2	--	--	952	--	--	4	--	--	102	--	--	3876.7	--	--	8.6	--	--
Max			12840	--	--	4	--	--	3284	--	--	18	--	--	517	--	--	8596.0	--	--	94.6	--	--
Range			3939	--	--	2	--	--	2331	--	--	14	--	--	415	--	--	4719.3	--	--	86.0	--	--
Criteria Description:			Length determine by route centerline.						Slopes were derived from Lidar elevation data. Elevation data was converted into percent slope and then summarized by if it was greater that 20%.			Turn angles were measured at each point of inflection along the route.			Crossing a river, highway, or other access-limited area. This number should be length in feet of span exceeding 400'. For example, a span of 415ft, would be shown in this table as 15.								

Figure 1. Distribution of Quantitative Route Analysis Scores



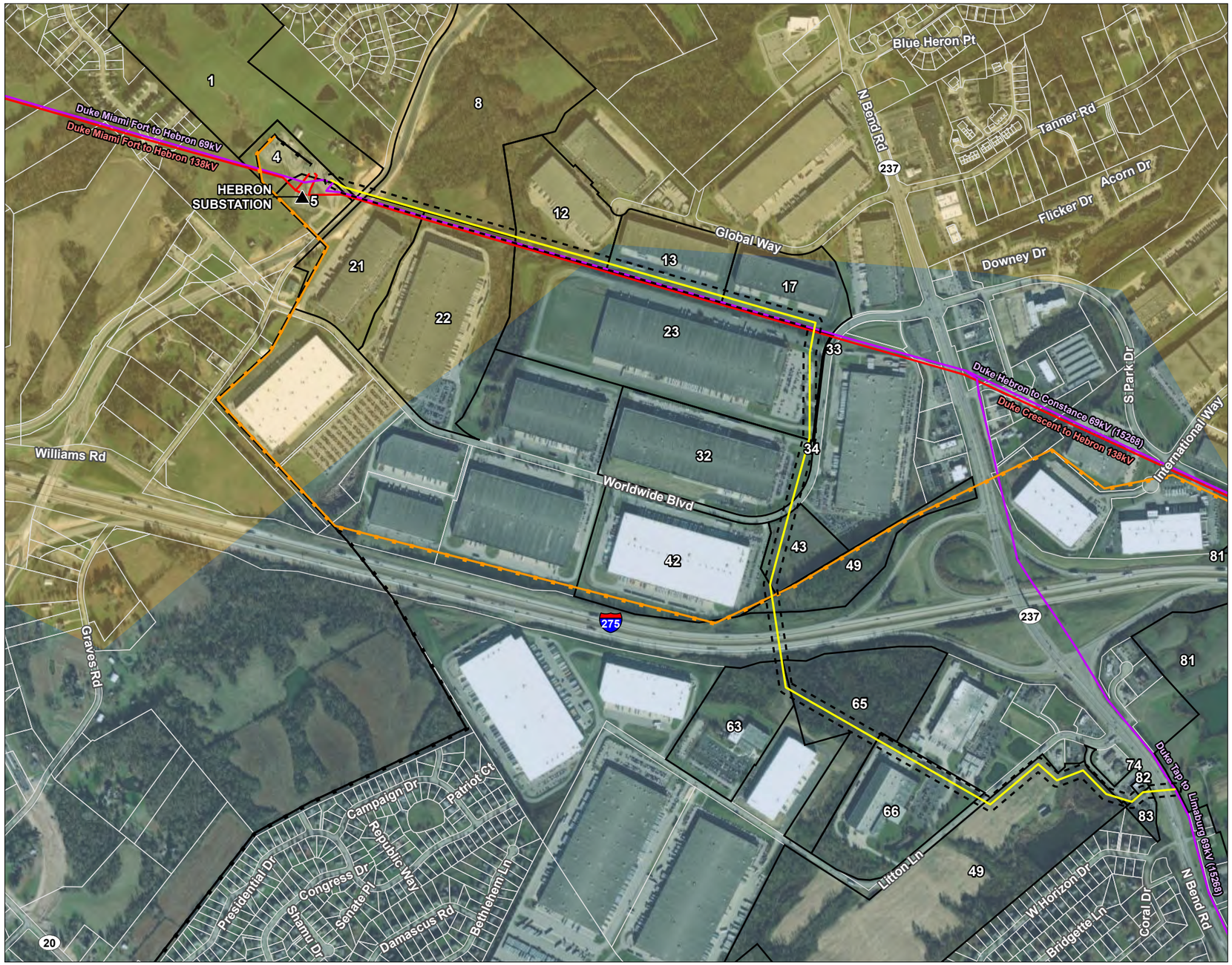


Figure No.
8

Title
Preferred Route rev1

Client/Project 193708666
Duke Energy Kentucky
Hebron to Oakbrook 138 kV Transmission Line Project

Project Location
Boone Co., Kentucky

Prepared by PM on 2022-08-22
TR by BT on 2021-11-09
IR by TR on 2022-09-08

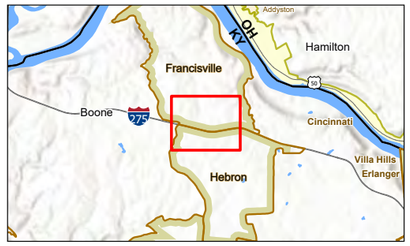
N

0 400 800 Feet
(At original document size of 11x17)
1:9,600

Legend
- Duke-owned Existing Substation
- Duke-owned Existing 69 kV Transmission Line
- Duke-owned Existing 138 kV Transmission Line
- Foreign Owned Existing Transmission Line
- Proposed EKPC Transmission Line
- Hebron to Oakbrook Preferred Route Centerline
- Proposed ROW
- Parcels Impacted by Project (Duke Unq. ID)
- Parcel Boundary

Retail Electric Service Territory
- DUKE ENERGY KENTUCKY
- EAST KENTUCKY POWER COOP, INC

*Exhibit reflects parcels impacted by anticipated ROW associated with preferred route at the time of CPCN submission.



Notes
1. Coordinate System: NAD 1983 StatePlane Kentucky North FIPS 1601 Feet
2. Data Sources: Stantec, Duke, USGS, NADS, PennWell, OSM, USFWS
3. Background: Esri World Imagery

DUKE ENERGY®

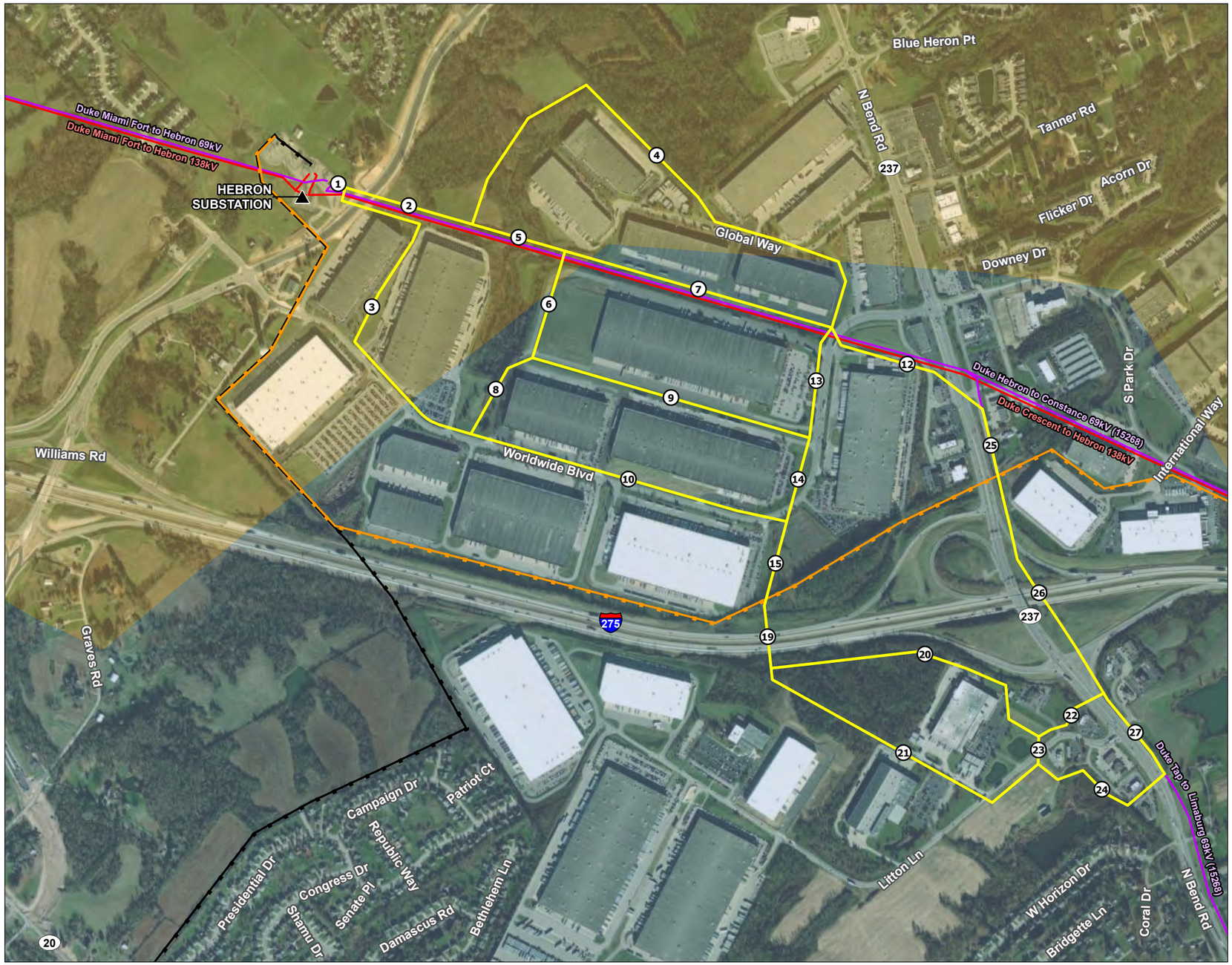


Figure No.
9

Title
Alternative Route Segments rev1

Client/Project 193708666
Duke Energy Kentucky
Hebron to Oakbrook 138 kV Transmission Line Project

Project Location
Boone Co., Kentucky

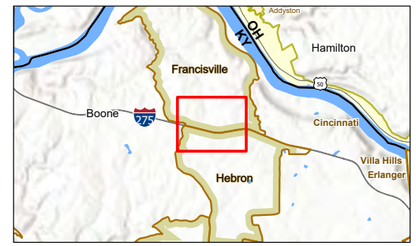
Prepared by PM on 2022-08-23
TR by BT on 2021-11-09
IR by TR on 2022-09-08

N

0 400 800 Feet
(At original document size of 11x17)
1:9,600

Legend
- Duke-owned Existing Substation
- Duke-owned Existing 69 kV Transmission Line
- Duke-owned Existing 138 kV Transmission Line
- Foreign Owned Existing Transmission Line
- Proposed EKPC Transmission Line
- Segment Network

Retail Electric Service Territory
- DUKE ENERGY KENTUCKY
- EAST KENTUCKY POWER COOP, INC



Notes
1. Coordinate System: NAD 1983 StatePlane Kentucky North FIPS 1601 Feet
2. Data Sources: Stantec, Duke, USGS, NADS, PennWell, OSM, EKPC
3. Background: Esri World Imagery

DUKE ENERGY®

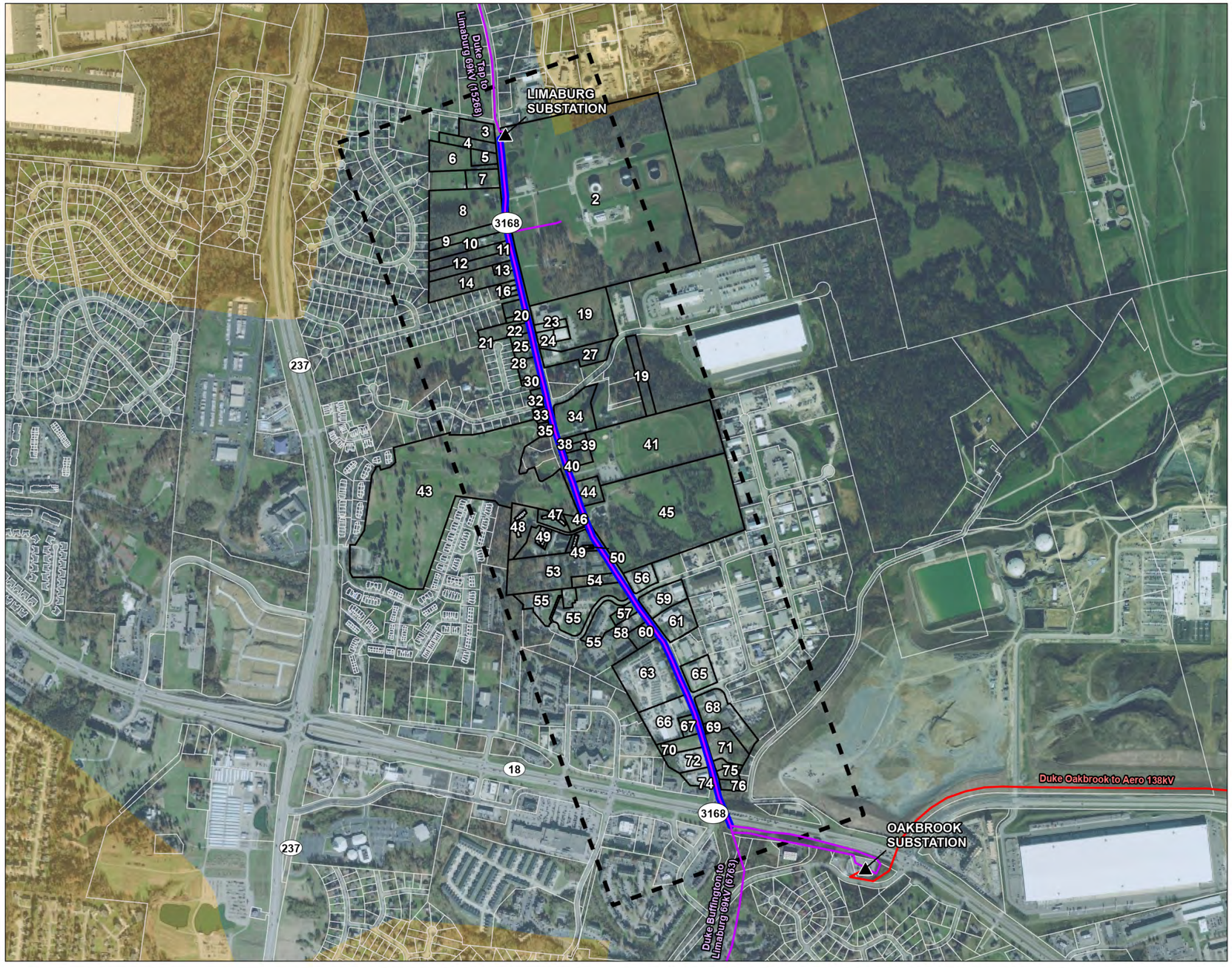


Figure No.
10

Title
Rebuild Area

Client/Project 193708666
Duke Energy Kentucky
Hebron to Oakbrook 138 kV Transmission Line Project

Project Location
Boone Co., Kentucky

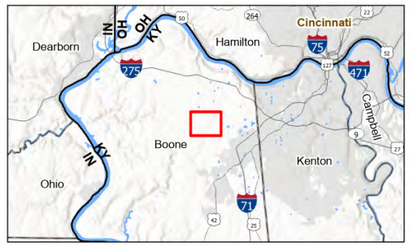
Prepared by PM on 2024-04-03
TR by SE on 2024-04-03
IR by TR on 2024-04-03

N

0 500 1,000 Feet
(At original document size of 11x17)
1:12,000

Legend
- Rebuild Area
- Duke-owned Existing Substation
- Duke-owned Existing 69 kV Transmission Line
- Duke-owned Existing 138 kV Transmission Line
- Rebuild Section
- Parcels Impacted by Project (Duke Unq. ID)
- Parcel Boundary

Retail Electric Service Territory
- DUKE ENERGY KENTUCKY
- EAST KENTUCKY POWER COOP, INC



Notes
1. Coordinate System: NAD 1983 StatePlane Kentucky North FIPS 1601 Feet
2. Data Sources: Stantec, Duke, USGS, NADS, PennWell, OSM, EKPC
3. Background: Esri World Imagery

DUKE ENERGY®

Page 1 of 1

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

The Electronic Application of Duke Energy Kentucky, Inc. for a Certificate of Public Convenience and Necessity to Construct A 138-kV Transmission Line and Associated Facilities in Boone County (Hebron to Oakbrook Transmission Line Project)	)	Case No. 2024-00158

Verified Statement in Accordance with 807 KAR 5:120, Section 2(3)

Dawn M. Fuller, Senior Stakeholder Engagement Manger, being duly sworn, states as follows:

1. The statements contained in this verification are based upon my personal knowledge, or my review of the records of Duke Energy Kentucky, Inc. within the purview of my duties for the Company.

2. The records of the Boone County Property Valuation Administrator, except as corrected or updated upon landowner contact or other research, located within the filing corridor (including the currently proposed right-of-way) for Duke Energy Kentucky, Inc.'s Hebron to Oakbrook Transmission Line Project will cross the property owned by the persons listed in Exhibit 12 of the Application.

3. On May 17, 2024 the persons in Exhibit 13 were mailed the notice as required by 807 KAR 5:120, Section 2(3)(a) – (e):

> *A verified statement that, according to county property valuation administrator records, each property owner over whose property the transmission line right-of-way is proposed to cross has been sent by first-class mail, addressed to the property owner at the owner's address as indicated by the county property valuation administrator records, or hand delivered:*
>
> *(a) Notice of the proposed construction;*

(b) The commission docket number under which the application will be processed and a map showing the proposed route of the line;
(c) The address and telephone number of the executive director of the commission;
(d) A description of his or her rights to request a local public hearing and to request to intervene in the case; and
(e) A description of the project.

4. The form of the notice mailed is attached in Exhibit 13.

FURTHER AFFIANT SAYETH NAUGHT.

Dawn M. Fuller

STATE OF OHIO)
) **SS**
COUNTY OF HAMILTON)

Subscribed and sworn to before me, a Notary Public in and before said County and State, by Dawn M. Fuller this 12 day of June 2024.

Notary Public
My Commission Expires: July 8, 2027

EMILIE SUNDERMAN
Notary Public
State of Ohio
My Comm. Expires
July 8, 2027

Transmission - Public Engagement
EX552 | 315 Main St
Cincinnati, OH 45202
duke-energy.com

May 17, 2024

<<Recipient Name>>
<<Mailing Address>>
<<City, ST ZIP>>

Project Reference: Update about Hebron to Oakbrook Reliability Project, Notice of Proposed Electric Transmission Line Construction Project

Dear Property Owner:

Duke Energy Kentucky, Inc., (Duke Energy) first notified select property owners in November 2022 about a regulatory filing seeking a Certificate of Public Convenience and Necessity for a proposed new electric transmission line project in Boone County. The project is referred to as the Hebron to Oakbrook Reliability Project. We are refiling this application following additional direction from the Kentucky Public Service Commission. The need and description of the project – as well as the engineering – have not changed from our initial filing in 2022, but the project is assigned a new case number.

The Hebron to Oakbrook Reliability Project will upgrade the electric system by building a new 2.1-mile transmission line from Hebron Substation at 2139 Graves Road, in Hebron, Ky., to Route 237.

You are receiving this notice because county property records indicate either the proposed transmission line right-of-way crosses your property, or you own property within the filing corridor.

1. The construction of the proposed transmission line between the Hebron Substation and Route 237 involves the following work:

- The construction of approximately 2.1 miles of transmission line with capacity for 138-kilovolts (kV), but the system will initially be operated at 69-kV.
- The transmission line will be supported by approximately 40 steel poles with an average above-ground height of 80-100 feet.
- The distance between poles will run an average of 200 to 400 feet.
- Right-of-way width for the project is anticipated to be 70 feet when the line is running parallel and adjacent to a public road, and 100 feet when the line is running cross-country.
- To enable the safe operation of the line, the required right-of-way width and location of the centerline will be finalized during the detailed engineering design and construction phases and will be discussed in land rights negotiations with landowners.

The project is now described as Case No. 2024-00158 on the Kentucky Public Service Commission's website at www.psc.ky.gov/Case/ViewCaseFilings/2024-00158.

2. Enclosed is a map that shows the route of the proposed transmission line.

3. The Kentucky Public Service Commission will process Duke Energy's application under Case No. 2024-00158.

Contact information for the Executive Director of the Kentucky Public Service Commission:

Linda Bridwell, Executive Director
Kentucky Public Service Commission
211 Sower Boulevard
Frankfort, KY 40602
502.564-3940
800.772.4636

Duke Energy anticipates re-filing its application with the Kentucky Public Service Commission on or after June 21, 2024. The application when filed may be viewed under Case No. 2024-00158 on the commission's website at www.psc.ky.gov/Case/ViewCaseFilings/2024-00158.

4. You have the right to submit a timely written request for intervention in Case No. 2024-00158. The motion must be submitted to the Kentucky Public Service Commission, 211 Sower Boulevard, Frankfort, KY 40602, and must establish the grounds for your request to intervene, including your status and the nature of your interest in the proceeding. Please see 807 KAR 5:001, Section 4 (11) at http://kyrules.elaws.us/rule/807kar5:001 for additional information regarding the requirements and procedure for requesting intervention. 807 KAR 5:001, Section 4(11) may be accessed at http://kyrules.elaws.us/rule/807kar5:001.

If no request for intervention is received within 30 days of the filing of the application, the Kentucky Public Service Commission may take final action on the application. The request for intervention should reference Case No. 2024-00158.

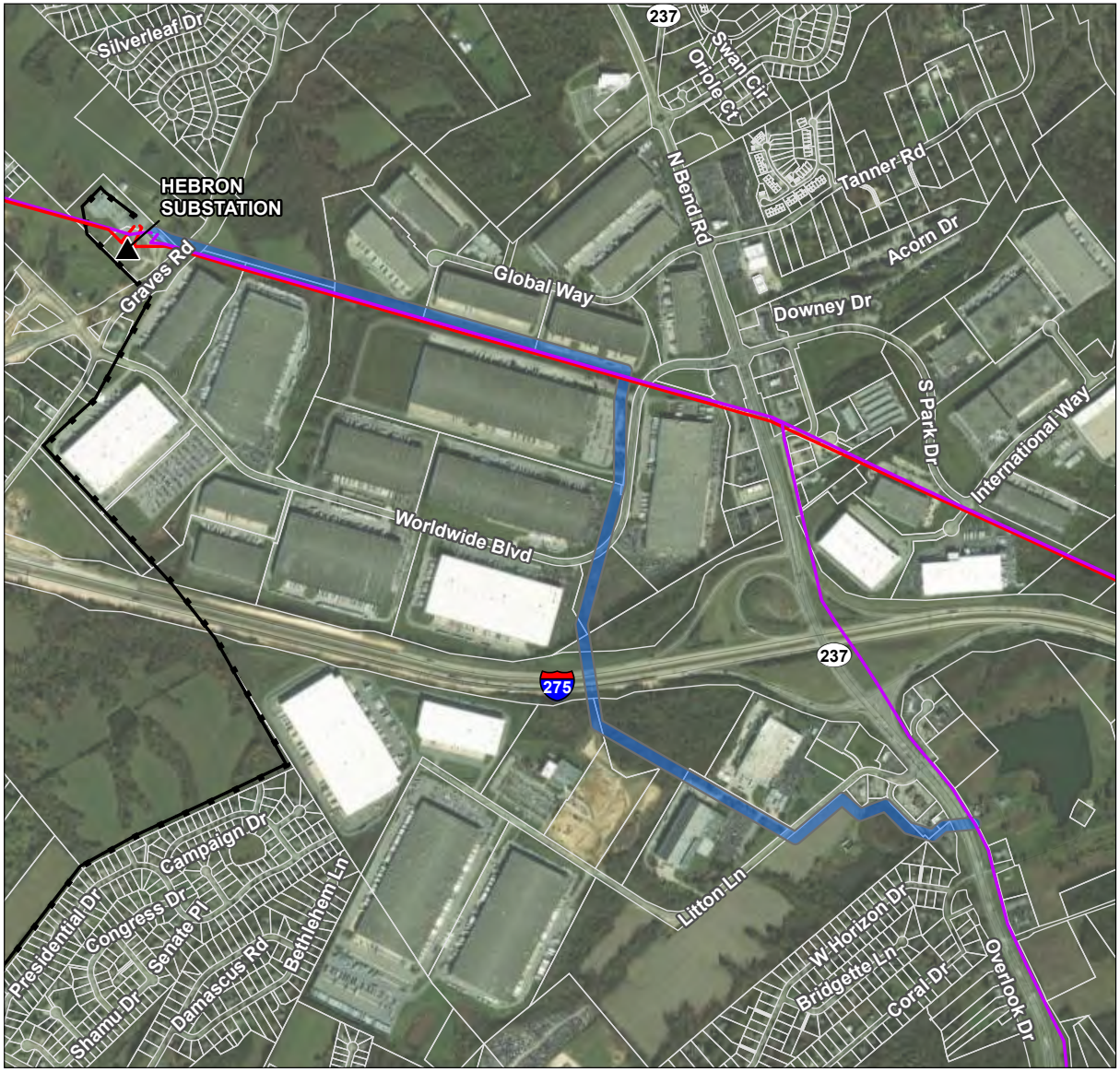
5. You also have the right to request a local public hearing regarding the application and the proposed 69-kV transmission line and related work. The requirements for requesting a local public hearing are described in 807 KAR 5:120, Section 3. See http://kyrules.elaws.us/rule/807kar5:120 for additional information.

6. Written comments may also be filed at the above address, or by sending an email to the commission's public information officer at **psc.info@ky.gov**. The comments should reference Case No. 2024-00158.

7. Project updates may also be found on the Duke Energy Hebron to Oakbrook Reliability Project website at duke-energy.com/hebron.

Sincerely,

Duke Energy Transmission



Title
Preferred Route Corridor

Client/Project
Hebron to Oakbrook
138 kV Transmission Line Project

Project Location
Boone County,
Kentucky

N

0 600 1,200 Feet
(At original document size of 8.5x11)
1:15,000

Legend

- Duke-owned Existing Substation
- Duke-owned Existing 69 kV Transmission Line
- Duke-owned Existing 138 kV Transmission Line
- Foreign Owned Existing Transmission Line
- Preferred Route Corridor
- Parcel Boundary

DUKE ENERGY

Notes
1. Coordinate System: NAD 1983 StatePlane Kentucky North FIPS 1601 Feet
2. Data Sources: Duke Energy, Stantec, USGS, NADS
3. Background: Esri World Imagery

Page 1 of 1

Hebron to Oakbrook (New Build)
CPCN Notiication

Name	Address	City	State	ZIP	Date Notification Sent	Date Signed Certified Mail Slip Returned	Return Signed	Returned as Undeliverable		Certified Mail Article #
FARM MEMORIES LLC	2093 GRAVES RD	HEBRON	KY	41048	5/16/2024	5/24/2024	1			7022 2410 0001 9811 4488
FARM MEMORIES LLC	2123 GRAVES RD	HEBRON	KY	41048	5/16/2024					7022 2410 0001 9811 4495
EAST KENTUCKY POWER COOPERATIVE INC	4775 LEXINGTON RD	WINCHESTER	KY	40391	5/16/2024	5/23/2024	1			7022 2410 0001 9811 4501
EAST KENTUCKY POWER COOPERATIVE INC	2129-2131 GRAVES RD	HEBRON	KY	41048	5/16/2024					7022 2410 0001 9811 4518
DUKE ENERGY KENTUCKY INC	550 S TYRON ST DEC 44P	CHARLOTTE	NC	28202	5/16/2024					7022 2410 0001 9811 4525
DUKE ENERGY KENTUCKY INC	2139 GRAVES RD	HEBRON	KY	41048	5/16/2024					7022 2410 0001 9811 4235
I&G DIRECT REAL ESTATE 33D LP	270 PARK AVE	NEW YORK	NY	10017	5/16/2024	6/3/2024	1			7022 2410 0001 9811 4242
I&G DIRECT REAL ESTATE 33D LP	1770-1800 WORLDWIDE BLVD	HEBRON	KY	41048	5/16/2024					7022 2410 0001 9811 4259
SUGAR CAMP PARTNERSHIP	2272 WILLIAMS RD	HEBRON	KY	41048	5/16/2024					7022 2410 0001 9811 4266
DCT/SPF PARK WEST LLC	1800 WAZEE ST	DENVER	CO	80202	5/16/2024	5/30/2024	1			7022 2410 0001 9811 4273
DCT/SPF PARK WEST LLC	1596-1600 WORLDWIDE BLVD	HEBRON	KY	41048	5/16/2024					7022 2410 0001 9811 4280
DCT PARK WEST LLC IDI SERVICES GROUP	1800 WAZEE ST	DENVER	CO	80202	5/16/2024	5/30/2024	1			7022 2410 0001 9811 4297
DCT PARK WEST LLC IDI SERVICES GROUP	2305-2335 GLOBAL WAY	HEBRON	KY	41048	5/16/2024					7022 2410 0001 9811 4303
I&G DIRECT REAL ESTATE 34, LP	270 PARK AVE	NEW YORK	NY	10017	5/16/2024	6/3/2024	1			7022 2410 0001 9811 4310
I&G DIRECT REAL ESTATE 34, LP	1100 WORLDWIDE BLVD	HEBRON	KY	41048	5/16/2024					7022 2410 0001 9811 4327
MELVIN R MCGLASSON LIVING TRUST	1856 PERRY LN	BURLINGTON	KY	41005	5/16/2024	5/30/2024	1			7022 2410 0001 9811 4334
AIRPORT CENTER LLC	281 POINT TOWNSHIP DR	NORTHUMBERLAND	PA	17857	5/16/2024					7022 2410 0001 9811 4341
AIRPORT CENTER LLC	2300 LITTON LN	HEBRON	KY	41048	5/16/2024					7022 2410 0001 9811 4358
LITTON LANE LLC	18W140 BUTTERFIELD RD SUITE 750	OAKBROOK TERRACE	IL	60181	5/16/2024	5/30/2024	1			7022 2410 0001 9811 4365
LITTON LANE LLC	2250 LITTON LN	HEBRON	KY	41048	5/16/2024					7022 2410 0001 9811 4372
BCI IV HEBRON LC LLC	518 17TH ST 17TH FLOOR	DENVER	CO	80202	5/16/2024					7022 2410 0001 9811 4389
BCI IV HEBRON LC LLC	2270 LITTON LN	HEBRON	KY	41048	5/16/2024					7022 2410 0001 9811 4396
FIVES MACHINING SYSTEMS, INC.	2200 LITTON LN	HEBRON	KY	41048	5/16/2024	5/23/2024	1			7022 2410 0001 9811 4402
BROADSTONE KBC PORTFOLIO LLC	4760 PADDOCK RD	CINCINNATI	OH	45229	5/16/2024	5/20/2024	1			7022 2410 0001 9811 4419
BROADSTONE KBC PORTFOLIO LLC	2100 LITTON LN	HEBRON	KY	41048	5/16/2024					7022 2410 0001 9811 4426
BOOM INC	5623 FAIRFIELD RD	COLUMBIA	SC	29203	5/16/2024	6/6/2024	1			7021 2720 0003 4166 7347
BOOM INC	2095 LITTON LN	HEBRON	KY	41048	5/16/2024					7021 2720 0003 4166 7354
WAFFLE HOUSE INC	PO BOX 6450	NORCROSS	GA	30091	5/16/2024					7021 2720 0003 4166 7361
WAFFLE HOUSE INC	2085 LITTON LN	HEBRON	KY	41048	5/16/2024	5/22/2024	1			7021 2720 0003 4166 7378
SPEEDWAY LLC	539 S MAIN ST	FINDLAY	OH	45840	5/16/2024	5/30/2024	1			7021 2720 0003 4166 7385
SPEEDWAY LLC	2075-2077 LITTON LN	HEBRON	KY	41048	5/16/2024	5/23/2024	1			7021 2720 0003 4166 7408
JOHN R FOOTE JR	2032 W HORIZON DR	HEBRON	KY	41048	5/16/2024	5/22/2024	1			7021 2720 0003 4166 7392
CHRISTOPHER W & AMANDA L HESS	2030 W HORIZON DR	HEBRON	KY	41048	5/16/2024	5/22/2024	1			7021 2720 0003 4166 7415
HEBRON LAND COMPANY LLC	45 FAIRFIELD AVE SUITE 200	BELLEVUE	KY	41073	5/16/2024					7021 2720 0003 4166 7422
HEBRON LAND COMPANY LLC	2575 NORTH BEND RD	HEBRON	KY	41048	5/16/2024					7021 2720 0003 4166 7439
MELVIN MCGLASSON	2580 NORTH BEND RD	HEBRON	KY	41048	5/16/2024	6/5/2024	1			7021 2720 0003 4166 7446
MELVIN MCGLASSON	2538 NORTH BEND RD	HEBRON	KY	41048	5/16/2024	5/22/2024	1			7021 2720 0003 4166 7460
IPT PARK WEST DC LLC	1800 WAZEE ST SUITE 500	DENVER	CO	80202	5/16/2024	5/30/2024	1			7021 2720 0003 4166 7453
IPT PARK WEST DC LLC	1151-1155 WORLDWIDE BLVD	HEBRON	KY	41048	5/16/2024					7021 2720 0003 4166 7477
BCORE FOREST LOGISTICS KY OWNER LLC	PO BOX A-3879	CHICAGO	IL	60690	5/16/2024	5/28/2024	1			7021 2720 0003 4166 7484
BCORE FOREST LOGISTICS KY OWNER LLC	1200 WORLDWIDE BLVD	HEBRON	KY	41048	5/16/2024					7021 2720 0003 4166 7491
BCORE FOREST LOGISTICS KY OWNER LLC	2055-2095 GLOBAL WAY	HEBRON	KY	41048	5/16/2024					7021 2720 0003 4166 7507
BCORE FOREST LOGISTICS KY OWNER LLC	1405 WORLDWIDE BLVD	HEBRON	KY	41048	5/16/2024					7022 0410 0000 6021 0016
BCORE FOREST LOGISTICS KY OWNER LLC	2205-2255 GLOBAL WAY	HEBRON	KY	41048	5/16/2024					7022 0410 0000 6021 0023
NIDAL K YACOUB	PO BOX 6969	SYRACUSE	NY	13217	5/16/2024	6/5/2024	1			7022 0410 0000 6021 0139
NIDAL K YACOUB	2549 NORTH BEND RD	HEBRON	KY	41048	5/16/2024					7021 0350 0001 9166 8236

Transmission - Public Engagement
EX552 | 315 Main St
Cincinnati, OH 45202
duke-energy.com

May 17, 2024

<<Recipient Name>>
<<Mailing Address>>
<<City, ST ZIP>>

Project Reference: Update about the Limaburg to Oakbrook Reliability Project, Notice of Proposed Electric Transmission Line Construction Project

Dear Property Owner:

Duke Energy Kentucky, Inc., (Duke Energy) first notified select property owners in November 2022 about a regulatory filing involving the proposed rebuild of an existing electric transmission line in Boone County. This project is referred to as the Limaburg to Oakbrook Reliability Project. We are refiling this application for a Certificate of Public Need and Necessity following additional direction from the Kentucky Public Service Commission. The need and description of the project – as well as the engineering – have not changed from our initial filing last fall, but the project is assigned a new case number.

This project involves rebuilding an existing 1.5-mile section of a 69-kilovolt (kV) transmission line and its associated equipment from Limaburg Substation along Limaburg Road in Hebron, Ky., to Burlington Pike in Burlington, Ky. Part of this project involves building a new transmission line starting from Hebron Substation at 2139 Graves Road, in Hebron, Ky., to Route 237.

You are receiving this notice because county property records indicate either the proposed transmission line right-of-way crosses your property, or you own property within the filing corridor.

1. The rebuild of an existing 69-kV transmission line between the Limaburg Substation and Burlington Pike involves the following work:

    - Rebuilding of 1.5 miles of an existing transmission line with capacity for 138-kV, but the system will initially be operated at 69-kV.
    - The rebuilt transmission line will be supported by approximately 54 steel poles with an average above-ground height of 80-100 feet.
    - The distance between poles will run an average of 100 to 300 feet.
    - Additional right-of-way may be required for guy wires and will be determined during the engineering phase of the transmission line.

The project is now described as Case No. 2024-00158 on the Kentucky Public Service Commission's website at www.psc.ky.gov/case/viewcasefilings/2024-00158.

2. Enclosed is a map that shows the route of the proposed transmission line rebuild.

3. The Kentucky Public Service Commission will process Duke Energy's application under Case No. 2024-00158.

Contact information for the Executive Director of the Kentucky Public Service Commission:

Linda Bridwell, Executive Director
Kentucky Public Service Commission
211 Sower Boulevard
Frankfort, KY 40602
502.564-3940
800.772.4636

Duke Energy anticipates re-filing its application with the Kentucky Public Service Commission on or after June 21, 2024. The application when filed may be viewed under Case No. 2024-00158 on the commission's website at www.psc.ky.gov/case/viewcasefilings/2024-00158.

4. You have the right to submit a timely written request for intervention in Case No. 2024-00158. The motion must be submitted to the Kentucky Public Service Commission, 211 Sower Boulevard, Frankfort, KY 40602, and must establish the grounds for your request to intervene, including your status and the nature of your interest in the proceeding. Please see 807 KAR 5:001, Section 4 (11) at http://kyrules.elaws.us/rule/807kar5:001 for additional information regarding the requirements and procedure for requesting intervention. 807 KAR 5:001, Section 4(11) may be accessed at http://kyrules.elaws.us/rule/807kar5:001.

If no request for intervention is received within 30 days of the filing of the application, the Kentucky Public Service Commission may take final action on the application. The request for intervention should reference Case No. 2024-00158.

5. You also have the right to request a local public hearing regarding the application and the proposed 69-kV transmission line and related work. The requirements for requesting a local public hearing are described in 807 KAR 5:120, Section 3. See http://kyrules.elaws.us/rule/807kar5:120 for additional information.

6. Written comments may also be filed at the above address, or by sending an email to the commission's public information officer at **psc.info@ky.gov**. The comments should reference Case No. 2024-00158.

7. Project updates may also be found on the Duke Energy Project website at

duke-energy.com/hebron.

Sincerely,

Duke Energy Transmission

Title
Rebuild Section

Client/Project
Hebron to Oakbrook
138 kV Transmission Line Project

Project Location
Boone County,
Kentucky

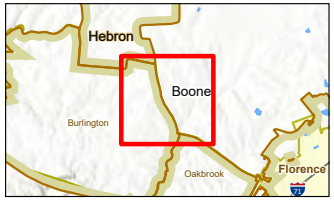
N

0 600 1,200 Feet
(At original document size of 8.5x11)
1:15,000

Legend

- Duke-owned Existing Substation
- Duke-owned Existing 69 kV Transmission Line
- Duke-owned Existing 138 kV Transmission Line
- Rebuild Section
- Parcel Boundary

DUKE ENERGY®



Notes
1. Coordinate System: NAD 1983 StatePlane Kentucky North FIPS 1601 Feet
2. Data Sources: Duke Energy, Stantec, USGS, NADS
3. Background: Esri World Imagery

Page 1 of 1

Limaburg to Oakbrook (Rebuild Section)
CPCN Notification Tracking

Name	Address	City	State	ZIP	Date Notification Sent	Date Signed Certified Mail Slip Returned	Returned Signed	Date Returned as Undeliverable	Returned Undeliverable	Certified Mail Article #
FAITHFUL FRIENDS PET CREMATORY LLC	4796 LIMABURG RD	HEBRON	KY	41048	5/16/2024	5/20/2024	1			7022 2410 0001 9811 2729
MID VALLEY PIPELINE	1900 DALROCK RD	ROWLETT	TX	75088	5/16/2024	5/28/2024	1			7022 2410 0001 9811 2736
MID VALLEY PIPELINE	4826-4910 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024					7022 2410 0001 9811 2743
KEVIN B & LISA S HILLMAN	4827 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024					7022 2410 0001 9811 2750
VIRGINIA D DE MOISEY	4847 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024	5/24/2024	1			7022 2410 0001 9811 2767
DANNY S DELPH	4907 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024					7022 2410 0001 9811 2774
DRDD FAMILY TRUST	2179 WILLIAMS RD	HEBRON	KY	41048	5/16/2024	5/20/2024	1			7022 2410 0001 9811 2781
DRDD FAMILY TRUST	4929 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024					7022 2410 0001 9811 2798
DAWN M MCGRATH	4965 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024	5/28/2024	1			7022 2410 0001 9811 2804
EMMA J FUGATE	5019 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024	5/28/2024	1			7022 2410 0001 9811 2811
JUANITA SMITH	5039 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024					7022 2410 0001 9811 2828
GILBERT & RUBY REEVES	5057 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024	5/24/2024	1			7022 2410 0001 9811 2835
PHILIP G GOETZ	5065 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024					7022 2410 0001 9811 2842
TRACIE M WILLOUGHBY	1813 PEARL ST APT 1	COVINGTON	KY	41014	5/16/2024					7022 2410 0001 9811 2859
TRACIE M WILLOUGHBY	5071 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024					7022 2410 0001 9811 2866
DONNA M KLEIN	5077 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024					7022 2410 0001 9811 2873
CARL RAY SR & MARY E WILLOUGHBY	5115 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024					7021 2720 0003 4166 7330
GREGORY W PIERSON	5127 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024	5/31/2024	1			7022 0410 0000 6021 0146
TRUSTEES OF FLOYD AND MAXINE HICKS	1729 PIONEER BLVD	BURLINGTON	KY	41005	5/16/2024					7022 0410 0000 6021 0153
CRAIG D & SALLY J HUNT	5147 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024					7022 0410 0000 8542 3347
DREW B THIEL	5159 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024					7022 0410 0000 8542 3828
TODD E GROSS	7645 PLOW SHARE CT	FLORENCE	KY	41042	5/16/2024	5/20/2024	1			7022 0410 0000 8542 3835
TODD E GROSS	5183 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024					7022 0410 0000 8542 3842
KELLY RODGERS	5207 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024					7022 0410 0000 8542 3859
DAVID F FINKENSTEDT	1710 HARVEST CT	BURLINGTON	KY	41005	5/16/2024					7022 0410 0000 8542 3866
DON C & CAROLE R VALENTINE	1724 TIMBER LN	BURLINGTON	KY	41005	5/16/2024					7022 0410 0000 8542 3873
GAYLE L AND BEVERLY BLACKBURN	1723 TIMBER LN	BURLINGTON	KY	41005	5/16/2024	5/23/2024	1			7022 0410 0000 8542 3880
MARK D CRAWFORD	5320 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024					7022 0410 0000 8542 3897
GOLDMAN USA INC	22 HILCREST RD	GREAT NECK	NY	11021	5/16/2024					7022 0410 0000 8542 3903
GOLDMAN USA INC	5327 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024					7022 0410 0000 8542 3910
BRIAN S SCHWARTZ & ALICIA B KEMPER	5340 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024					7022 0410 0000 8542 3927
WOLFE CHARLES S & CHERIE	5360 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024	6/3/2024	1			7022 0410 0000 6022 0008
PATRICIA A HOGAN REVOCABLE TRUST	2267 VISTA CT	HEBRON	KY	41048	5/16/2024					7022 0410 0000 6021 2409
PATRICIA A HOGAN REVOCABLE TRUST	5372 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024					7022 0410 0000 6021 2416
SKAS PROPERTIES LLC	961 WHIRLAWAY DR	UNION	KY	41091	5/16/2024	6/3/2024	1			7022 0410 0000 6021 2423
SKAS PROPERTIES LLC	5390 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024					7022 0410 0000 6021 2430
NORSELAND LLC	317 COUNTRY CLUB DR	BUTLER	KY	41006	5/16/2024			6/12/2024	1	7022 0410 0000 6021 2447
NORSELAND LLC	1911 GOLF CLUB DR	BURLINGTON	KY	41005	5/16/2024	6/3/2024	1			7022 0410 0000 6021 2454
DARRELL & BETHANY STAHL	4376 BELLEVIEW RD	PETERSBURG	KY	41080	5/16/2024	5/20/2024	1			7022 0410 0000 6021 2461
DARRELL & BETHANY STAHL	5420 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024					7022 0410 0000 6021 2478
CPRE TP BOONE LIMABURG LLC	250 W COURT ST STE 200E	CINCINNATI	OH	45202	5/16/2024	5/24/2024	1			7022 0410 0000 6021 2485
CPRE TP BOONE LIMABURG LLC	5460-5468 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024					7022 0410 0000 6021 2492
ROBERT J & TERESA A EHLINGER	5459 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024					7022 0410 0000 6021 2508
BRANDIAN SCHATTSCHNEIDER	1681 VAL COURT DR	BURLINGTON	KY	41005	5/16/2024	6/3/2024	1			7021 2720 0003 4165 6273
IVY RHODES	1679 VAL COURT DR	BURLINGTON	KY	41005	5/16/2024	5/28/2024	1			7021 2720 0003 4165 6280
MICHAEL H KUNKA	3659 DAWN DR	FAIRFIELD TOWNSHIP	OH	45011	5/16/2024	5/24/2024	1			7021 2720 0003 4165 5597
MICHAEL H KUNKA	1677 VAL COURT DR	BURLINGTON	KY	41005	5/16/2024	5/24/2024	1			7021 2720 0003 4165 5603
HAYFIELD PARK APTS #232100 EPIRIAN P	40 WALL ST 60TH FLOOR	NEW YORK	NY	10005	5/16/2024			6/4/2024	1	7021 2720 0003 4165 5610
HAYFIELD PARK APTS #232100 EPIRIAN P	5519-5537 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024					7021 2720 0003 4165 5627

Limaburg to Oakbrook (Rebuild Section)
CPCN Notification Tracking

K AND T DEVELOPMENT LLC	2529 RITCHIE AVE	CRESCENT SPRINGS	KY	41017	5/16/2024	5/28/2024	1			7021 2720 0003 4165 5634
K AND T DEVELOPMENT LLC	5559-5565 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024					9589 0710 5270 0852 8303 33
SKY HARBOR LLC	PO BOX 961009	FT WORTH	TX	76161	5/16/2024					9589 0710 5270 0852 8303 40
SKY HARBOR LLC	1735-1881 TANGLEWOOD CT	BURLINGTON	KY	41005	5/16/2024	5/28/2024	1			9589 0710 5270 0852 8303 57
WOLFE WOLFE PROPERTIES LLC	5578 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024	5/31/2024	1			9589 0710 5270 0852 8303 64
WOLFE WOLFE PROPERTIES LLC	5578-5582 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024	6/3/2024	1			9589 0710 5270 0852 8303 71
EDWARD JOSEPH WARD	2900 WASHINGTON ST	BURLINGTON	KY	41005	5/16/2024	5/28/2024	1			9589 0710 5270 0852 8303 88
EDWARD JOSEPH WARD	5613 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024					9589 0710 5270 0852 8303 95
YARD DESIGNS, LLC	5637 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024	5/28/2024	1			9589 0710 5270 0852 8304 01
JOHN ROBERTSON	PO BOX 837	BURLINGTON	KY	41005	5/16/2024	5/24/2024	1			9589 0710 5270 0852 8304 18
PAUL T & BELINDA G MCCARTHY	5853 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024	5/24/2024	1			9589 0710 5270 0852 8304 25
A M S TIRE REALTY LTD	4175 MUHLHAUSER RD	FAIRFIELD	OH	45014	5/16/2024					9589 0710 5270 0852 8304 32
A M S TIRE REALTY LTD	1675 PRODUCTION DR	BURLINGTON	KY	41005	5/16/2024	5/24/2024	1			9589 0710 5270 0852 8304 49
GEORGE CASTEEL	2610 SECOND CREEK	PETERSBURG	KY	41080	5/16/2024	6/10/2024	1			9589 0710 5270 0852 8304 56
GEORGE CASTEEL	5826 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024			6/4/2024	1	9589 0710 5270 0852 8304 63
GARY L ELLIOTT	1383 GARDEN RD	WESTON	FL	33326	5/16/2024	5/24/2024	1			9589 0710 5270 0852 8304 70
GARY L ELLIOTT	5856-5880 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024			6/4/2024	1	9589 0710 5270 0852 8304 87
CRESSCO LLC	7159 PLEASANT VALLEY RD	FLORENCE	KY	41042	5/16/2024	5/23/2024	1			9589 0710 5270 0852 8304 94
CRESSCO LLC	5941 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024	5/30/2024	1			9589 0710 5270 0852 8305 00
BHAVIN V PATEL	9159 ARMISTEAD CT	UNION	KY	41091	5/16/2024	5/20/2024	1			9589 0710 5270 0852 8305 17
BHAVIN V PATEL	5950 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024					9589 0710 5270 0852 8305 24
GM GROUP LLC	500 WESTOVER DR #17298	SANFORD	NC	27330	5/16/2024					9589 0710 5270 0852 8305 31
GM GROUP LLC	1720 WILDCAT BLVD	BURLINGTON	KY	41005	5/16/2024					9589 0710 5270 0852 8305 48
AKRAM OTHMAN	2306 KENYON CT	HEBRON	KY	41048	5/16/2024					9589 0710 5270 0852 8305 55
JEREMY KLOENTRUP	6322 REMINGTON COVE	BURLINGTON	KY	41005	5/16/2024					9589 0710 5270 0852 8305 62
JEREMY KLOENTRUP	4999 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024			6/4/2024	1	9589 0710 5270 0852 8305 79
JEREMY KLOENTRUP	4977 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024					9589 0710 5270 0852 8305 86
SKILCRAFT ACQUISITION LLC	5184 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024					7022 2410 0001 9813 2239
RONALD G & JANET ANDERSON	5226 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024					7022 2410 0001 9813 2246
MICHAEL J JOYCE	5353 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024					7022 2410 0001 9813 2253
VAL COURT TOWNHOMES HOMEOWNERS C/O A	P O BOX 36305	CINCINNATI	OH	45236	5/16/2024					7022 2410 0001 9813 2260
TIMOTHY P O HEAREN	4865 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024					7022 2410 0001 9813 2277
LIMABURG PROPERTIES LLC	5719 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024	5/31/2024	1			7022 2410 0001 9813 2284
LIMABURG PROPERTIES LLC	5659 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024			6/12/2024	1	7022 2410 0001 9813 2291
PRECISION CONSTRUCTION CORP	6705 SNEAD LN	FLORENCE	KY	41042	5/16/2024	5/20/2024	1			7022 2410 0001 9813 2307
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DAL PROPERTIES LLC	1880 STAHL RD	HEBRON	KY	41048	5/16/2024					7022 2410 0001 9813 2321
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DAL PROPERTIES LLC	5750-5756 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024			6/4/2024	1	7022 2410 0001 9813 2345
WAYNE C MAXWELL	5923 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024	5/30/2024	1			7022 2410 0001 9813 2352
JHNKB PROPERTY MANAGEMENT LLC	2608 LEGACY RDG	FLORENCE	KY	41042	5/16/2024	6/3/2024	1			7022 2410 0001 9813 2369
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JHNKB PROPERTY MANAGEMENT LLC	5940 LIMABURG RD	BURLINGTON	KY	41005	5/16/2024					7022 2410 0001 9813 2383

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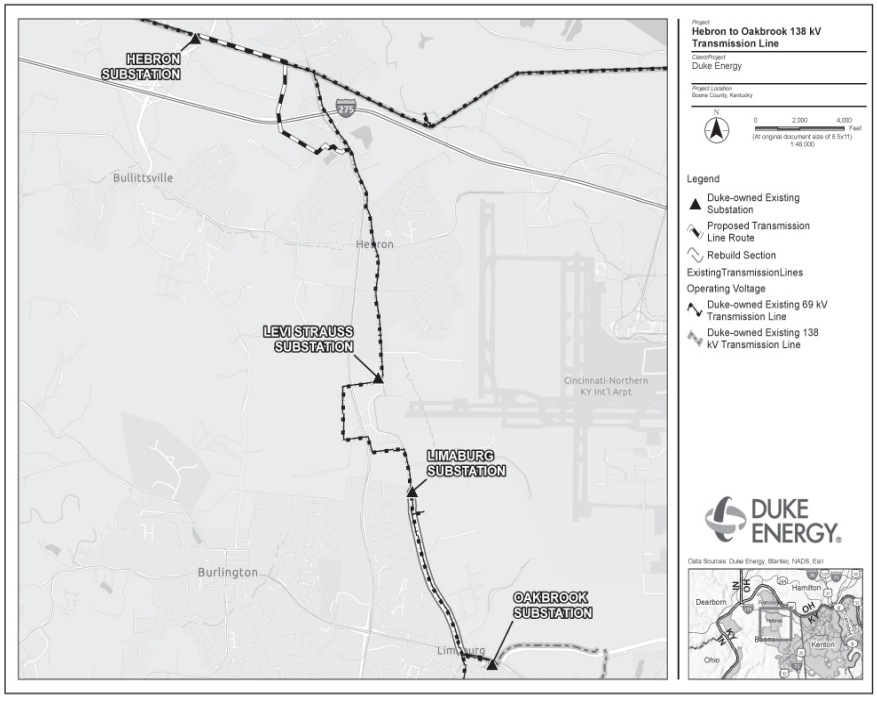

KENTUCKY PRESS SERVICE

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Holly Willard
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List of newspapers running the notice for Duke Energy Case No. 2024-00158
Attached tearsheets provide proof of publication:

Covington KY Enquirer—6/6
Falmouth Outlook—6/4
LINK nky—6/7
Warsaw Gallatin Co. News—6/5
Williamstown Grant County News—6/13

NOTARIZED PROOF OF PUBLICATION

STATE OF KENTUCKY

COUNTY OF FRANKLIN

Before me, a Notary Public, in and for said County and State, this 17th day of June, 2024, came Holly Willard personally known to me, who being duly sworn, states as follows: that she is the Bookkeeping Assistant of the Kentucky Press Service Inc. and that she has personal knowledge of the contents of this affidavit; and that the publications included on the attached list published the Legal Notice for Duke Energy.

Signed Holly Willard

Notary Public Bonnie J. Howard

My commission expires 9-18-2024

Id. # 14119

Construction begins on Kenwood Road bridge

Quinlan Bentley
Cincinnati Enquirer
USA TODAY NETWORK

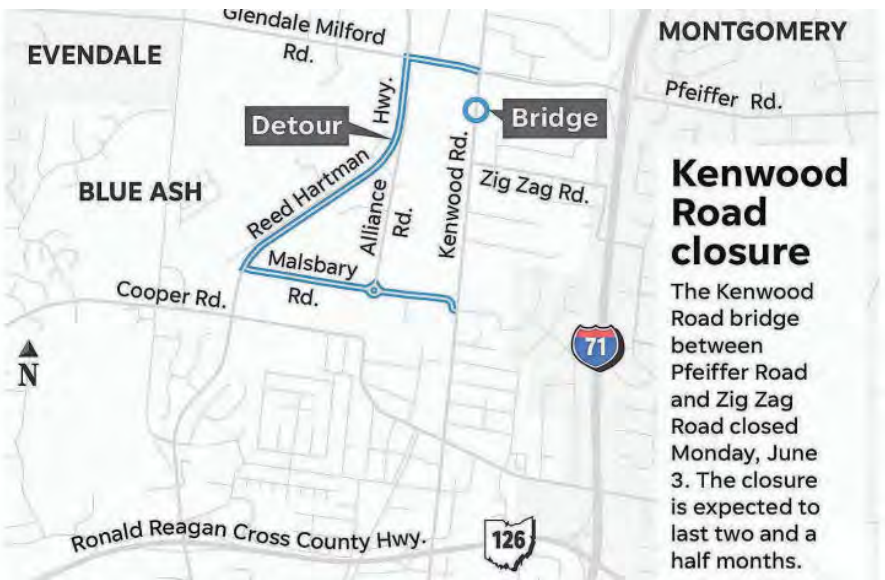
Drivers traveling through Blue Ash this spring and summer might be met with an unexpected delay: the Kenwood Road bridge will be closed for two and a half months.

Construction on the bridge between Pfeiffer and Zig Zag roads started Monday, city spokesperson Rachel Murray said in a news release.

Crews will be working to reconstruct failing infrastructure and rebuild a pedestrian bridge.

"Due to the extensive work and the lack of safe space for motorists and pedestrians, both Kenwood Road and the sidewalk will be closed at the bridge in both directions for the duration of the construction," Murray said.

While the work is underway, drivers must take a detour from Glendale Milford Road to Reed Hartman Highway to Malsbary Road.



A graphic outlining the detour rerouting drivers away from the Kenwood Road bridge in Blue Ash. MICHAEL NYERGES/THE ENQUIRER

The Kenwood Road bridge will be under construction for more than two months as crews work to reconstruct failing infrastructure and rebuild a pedestrian bridge. CITY OF BLUE ASH

Probe: Kids abused at mental health facility

Laura A. Bischoff
Enquirer Statehouse Bureau
USA TODAY NETWORK

Children sent to a state-licensed facility for mental health care are subjected to chokeholds and slaps, being pinned to the ground and verbally abused, and are regularly leaving the campus, according to an investigation conducted by Disability Rights Ohio.

Disability Rights Ohio Director Kerstin Sjoberg said neither Ohio Department of Mental Health and Addiction Services nor the center, Youth Intensive Services, are working to correct the problems.

"If things remain as they are, these kids are at risk of serious injury or possibly even death if something doesn't happen. We cannot wait for that before we take action," Sjoberg said. "We are begging, particularly the Department of Mental Health to use your enforcement authority to help these kids be safe. They don't deserve to be in this type of environment."

Child protective services agencies in multiple counties, including Franklin, Summit, Stark, Carroll and Tuscarawas, send children to Youth Intensive Services, which is in Youngstown.

In the first five months of 2024, there were 31 police reports on children leaving the facility. One kid made it to the bus station nearly 3.5 miles away before police found them. Two other children trying to leave the grounds were left outside in winter for 20 minutes while employees periodically checked in from the doorway. Off grounds, they're subjected to dangerous conditions, sexual assaults and injuries, investigators found.

Since October 2022, Disability Rights Ohio visited three times, interviewed 28 children and employees, reviewed videos and records and issued recommendations.

Disability Rights Ohio has raised these issues with Youth Intensive Services and the Ohio Department of Mental Health and Addiction Services, which licenses the treatment center. Disability Rights Ohio asked the state to stop admissions to the center until minimum standards are met and if they aren't, revoke the license.

"The department remains engaged in regular contact with Disability Rights Ohio (DRO) and Youth Intensive Services (YIS) staff. Our team has been working with YIS and they have been responsive and collaborative in addressing concerns," said department spokesman Eric Wanderslaben. "OhioMHAS will thoroughly review the DRO report and take any necessary steps to ensure that youth entrusted to YIS receive quality care and treatment in a safe environment."

Sjoberg said the state has taken no corrective action in more than a year.

Disability Rights Ohio is a statewide nonprofit with authority to advocate and protect people with disabilities in prisons, jails and other institutional settings.

Youth Intensive Services is licensed for 33 kids, ages 12 to 18, according to Disability Rights Ohio. The state licenses about 60 such residential facilities for at-risk children.

Laura Bischoff is a reporter for the USA TODAY Network Ohio Bureau, which serves the Columbus Dispatch, Cincinnati Enquirer, Akron Beacon Journal and 18 other affiliated news organizations across Ohio.

Disability Rights Ohio Director Kerstin Sjoberg and her team conducted a 16-month investigation into a residential mental health center for teens. They found children leave the facility without permission and are subjected to abusive treatment by facility staff. BROOKE LAVALLEY/COLUMBUS DISPATCH

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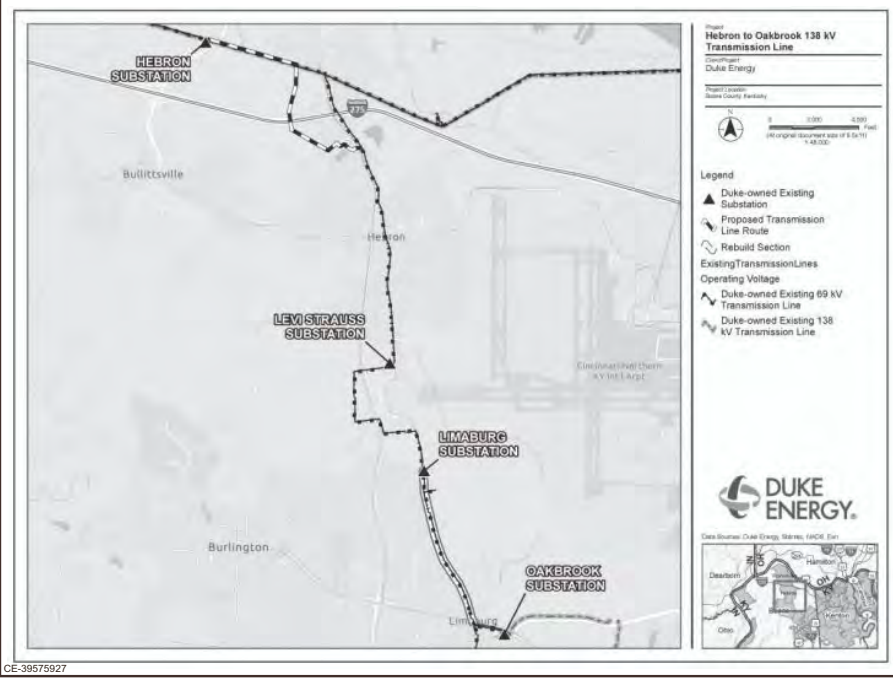


CE-39575927

Ladycats fall to Mason County at region quarterfinals

By Sam McClanahan

The 2024 season came to an end for the Pendleton County Ladycats as they were defeated 3-1 by Mason County in the first round of the 10th Region Tournament.

Pendleton County entered the game having won a regular season matchup over the Lady Royals but this time around Mason County would emerge victorious. The Ladycats were held to just two hits throughout the contest as Madison Verst and Aubrey Mullins singled and doubled, respectively.

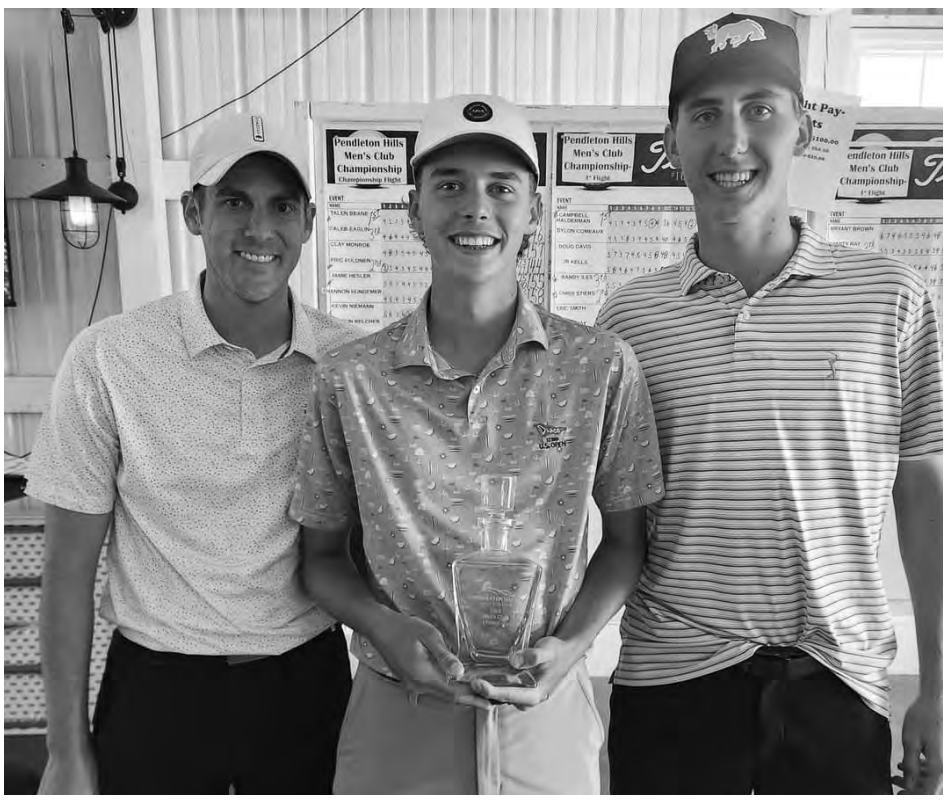
Ladycats freshman pitcher Hannah Spaulding was impressive from inside the pitcher's circle as she struck out 12 batters, allowed five hits and one earned run over six innings. Following the game, she was named to the 10th Region All-Tournament team.

Pendleton County concludes it's season with a 13-16 record. Following the game, team head coach Jessica Verst shared these thoughts on the team and the strides they made throughout the season.

"Although we lost I was very proud of the girls. Hannah pitched great. Our defense did a good job of backing her up. We just couldn't get the hits to fall. It happens sometimes. I don't think very many people expected us to be in the regional tournament based on how the beginning of our season went. Our seniors did a fantastic job of being great leaders with our young team. Making sure the team stays positive and understood there was going to be some growing pains. I want to thank Maddy, Reagan, and Avery again for being great leaders and they have definitely left their mark on the Ladycat softball program," Coach Verst said.

In other softball news, Hannah Spaulding and Maddy Musk were named second team to the NKSCA All Star team while Madison Verst was named to the third team. On June 11, Ladycats Reagan Anderson, Avery Himes, Maddy Musk and Sarah Blackaby will take part in the NKSCA Senior and Junior All Star game, and on June 18, Madison Verst and Maddy Musk will represent the program at the 10th Region All Star game.

16-year-old Beane becomes youngest winner ever at Pendleton Hills Men's Club Championship



History was made at Pendleton Hills on June 2 when 16-year-old Talon Beane captured the men's club championship. He becomes the youngest competitor to ever accomplish this feat in the history of the tournament. Beane fired a 67 during round one and a 74 to finish three under par with a total score of 141. Last year's winner, Eric Fuldner, came in second with a 144 followed by Caleb Eaglin with a 146. Congratulations gentlemen.

"Put me in coach, I'm ready to play." Maybe...

Seven-year-old Jeremiah Gregg found time to squeeze in a nap during youth baseball games put on by Pendleton County Recreation over the weekend. He follows a long family history of hard work and dedication to local sports. Jeremiah is the son of Tolman Gregg and Kassidy Milburn.

Chances are he was dreaming about scoring the game-winning run. Photo courtesy of the Pendleton County Recreation Facebook page.

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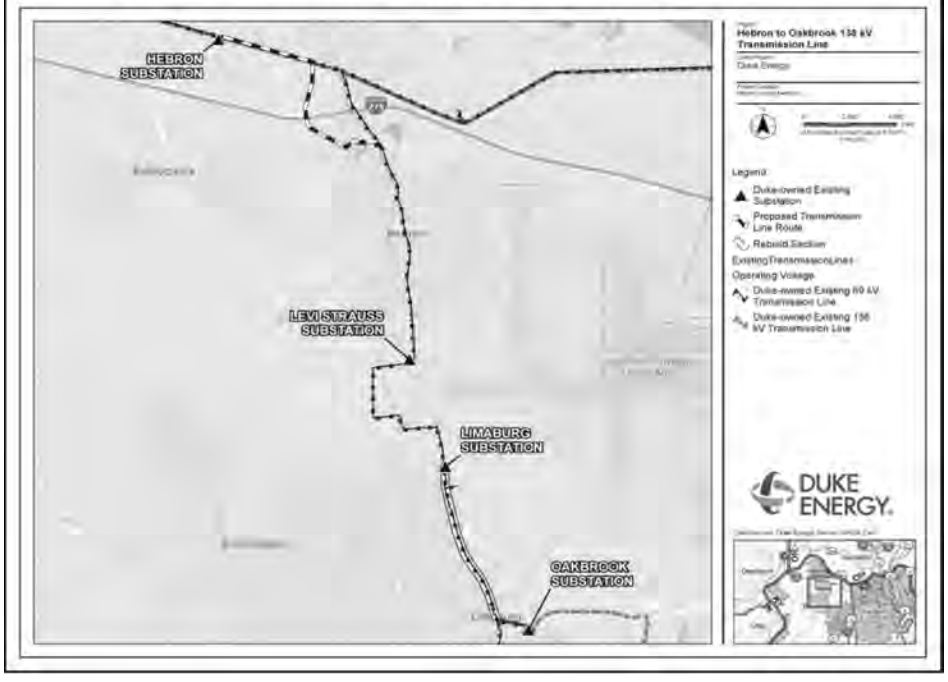

Ruthsatz resigns posts at Covington Catholic, to focus on business

Covington Catholic Head Coach Scott Ruthsatz, middle, resigned as head coach on May 28. File photo | Charles Bolton

Scott Ruthsatz has spent the past 13 seasons not only coaching three of his kids, but trying to raise a family of nine in the process.

On May 28, Ruthsatz decided it's time to focus on his own. He resigned as Covington Catholic's head basketball coach.

What many didn't know outside of his circle was that he's also running two successful businesses, one he bought from his father in 2002, Polar Pure, and a commercial real estate business in Northern Kentucky.

Ruthsatz also taught economics at the high school, something he also will no longer be doing.

The school released a statement May 28 announcing that Ruthsatz is leaving coaching and teaching to concentrate on the family business.

Ruthsatz has been at post in Park Hills the past 13 seasons, accumulating a 363-79 record (82%), winning two state titles, making it to four Final Fours, winning six region titles and 10 district titles. The state titles came in 2014 and 2018. His son Aiden was on the '14 state title team, and son Nick was on the '18 team.

He departs as the all-time wins leader of the program.

Another son, Nolan, is a rising senior. The Colonels went 26-6 last season, winning the 35th District before losing to Cooper in the 9th Region semifinals. They graduate four seniors, two of them starters in Caden Miller and Brady Hussey along with key reserve Noah Johnson. They boast a talented sophomore crop with a trio of Cash Harney, Athens McGillis and Donovan Bradshaw that played significant minutes last season.

Prior to Ruthsatz's arrival at CovCath, his family lived in Sandusky, Ohio, and then headed to St. Anthony's in New Jersey, with Ruthsatz joining the staff of legendary coach Bob Hurley. Ruthsatz stated they'll remain in the area and have no interest in leaving. He said he has no interest in getting back into coaching anytime soon and is at peace with his decision.

Current varsity assistant coach Matt Stevens will serve as the interim head coach and will continue to manage basketball operations.

Newport taps veteran from Brossart as new football head coach

Paul Wiggins is the new head football coach at Newport, who resigned after two seasons. Photo provided | Patty Goering

Paul Wiggins is the new head football coach at Newport, replacing Ryan Hahn, who resigned after two seasons. Wiggins is also an eight-year teacher at Newport.

It's Wiggins' second stint as a head coach. He put together a 67-43 record and enjoyed seven winning seasons in 10 years at Bishop Brossart. He and the school parted ways in January after a 5-6 Mustangs finish. Wiggins' previous Brossart teams finished 9-3 in 2022 and 12-1 in 2021. Wiggins guided the Mustangs to a perfect 10-0 regular season in 2021 and led them to the regional final.

The former Class A District 5 coach of the year orchestrated one of the greatest local turnarounds for Brossart. The Mustangs finished 9-2 one season after going 1-8 in 2014. He left the Mustangs after winning three district championships including their first in 2016.

Lloyd's Walker picks SC after offers from 34 schools

E.J. Walker gets ready to make his college commitment on May 24 at Lloyd Memorial High School. Evan Dennison | LINK nky

There's not much E.J. Walker can't do on the basketball court. The same could be said off the court.

Whether he's pulling down rebounds and starting a fast break or accumulating a 4.0 GPA in the classroom, whoever Walker committed to May 24 for his academic and basketball career after Lloyd Memorial High School was getting the complete package.

Walker narrowed his list of over 30 offers down to four this week, ultimately making his decision to commit verbally to the University of South Carolina. He announced his decision in Scheben Gym at the high school.

Walker is ranked No. 2 in Kentucky for the class of 2025, 131st nationally, according to On3's recruiting rankings, and one of the highest ranked recruits to ever come out of Northern Kentucky. He finished with 34 offers in total, starting in eighth grade when Youngstown State was the first to do so.

Not only did Walker blossom with his height, but his game evolved with his growth spurts. His 6-foot-8, 230 pound frame creates a mismatch anytime he's on the floor with his ability to knock down the outside jumper, handle the ball like a guard and rebound with relative ease. That's why South Carolina, coming on late and winning out over three Big 10 schools in his final four (Ohio State, Purdue and Wisconsin) made the most sense for him.

Walker finished his junior season with 16.9 points and 11.1 rebounds per game. He scored his 1,000th career point in January. On top of his high GPA, he was taking some history and math classes at Northern Kentucky University. He has 1,322 points in his high school career, 267 away from program record holder Ryan Wilson, a 2000 graduate with 1,588 career points.

Walker does it in an efficient manner, too. He shot 58% from the field, 38% from three and 70% from the free throw line this past season.

New Walton-Verona AD brings experience as coach in district

Walton Verona's Ryan Borkowski moves from coaching and the classroom to the athletic director's office. Photo provided | Walton-Verona High School

Ryan Borkowski has replaced Kyle Bennett as Walton-Verona High School athletic director. Borkowski was named to the position last week. Bennett, a Walton-Verona graduate, recently resigned after 30 years at the school. He served 13 years as boys basketball coach and the past 16 as athletic director.

Borkowski comes to the position with experience on the Walton-Verona coaching staff. He was most successful as boys basketball assistant under head coach Grant Brannen, now the principal at St. Henry. With Borkowski, Walton-Verona won the 2019 8th Region championship and a Sweet 16 state tournament game.

Borkowski also coached boys golf and most recently boys and girls tennis at Walton-Verona. Additionally, he was the school's intramural sports coordinator. He's also been involved with youth sports, primarily basketball through coaching, camps and officiating.

Borkowski, a 2006 Boone County graduate, has been a teacher for 13 years. The last 10 have been at Walton-Verona. He taught business the past three years after being a special education teacher. He graduated from the University of Kentucky in 2010. Borkowski furthered his education at Georgetown College and Campbellsville University, from which he earned master's degrees. His wife also teaches in the Walton-Verona school district, and the family lives with their two children in Verona.

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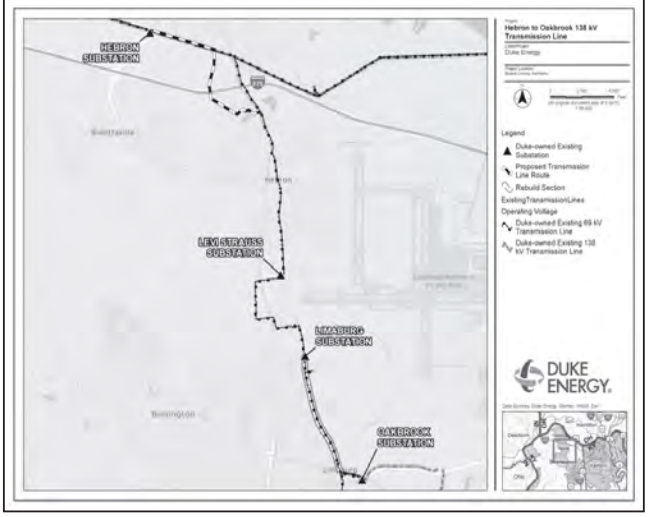

Classified Advertising

FOR RENT

FOR RENT: 1 bedroom house for rent in Sparta, AC, washer/dryer hookup, $600/month, no pets. Call or text 859-643-5176.

23-2p

YARD SALES

GARAGE SALE: Whole house Garage Sale, Friday & Saturday, June 7 & 8, from 9 a.m.-2 p.m., at 129 Bluffside Drive, Sparta. We have tools, housewares, dishes, clothing, and much more, we are drastically downsizing and almost everything is for sale!

23-1p

YARD SALE: Five family Yard Sale, Saturday June 8, 8 a.m.-?, at the corner of Smith Ave and Main Cross. We have clothing in many sizes including boys and men's in small, medium, large, XL, and XXL. Women's clohting in many sizes including plus sizes. Coats, and shoes in many sizes. Framed pictures, kitchen items, dishes, costume jewelry, bedding, picture/document frames, fishing gear, housewares, and decor, and holiday items. Too much to list, so come see, shop and buy!

23-1p

'Angel Tree' Annual Yard Sale

Friday, June 7 • 8-5 p.m.
Saturday, June 8 • 8-3 p.m.

Switzerland Co. Fairgrounds
507 Vineyard St., Vevay

Clothing, Purses, Houseware items, Luggage, Furniture, Baby Items, Jewelry, Antique items, Shoes, Much Much More!!

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- **2.3 Ac. Northern Gallatin**, just off Hwy 16, double wides welcome, paved frontage, less than 30 min. to Florence, $36,900, $2,500 down
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State Farm County Mutual Insurance Company of Texas, StateFarm Lloyds, Richardson, TX

State Farm Florida Insurance Company, Winter Haven, FL

The Warsaw Christian Church invites you to join our Community Yard Sale!

Saturday, June 15
Opening at 8 a.m.
207 West High Street,
Warsaw, KY 41095

Get great deals on household goods, antiques, collectibles, toys, furniture, clothes & much more!

All proceeds will benefit the Warsaw Christian Church Outreach Programs

Spaces & Tables Available for Community Members to Rent $10/Table

For information on renting a table:
859-640-4746
kennedibled03@gmail.com

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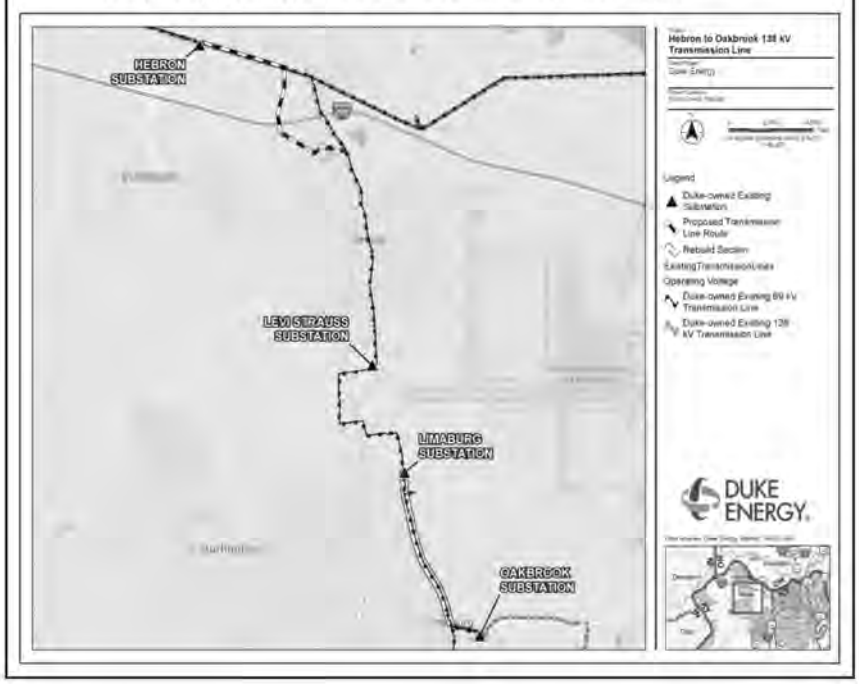

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HISTORY CORNER

BY COLTON SIMPSON
GRANT COUNTY HISTORICAL SOCIETY PRESIDENT

Camp Northward, the well known Christian Camp located in Pendleton County, Kentucky, held its first camp on Aug. 4, 1941.

Few people remember, though, that the camp got its start in Grant County.

Before moving its location to Falmouth, the camp was operated on the Odor Family farm on Fork Lick Creek, seven miles southeast of Williamstown.

It remained in Grant County from 1941 to 1953 when a new tract of land was purchased in Pendleton County.

A more detailed history of the beginning of the camp will be coming in an Aug. edition of the Grant County News.

Colton Simpson is the president of the Grant County Historical Society.

You can email him at jcoltonsimpson@gmail.com

Campers pose for a picture during the early days of Camp Northward.

TURNING BACK THE CLOCK

10 YEARS AGO
June 12, 2014

• US 25 yard sale fans descended on Grant County last weekend, June 5-7.

• The following students placed in the Williamstown Elementary talent show: Cayden and Brant Smithers, who took the audience on a musical journey through the decades, claimed first place. Olivia Hedges took second place with her dance and flag routine. Third went to singing sisters, Avery and Riley King.

• Heritage Bank's Relay for Life team challenged employees to a month-long pie-in-the-face competition. Customers voted on whom they wanted to see get "pied." Katie Davis and Jemma Thornton were the unlucky winners.

25 YEARS AGO
June 17, 1999

• Births announced this week: twins Hanna Lea and Seth Jordan Lillard were born to Steve and Amy Lillard on May 20. Tyrsten Cummins was born to Chad and Victoria Cummins of Dry Ridge on Dec. 23, 2023.

• Two Williamstown sophomores, Amanda Harris and Megan Brumback, will be on "The Kentucky Sings! Mostly Mozart Tour 2000." They are among 36 girls selected from the members of the 1998 KCDA All-State members who will travel to Austria to perform.

50 YEARS AGO
June 14, 1974

• A Grant County grand jury declared the death of Sherman Dixon, 63, a justifiable homicide. He was shot by his father, Mitchell Dawson, 86, during a quarrel. Death was the result of an internal cranial hemorrhage when he fell to the ground. Dixon was shot in the hand during the altercation. No charges have been filed.

• Sp-4 army specialist Donald R. Pennington of Dry Ridge was named Soldier of the Year for the 3rd Armored Division Artillery in Germany.

• J.L. Webb, president of the Bank of Williamstown, said the nation is facing a penny shortage. He encouraged families to empty the pennies from their piggy banks, old socks, and pickle jars and trade them in during "Penny Redemption Month."

Parton's Imagination Library now in every KY community

BY OFFICE OF GOV. ANDY BESHEAR

On June 5, the Governor, Lieutenant Governor and First Lady celebrated the statewide expansion of the Dolly Parton Imagination Library. For the first time, every preschool child in Kentucky can have the gift of reading delivered to their home, building a love of books that can last a lifetime.

Dolly Parton's Imagination Library (DPIL) mails a free, age-appropriate book to children each month from birth to age 5 and has been shown to have a significant positive impact on kindergarten readiness.

The program partners with local 501©(3) or governmental organizations to register children in their area, and with the addition of the Kenton County Public Library in June, every community in the commonwealth is now served by a local partner.

To sign up your child visit imaginationlibrary.com/kentucky. Kentuckians can also follow the Dolly Parton Imagination Library on Facebook and Instagram.

"My administration will always put education first, and that starts with putting books in the hands of our youngest learners," said Gov. Andy Beshear.

"As Governor, and as a dad, I'm proud that Team Kentucky has come together to reach this historic milestone for our kids. I hope parents and guardians across the commonwealth will sign their kids up for the Imagination Library today. Thank you to Dolly Parton and every local partner for your investment in Kentucky's children."

While the program has been available for more than a decade in limited areas of the state, more local partners have steadily joined since Kentucky lawmakers provided one-time matching funds in the 2021-22 state budget.

The next year, Gov. Beshear signed legislation establishing a framework for ongoing state support.

"As a rural Kentuckian and as a former educator, I am so proud and excited that every Kentucky child will now be able to create their own home library," said Lt. Gov. Jacqueline Coleman.

"As a mom to a preschooler, I've gotten to see firsthand the impact that reading has had on my own daughter from a young age. The Imagination Library is helping thousands of Kentucky children develop a love of reading and learning that they will carry with them as they grow up."

Kentucky's first ladies have also played key roles in the Imagination Library for years. Former First Lady Jane Beshear helped launch pilot programs in Eastern Kentucky and currently serves as board chair for the statewide program.

First Lady Britainy Beshear is a longtime advocate for children's literacy and will visit Kenton County this month to read with children and celebrate the program reaching statewide coverage.

SEE **LIBRARY/PAGE B4**

SECTION 00100
ADVERTISEMENT FOR BIDS

City of Dry Ridge
Warsaw Avenue Waterline Replacement

Separate Sealed BIDS for the construction of the Warsaw Avenue Waterline Replacement Project will be received by the City of Dry Ridge, 31 Broadway, P.O. Box 145, Dry Ridge, KY 41035 until June 28, 2024 at 10:00 A.M. local time and then publicly opened and read aloud at City Hall.

This project consists of approximately 870 LF of 6" PVC C900 DR-18 and all necessary appurtenances.

The CONTRACT DOCUMENTS may be examined at the following locations:
CITY OF DRY RIDGE, 31 BROADWAY, DRY RIDGE, KY 41035
KENVIRONS, 770 WILKINSON BLVD., FRANKFORT, KY 40601

Copies of the CONTRACT DOCUMENTS may be obtained from Lynn Imaging, 328 Old Vine Street, Lexington, KY 40507 (859-226-5850) and www.lynnimaging.com upon payment of a nonrefundable price of $175.00 for each set plus any shipping charges.

All bidders shall submit with their bid a Bid Bond in the amount of not less than five (5) percent of the base bid. No Bidder may withdraw his bid for a period of ninety (90) days after the scheduled Bid Opening Date. The Bidder awarded the contract shall execute a 100% Performance Bond and a 1 00% Payment Bond and shall furnish insurance as required, in the General Conditions. The Bidder awarded the project shall complete the project within 60 calendar days after date of authorization to start work. Liquidated damages will be assessed at $800 per calendar day.

Bidders must comply with the President's Executive Order Nos. 11246 and 11375, which prohibit discrimination in employment regarding race, creed, color, sex, or national origin. Bidders must comply with Section 3, Section 109, and Title VI of the Civil Rights Act of 1964, the Anti-Kickback Act and the contract Work Hours Standard Act. Bidders must certify that they do not, and will not, maintain or provide for their employees any facilities that are segregated on a basis of race, color, creed, or national origin.

Any bid that is obviously unbalanced may be rejected. The City of Dry Ridge reserves the right to reject any and all bids and waive informalities.

Small, minority and women's businesses and labor surplus area firms are encouraged to bid this project.

By: Greg Brockman, Mayor
City of Dry Ridge

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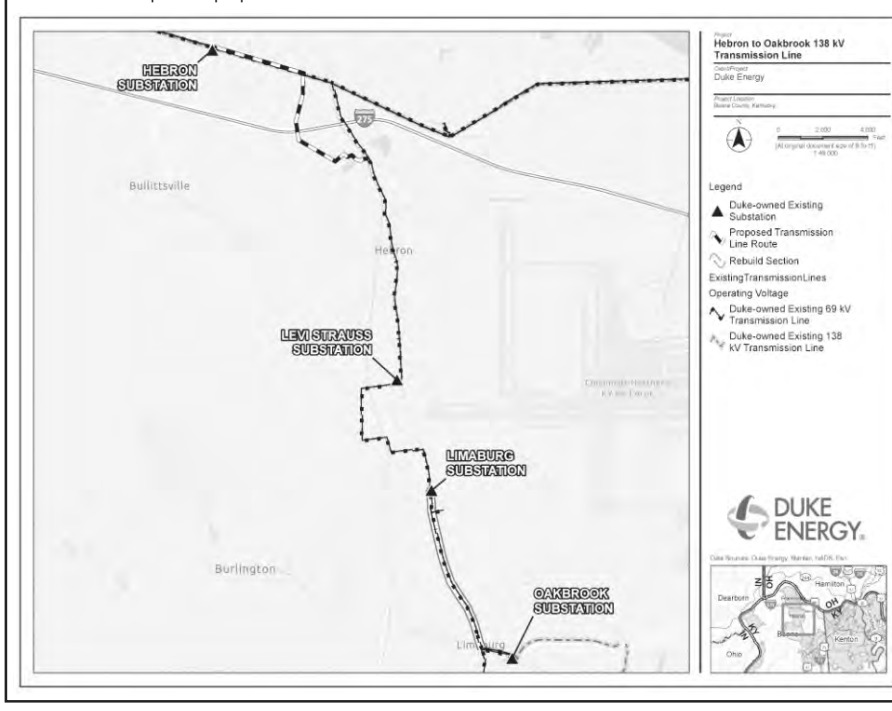


POSTED NO TRESPASSING

**No Trespassing Persons are notified that the land and property belonging to the below listed persons are posted against hunting, fishing, trapping, 4-wheeling or dirt bike riding, walking, horseback riding, woodcutting, dumping or any other kind of trespassing. Owners are not responsible for any accidents.

Violators will be prosecuted to the fullest extent of the law.

POSTED PROPERTY LISTINGS ARE BELOW.

Property of Doering Family Ltd. Partnership on Dry Ridge Mt. Zion Rd., Dry Ridge.

PROPERTY LOCATED AT - 5340 Stewartsville Rd., Williamstown.

Dimitt Property 7120 Warsaw Rd Dry Ridge (Old Kelly Martin Farm).

Dishon Farms, Verona-Mt. Zion Rd., Vallandingham Rd. and Arnold's Creek Rd.

Henry Family Farm at 1115 Smokey Rd., Williamstown, KY 41097.

Property listed for Rita Snow at 5220 Sherman Mt. Zion Rd, Dry Ridge, KY 41035.

MARTIN PROPERTY-lots on Sunny Hill Drive, Dry Ridge, KY.

DEGLOW, RICHARD & LINDA. Farm at 1495 Heekin Road, Williamstown, KY.

Littrell Property located at 800 & 940 Ashbrook Rd. Williamstown, KY 41097 NO TRESPASSING & NO HUNTING

MCINTIRE PROPERTY located on Old Cynthiana Rd. and Oak Ridge Pike.

Sponcil, Wayne 485 Sherman Newtown Rd. Sponcil Properties, 2895 Dixie Hwy.

Janice & Jack Bowling property located on White Chapel Road.

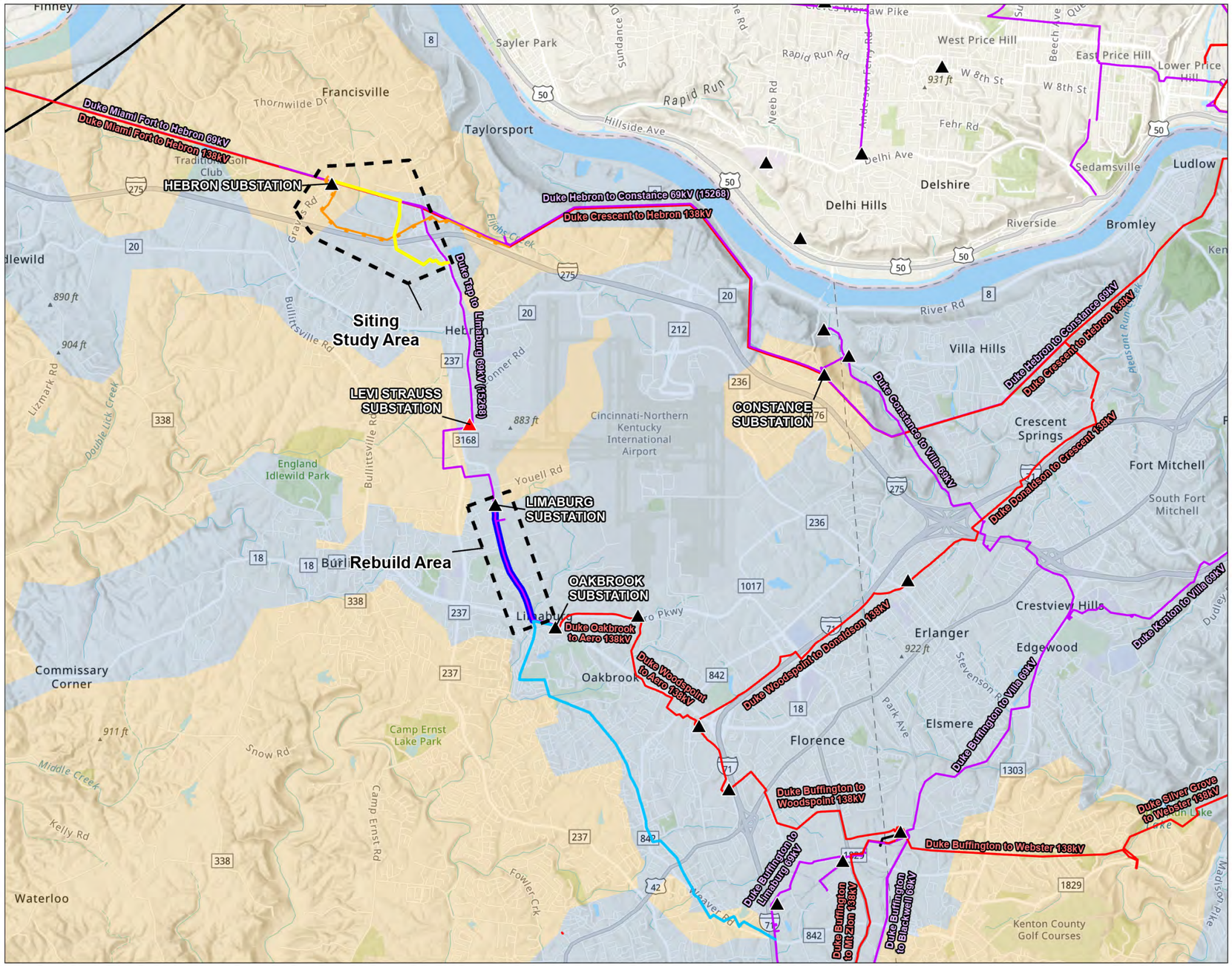


Figure No.
14

Title
Present System and Proposed Project Components

Client/Project
Duke Energy Kentucky
Hebron to Oakbrook 138 kV Transmission Line Project
193708666

Project Location
Boone Co., Kentucky

Prepared by PM on 2024-04-03
TR by SE on 2024-04-03
IR by TR on 2024-04-03

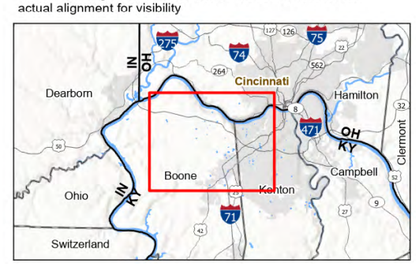
N

0 3,000 6,000 Feet
(At original document size of 11x17)
1:72,000

Legend
- Study Area
- Duke-owned Existing Substation
- Customer-owned Existing Substation
- Duke-owned Existing 69 kV Transmission Line*
- Duke-owned Existing 138 kV Transmission Line*
- Duke-owned Existing 345 kV Transmission Line
- Preferred Route
- Rebuild Section
- Proposed EKPC Transmission Line
- Buffington 6763 Retirement

Retail Electric Service Territory
- DUKE ENERGY KENTUCKY
- EAST KENTUCKY POWER COOP, INC

*Some Existing Transmission Line features are offset from actual alignment for visibility



Notes
1. Coordinate System: NAD 1983 StatePlane Kentucky North FIPS 1601 Feet
2. Data Sources: Stantec, Duke, USGS, NADS, PennWell, OSM, EKPC
3. Background: Esri World Imagery

DUKE ENERGY®

Page 1 of 1

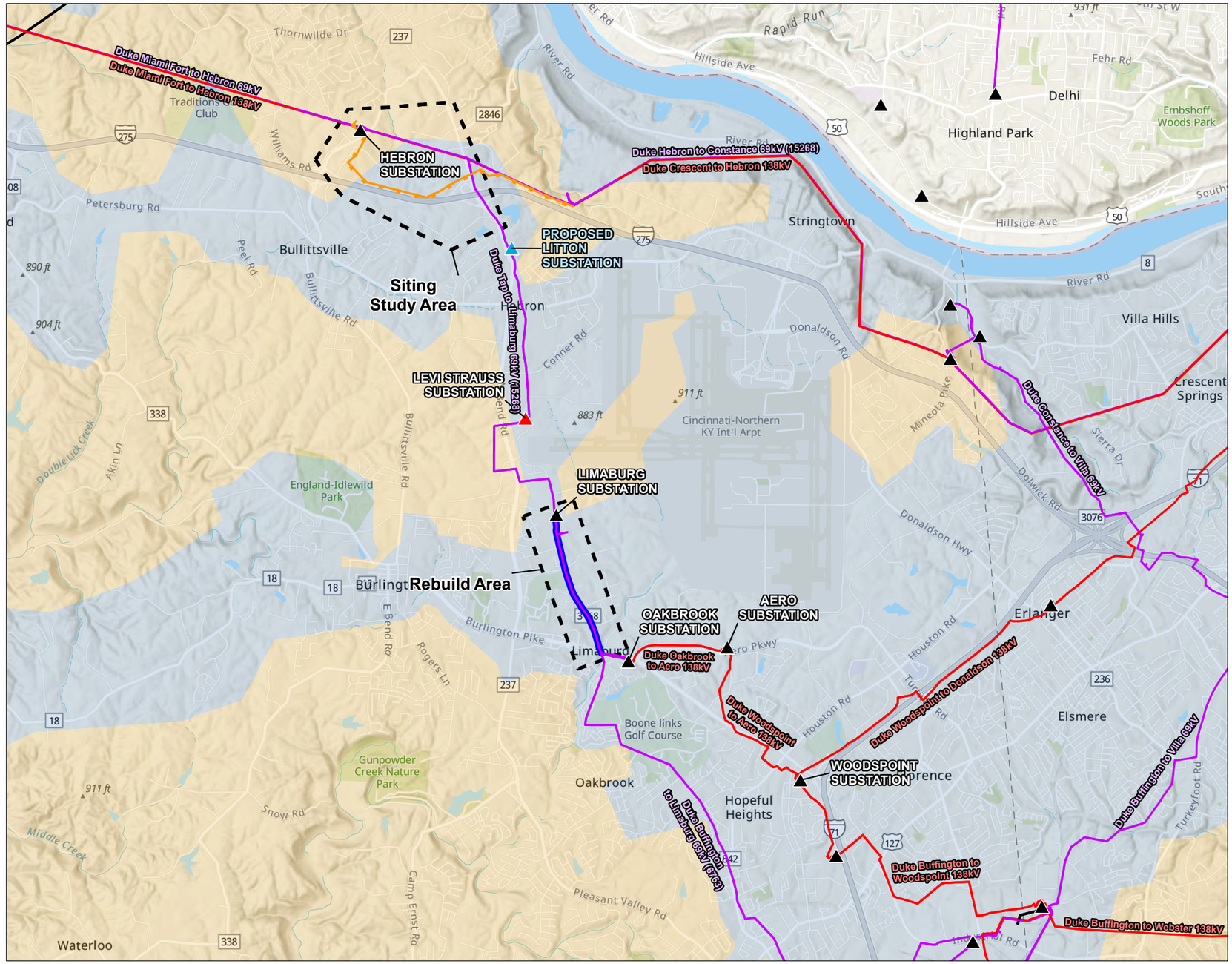


Figure No.
1

Title
Exhibit 16

Client/Project 193708666
Duke Energy Kentucky
Hebron to Oakbrook 138 kV Transmission Line Project

Project Location
Boone Co., Kentucky

Prepared by PM on 2023-04-27
TR by BT on 2021-11-09
IR by TR on 2022-09-08

N

0 2,500 5,000 Feet
(At original document size of 11x17)
1:60,000

Legend
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- Proposed Substation
- Customer-owned Existing Substation
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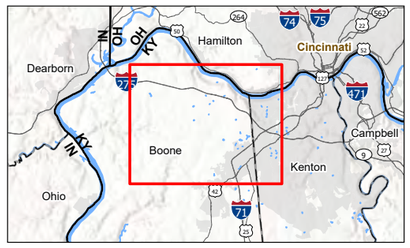
- Duke-owned Existing 345 kV Transmission Line
- Rebuild Section
- Proposed EKPC Transmission Line

Retail Electric Service Territory
- DUKE ENERGY KENTUCKY
- EAST KENTUCKY POWER COOP, INC



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2. Data Sources: Stantec, Duke, USGS, NADS, PennWell, OSM, EKPC
3. Background: Esri Topographic Map

DUKE ENERGY®

CONFIDENTIAL PROPRIETARY TRADE SECRET

CONFIDENTIAL EXHIBIT 17

FILED UNDER SEAL

CONFIDENTIAL PROPRIETARY TRADE SECRET

CONFIDENTIAL EXHIBIT 18

FILED UNDER SEAL

Transmission – Public Engagement
EX552 | 315 Main Street
Cincinnati, OH 45202
duke-energy.com

February 14, 2022

You're invited to learn about a Duke Energy transmission reliability project planned for Boone County.

Dear Neighbor,

Duke Energy's electrical system is essential to powering the energy needs of our communities, and that's a responsibility that we take very seriously. Boone County is experiencing rapid growth and increased energy use – it's the fastest-growing county in our Kentucky service area.

Duke Energy is planning to build a new 69-kilovolt (kV) transmission line to help meet the growing energy needs of the region. The new line will start at the Hebron Substation at 2139 Graves Road, in Hebron, Ky., to Route 237.

We invite you to attend a virtual public meeting to learn more about this project. **Please visit the project website at duke-energy.com/Hebron to register**.

Monday, March 7, 2022, from 6 to 7 p.m.
Tuesday, March 8, 2022, from 7 to 8 p.m.

At these events, you can hear from the transmission project team and ask your questions. The website will be available throughout the construction of the project.

We invite your input on potential routes under consideration for the proposed transmission line (please see map enclosure). You are receiving this letter because you are a property owner within 500 feet of the centerline of one of the proposed routes under consideration. Our goal is to minimize impacts to personal property, homes, businesses, the environment and cultural resources.

This virtual public meeting will:
- Provide information about how a routing study is conducted
- Provide a review and discussion about the potential routes under consideration
- Allow your input to become part of the official data collection record

You can also join the webinar by phone (in listen mode only) by calling 415.655.0003 and entering access code 2342 820 1581 on **March 7** or access code 2339 436 4313 on **March 8**.

If you're unable to join us or if you have additional questions about the project, please contact us at the toll-free number or email address below. We can mail you the packet of information that will be shared at the virtual open house.

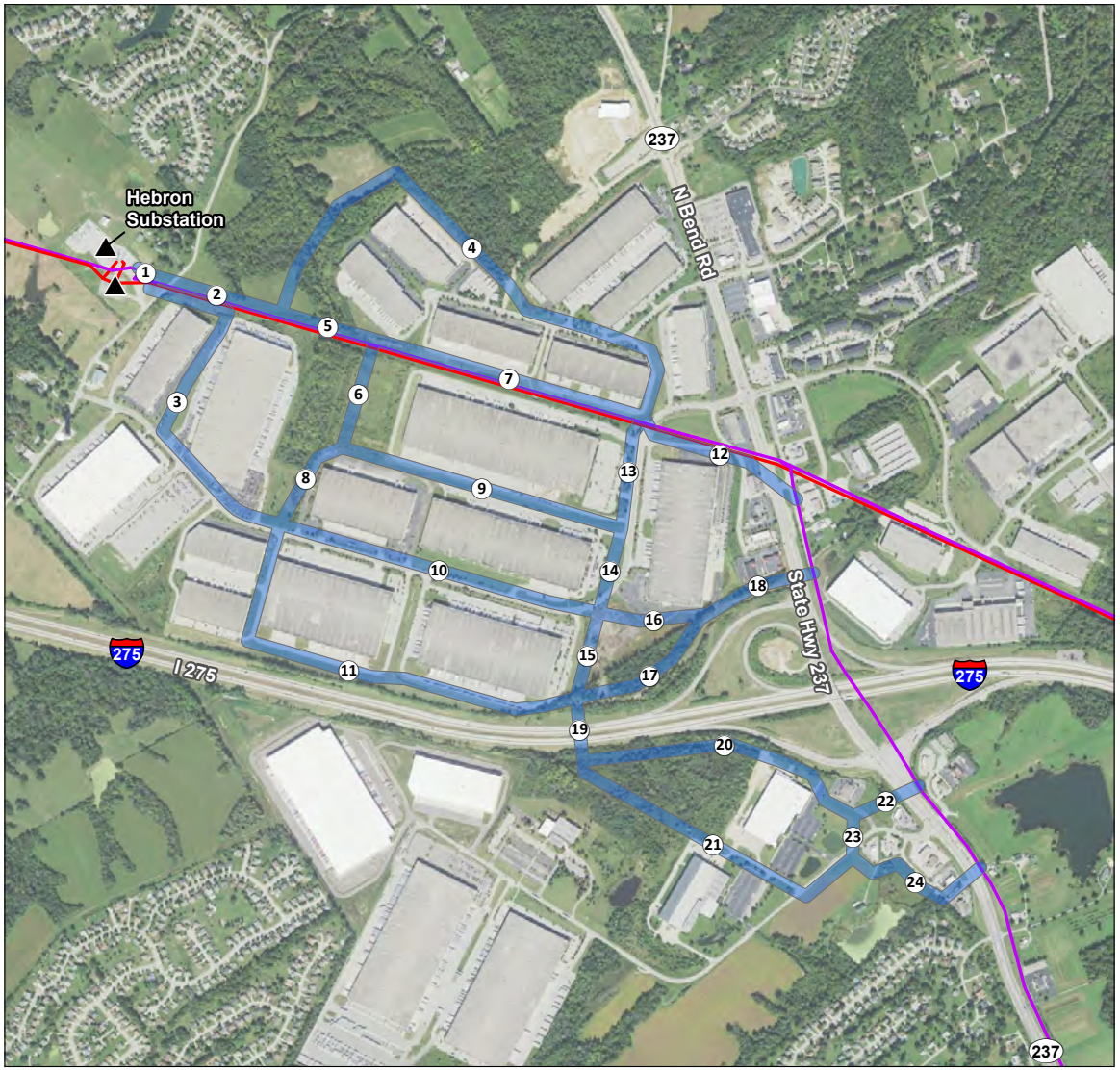
Website: duke-energy.com/Hebron
Email: MWOhioTransmission.com
Call: 888.827.5116

We're committed to communicating with you throughout this process. We hope you'll join us during one of the live sessions or visit our website.

Sincerely,

Chris Gruber
Senior Project Manager for Duke Energy

Enclosure



Title
Potential Route Corridors

Client/Project
Hebron to Oakbrook
138 kV Transmission Line

Project Location
Boone County,
Kentucky

N

0 600 1,200 Feet
(At original document size of 8.5x11)
1:14,400

Legend

- Existing Substation
- Potential Route Corridor*
- Duke-owned Existing 69 kV Transmission Line
- Duke-owned Existing 138 kV Transmission Line

*Note 1: The alternative route corridors are shown at a width of 100 feet for study purposes only. The final easement area will be located within this area and may be less than 100 feet in some locations.

Note 2: Only one route will be selected for the new transmission line.

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Notes
1. Coordinate System: NAD 1983 StatePlane Kentucky North FIPS 1601 Feet
2. Data Sources: Duke Energy, Stantec, NADS
3. Background: NAIP 2018

Page 1 of 1

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Transmission - Public Engagement
EX552 | 315 Main Street
Cincinnati, OH 45202

You're Invited:
Hebron to Oakbrook Reliability Project Virtual Public Meeting

Impacted counties: Boone County, Ky.

Join us!

Monday, March 7, 2022
6-7 p.m.

Tuesday, March 8, 2022
7-8 p.m.

Pre-register:
duke-energy.com/Hebron

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<<Street Address>>
<City>>, <<State>> <<ZipCode>>

Join us!

Monday, March 7, 2022
6-7 p.m.

Tuesday, March 8, 2022
7-8 p.m.

Pre-register:
duke-energy.com/Hebron

Please join us to learn more about Duke Energy's Hebron Electric Reliability Project.

Duke Energy invites you to a virtual public information meeting to get your input on potential routes under consideration for a new transmission line Boone County. The 1.1 to 2.5-mile Hebron to Oakbrook Reliability Project will upgrade the electric system by building a new 69-kilovolt (kV) transmission line between the company's Hebron and Oakbrook substations in Boone County.

You are receiving this invitation because you are a property owner within 500 feet of the centerline of one of the proposed routes under consideration. Our goal is to minimize impacts to personal property, homes, businesses, the environment and cultural resources.

Please visit the project website at **duke-energy.com/Hebron** to register for the virtual meeting.

You can also join the webinar by phone (in listen mode only) by calling **415.655.0003** and entering access code **2342 820 1581** on March 7 or access code **2339 436 4313** on March 8.

If you're unable to join us or if you have additional questions about the project, please contact us at the toll-free number or email address below. We can mail you the packet of information that will be shared at the virtual meeting.

Questions? Call Duke Energy at **888.827.5116** weekdays between 8 a.m. and 5 p.m. or email **MWOhioTransmission@duke-energy.com.**

We appreciate the opportunity to continue to meet the growing energy needs of your community.

*BUILDING A **SMARTER** ENERGY FUTURE ®*

DUKE ENERGY®

Hebron to Oakbrook Reliability Project

Virtual Public Information Sessions, March 7 and 8, 2022

DUKE ENERGY®

Dawn Fuller,
Senior Public Engagement Manager

Cara Brooks,
Community Relations Manager

Chris Gruber,
Project Manager

John Hurd,
Project Siting

Hebron to Oakbrook Reliability Project
www.duke-energy.com/Hebron

DUKE ENERGY®


Dawn Fuller,
Engagement


Sally Thelen,
Corp. Communications


Cara Brooks,
Community Relations


Chris Gruber,
Project Manager


John Hurd,
Siting


Kim Craven,
Safety


Mark Sendelbach,
Real Estate


Sean Bill,
Asset Protection


Jacob Banfill,
Vegetation


Jeff Turner,
Planning


Dane Vandewater,
Permitting


John Rogers,
Engineering


Ken Quitter,
Construction

Q&A Session with Subject Matter Experts

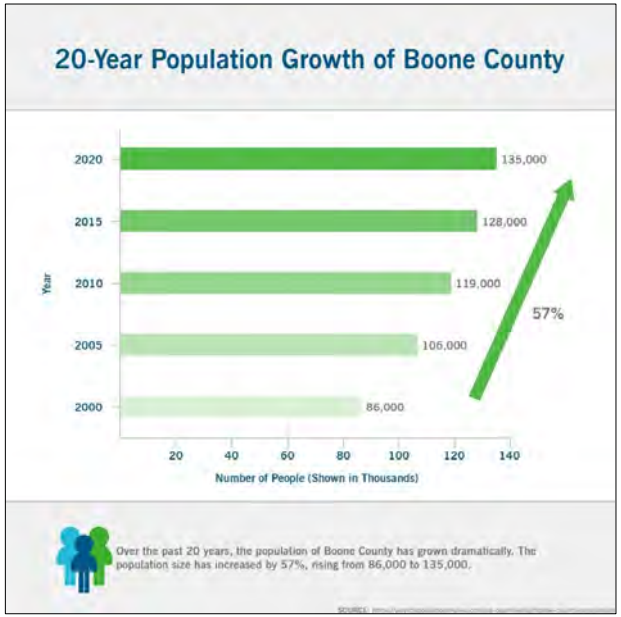
DUKE ENERGY®

Duke Energy Kentucky Operations

- Serving Kentucky for nearly 170 years
- Throughout Kentucky and Ohio, we employ approximately 2,200 people
- Provide electric service to almost 145,000 customers in Boone, Campbell, Grant, Kenton and Pendleton counties
- More than 3,200 miles of transmission and distribution lines in Kentucky

Hebron to Oakbrook Reliability Project

- Boone County is the fastest growing county in the Commonwealth of Kentucky. This rapid growth will likely continue.
- Duke Energy must expand the local energy system to ensure continued reliability and capacity.
- A new 69-kilovolt (kV) transmission line is needed between the company's Hebron and Oakbrook substations.
- The new transmission line is part of a larger reliability project that will include rebuilding an existing 69-kV transmission line and its associated equipment from Limaburg Substation along Limaburg Road in Hebron to Burlington Pike in Burlington.



Benefits to the Community

This project will bring many benefits to the community such as:

- **Providing additional capacity**
- **Enhancing Duke Energy's ability to provide safe and reliable energy**
- **Allowing more flexibility for providing critical energy**
- **Improving the company's ability to reroute power**
- **Maintaining a robust system**

Transmission Line Details

- The new line will be approximately 1-2.25 miles in length
- Runs between Hebron Substation and State Highway 237
- The new line will carry 69-kV but the poles and equipment will be designed to carry 138-kV (flexibility to respond to future growth in the region)
- 3-phase transmission wires, some areas may have distribution underbuild
- Pole height typically ranges from 80 to 100 feet
- Easement widths are 70 feet roadside and 100 feet cross country

*Example of steel transmission poles – final design to be determined

Benefits of Steel Poles

- Galvanized steel poles last longer than wood utility poles
- Require less maintenance and inspections, as they're not prone to rot or insect or animal damage
- Improved design for lightning protection and can withstand higher wind speeds than traditional wood poles. Both attributes benefit the energy grid during inclement weather

*Example of steel transmission pole – final design to be determined

Factors Considered When Siting Transmission Lines

Community/Public Input
Open houses, surveys, informational meetings, toll-free lines, email comments/suggestions and customer letters

Land Use
Residential, commercial, industrial, major developments, schools, conservation lands and parks, existing linear facilities, airports and managed lands

Land Cover
Forest woodland, mixed forest, grassland/pasture, freshwater urban development and urban residential

Cultural Resources
Archaeological resources, historic resources, historic districts and cemeteries

Natural Resources
State and federal rare, threatened and endangered species

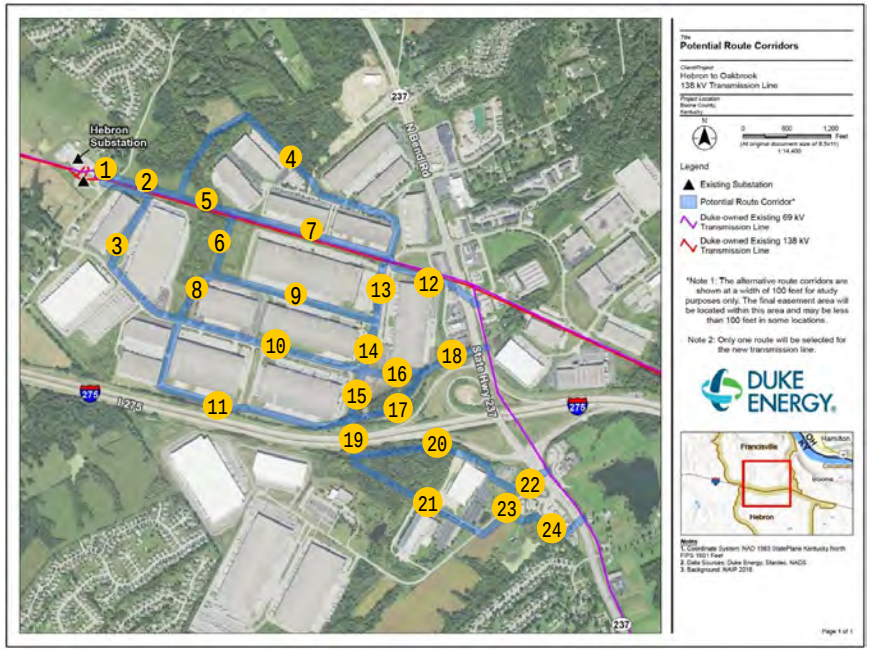
Visual Resources
View shed analysis

Water Resources
Wetlands, streams and flood plains

Occupied Buildings
Number of single-family residences in proximity of a purposed route

Safety/Reliability/Cost
Protection from undue risks, compliance with regulations and established design criteria, ensuring uninterrupted availability of power

Route Alternatives Currently Being Considered



The preferred route will be announced later this summer.

What happens after a route is selected?

1. Public notification
2. Land surveys to identify other utilities
3. Environmental surveys
4. Geotechnical (soil borings)
5. Pole location staking
6. Easement acquisition

Easements

Duke Energy's electric transmission lines are located in both urban and rural areas. In most cases, the company does not own the land on which the facilities are located and has easement rights that allow Duke Energy **to use another person's property to construct, operate, maintain, repair, and replace electrical facilities**. The landowner may continue to use the easement area so long as the use is not inconsistent with the easement.

Typical Construction Process

1. Easement staking
2. Vegetation removal
3. Removal of other encroachments
4. Utility mark outs, pre-construction work
5. Equipment staging and pole delivery
6. Active construction
7. Temporary restoration
8. Final restoration (weather dependent)

Vegetation Management

Duke Energy uses an Integrated Vegetation Management (IVM) strategy. This strategy helps to provide safe and reliable service to our customers by eliminating the possibility of contact by vegetation which has grown toward or could fall into the overhead power lines.

Installing Structures and Stringing Lines

Installing transmission structures and lines can be similar to a typical construction site, with numerous crews, trucks and other equipment. Generally, property owners can anticipate skilled contractors and trade workers, who are subject to specific requirements, to work during daylight hours. We typically do not work during nighttime hours. A Duke Energy employee is assigned to each project as an inspector.

Heavy Trucks and Equipment – Large trucks with drilling equipment will be seen on site to construct pole foundations, structures arrive in sections and will be assembled onsite.

Stringing lines – Linemen will be on site attaching wires to the structures.

Residential and commercial outages are not anticipated during construction.

Restoration

- Our land agents will work with individual property owners to discuss restoration of private property.
- Initial restoration includes removing construction materials, leveling disturbed areas, and restoring with grass seed and straw after work is completed.
- Sometimes final restoration will have to wait for warmer weather.
- Restoration will be monitored for successful growth.

Tentative Project Schedule

Virtual Open Houses
March 2022

Public Input Window
April 7, 2022

Preferred Route Announcement
June 2022

CPCN Filing
August/September 2022

Surveying and Easement Acquisition
Through December 2022

Project Design
2023

Construction
2024

Restoration
2025

These dates are subject to change.

We are standing by to answer your questions. Please type them into the chat box on the right side of your screen.

Thank you for joining us to learn more about the Hebron to Oakbrook Reliability Project.


Dawn Fuller,
Engagement


Sally Thelen,
Corp. Communications


Cara Brooks,
Community Relations


Chris Gruber,
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Jacob Banfill,
Vegetation


Jeff Turner,
Planning


Dane Vandewater,
Permitting


John Rogers,
Engineering


Ken Quitter,
Construction

Q&A Session with Subject Matter Experts

DUKE ENERGY®

30-Day Public Comment Period

March 7 through April 7, 2022

Please submit your questions and comments using any of the methods below.

Comment Form on Interactive Map

www.duke-energy.com/Hebron

Email

MWOhioTransmission@duke-energy.com

Phone

888.827.5116

We are committed to evaluating all input received during this comment period as part of our route selection process.

Hotline: 888.827.5116

Email: MWOhioTransmission@duke-energy.com

Website: duke-energy.com/Hebron

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

The Electronic Application of Duke Energy Kentucky, Inc. for a Certificate of Public Convenience and Necessity to Construct A 138-kV Transmission Line And Associated Facilities In Boone County (Hebron to Oakbrook Transmission Line Project)	))))))	Case No. 2024-00158

DIRECT TESTIMONY OF

YANTHI W. BOUTWELL

ON BEHALF OF

DUKE ENERGY KENTUCKY, INC.

June 27, 2024

TABLE OF CONTENTS

I. INTRODUCTION AND PURPOSE

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Yanthi W. Boutwell, and my business address is 139 East Fourth Street, Cincinnati, Ohio 45202.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

I am employed by Duke Energy Business Services, LLC (DEBS) as General Manager of Midwest Transmission Resource & Project Management. DEBS provides various administrative and other services to Duke Energy Kentucky, Inc., (Duke Energy Kentucky or Company) and other affiliated companies of Duke Energy Corporation (Duke Energy).

Q. PLEASE BRIEFLY DESCRIBE YOUR EDUCATIONAL AND PROFESSIONAL BACKGROUNDS.

A. I hold a Bachelor of Science and a Master of Science in Electrical Engineering from the University of Alabama at Birmingham and a Master of Business Administration from Xavier University. I am a licensed Professional Engineer in the states of Ohio, Kentucky, Pennsylvania, and Alabama. I joined Duke Energy in 2001 and have held various leadership and engineering roles within Transmission Engineering. Prior to joining Duke Energy, I worked as an engineer for Alabama Power Company in Birmingham, Alabama and for Allegheny Power in Greensburg, Pennsylvania. I have design experience in transmission line, substation, Protection & Control, and substation standards. In May of 2019, I became Director of Transmission Resources & Project Management where I was responsible for providing strategic direction relative to project and resource management to the

Transmission Department. In November of 2019, I assumed my current role as General Manager of Transmission Resource & Project Management.

Q. PLEASE SUMMARIZE YOUR DUTIES AS GENERAL MANAGER OF MIDWEST RESOURCE & PROJECT MANAGEMENT.

A. As General Manager of Midwest Resource & Project Management, I am responsible for providing strategic direction relative to project and resource management to the Transmission Department as it relates to project development and execution, project portfolio management, and construction management. I am accountable for the Midwest portion of the overall Transmission project portfolio with large capital spending that equates to a portfolio of 100's of projects. I play a key role in providing oversight on the Duke Energy Midwest Transmission capital and Operation and Maintenance (O&M) budget. I serve as the department management point of contact with other departments and organizations, both internally and externally to the Company as it relates to Midwest Transmission projects.

Q. HAVE YOU PREVIOUSLY PROVIDED TESTIMONY BEFORE THE KENTUCKY PUBLIC SERVICE COMMISSION?

A. Yes. I previously provided testimony in support of the Company's Applications for Certificates of Public Convenience and Necessity in several cases before the Commission.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. I am testifying in support of Duke Energy Kentucky's application for a certificate of public convenience and necessity (CPCN) to build the Hebron to Oakbrook Transmission Line Project (the Project). In doing so, I provide an overview of the Project, Project need, details on Project components, and details on the Company's compliance with the notice requirements for this proceeding. Finally, I sponsor Confidential Exhibits 5, 17, and 18 and Exhibits1, 7, 12, 13, 14, 15, and 16 to the Company's Application.

II. OVERVIEW OF THE PROJECT AND SUMMARY OF NEED

Q. PLEASE BRIEFLY SUMMARIZE DUKE ENERGY KENTUCKY'S PROPOSAL IN THIS APPLICATION.

A. Duke Energy Kentucky is seeking authority to construct and operate a new single circuit 138-kilovolt (kV) transmission line. The proposed line connects the existing Duke Energy owned Hebron and Oakbrook Substations via a tie-in with a Duke Energy-owned 69 kV line between the Limaburg and Oakbrook Substations. As more fully explained by Company witness, Betsy Ewoldt[1], Duke Energy Kentucky is seeking authority to construct and operate a new single circuit 138 kV capacity transmission line (circuit #15264). The new circuit will utilize a portion of the existing #15268 69 kV transmission line circuit, a portion of the existing #6763 69 kV transmission line circuit, and approximately 2.1 linear miles of a proposed new transmission line portion. To accommodate the new circuit, reconfigurations to the

[1] Exhibit 21

existing #6763 circuit and the existing #15268 circuit will occur to minimize the new infrastructure required to create this new circuit. The #15268 circuit that is currently a three-terminal circuit between the Hebron, Constance, and Limaburg Substations will be split so that after the project is complete, #15268 will only connect the Hebron and Constance Substation while a portion of the existing Tap to Limaburg will be incorporated in the proposed Hebron to Oakbrook circuit #15264. The #6763 circuit will be reconfigured so that a portion of the circuit between Limaburg and Oakbrook substation will be rebuilt and incorporated into the new Hebron to Oakbrook circuit #15264. Another portion of the #6763 circuit between the Oakbrook Substation and near Interstate 71/75 will be retired, and the remaining portion of the circuit on the east side of the interstate will remain operational as it currently is built. Therefore, this proposed new circuit would start at the Hebron Substation and begin with approximately a proposed new 2.1-mile section, connect to an existing portion of the #15268 circuit south of Interstate 275 to the existing Limaburg Substation, and then utilize an approximately 1.5 mile section of the #6763 circuit which will be rebuilt in place to 138 kV capacity. The new circuit will be energized to 69 kV initially with future plans to energize to 138 kV. The individual portions of the Project are described in Ms. Ewoldt's Testimony. As a result of the new circuit, the portion of circuit #6763 that currently feeds the Oakbrook Substation will be retired. The retirement is discussed in further detail below. There are no other current plans for upgrades to this existing section of the Duke Energy Kentucky 69 kV Feeder circuit #15268 between the Limaburg Substation and the point where the new 138 kV-constructed (69 kV-energized) line

intersects the existing line. It is anticipated that the loads in this region may eventually exceed the capacity of the 69 kV system. At that time, this line section will be reconstructed to enable operation at 138 kV and the Hebron to Oakbrook circuit will be converted to 138 kV operation. As much existing equipment will be reused as possible, the extent of which will be assessed when detailed design is being completed. For the transmission line and equipment, some existing poles may be reused if they have already been replaced with steel poles. The distribution equipment will also continue to be utilized where feasible.

Q. IN WHAT COUNTY IS THE PROJECT LOCATED?

A. The Project will be in Boone County, Kentucky.

Q. PLEASE DESCRIBE THE PATH OF THE PROPOSED NEW CIRCUIT #15264 138 kV TRANSMISSION LINE.

A. The Project location is shown in Exhibit 2. The proposed line begins at the Hebron Substation, located west of the industrial/commercial complex along Graves Road. The route exits the substation to the east, follows the existing transmission line corridor and then turns south along Worldwide Boulevard. The route then crosses Worldwide Boulevard and continues south to cross Interstate 275. Once across Interstate 275, the route turns east, bisecting a parcel before following a parcel line and then crossing Litton Lane. The route then follows Litton Lane and parcel boundaries east before it crosses Highway 237 to meet the existing transmission lines where it travels south to the Oakbrook Substation completing circuit #15264.

Q. WHAT IS THE PURPOSE OF THE PROJECT AND WHY IS IT NECESSARY?

A. The purpose of the Project is to reinforce Duke Energy Kentucky's transmission system that supplies the Company's service area west and south of the Cincinnati/Northern Kentucky International Airport (CVG). Aero Substation is the source of supply to the Amazon Air Hub as well as other loads in the area west and south of CVG. Duke Energy Kentucky has recently completed several projects to supply the Aero Substation via a 138 kV line extension to Aero from the Woodspoint Substation. As part of this recent effort to reinforce the system, Aero Substation was connected at 138 kV to the Oakbrook Substation, where it was tied into the existing 69 kV system west of CVG via the installation of a 138-69 kV transformer. As shown on Exhibit 15 this configuration of connection between the Aero and Oakbrook substations enables the 138 kV source from Woodspoint through Aero to support the 69 kV system, and also provides a source to Aero in the event that the Woodspoint to Aero circuit experiences an interruption or is otherwise unavailable for service. The existing 69 kV system has limited capacity to support the loads supplied from Oakbrook and Aero if the Woodspoint to Aero 138 kV circuit is unavailable. Based on recent load growth trends and updated forecasts as of June 2024, it appears that the current system will not be able to supply all Oakbrook and Aero loads by the summer of 2028. The 69 kV system also has limited capacity to support expected load growth in the region to be supplied from the planned new Litton substation. The proposed new circuit #15264 will provide sufficient capacity such that load requirements of the area can be met

without risk of overload.[2] This project that utilizes existing infrastructure and easements where practical, was selected over building a new transmission line from Hebron to Oakbrook. That would require over seven miles of new transmission which would have a bigger impact to the community and incur additional costs. Transmission upgrade projects are not necessarily planned to exactly coincide with some projected load. Duke Energy Kentucky believes it is prudent to have facilities planned and installed based on reasonable expectations of load rather than waiting for load to appear and then be caught short. Confidential Exhibits 17 and 18, prepared by Duke Energy Kentucky Customer Delivery and Transmission engineers, demonstrate the high growth potential for this area.

After completion of the project, the upgraded system will have sufficient capacity to meet the projected requirements of the area for several years. Constructing the project for future operation at 138 kV will facilitate increasing the capacity to the area when the area load exceeds the capacity that can be provided at 69 kV.

The Litton substation project is not included as part of the application as it is a separate standalone project from the Hebron to Oakbrook transmission line project and the transmission line component of the Litton substation project was significantly less than 1 mile in overall length.

Q. WHEN IS THE PROPOSED IN-SERVICE DATE FOR THE PROJECT?

A. The proposed final in-service date for the Project is December 31, 2027. The Company intends to bring pieces of the project into service as completed.

[2] See Confidential Exhibit 17.

Q. COULD DUKE ENERGY KENTUCKY RELIABLY SERVE THE ANTICIPATED NEW LOAD IN THE AREA WITHOUT THE PROJECT?

A. No. The existing and planned electric infrastructure in the area would not reliably support the future load, including that of the Amazon Prime Air Hub facility. Without this Project, it is anticipated that a low-capacity section of an existing 69 kV circuit will be susceptible to overload during high-load and or other system conditions. This susceptibility will require placing the system in a radial configuration any time it is determined that the overload would occur for a reasonably foreseeable event. This will subject various substations and the customers supplied from them to interruption for events that would otherwise not result in interruption, or to longer interruption rather than brief interruption.

Q. COULD THE SERVICE TO BE FURNISHED BY THE PROJECT BE REASONABLY PROVIDED BY REBUILDING AN EXISTING TRANSMISSION LINE OR EXTENDING SERVICE FROM AN EXISTING SUBSTATION?

A. The low-capacity section of an existing 69 kV circuit is approximately 5 miles in length and is routed through a heavily developed residential area. Rebuilding this section to provide the needed capacity would have much greater impacts to the public than the proposed project. It would also not provide the same capacity benefits to the local system, nor the possibility to meet future needs via upgrade to 138 kV.

Q. WHY WILL THE NEW LINE SECTION BE CONSTRUCTED TO ALLOW FOR FUTURE CONVERSION TO 138 KV OPERATION?

A. The capacity needs of the area can reliably be met by operating the new facilities at 69 kV. Upon completion of the project, the potential overloads will be mitigated, and the Duke Energy Kentucky 69 kV system in the vicinity will then have sufficient capacity to serve the expected area load. Continued operation at 69 kV minimizes the amount of work required to supply the area load requirements for the foreseeable future. However, Duke Energy Kentucky anticipates that the load in this area has the potential to continue to increase such that 69 kV supply will become inadequate at some point.

The Company feels that it would be wasteful of resources and more impactful to the public to build the new facilities capable of operation at only 69 kV and then return in 5 or 10 years and have to essentially completely rebuild the same facilities to upgrade to operation at 138 kV. The 5 to 10 year figure for possible conversion to 138 kV was provided as a rough estimate of the possible need to do so, and the conversion will only be implemented if and when loading conditions exceed the capacity of the 69 kV system.

By designing the line to 138 kV now it will require larger insulators and slightly taller structures but everything else is the same. It would require the same amount of labor, same type of wire, same access and construction needs. When the line is uprated to 138 kV this section of line will not need to be redone in any way. If it is designed and built to 69 kV now, all the structures and insulators would need to be replaced and only the conductor could be reused. This would require disturbing all the properties again for construction and replacing all the structures.

III. PROJECT CONSTRUCTION

A. New Transmission Line

Q. PLEASE DESCRIBE THE PROPOSED NEW TRANSMISSION LINE PORTION OF THE PROJECT IN MORE DETAIL.

A. Duke Energy Kentucky proposes to construct approximately 2-miles of new single circuit 138 kV transmission line in Boone County, Kentucky. The new line will connect the existing Hebron Substation with the Oakbrook Substation via a tie-in with a Duke Energy-owned 69 kV line along North Bend Road. The new electrical transmission line will have approximately 34 galvanized steel monopoles installed in private easements.

Q. PLEASE DESCRIBE THE AREA THE PROPOSED LINE WILL TRAVERSE.

A. The area of the proposed line is located in the City of Francisville, Kentucky, and the City of Hebron, Kentucky. The area is relatively hilly, with steep slopes (>20%) surrounding much of the existing infrastructure. It is characterized by mixed industrial and commercial development, interspersed by vacant wooded lots, and residential areas. Existing development includes the Boone County public library, suburban housing development, warehouse facilities, Hebron Fire Protection District Station 2, Children's House Hebron, medical facilities, storage facilities, restaurants, and other retail buildings. Major travel corridors include Interstate 275, State Route 237, and Graves Road. Buried utilities, including water, sanitary sewer, storm sewer, and gas lines are sited along most roadsides and under parking lots in the area. There is one stream, Sand Run, and minimal presence of wetlands and

other jurisdictional waters or water features. Woodlots are present in the northern portion of the area, along Sand Run, and throughout vacant lots in the southern portion of the area.

Q. PLEASE DESCRIBE THE PRINCIPAL TYPES OF STRUCTURES THAT WILL BE USED FOR THE PROPOSED TRANSMISSION LINE.

A. Structure types and numbers will be determined during final engineering, which includes ground survey and geotechnical studies, and will depend upon terrain crossed, spans, turning angles, and other engineering considerations. Based upon preliminary engineering, the Company anticipates approximately 26 foundation based galvanized steel poles and 50 direct embedded galvanized steel poles will be required for the project. It is anticipated that angle and dead-end structures will utilize either guy wires and anchors or foundations.

Q. WHAT ARE THE PROJECTED HEIGHTS OF THE STRUCTURES THAT WILL BE ERECTED AS PART OF THE PROJECT?

A. The structure heights will vary depending on placement, terrain, and clearance requirements. The transmission engineering design has the average height above ground at approximately 80 feet.

Q. PLEASE DESCRIBE THE TYPES OF EQUIPMENT THAT WILL BE USED FOR THE PROPOSED TRANSMISSION LINE.

A. The proposed structures will have one 138 kV transmission circuit supporting a total of three phase conductors and one overhead ground/shield wire. In addition, the design incorporates potential distribution under build to further enhance the

distribution system in some of the locations. The phase conductors will utilize 954 kcmil aluminum conductor steel-reinforced (ACSR) conductor.

The design materials selected for this project are the Duke Energy Midwest standard transmission poles and equipment for a 138 kV transmission line, which are similar to industry standards for transmission lines. Since the standard equipment for a 138 kV transmission line was able to be utilized for this project, no alternative materials or design were considered. Utilizing standard poles and equipment provide operational and maintenance benefits. Standard poles and equipment are often readily available in case of an unexpected outage allowing customers to regain service much faster with less overall costs.

Q. WHAT IS THE STATUS OF THE ENGINEERING AND DESIGN WORK FOR THE HEBRON TO OAKBROOK 138 kV TRANSMISSION LINE?

A. Engineering and design work are ongoing and will be finalized once surveying and property rights are obtained. Duke Energy Kentucky hired a contractor to provide surveys on underground utilities based on the routes traversing through a commercial area. Structures may require minor field changes to accommodate any additional identified utility during construction.

Q. WHAT IS THE WIDTH OF THE RIGHT-OF-WAY FOR THE PROPOSED LINE?

A. Where the proposed transmission line is cross country, the standard right-of-way for new lines is 100 feet. Where the proposed transmission line is parallel and adjacent to existing road right-of-way, the right-of-way guidelines for new lines is 70 feet.

For the preferred route in yellow as shown on Exhibit 2, where we parallel an existing 138 kV/69 kV tower line we would utilize the existing easement and acquire additional easement as needed. For the section of preferred route not parallel to the tower line we would utilize our Duke Energy Kentucky standard easement widths. For the rebuild section, the structures would be designed for 138 kV but initially energized to 69 kV until a later time. They would not be co-located. ROW needs on the rebuilt section would be acquired on an as needed basis during detailed design.

The proposed new ROW is typically 100 ft. in width. The ROW can be reduced to 70 ft. wide when the proposed ROW is parallel and adjacent to an existing road ROW. The road ROW provides two main benefits to allowing a smaller ROW. First, the road ROW provides some protection because new above ground development such as buildings is limited or prohibited. Second, the road ROW also provides the ability to access the ROW for construction and operations and maintenance activities.

Q. WILL THE PROPOSED LINE'S RIGHT-OF-WAY EXCEED 100 FEET IN SOME CIRCUMSTANCES?

A. No. It is not anticipated that a greater right-of-way width will be needed.

Q. WHAT RIGHT-OF-WAY ACTIVITIES HAS DUKE ENERGY KENTUCKY UNDERTAKEN TO DATE?

A. Letters announcing the preferred route have been sent to property owners within 100 feet of the selected route notifying them of the placement of the line within or near their property. This letter included the 10-day notification in compliance with

KRS 416.560(4) which has allowed engineering, testing, and surveying to proceed with site visits to gather additional details to continue the design of the route. A bid event has been conducted to select a land acquisition vendor to start contacting property owners in 2024.

Q. DUKE ENERGY KENTUCKY FILED MAPS ILLUSTRATING THE CENTERLINE OF THE PROPOSED TRANSMISSION LINE AS EXHIBIT 9 TO ITS APPLICATION. COULD THAT CENTERLINE CHANGE?

A. Yes. However, no change is anticipated at the time of filing, but discussions with property owners during the easement acquisition process could result in the adjustment of the centerline. Duke Energy Kentucky will work with property owners to minimize impacts and accommodate preferences to the extent practical. Underground utilities could shift the centerline slightly during final engineering and construction. The proposed centerline of the right-of-way for the new portion of the transmission line is shown on Exhibit 9. The centerline for the rebuild portion of the Project will likely not change, see Exhibit 11. Duke Energy Kentucky seeks authority to place the centerline and associated right-of-way in the filing corridor if required based on field conditions encountered.

Q. WHAT IS THE WIDTH OF THE FILING CORRIDOR?

A. The width of the Filing Corridor is 200 feet wide or 100 ft. on either side of the proposed centerline. The proposed transmission line ROW for the new line portion of the project is 100 ft. wide or 50 ft. on either side of the proposed centerline. This filing corridor would allow for the proposed centerline and associated ROW to move 50 feet on either side of the proposed centerline and ROW to account for

adjustments required during finalized negotiations with landowners and access needs. This does not include construction access if alternative access is required.

B. Rebuild Transmission Line

Q. PLEASE PROVIDE A BRIEF SUMMARY OF THE REBUILD PORTION OF THE PROJECT.

A. The Project proposes to rebuild approximately 1.5 miles of Duke Energy Kentucky owned circuit #6763 in place from the Limaburg Substation south along Limaburg Road in Hebron to Burlington Pike (KY 18) in Burlington (structure HL800). The rebuild will be designed to 138 kV standards but will initially be energized to 69 kV, like the remainder of the new circuit. The rebuild will consist of retiring approximately 29 wood poles and 12 light duty steel poles and installing 38 light duty steel poles with distribution under build. The rebuild portion of the Project is shown in Exhibits 4 and 11.

Q. WHAT IS THE PURPOSE OF THE REBUILD PORTION OF THE PROJECT?

A. The rebuild portion of the Project is required to meet capacity needs and is part of a larger Duke Energy Kentucky reliability project. The rebuild section of the existing #6763 circuit will have the conductors replaced to increase the capacity to 138 kV. The portion that is being replaced is currently built to 69 kV standards; however, future plans to accommodate expected growth include energizing the new #15264 circuit to 138 kV.

Q. PLEASE EXPLAIN WHY THE EXISTING PORTION OF THE #15268 69 KV CIRCUIT UTILIZED FOR THE PROJECT DOES NOT ALSO NEED TO BE REBUILT TO 138 KV.

A. Reconductoring is not required to operate this circuit at 138 kV but may be warranted for other reasons. Further evaluations will be conducted prior to additional upgrades being proposed. The minimum upgrades needed to convert this circuit to 138 kV would include rebuilding this section with new taller steel poles and insulators. The new taller poles would be required to maintain adequate spacing for required 138 kV insulation, clearance, and operation.

The section of existing line that comprises the rebuild portion of The Project has smaller conductors than the remaining section not included in the scope of the current project. The Project as requested, while being operated at 69 kV, will increase the circuit capacity from 54 MVA to 133 MVA. This increased capacity will meet projected near-term circuit capacity needs. Rebuilding the remaining 3.5-mile portion of the new circuit not included in the Project would significantly increase the cost and time required to complete the Project. Duke Energy Kentucky feels it is prudent to defer this work and expense until system needs require this additional upgrade. In the future, if system capacity needs require this circuit to be further upgraded, rebuilding and reconductoring this section to 138 kV would then increase the capacity up to 300 MVA for the Hebron to Oakbrook circuit.

C. Construction

Q. WHEN DOES DUKE ENERGY KENTUCKY PROPOSE TO BUILD THE TRANSMISSION LINE IF THE CERTIFICATE IS GRANTED?

A. Construction on the line would begin in Spring of 2027 pending easement acquisition. The line is scheduled to be energized by end of 2027 and restoration of these construction areas will continue into spring of 2028. Retirement of the current 69 kV structures will occur throughout 2028.

Q. WILL THE COMPANY NEED TO OBTAIN ANY PERMITS FOR CONSTRUCTION OF THE PROJECT?

A. Yes. There are several permits that Duke Energy Kentucky has or is in the process of obtaining. Duke Energy Kentucky witness Betsy Ewoldt fully describes the required permits in her Direct Testimony.

Duke Energy Kentucky has active electric franchises in many of the communities that will be affected by the electric transmission line construction. It is my understanding that those franchises are filed with the Commission. To the extent any of these local communities require additional construction permitting, the Company will follow those local rules and work with the communities to obtain any and all necessary permits prior to beginning actual construction.

Q. PLEASE BRIEFLY DESCRIBE HOW THE COMPANY WILL EXECUTE AND COMPLETE CONSTRUCTION UNDER THE PROJECT.

A. Duke Energy Kentucky will use both Company and contractor crews where appropriate to complete this Project. If contractor crews are deployed, awarding of contracts will be accomplished through Company contractors that have

successfully accomplished work in prior construction projects. Duke Energy Kentucky will use industry standard equipment, materials, and designs to construct the Project in accordance with the work specifications.

Q. IS DUKE ENERGY KENTUCKY SEEKING DISCRETION TO LOCATE THE TRANSMISSION LINE AND RIGHT-OF-WAY WITHIN THE PROPOSED FILING CORRIDOR?

A. Duke Energy Kentucky is seeking authority to move the electric transmission line and associated right-of-way only within the indicated Filing Corridor. The Filing corridor is 200 ft. wide or 100 ft. on either side of the proposed centerline. The proposed transmission line ROW for the new line portion of the project is 100 ft. wide or 50 ft. on either side of the proposed centerline. The centerline and associated ROW could be moved 50 ft. left or right of the proposed centerline and remain within the Filing Corridor.

Q. WILL THE COMMISSION BE INFORMED OF THE FINAL LOCATION OF THE LINE AND THE ADJACENT RIGHTS-OF-WAY?

A. Yes. Duke Energy Kentucky will file with the Commission a revised plan showing the location of the proposed line and structures upon the completion of construction.

Q. PLEASE DESCRIBE THE CONSTRUCTION OF THE TRANSMISSION LINE.

A. Construction of the transmission line will start with installation of erosion and sediment controls followed by tree clearing and vegetation removal along the proposed right-of-way. Once the site is cleared, access roads will be installed as needed. Since the proposed route is along established roads and near stable surfaces

these may be utilized, and public roads could be used. A drill rig will set up at each location to dig the hole for each structure. Some structures will be directed embedded, and others will have concrete foundations requiring concrete trucks come to the site to pour concrete into the hole and cure prior to the structure being erected. Structures are then erected with cross arms and pullies installed. After all structures are set, pull ropes will be strung through each pulley for conductors to be strung. Once conductor is pulled in insulators will be installed with the conductor clipped in. After the line is energized and work is complete, the site will be restored.

Q. WILL ANY EQUIPMENT OR INFRASTRUCTURE BE RETIRED AS PART OF THE PROJECT?

A. Yes. As a result of the new circuit, the portion of existing circuit #6763 that currently feeds the Oakbrook Substation will be retired. Approximately 6 miles of this circuit will be retired from the Oakbrook Substation along KY 18 (Burlington Pike) south towards Interstate 71/75 along Weaver Road. The transmission conductors and insulators will be removed, and the poles will be cut to allow the distribution circuits on the poles to remain. Figure 14 depicts the retirement of circuit #6763.

From a transmission standpoint, circuit 6763 is functionally obsolete in the section identified to be retired in the Spring of 2028. The plan is to retire transmission circuit 6763 from the structures, and the distribution class equipment will remain in-service. The section of line was originally built in the early 1960's and there have been multiple transmission components (conductor, static, hardware, etc.) in addition to poles and crossarms identified and required emergent

replacement. Any upgrades to the transmission conductors and/or static would require a complete rebuild of the line section. Additionally, the existing easement widths do not meet current transmission standards for this voltage class and are more appropriate for distribution class electrical requirements.

Existing distribution circuits along Buffington #6763 will remain in place. Once the transmission conductor is removed, the top section of the wood poles will be cut and any steel poles will be left to be replaced in a future distribution circuit leaving the pole with distribution asset only. At this point of the design, most poles are to remain in place to support distribution assets. If the design identifies poles that have no distribution assets, we will relinquish easements associated with those transmission poles. Near the Oakbrook Substation, the structures along and closest to KY 18 will be removed except the ones that have distribution lines on them. Once the rebuild of the section of line from Limaburg to Oakbrook is complete, 6763 circuit will be retired which is to be completed in 2028.

Additionally, the portion of the Duke Energy Kentucky Tap to Limaburg 69 kV line running from the point where the new transmission line section ties in with the existing Duke Energy Kentucky Tap to Limaburg 69 kV line North to the Hebron to Constance 69 kV line (existing #15268 circuit) will be retired, the transmission equipment will be removed, and the poles will be topped. The poles and easements will remain in place to support the distribution lines also attached to these poles.

IV. FILING REQUIREMENTS

Q. DID DUKE ENERGY KENTUCKY COMPLY WITH THE REQUIREMENTS OF 807 KAR 5:120, SECTION 2(3) BY PROVIDING NOTICE TO ADJOINING LANDOWNERS WHOSE PROPERTY MIGHT BE AFFECTED BY THE PROJECT?

A. Yes. Duke Energy Kentucky mailed notices to the owners of record for all parcels within the proposed right-of-way and the filing corridor.

Q. WHEN WAS THE LANDOWNER NOTICE MAILED?

A. The landowner notification was mailed on May 17, 2024. The list of landowners within the proposed right-of-way and filing corridor to whom the notice was mailed is attached to the application in Exhibit 13. The required verification of mailing is attached to the application in Exhibit 12.

Q. DID THE NOTICE CONTAIN THE INFORMATION REQUIRED BY 807 KAR 5:120, SECTION 2(3)(A)-(E)?

A. Yes. The form of the notice is attached to the application as Exhibit 13.

Q. DID DUKE ENERGY KENTUCKY PUBLISH THE REQUIRED NOTICE IN THE NEWSPAPER OF RECORD?

A. Yes. A copy of the notice and publication affidavit is provided as Exhibit 14.

Q. IN ACCORDANCE WITH 807 KAR 5:001, SECTION 14(2), IS DUKE ENERGY KENTUCKY, A CORPORATION INCORPORATED IN KENTUCKY, CURRENTLY IN GOOD STANDING?

A. Yes. Duke Energy Kentucky is a Kentucky corporation originally incorporated on March 20, 1901 and is currently in good standing. A certified copy of Duke Energy

Kentucky's certificate of good standing from the Kentucky Secretary of State is attached as Exhibit 1 to the Application..

V. FINANCIAL ASPECTS OF THE PROJECT

Q. WHAT IS THE PROJECTED COST OF THE PROJECT?

A. The overall Project is estimated to cost approximately $35 million. That sum comprises the construction of the overhead line, including right-of-way acquisition and the retirement of a portion of existing circuit #6763. Costs are summarized in Exhibit 7.

Q. DOES THE $35 MILLION COST ESTIMATE DESCRIBED ABOVE AND SET OUT IN THE APPLICATION REPRESENT A FIXED AND FINAL COST?

A. No. The $36 million provided in Exhibit 7 is based on a Class 4 estimate that represents plus 50 percent and minus 30 percent. This estimate will be further refined once engineering is finalized and prior to start of construction. The final cost for the Project will not be known until all work is complete and the right-of-way is restored.

Q. WHAT IS THE PROJECTED COST OF OPERATION FOR THE PROPOSED FACILITIES AFTER THEY ARE COMPLETED?

A. Duke Energy Kentucky projects the annual operating cost will be on average approximately $10,000 for general maintenance and inspection.

VI. REVIEW OF THE PROJECT AND STAKEHOLDER INPUT

Q. IS THE PROJECT DENOMINATED BASELINE OR SUPPLEMENTAL PJM INTERCONNECTION LLC?

A. This will be considered a Supplemental Project. PJM Supplemental Project Number s1782.1.

Q. PLEASE EXPLAIN WHAT BEING A SUPPLEMENTAL PJM PROJECT MEANS.

A. Supplemental projects are expansions of the system that do not address reliability criteria, but other needs. This need includes items like equipment condition, performance and risk, operational flexibility and efficiency, infrastructure resilience, and customer service. The driver for this Project is customer service and being able to meet a customer's schedule for when it will need electric service.

Q. IS DUKE ENERGY KENTUCKY RELYING ON THE PJM REVIEW OF THE PROJECT TO DEMONSTRATE THE NEED FOR THE PROJECT?

A. No. As a supplemental project, the project is justified by Duke Energy Kentucky to meet internal criteria, in this case provision of service to retail customers. PJM performed a "do-no-harm" analysis to determine if the proposed project could necessitate any other system projects or modifications. The PJM "do-no-harm" analysis is intended to verify that a supplemental project proposed by Duke Energy Kentucky does not cause any baseline violations on the bulk electric system. No analysis is provided by PJM, beyond notification by PJM that no such violations are found. PJM notified Duke Energy Kentucky of that finding. Please see

Confidential Exhibit 18 which presents the transmission analysis that identifies the contingencies that will be cured by the proposed project.

Q. HAVE RELEVANT STAKEHOLDERS BEEN AFFORDED AN OPPORTUNITY TO PROVIDE INPUT REGARDING THE PROPOSED TRANSMISSION LINE ROUTE?

A. Yes. Duke Energy Kentucky has consulted with stakeholders using formal correspondence with regulatory agencies, in person meetings with local officials, two virtual open houses for landowners and other members of the community, and an online mapping, toll-free hotline, and comment website.

VII. CONCLUSION

Q. WERE EXHIBITS 1, 5, 7, 12, 12, 13, 14, 16, 17, AND 18 PREPARED AT YOUR REQUEST AND/OR UNDER YOUR DIRECTION AND CONTROL?

A. Yes.

Q. PLEASE EXPLAIN EXHIBIT 1.

A. Exhibit 1 is a certificate of good standing for Duke Energy Kentucky obtained from the Kentucky Secretary of State.

Q. PLEASE EXPLAIN CONFIDENTIAL EXHIBIT 5.

A. Confidential Exhibit 5 are Duke Energy in the Midwest (Duke Energy Indiana, Duke Energy Kentucky, and Duke Energy Ohio) standard structure details for 138-kV electrical structures. Final engineering would use a combination of these standard structures to construct the line.

Q. PLEASE EXPLAIN EXHIBIT 7.

A. Exhibit 7 includes the breakdown of the estimated projects costs.

Q. PLEASE EXPLAIN EXHIBIT 12.

A. Exhibit 12 includes a verified statement that, according to county property valuation administrator records, each property owner over whose property is within the filing corridor has been sent by first-class mail, addressed to the property owner at the owner's address as indicated by the county property valuation administrator records, or hand delivered, a letter notifying them of the proposed transmission line, where to obtain more information, and their rights to submit written comments, requests for intervention, and/or a public hearing.

Q. PLEASE EXPLAIN EXHIBIT 13.

A. Exhibit 13 includes a sample copy of the notice provided to a property owner and a list of the names and addresses of the property owners to whom the notice has been sent as well as a detailed map that corresponds to the list of property owners.

Q. PLEASE EXPLAIN EXHIBIT 14.

A. Exhibit 14 includes a copy of the notice of the intent to construct the proposed transmission line that has been published in a newspaper of general circulation in the county or counties in which the construction is proposed.

Q. PLEASE EXPLAIN EXHIBIT 15.

A. Exhibit 15 shows the current transmission components in the area as well as the Project components on an aerial map. This exhibit shows where the Project is located in association with other existing Duke Energy transmission lines.

Q. PLEASE EXPLAIN EXHIBIT 16.

A. Exhibit 16 shows the proposed transmission line along with the recently constructed Woodspoint Substation, Aero Substation, Oakbrook to Aero Transmission Line, and Woodspoint to Aero Transmission Line.

Q. PLEASE EXPLAIN CONFIDENTIAL EXHIBIT 17.

A. Confidential Exhibit 17 demonstrates the high growth potential for this area.

Q. PLEASE EXPLAIN CONFIDENTIAL EXHIBIT 18.

A. Confidential Exhibit 18 presents the transmission analysis that identifies the contingencies that will be cured by the proposed project.

Q. DOES THIS CONCLUDE YOUR PRE-FILED DIRECT TESTIMONY?

A. Yes.

VERIFICATION

STATE OF OHIO)
) **SS:**
COUNTY OF HAMILTON)

The undersigned, Yanthi W. Boutwell, General Manager Transmission Resource & Project Management, being duly sworn, deposes and says that she has personal knowledge of the matters set forth in the foregoing testimony and that it is true and correct to the best of her knowledge, information and belief.

Yanthi W. Boutwell

Yanthi W. Boutwell Affiant

Subscribed and sworn to before me by Yanthi W. Boutwell on this 27TH day of JUNE, 2024.

Adele M. Frisch

NOTARY PUBLIC

My Commission Expires: 1/5/2029

Exhibit 21

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

The Electronic Application of Duke Energy Kentucky, Inc. for a Certificate of Public Convenience and Necessity to Construct A 138-kV Transmission Line And Associated Facilities In Boone County (Hebron to Oakbrook Transmission Line Project)	))))))	Case No. 2024-00158

DIRECT TESTIMONY OF

BETSY EWOLDT

ON BEHALF OF

DUKE ENERGY KENTUCKY, INC.

June 27, 2024

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Attachments
BE-1- Cost Analysis of Top Ten Routes

I. INTRODUCTION AND PURPOSE

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Betsy A. Ewoldt, and my business address is 1000 E. Main Street, Plainfield, IN 46068.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by Duke Energy Business Services, LLC (DEBS) as Lead Transmission Siting Manager. DEBS provides various administrative and other services to Duke Energy Kentucky, Inc., (Duke Energy Kentucky or Company) and other affiliated companies of Duke Energy Corporation (Duke Energy).

Q. PLEASE BRIEFLY DESCRIBE YOUR EDUCATIONAL BACKGROUND AND BUSINESS EXPERIENCE.

A. I received a Bachelor of Science degree in Natural Resources and Environmental Science in 2005 from Purdue University. I began my professional career at JFNew & Associates as an Ecological Resource Specialist supporting the siting and permitting of electric and gas utility projects and the watershed improvement program. In 2007, I became a project manager at JFNew leading transmission and substation siting and permitting projects and watershed improvement projects. In 2013, I joined URS Corporation as an Environmental Specialist in Cincinnati, Ohio supporting siting and permitting projects for transmission lines and substations. In 2018, I joined Stantec Consulting, Inc. as a Senior Environmental Scientist and project manager supporting the siting team with siting and permitting of transmission lines and substations. I joined Duke Energy as a Senior Transmission Siting Specialist in 2019 and was promoted to Lead Transmission Siting Manager

in 2023.

Q. PLEASE SUMMARIZE YOUR DUTIES AS LEAD TRANSMISSION SITING MANAGER.

A. I am responsible for leading the siting and routing studies needed for new or relocated substations and transmission lines in Duke Energy's Midwest Territory, which includes Kentucky, Ohio, and Indiana.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE KENTUCKY PUBLIC SERVICE COMMISSION?

A. No, I have not.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. I am testifying in support of Duke Energy Kentucky's application for a certificate of public convenience and necessity (CPCN) to build the Hebron to Oakbrook Transmission Line Project (the Project). In doing so, I describe the methodology used by Duke Energy Kentucky in conducting the siting study that was used to identify and evaluate the various transmission line route alternatives. I describe the results and conclusions of the siting study as well as the basis for the recommended proposed route. Finally, I sponsor Exhibits 2, 3, 4, 8, 9, 10, 11 and 19 to the Company's Application, which I describe below.

II. OVERVIEW OF THE PROJECT AND SUMMARY OF NEED

Q. PLEASE PROVIDE A BRIEF SUMMARY OF THE PROJECT AND ITS PURPOSE.

A. Duke Energy Kentucky is seeking authority to construct and operate a new single circuit 138 kilovolt (kV) transmission line, circuit #15264 (the Project). The new circuit will utilize a portion of the existing #15268 69 kV transmission line circuit, a portion of the existing #6763 69 kV transmission line circuit, and approximately 2.1 linear miles of a proposed new transmission line. To accommodate the new circuit, reconfigurations to the existing #6763 circuit and the existing #15268 circuit will occur to minimize the new infrastructure required to create the new #15264 circuit. The existing #15268 circuit that is currently a three-terminal circuit between the Hebron, Constance, and Limaburg Substations will be split so that after the project is complete, #15268 will only connect the Hebron and Constance Substation while a portion of the existing Tap to Limaburg will be incorporated into the proposed Hebron to Oakbrook circuit #15264. The portion of existing circuit #15268 between where the new #15264 circuit ties in north to the Constance Substation will be retired (see Exhibit 15). The existing #6763 circuit between Limaburg and Oakbrook substations will be reconfigured and a portion of it will be rebuilt so that it can be incorporated into the new Hebron to Oakbrook circuit #15264. The portion of the #6763 circuit between the Oakbrook Substation and near Interstate 71/75 will be retired, and the remaining portion of the circuit on the east side of the interstate will remain operational as it currently is built (see Exhibit 15). Therefore, this proposed new circuit would start at the Hebron Substation and

begin with a proposed new approximately 2.1-mile section, connect to an existing portion of the #15268 circuit south of Interstate 275 to the existing Limaburg Substation, and then utilize an approximately 1.5 mile section of the #6763 circuit to the existing Oakbrook Substation which will be rebuilt in place to 138 kV capacity. The new circuit will be energized to 69 kV initially with future plans to energize to 138 kV. The individual portions of the Project are described in more detail below.

Once the Project is completed and the new #15264 is converted to 138 kV, the existing #15268 circuit between Hebron and Constance substations will still be energized to 69 kV. The only remaining portion of the #6763 circuit will be the portion east of I-75 and will also still be operated at 69 kV. The Oakbrook Substation will then only interconnect 138 kV transmission lines which will includes the #15264 Hebron to Oakbrook and the Oakbrook to Aero 138 kV transmission lines.

As a result of the new #15264 circuit, a portion of circuit #6763 and circuit #15268 will be retired (Exhibit 15). The retirement is discussed in further detail in the direct testimony of Yanthi W. Boutwell.[1]

As more fully explained by Ms. Boutwell, the purpose of the Project is to address expected load growth and reliability concerns within Boone County. This Project will add capacity for future growth in the region, increase reliability by providing alternatives for operations during planned or unexpected outages, allow flexibility for providing critical energy, and help maintain a robust system for

[1] Exhibit 20.

supplying and delivering electric service. Future plans to account for expected load growth include energizing the new line to 138 kV. The Project location is shown in Exhibit 2.

III. THE SITING STUDY

A. OVERVIEW

Q. WHAT IS THE PURPOSE OF A SITING STUDY?

A. The purpose of a siting study is to select a preferred route for the new electrical transmission facility that minimizes impacts to the natural and built environment while also optimizing Duke Energy Kentucky's business needs. The siting study methodology can vary depending on the nature of the project and study area (Siting Study Area).

Q. PLEASE DESCRIBE HOW THE SITING STUDY WAS CREATED.

A. The first step in the siting study was for the siting team to establish a Siting Study Area for the vicinity of load needs with input from planning on system reliability and to create siting guidelines that served to direct the decision-making process. For this Project, it was determined the Siting Study Area would be a 1.6-square mile area surrounding the existing Hebron Substation, the Graves Road and Interstate 275 interchange, and the Highway 237/North Bend Road and Interstate 275 interchange. The Siting Study Area is shown in Exhibit 3 in the Application. A broad array of data was then compiled to help the siting team identify opportunities and constraints for siting the new transmission line. Opportunities and constraints included information on ecology, engineering, land use, and cultural resources in the Siting Study Area. Members of the siting team then created a segment network

that could later be combined into route alternatives that minimized impacts to siting constraints and took advantage of siting opportunities. This segment network was viewed in the field from public vantage points and opportunities and constraints data were verified at this time to the extent possible. The segment network was then reviewed by the full siting team, updated as necessary, and presented to the public in virtual open houses on March 7, 2022, and March 8, 2022. During the open houses, and for the following 30-day comment period, the siting team received comments from the public. The siting team used this data collection process to create 29 route alternatives for analysis. The analysis consisted of applying weights to criteria considered important to siting electrical transmission lines in this area, normalizing the output, and combining the values to establish a single composite score for each route. Following the analysis, the routes were ranked and reviewed along with qualitative criteria, including public feedback and stakeholder correspondence, to determine the preferred route. Each step in this process is further described in the accompanying Transmission Line Route Selection Study is included in Exhibit 8.

Q. PLEASE DESCRIBE THE SITING STUDY TEAM.

A. I was part of the multi-disciplinary team that developed the study. The Siting Team consisted of members from Duke Energy Kentucky and Stantec Consulting Services Inc., (Stantec) experienced in transmission line siting, planning, engineering, construction, permitting, public engagement, project management, real estate, and government and community relations.

Q. HAVE ANY CHANGES BEEN MADE TO THE SITING STUDY SINCE ITS SUBMITTAL IN CASE NO. 2022-00364 AND CASE NO. 2023-00239?

A. While no changes have been made to the siting study since its submittal in Case No. 2022-00364 and Case No. 2023-00239, however, as I explain further below, following the Commission's decision in Case No. 2023-00239, which among other things, determined that the Company had demonstrated the need for the project, but did not demonstrate that the route selected (Route L) was the reasonable least cost solution, the Company did revisit the study after acquiring additional information on 10 of the remaining route alternatives under consideration.

B. NEW 138 KV TRANSMISSION LINE

Q. WHAT METHODOLOGY WAS USED TO EVALUATE THE ROUTE FOR THE NEW TRANSMISSION LINE IN THE SITING STUDY?

A. Duke Energy Kentucky used its standard methodology which includes quantitative and qualitative evaluations.

Q. WHERE IS THE METHODOLOGY EXPLAINED IN THE SITING STUDY?

A. The methodology is explained in Section 2.0 Route Selection Methodology of the Transmission Line Route Selection Study included in Exhibit 8.

Q. WHY DID YOU USE THIS METHODOLOGY?

A. The siting methodology that Duke Energy Kentucky utilized on this Project was able to quickly identify all feasible potential route alternatives. Since the Project end points were less than two (2) miles apart and there is considerable development in the Siting Study Area, Duke Energy Kentucky was able to reasonably identify all feasible route alternatives.

Other methodologies were considered, such as Kentucky EPRI methodology. Both the Duke Energy Kentucky and the Kentucky EPRI methodologies utilize Geographic Information Systems (GIS) and incorporate a broad array of criteria that represent the built environment, natural environment, and engineering considerations. Both rely on input from a multi-disciplinary group of subject matter experts. Both aim to identify existing linear features to follow as well as identify cross country alternatives and both methodologies utilize a quantitative approach to compare route alternatives.

One of the differences between the two methodologies is the Kentucky EPRI Methodology utilizes a raster-based GIS process to identify the study area and alternative corridors and for this project the Duke Energy Kentucky siting team identified the study area and route alternatives directly. The EPRI methodology uses a stakeholder group to identify weights while the Duke Energy Kentucky

methodology uses direct feedback on the Project, as well as many years of public feedback on similar projects combined with the siting team's subject matter expertise to establish the criteria and weighting. The benefits of the Macro and Alternative Corridor steps in the Kentucky EPRI Methodology are realized on longer transmission lines when defining the study area and identifying alternative corridors are more time consuming and complicated.

Q. PLEASE EXPLAIN THE GENERAL STEPS OF THE SITING METHODOLOGY USED IN THE SITING STUDY.

A. In general, the siting study methodology consisted of six (6) steps:

1) Establish Siting Study Area and siting guidelines;

2) Compile data and map constraints;

3) Identify a segment network;

4) Solicit public comments;

5) Create and analyze route alternatives; and

6) Select a preferred route.

Q. PLEASE DESCRIBE HOW THE SITING TEAM ESTABLISHED THE SITING AREA AND GUIDELINES.

A. Duke Energy Kentucky's transmission planning group identified that the three-terminal circuit at the Hebron Substation could be split into two, two-terminal circuits and allow for separate circuits to provide power from the Hebron Substation to the Oakbrook Substation and from the Hebron Substation to the Constance Substation. It was established that this would be possible by constructing a new

transmission line that would connect into the existing circuit #15268 69 kV transmission line.

The siting team then began by establishing a Siting Study Area that would provide the opportunity to identify unique route alternatives for the new transmission line (the portion from the Hebron Substation to the tie-in point along the existing 15268 line). The siting team then met to create siting guidelines that would steer the decision-making process for the Project. The Siting Study Area is shown on the map in Exhibit 3.

Q. PLEASE DESCRIBE THE TOPOGRAPHY AND LAND USE FOUND IN THE SITING STUDY AREA.

A. Approximately two thirds of the 1.6-square mile Siting Study Area is located in the City of Francisville, Kentucky, with the remainder located in the City of Hebron, Kentucky. The Siting Study Area is relatively hilly, with steep slopes (>20%) surrounding much of the existing infrastructure. The Siting Study Area is characterized by mixed industrial and commercial development, interspersed by vacant wooded lots, and residential areas. Existing development includes the Boone County public library, suburban housing development, warehouse facilities, Hebron Fire Protection District Station 2, Children's House Hebron, medical facilities, storage facilities, restaurants, and other retail buildings. Major travel corridors include Interstate 275, State Route 237, and Graves Road. Buried utilities, including water, sanitary sewer, storm sewer, and gas lines are sited along most roadsides and under parking lots in the Siting Study Area. United States Fish and Wildlife Service National Wetland Inventory (USFWS, NWI) data indicates the

presence of one stream, Sand Run, and minimal presence of wetlands and other jurisdictional waters or water features. Woodlots are present in the northern portion of the Siting Study Area, along Sand Run, and throughout vacant lots in the southern portion of the Siting Study Area.

Q. PLEASE DESCRIBE THE DATA COLLECTION PROCESS AND CONSTRAINTS MAPPING.

A. Members of the siting team collected data on the natural and built environment for the Siting Study Area from public data sets, agency correspondence, review of aerial photography, and historic maps. Data were compiled in a project GIS. The GIS was then used to produce maps that depicted the ecology, engineering, land use and cultural resource features in the Siting Study Area. The siting lead and members of the analysis team conducted field reconnaissance of the Siting Study Area on multiple occasions from public vantage points to ground truth constraints and opportunities identified during the data collection process.

Q. PLEASE DESCRIBE THE PROCESS TO IDENTIFY SITING CORRIDORS IN THE SITING METHODOLOGY IN MORE DETAIL.

A. The third step in the siting methodology was to identify siting corridors that minimized impacts to the built and natural environment. The siting team then used these corridors and field review of the Siting Study Area to create a segment network that contained 27 feasible study segments. The siting team held several internal meetings with a multi-disciplinary team of subject matter experts to review and refine the study segments. A detailed field reconnaissance was then conducted

to verify adjacent buildings, natural features, and types of data that would later be used in analysis.

Q. PLEASE DESCRIBE THE FEEDBACK SOLICITATION PROCESS IN THE SITING METHODOLOGY IN GREATER DETAIL.

A. The fourth step in the siting methodology was to solicit comments from members of the local community. The siting team then sent an invitation to landowners within 500 feet of all study segments to attend an informational open house. Two virtual open houses were held on March 7 and March 8, 2022, and were staffed by experts in transmission planning, permitting, GIS, siting, engineering, and real estate. The open houses were designed to solicit comments and to give participants a broad overview of the purpose and need for the Project, what the Project elements are proposed to look like, the study segments under consideration, and the proposed schedule for construction. Attendees were provided access to interactive mapping to provide comments tied to specific parcels. The open house also initiated a 30-day comment period during which community members could provide comment by phone, email, or through an online interactive map for the Project.

Q. PLEASE DESCRIBE THE ROUTE ANALYSIS PROCESS IN THE SITING METHODOLOGY IN GREATER DETAIL.

A. The fifth step in the siting methodology was to combine the study segments into 29 unique routes for analysis. Criteria were weighted based on sensitivity to electrical transmission line siting and compiled into a single composite score for each route. Additional qualitative data were also evaluated such as existing and proposed developments and comments from the public.

Q. PLEASE DESCRIBE THE PREFERRED ROUTE SELECTION PROCESS IN GREATER DETAIL.

A. The sixth step in the siting methodology was to select a preferred route. After the analysis was completed, the siting team held multiple internal, multi-disciplinary meeting to review the analysis, discuss qualitative factors not included in the analysis framework, and select a preferred route. The objective of the meeting was to identify the least impactful route that also met the project need including the need for ongoing maintenance and safe operations. The review included both quantitative and qualitative aspects of each route.

Q. WAS THE ENTIRE STUDY AREA AVAILABLE IN CREATING THE ROUTES?

A. Yes.

Q. WHAT OUTREACH WAS PERFORMED DURING THE SITING PROCESS?

A. Stakeholders were consulted using formal and informal correspondence with regulatory agencies, a public open house for landowners and other members of the community, and an online mapping, toll-free hotline, and comment website. Additionally, based on public comments received, Duke Energy Kentucky conducted further outreach with affected landowners, including Kentucky Transportation Cabinet (KYTC), as necessary.

On February 14, 2022, a letter was sent to property owners within 500 feet of all route alternatives to invite input at two WebEx meetings that started on March 7. The WebEx meetings were held in lieu of a public open house, factoring the

safety concerns around the COVID pandemic. A reminder postcard invite to the meetings was sent on Feb. 21. The WebEx meetings were held from 6-7 p.m., March 7, 2022, and from 7-8 p.m., March 8, 2022. The meetings opened a 30-day public comment period and gained 7 attendees for the WebEx meetings. The project website (www.duke-energy.com/Hebron) included a virtual open house, interactive map and comment form inviting input through the comment period. Please see Exhibit 19 which includes the letter and postcard sent inviting property owners to the WebEx meetings and also the materials that were presented during the meetings.

Q. WERE LANDOWNERS CONTACTED THROUGHOUT THE SITING PROCESS?

A. Yes. Duke Energy Kentucky sent out a public engagement letter to individuals with property within 500 feet of the route alternatives and requested input on the Project during a 30-day comment period that began on March 7, 2022.

Q. ARE THERE OTHER MEANS BY WHICH PUBLIC OFFICIALS AND THE GENERAL PUBLIC MAY LEARN MORE ABOUT THE PROJECT AND PROVIDE INPUT?

A. Yes. More Project information is available on the Project website (www.duke-energy.com/Hebron). On the website there is a toll-free phone number and email address where officials or the public may ask questions and provide input.

Q. WAS STAKEHOLDER AND LANDOWNER INPUT TAKEN INTO CONSIDERATION DURING THE ROUTE SELECTION STUDY?

A. Yes. The siting team worked with affected landowners to review study segments and identify issues and alleviate concerns as feasible. Landowner input was

considered as part of the preferred route identification. Based on public comments received regarding planned development in the Siting Study Area, Duke Energy Kentucky reached out to and held meetings with affected landowners. One affected landowner informed Duke Energy Kentucky that they were actively constructing new facilities and finalizing plans for further expansion on two parcels along Litton Lane. At the time of the meeting there was active construction on the southern parcel (impacting Segment 20) with plans to develop the eastern parcel (impacting Segment 22) (Exhibit 10). A site visit confirmed the parcel adjacent to Segment 22 was under construction. Based on a review of ongoing construction and conceptual site plans provided by the property owner, it was determined that Duke Energy Kentucky would be unable to place their transmission line on their property without significantly impacting business operations and occupied buildings. As a result, Duke Energy Kentucky did not identify any routes which utilized Segments 20 and/or 22 as the preferred route.

Discussions with property owners during the easement acquisition process could result in the adjustment of the centerline and Duke Energy Kentucky will continue to work with property owners to address concerns as feasible.

IV. RESULTS OF THE STUDY

Q. YOU PREVIOUSLY INDICATED THAT TWENTY-NINE ALTERNATIVE ROUTES WERE DEVELOPED. PLEASE GENERALLY DESCRIBE THOSE ROUTES.

A. Generally speaking, routes exited the Hebron substation to the east, utilized various routes through the industrial/commercial complex before either continuing east to

tie into the existing line north of Interstate 275 and utilize the existing crossing within the clover leaf or turning south to cross Interstate 275 at a new crossing west of the clover leaf. The routes that crossed Interstate 275 west of the clover leaf turned east to tie-in to the existing line at two different tap points. No routes were created that exit the Hebron Substation to the south and then parallel Interstate 275 through the Siting Study Area because during the route evaluation process additional information about proposed development was discovered that impacted the route selection process. Eastern Kentucky Power Cooperative (EKPC) publicly announced in May that they had selected a route for a new 69 kV transmission line within the Study Area. In discussions with Duke Energy Kentucky, EKPC indicated that they have started engineering and plan to begin acquiring easements for the new 69 kV transmission line in fall 2022. The proposed EKPC centerline exits the Hebron Substation to the south after which it parallels Interstate 275 through the Siting Study Area (see Figure A-3 in Exhibit 8). This information required the removal of study segments 11, 16, 17, 18 from further consideration because there was not sufficient room to build both the EKPC line and this proposed transmission line along those segments. This reduced the potential route alternatives from 43 to 29. The remaining 29 route alternatives were all considered feasible and were evaluated for selection as the preferred route.

After the 29 route alternatives were determined, additional information about proposed development was discovered that impacted the route selection process. It was discovered that an affected property owner started construction along segments 20 and 22 and has plans for more development on those properties

that conflicts with the construction of the proposed transmission line. Therefore, based on the qualitative and quantitative review, route alternatives that utilized segments 20, and 22 were not chosen as the preferred route.

During the process of compiling this data, the Siting Team determined that three segments could not be utilized because new medical office buildings were going to be constructed in the area of those segments with uncertain plans for additional construction. This reduced the feasible number of routes to ten. The scores for these ten routes were as follows:

Route	Ecological	Land Use	Engineering	Total Score
G	6.7	9.2	8.2	24.1
M	6.7	11.3	15.0	33.0
AN	7.5	14.0	15.4	36.9
AI	0.0	12.5	25.7	38.2
AC	0.4	12.6	26.3	39.3
R	14.2	15.9	11.1	41.2
L	14.2	15.8	11.6	41.6
W	14.7	15.3	12.3	42.3
A	10.5	15.9	17.1	43.5
AH	8.0	17.2	22.2	47.4

Using both qualitive and quantitative factors, Route L was selected as the preferred route. Route L begins at the Hebron Substation, located west of the industrial/commercial complex along Graves Road. Route L exits the substation to the east, follows the existing transmission line corridor and then turns south along Worldwide Boulevard. The route then crosses Worldwide Boulevard and continues south to cross Interstate 275. Once across Interstate 275, Route L turns east, bisecting a parcel before following a parcel line and then crossing Litton Lane. The route then follows Litton Lane and parcel boundaries east before it crosses Highway 237 to tie-in to the existing transmission line.

Q. EXPLAIN THE RELATIONSHIP BETWEEN THE QUANTITATIVE SCORES AND COST.

A. While some quantitative criteria are proxies for cost such as overall length which would require additional infrastructure, sharp turn angles which would require engineered poles and/or guy wires, and forested acres that would need to be cleared, not all criteria have a direct relationship with cost. For example, the number of residences within 200 feet of the ROW does not have a direct correlation to cost but represents an adverse impact to the community. The more residences within 200 feet of the ROW, the higher the quantitative score but this does not necessarily mean that the cost will also be greater than that of a route with fewer residences within the specified distance because the land value might not change based on proximity of or number of landowners. Therefore, not all criteria are proxies for cost so overall scores cannot be used as relative proxies for overall cost.

Q. FOLLOWING THE COMMISSION'S ORDER IN CASE NO. 2023-00239, WAS A COST ANALYSIS COMPLETED FOR THE VARIOUS ROUTE ALTERNATIVES? IF SO, PLEASE DESCRIBE THE RESULTS.

A. Yes, a cost estimate study is included as Attachment BE-1 to my Testimony. A summary of the estimated costs of construction, including transmission investment costs, real estate acquisition, and distribution construction costs is below.

Route	Transmission Estimate	Trans RLE Estimate	Dist. Estimate	Total Estimate
A	$13,542,119	$4,424,624	$423,111	$18,389,854
AC	$13,254,704	$5,466,445	$423,111	$19,144,260
AH	$12,675,652	$3,301,567	$44,388	$16,021,607
AI	$13,190,108	$5,515,657	$423,111	$19,128,876
AN	$11,057,482	$2,939,977	$44,388	$14,041,847
G	$10,471,132	$4,221,857	$423,111	$15,116,100

L	$11,049,556	$2,503,465	$44,389	$13,597,410
M	$11,223,975	$4,851,141	$423,111	$16,498,227
R	$10,273,481	$2,653,967	$44,389	$12,971,837
W	$11,107,088	$2,787,380	$44,389	$13,938,857

Based upon this analysis, the least cost routes to construct are Routes R and L, respectively.

Q. HOW WAS THIS STUDY PERFORMED?

A. The Company retained Burns & McDonnell to analyze the route alternatives and develop estimated costs of construction for the various routes. These estimates are considered “Class Five" estimates, with an accuracy range of – 50 percent and +100 percent because detailed engineering could not be performed in a timely, efficient, and cost effective manner. Full design and engineering for each of these routes that would not be constructed would be an ineffective and wasteful use of resources and unnecessarily increase costs of the project. The scope that Burns & McDonnell used for the cost estimates is included in Attachment BE-1.

Q. PLEASE EXPLAIN WHY ROUTE G, WHICH SCORED VERY WELL IN THE INITIAL QUANTATIVE ANALYSIS IS NOT A PREFERRED ROUTE.

A. While the Commission’s Order in Case No. 2023-00239 cited to Route G as a having a better score in the quantitative analysis, as expected, after performing the cost analysis, it is clear that the incremental costs of acquiring additional property interests and the increase in distribution system investments makes Route G undesirable and the fifth most expensive alternative.

Q. WHAT IS THE COMPANY'S PREFERRED CONSTRUCTION ROUTE FOR THE PROJECT?

A. Based on discussions with multiple subject matter experts on the Siting Team, Route L remains the Company's preferred route based on overall analysis, constructability, customer impacts, and cost. While Route R is marginally less expensive than Route L, less than five percent, this is an inconsequential difference in cost when one contemplates the benefits provided by Route L from a constructability and customer impact standpoint.

Q. PLEASE EXPLAIN IN GREATER DETAIL WHY IS ROUTE L THE PREFERRED ROUTE INSTEASD OF ROUTE R?

A. Based on the comprehensive quantitative and qualitative evaluations and cost estimates, Route L remains the preferred route. This route is approximately 2.1 miles in length. There are numerous qualitative factors that support Route L being the most reasonable alternative. As the Company previously explained in Case No. 2023-00239 analysis determined that routes that utilized segments 25 and 26 along North Bend Road north of Interstate 275 would require crossing over the proposed EKPC line along North Bend Road (see Figure A-3 in Exhibit 8). The crossing of the EKPC line in this area would require potential pole heights of 150 to 160' which is near the Federal Aviation Administration (FAA) height threshold for Cincinnati/Northern Kentucky International Airport (CVG). The area around segment 12 is very congested with existing utilities and commercial business. It is possible that segment 12 would require engineered poles that could significantly impact the gas station on the east side of North Bend Road (see Figure A-6 in

Exhibit 8). Routes that utilized segment 19 were identified as beneficial. Segment 19 allows Duke Energy Kentucky to relocate the existing transmission line within KYTC road right of way (ROW) and construct the new line without any new structures within KYTC ROW. Segments 21 and 24 were selected south of Interstate 275 to avoid impacting planned development. The team selected segments 2, 5, 7, 13, and 14, over segments 3 and 10 to utilize the existing transmission corridor and reduce impacts to commercial buildings and existing infrastructure along Worldwide Boulevard.

While Route R and Route L scored very similarly, Route L was chosen because it is collocated with an existing transmission corridor for a greater distance which reduces the amount of new easement required, reduces impacts to existing businesses, and reduces impacts to greenfield areas. Route R has greater impacts to customers/businesses than Route L by creating a longer greenfield transmission line corridor by not being collocated a greater distance with the existing transmission line corridor. Additionally, with Route R, some of the impacted businesses would have a transmission line on 3 sides of the building instead of just 2, which could further limit their future operations or development expansion possibilities. Additionally, Route R would also require an additional 2.88 acres of right-of-way since it cannot take advantage of the overlapping rights-of-way that Route L utilizes. An additional 2.88 acres of ROW further restricts future operations or development expansion possibilities of impacted customers.

Given these additional impacts to customers along Route R, limiting their potential expansion and operations, and given the marginal cost difference between

Routes L and Route R, the Company continues to believe that Route L remains the reasonable, least cost alternative. That said, if the Commission were to require the Company to construct along Route R, it would agree to do so.

Q. DID ANY AFFECTED LANDOWNERS EXPRESS OPPOSITION TO THE ROUTES CONSIDERED OR SELECTED?

A. Yes. Three of the route segments (20, 21, and 22) were of concern to property owners (see Exhibit 10). One landowner was concerned with route segment 21 bisecting their property and affecting potential planning for future site expansion and their property values. Another landowner was concerned with route segments 20 and 22 affecting current and planned construction. The siting team took the concerns into account during the siting process and worked to avoid impacts to concerned landowners. However, design need dictated the need to use the southern routes that would have potential to impact the concerned property owners. Duke Energy met with the property owner that was under active construction to learn more about their current and future development plans and, based on those meetings, determined that a route on their property (utilizing route segments 20 and/or 22) was not feasible without directly impacting their development. Therefore, a preferred route using Segment 21 was required. Through the easement acquisition process, Duke Energy Kentucky will continue to work with the property owners to further reduce the impact if feasible.

Q. WERE ANY ALIGNMENT SHIFTS REQUIRED FOR THE ALTERNATIVE ROUTES EXAMINED?

A. Yes. Duke Energy made minor revisions to the centerline within the existing transmission corridor and at the southern end of the Preferred Route to maintain a 50-foot clearance from the residential properties located in the southeastern corner of the Siting Study Area.

Q. BASED UPON THE EFFORTS UNDERTAKEN BY THE SITING TEAM AS DESCRIBED ABOVE, DO YOU HAVE ANY OPINION ON THE COMPANY'S PREFERRED ROUTE FOR THE PROJECT?

A I believe the Preferred Route L remains the optimal path for this Project.

V. PERMITTING AND ENVIRONMENTAL STUDIES

Q. WHAT ENVIRONMENTAL PERMITTING OR STUDIES ARE ANTICIPATED FOR THIS PROJECT?

A. Duke Energy Kentucky anticipates the following environmental studies, permits, and/or approvals for construction of the Project:

- A wetland delineation will be conducted to identify wetlands and waterbodies within the Preferred Route's ROW and the Rebuild portion of the project to determine if there are any jurisdictional features within the ROW. Impacts to jurisdictional streams and wetlands are regulated in the Commonwealth of Kentucky by the United States Army Corps of Engineers (USACE) and the Kentucky Energy and Environment Cabinet. Discharges of dredged or fill material into 'waters of the United States' require permits from the USACE under the provisions of Section 404 of the Clean Water Act (CWA), as well as Section 401 of the CWA, also referred to as Water Quality Certification (WQC) from the KDOW.

- Coordination is in progress with United States Fish and Wildlife Service (USFWS) on potential impacts to federally-listed threatened and/or endangered species. Utilizing the USFWS Information for Planning and Consultation (IPAC) website, an Official Species List was obtained for the Project on November 4, 2021. Based on this Official Species List, it was determined that there are three (3) federally-listed bat species, ten (10) federally-listed mussel/clam species, and one (1) candidate insect species that may occur within the Siting Study Area. Required studies will be coordinated with the USFWS.
- The Project is anticipated to have more than an acre of land disturbed during construction. As such, a Kentucky Pollutant Discharge Elimination System (KPDES) construction stormwater permit will be required to be obtained prior to initiation of construction activities. A condition of this permit is to develop a Stormwater Pollution Prevention Plan (SWPPP) for the Project to show the implementation of best management practices (BMPs) to be utilized during construction. Duke Energy Kentucky will also need to communicate with Sanitation District 1 (SD1) and coordinate and obtain other permits as required.
- Based on a Preliminary Cultural Resource Management Review, all identified archaeological sites and historical properties within the Siting Study Area were determined to be destroyed or ineligible for listing on the National Register of Historic Places (NRHP). Duke Energy Kentucky will conduct Consultation with the Kentucky Heritage Council (KHC) –

State Historic Preservation Office (SHPO) documenting the Preliminary Cultural Resource Management Review findings.

In addition to environmental permits, there are engineering permits that will need to be obtained. Due to the proximity of the Project to Cincinnati/Northern Kentucky International Airport, permit applications will need to be filed with the FAA and KYTC. The aerial crossing of Interstate 275 will require approval from the KYTC and local temporary access permits for driveways along the transmission route.

Q. HAVE ANY OF THE ENVIRONMENTAL PERMITS OR STUDIES BEEN COMPLETED FOR THIS PROJECT?

A. No.

Q. DO YOU EXPECT ANY ENVIRONMENTAL PERMITTING ISSUES OR DELAYS TO THE CONSTRUCTION AS A RESULT OF PERMITTING FOR THE TRANSMISSION LINE?

A. Duke Energy Kentucky does not expect any environmental permitting issues or delays to the construction as a result of permitting for the transmission line.

VI. CONCLUSION

Q. PLEASE EXPLAIN EXHIBIT 2.

A. Exhibit 2 includes a map showing the proposed location of the Project.

Q. PLEASE EXPLAIN EXHIBIT 3.

A. Exhibit 3 includes a map showing the Project Siting Study Area.

Q. PLEASE EXPLAIN EXHIBIT 4.

A. Exhibit 3 includes a map showing the proposed Rebuild Area.

Q. PLEASE EXPLAIN EXHIBIT 8.

A. Exhibit 8 includes a copy of the Transmission Line Route Selection Study report which describes the siting methodology and results in detail and depicts the full description of the route and alternative routes considered for the new line portion of the Project. Company's proposal is applicable only in the Company's service territory and, as such, the Project will not compete with any other public utilities, corporations, or persons.

Q. PLEASE EXPLAIN EXHIBIT 9.

A. Exhibit 9 shows the proposed route for the new line portion of the Project and the impacted parcels.

Q. PLEASE EXPLAIN EXHIBIT 10.

A. Exhibit 10 shows the alternative route segments considered as part of the siting review process.

Q. PLEASE EXPLAIN EXHIBIT 11.

A. Exhibit 11 shows the proposed rebuild route of the Project and the impacted parcels.

Q. PLEASE EXPLAIN EXHIBIT 19.

A. Exhibit 19 shows the letter and postcard sent inviting property owners to the WebEx meetings and also the materials that were presented during the meetings.

Q. PLEASE EXPLAIN ATTACHMENT BE-1.

A. Attachment BE-1 includes the cost analysis of the top ten routes evaluated and considered for the project.

Q. WERE EXHIBITS 2, 3, 4, 8, 9, 10, 11, 19, AND ATTACHMENT BE-1 PREPARED AT YOUR REQUEST AND/OR UNDER YOUR DIRECTION AND CONTROL?

A. Yes.

Q. DOES THIS CONCLUDE YOUR PRE-FILED DIRECT TESTIMONY?

A. Yes.

Attachment BE-1: Cost Analysis of Top Ten Routes

As part of Duke Energy Kentucky, Inc. (DEK)'s Application of for a Certificate of Public Convenience and Necessity to construct a 138-kv transmission line and associated facilities in Boone County (Hebron to Oakbrook Transmission Line Project; Case No. 2024-00158), DEK retained Burns & McDonnell to conduct a cost analysis of the top 10 feasible routes identified during the Route Selection Study. This memo outlines the assumptions used in the cost analysis and presents the results in Table 1.

The construction cost parameters for the proposed routes were developed based on the engineering requirements in the 2023 NESC and Duke Energy's MW Transmission Line Design Guide, MWPS-TL-DG-001 Revision 3. Standard DEK structure types were included for all tangent structures. Hardware for all engineered poles were based on standard DEK structure types and the applicable type of construction (short, medium, and long span). Direct embed foundations were used for all short and medium span tangent structures. Drilled shaft foundations were used for all other structure types. The new conductor will be 954ACSR45x7 and the new shield wire will be AC99/669-27 OPGW. The parameters included an assumed number of OPGW splice boxes and details related to line retirements and distribution underbuild transfers. Considerations for survey, soil borings, underground obstructions, vegetation clearing, Real Estate, Siting, Permitting, Environmental, and construction access were also included in the construction cost parameters.

Class 5 estimates were created using DEK's standard estimate template. The cost estimates account for the following:

- Removals
- Site Work (SWPPP, Borings, Surveying, Vegetation Clearing)
- Grounding
- Structures
- Foundations
- Pole Hardware
- Conductor and OPGW
- Distribution underbuild
- Access roads
- Miscellaneous construction activities (Mob/Demob, Damages, Restoration)
- Construction Management / General Conditions
- Engineering
- Project & Control Settings
- Land Acquisition
- Permitting

Results of the cost analysis are shown in Table 1. Cost estimates ranged from $12,971,837 to $19,144,260 with Route R being the least-cost route and Route AI being the most-cost route. The preferred route (Route L) was the second least-cost route at $13,597,410.

Table 1. Cost analysis results for the top 10 feasible routes identified during the Route Selection Study for the Hebron to Oakbrook Transmission Line Project

Route	Segments	Transmission Estimate	Transmission Real Estate Estimate	Distribution Estimate	Total Estimate	Quantitative Score	Preferred Route?
R	1, 2, 5, 6, 9, 14, 15, 19, 21, 24	$10,273,481	$2,653,967	$44,389	$12,971,837	41.22	no
L	**1, 2, 5, 7, 13, 14, 15, 19, 21, 24**	$11,049,556	$2,503,465	$44,389	$13,597,410	**41.64**	**yes**
W	1, 2, 5, 6, 8, 10, 15, 19, 21, 24	$11,107,088	$2,787,380	$44,389	$13,938,857	42.4	no
AN	1, 3, 10, 15, 19, 21, 24	$11,057,482	$2,939,977	$44,388	$14,041,847	36.92	no
G	1, 2, 5, 7, 12, 25, 26, 27	$10,471,132	$4,221,857	$423,111	$15,116,100	24.05	no
AH	1, 3, 8, 9, 14, 15, 19, 21, 24	$12,675,652	$3,301,567	$44,388	$16,021,607	47.42	no
M	1, 2, 5, 6, 9, 13, 12, 25, 26, 27	$11,223,975	$4,851,141	$423,111	$16,498,227	33.01	no
A	1, 2, 4, 12, 25, 26, 27	$13,542,119	$4,424,624	$423,111	$18,389,854	43.56	no
AI	1, 3, 10, 14, 13, 12, 25, 26, 27	$13,190,108	$5,515,657	$423,111	$19,128,876	38.13	no
AC	1, 3, 8, 9, 13, 12, 25, 26, 27	$13,254,704	$5,466,445	$423,111	$19,144,260	39.38	no

M19030902

Funding Project Name	Hebron to 15268C Tap-Install New 69kV Line Route R		FP Number	M190309	
Detail Project Name	M19030902				
Detail Project Description	Hebron to 15268C Tap-Install New 69kV Line Route R				
Estimate Prepared by	Burns & McDonnell	Date Entered:		Date Revised:	
Detail Project Number	Hebron to 15268C Tap-Install New 69				

(A) Cost of Property Additions

Material and Related Exp

Material Categories

		Quantity	Cost w/ Tax
L71728	Conductor	37,000	$259,000
L71722	OPGW	13,000	$58,500
L71752	Pole Foundations	14	$552,600
L71724	Light Duty Steel Poles	12	$165,000
L71748	Engineered Steel Poles	14	$1,553,078
Package Material	Subtotal (Specific Materials)		$2,588,178
L71722	Line Package Material		$170,700
	Subtotal (Package Material)		$170,700
	Total Material Purchases		$2,758,878

Labor and Allocated Expenses

Engineering

		Hours	Cost	Dur		Estimator Comments
	DE Internal Tline	160				
L30600	Tline Conceptual Design	64	$2,732	942		
L31700	TLine Detailed Engineering	96	$4,098	942		
L54000	TLine Support During Construction	3	$137			
L71732	TLine Contracted Engineering		$715,743	942		
	TLine Engr Total		$722,710			

		Hours	Cost	Dur		Estimator Comments
	DE Internal Sys Prot	160				
L41000	System Protection	160	$6,053	40		
	System Prot Total		$6,053			

Total Engineering Costs	$728,763
Total Engineering Contract Cost	$715,743

Construction Labor and Contracted

Cost of Install

			Hours	Cost	Units Per	Dur	Estimator Comments
L54200	TLine Substation Crew	DE Internal	876	$33,509	10	88	
L71736	TLine Internal Crew Vehicle			$5,697		88	
L71736	Mobilization		0	$30,000			
L71736	TLine Construction Contract Non Labor (Rentals other than equip)			$252,132		88	
L71736	TLine Construction Contract Material			$102,000		88	
L71736	TLine Construction Contract Equipment			$437,800		88	
	TLine Construction Contracted Labor		8,756				
L71736	Labor factor	1.00	8756	$1,094,500	100	88	
	TLine Construction Contractor Contracted Oversight		876	$140,096	10	88	
	Total TLine			$2,095,734			

			Hours	Cost	Units Per	Dur	Estimator Comments
L54250	Foundation Substation Crew	DE Internal	1,755	$67,172	10	176	
L71734	Foundation Internal Crew Vehicle			$11,419		176	
L71734	Foundation Construction Contract Non Labor (Rentals other than equip)			$15,000		176	
L71734	Foundation Construction Contract Material			$108,763		176	
L71734	Foundation Construction Contract Equipment			$877,600		176	
	Foundation Construction Contracted Labor		17,552				
L71734	Labor factor	1.00	17552	$2,194,000	100	176	
	Foundation Construction Contractor Contracted Oversight		1755	$280,832	10	176	
	Total Foundation			$3,554,786			

Total Construction Install Costs	$5,650,519

Contract Construction Labor & Equip	$4,603,900
Contract Oversight	$420,928
Contract NonLabor/Matl	$477,895
Total Construction Contract	$5,502,723

		Capital	O&M	Hours	Cost	Units Per	Dur	Estimator Comments
L71740	Vegetation Contract	70%	30%		$83,300	5000	17	$119,000.00
L30100	Route Survey			125	$11,900	16		
L32440	LIDAR Survey			261	$26,067	16		
L50350	Staking Survey			82	$7,800	16		
L71736	Traffic Control				$206,400			
L50375	Environmental Site Work/SWPPP				$10,000			
L31200, L31900, L33400	Environmental Permit Acquisition - Floodway				$20,000			
L31200, L31900, L33400	Environmental Permit Acquisition - Listed Species				$20,000			
L31200, L31900, L33400	Environmental Permit Acquisition - SWPPP				$20,000			
L31200, L31900, L33400	OPSB Permit				$60,000			
L40100	Highway Permits				$20,000			
L71732	Soil Borings				$150,266			
L30300, L50300, L61700	Public Engagement				$1,000			
L71736	Matting				$335,000			
	Total Misc				$971,733			

Total Install (Matl, Engr, Const, Misc)	$10,109,893

Construction Labor and Contracted Removal/Retirement

			Hours	Cost	Units Per	Dur	Estimator Comments
L54350	TLine Substation Crew	DE Internal	45	$1,714	10	4	
L71738	TLine Internal Crew Vehicle			$291		4	
L71738	TLine Construction Contract Equipment			$28,000		4	
	TLine Construction Contracted Labor		448				
L71738	Labor factor	1.00	448	$56,000	100	4	
	TLine Construction Contractor Contracted Oversight		45	$7,168	10	4	
	Total Tline Retire			$93,174			

		Hours	Cost	Units Per	Dur	Estimator Comments
L71738	Traffic Control		$24,000			
L71738	Environmental Site Work/SWPPP		$10,000			
	Total Misc		$34,000			

Total Retirement (Const, Misc)	$127,174

Construction Labor and Contracted O&M

		Hours	Cost	Units Per	Dur	Estimator Comments
L71744	Vegetation Contract		$35,700	5000	7	
	Total Tline O&M		$35,700			

Total Install, Retire, and O&M Cost	$10,238,767

Light Duty Steel Pole Size/Class	Qty	Cost per Pole	Total Cost	Total Cost w/Tax
105 H4	12	$13,750	$165,000	$165,000
	12		165,000	165,000

Engineered Steel Pole Size/Class	Qty	Cost per Pole	Total Cost	Total Cost w/Tax
Install (2) engineered tangent or runni	2	$77,017	$154,034	$154,034
Install (12) engineered deadend struct	12	$116,587	$1,399,044	$1,399,044
	14		1,553,078	1,553,078

TRANSMISSION LINE MATERIAL				Total Cost w/ Tax
Trans Line Pkg Material		$170,700		$170,700
Trans Conductor	**Ft x 3**	**Unit Cost/ft**	**Total Cost**	**Total Cost w/ Tax**
954ACSR45x7 Rail	37,000	$7.00	$259,000	$259,000
	37,000		$259,000	$259,000

OPGW	Ft	Unit Cost/ft	Total Cost	Total Cost w/ Tax
OPGW AFL-Teleco DNO-7721	13,000	$4.50	$58,500	$58,500

Foundations	Qty	Unit Cost	Total Cost	Total Cost
Install (2) engineered tangent or runni	2	$25,200	$50,400	$50,400
Install (12) engineered deadend struct	12	$41,850	$502,200	$502,200
	14		552,600	552,600

TLine RLE

Funding Project Name	**Hebron to 15268C Tap-Install New 69**	**FP Number**	**M190309**
Detail Project Name	**TLine RLE**		
Detail Project Description			
	Date Entered:	**Date Revised:**	
	Estimate Prepared By:		
Detail Project Number	**Tline RLE**		

Miles of TLine	1.9	
Width of RoW (Ft)	100	**Acres**
Total Sq Ft	1,008,480	23.2
Land Cost/Acre	$107,426	
Land cost w/o Factor	2,487,075	
Factor of Land Value	100%	
Land Cost with Factor	2,487,075	

		Hours	**Cost**
L30085	Siting Site Selection **Internal Labor**	100	$4,646
L30085	Siting Site Selection **Contractor**		$50,000
L31100	Siting Preferred Site **Internal Labor**	100	$4,646
L31100	Siting Preferred Site **Contractor**		$50,000
	Total Siting		**$109,292**
L31100	Route Negotiations	360	$36,000
L31350	Land Cost		$2,487,075
	Total Real Estate		**$2,523,075**
L30100	Survey	201	$19,100
	Total Survey		**$19,100**
L30300, L61700	Public Engagement		$2,500
	Total Public Engagement		**$2,500**
	Total Real Estate Purchase		**$2,653,967**

M19030901

Funding Project Name	Hebron to 15268C Tap-Install New 69kV Line Route R		FP Number	M190309	
Detail Project Name	M19030901				
Detail Project Description	Hebron to 15268C Tap-Install New 69kV Line Route R - Distribution				
Estimate Prepared by	Burns & McDonnell	Date Entered:		Date Revised:	
Detail Project Number	Hebron to 15268C Tap-Install New 69kV Line Route R - Distribution				

Install

	Hours	Cost	Unit/Day	Dur
Dist Line Material		$950		
Line Engineering Exempt	40	$3,827	4	10
Line Construction Contract	286	$35,761	100	3

Removal

Line Construction Contract	31	$3,850	100	0

Total Dist Line	**$44,388**

M19030902

Funding Project Name	Hebron to 15268C Tap-Install New 69kV Line Route L		FP Number	M190309	
Detail Project Name	M19030902				
Detail Project Description	Hebron to 15268C Tap-Install New 69kV Line Route L				
Estimate Prepared by	Burns & McDonnell	Date Entered:		Date Revised:	
Detail Project Number	Hebron to 15268C Tap-Install New 69				

(A) Cost of Property Additions

Material and Related Exp

Material Categories

		Quantity	Cost w/ Tax
L71728	Conductor	37,000	$259,000
L71722	OPGW	13,000	$58,500
L71752	Pole Foundations	17	$594,900
L71724	Light Duty Steel Poles	8	$110,000
L71748	Engineered Steel Poles	17	$1,704,989
Package Material	Subtotal (Specific Materials)		$2,727,389
L71722	Line Package Material		$160,750
	Subtotal (Package Material)		$160,750
	Total Material Purchases		$2,888,139

Light Duty Steel Pole Size/Class	Qty	Cost per Pole	Total Cost	Total Cost w/Tax
105 H4	8	$13,750	$110,000	$110,000
	8		110,000	110,000

Engineered Steel Pole Size/Class	Qty	Cost per Pole	Total Cost	Total Cost w/Tax
Install (7) engineered tangent or runnir	7	$77,017	$539,119	$539,119
Install (10) engineered deadend struct	10	$116,587	$1,165,870	$1,165,870
	17		1,704,989	1,704,989

TRANSMISSION LINE MATERIAL		Total Cost w/ Tax
Trans Line Pkg Material	$160,750	$160,750

Trans Conductor	Ft x 3	Unit Cost/ft	Total Cost	Total Cost w/ Tax
954ACSR45x7 Rail	37,000	$7.00	$259,000	$259,000
	37,000		$259,000	$259,000

OPGW	Ft	Unit Cost/ft	Total Cost	Total Cost w/ Tax
OPGW AFL-Teleco DNO-7721	13,000	$4.50	$58,500	$58,500

Foundations	Qty	Unit Cost	Total Cost	Total Cost w/ Tax
Install (7) engineered tangent or runnir	7	$25,200	$176,400	$176,400
Install (10) engineered deadend struct	10	$41,850	$418,500	$418,500
	17		594,900	594,900

Labor and Allocated Expenses

Engineering

			Hours	Cost	Dur	Estimator Comments
		DE Internal Tline	160			
L30600	Tline Conceptual Design		64	$2,732	997	
L31700	TLine Detailed Engineering		96	$4,098	997	
L54000	TLine Support During Construction		3	$137		
L71732	TLine Contracted Engineering			$757,973	997	
		TLine Engr Total		$764,940		

			Hours	Cost	Dur	Estimator Comments
		DE Internal Sys Prot	160			
L41000	System Protection		160	$6,053	40	
		System Prot Total		$6,053		

Total Engineering Costs	$770,993
Total Engineering Contract Cost	$757,973

Construction Labor and Contracted

Cost of Install

				Hours	Cost	Units Per Day	Dur	Estimator Comments
L54200	TLine Substation Crew	DE Internal		918	$35,117	10	92	
L71736	TLine Internal Crew Vehicle				$5,970		92	
L71736	Mobilization			0	$30,000			
L71736	TLine Construction Contract Non Labor (Rentals other than equip)				$310,015		92	
L71736	TLine Construction Contract Material				$102,000		92	
L71736	TLine Construction Contract Equipment				$458,800		92	
	TLine Construction Contracted Labor			9,176				
L71736		Labor factor	1.00	9176	$1,147,000	100	92	
	TLine Construction Contractor Contracted Oversight			918	$146,816	10	92	
		Total TLine			$2,235,717			

				Hours	Cost	Units Per Day	Dur	Estimator Comments
L54250	Foundation Substation Crew	DE Internal		1,988	$76,063	10	199	
L71734	Foundation Internal Crew Vehicle				$12,931		199	
L71734	Foundation Construction Contract Non Labor (Rentals other than equip)				$15,000		199	
L71734	Foundation Construction Contract Material				$108,763		199	
L71734	Foundation Construction Contract Equipment				$993,769		199	
	Foundation Construction Contracted Labor			19,875				
L71734		Labor factor	1.00	19875	$2,484,421	100	199	
	Foundation Construction Contractor Contracted Oversight			1988	$318,006	10	199	
		Total Foundation			$4,008,952			

Total Construction Install Costs	$6,244,670

Contract Construction Labor & Equip	$5,083,990
Contract Oversight	$464,822
Contract NonLabor/Matl	$535,778
Total Construction Contract	$6,084,590

		Capital	O&M	Hours	Cost	Units Per Day	Dur	Estimator Comments
L71740	Vegetation Contract	70%	30%		$83,300	5000	17	$119.000.00
L30100	Route Survey			125	$11,900	16		
L32440	LIDAR Survey			261	$26,067	16		
L50350	Staking Survey			79	$7,500	16		
L71736	Traffic Control				$206,400			
L50375	Environmental Site Work/SWPPP				$10,000			
L31200, L31900, L33400	Environmental Permit Acquisition - Floodway				$20,000			
L31200, L31900, L33400	Environmental Permit Acquisition - Listed Species				$20,000			
L31200, L31900, L33400	Environmental Permit Acquisition - SWPPP				$20,000			
L31200, L31900, L33400	OPSB Permit				$60,000			
L40100	Highway Permits				$20,000			
L71732	Soil Borings				$160,999			
L30300, L50300, L61700	Public Engagement				$1,000			
L71736	Matting				$335,000			
				Total Misc	$982,166			

Total Install (Matl, Engr, Const, Misc)	$10,885,968

Construction Labor and Contracted Removal/Retirement

				Hours	Cost	Units Per Day	Dur	Estimator Comments
L54350	TLine Substation Crew	DE Internal		45	$1,714	10	4	
L71738	TLine Internal Crew Vehicle				$291		4	
L71738	TLine Construction Contract Equipment				$28,000		4	
	TLine Construction Contracted Labor			448				
L71738		Labor factor	1.00	448	$56,000	100	4	
	TLine Construction Contractor Contracted Oversight			45	$7,168	10	4	
		Total Tline Retire			$93,174			

		Hours	Cost	Units Per Day	Dur	Estimator Comments
L71738	Traffic Control		$24,000			
L71738	Environmental Site Work/SWPPP		$10,000			
	Total Misc		$34,000			

Total Retirement (Const, Misc)	$127,174

Construction Labor and Contracted O&M

			Hours	Cost	Units Per Day	Dur	Estimator Comments
L71744	Vegetation Contract			$35,700	5000	7	
		Total Tline O&M		$35,700			

Total Install, Retire, and O&M Cost	$11,014,842

TLine RLE

Funding Project Name	**Hebron to 15268C Tap-Install New 69**	**FP Number**	**M190309**
Detail Project Name	**TLine RLE**		
Detail Project Description			
	Date Entered:	**Date Revised:**	
	Estimate Prepared By:		
Detail Project Number	**Tline RLE**		

Miles of TLine	1.9	
Width of RoW (Ft)	100	**Acres**
Total Sq Ft	997,920	22.9
Land Cost/Acre	$102,002	
Land cost w/o Factor	2,336,773	
Factor of Land Value	100%	
Land Cost with Factor	2,336,773	

		Hours	**Cost**
L30085	Siting Site Selection **Internal Labor**	100	$4,646
L30085	Siting Site Selection **Contractor**		$50,000
L31100	Siting Preferred Site **Internal Labor**	100	$4,646
L31100	Siting Preferred Site **Contractor**		$50,000
	Total Siting		**$109,292**
L31100	Route Negotiations	360	$36,000
L31350	Land Cost		$2,336,773
	Total Real Estate		**$2,372,773**
L30100	Survey	199	$18,900
	Total Survey		**$18,900**
L30300, L61700	Public Engagement		$2,500
	Total Public Engagement		**$2,500**
	Total Real Estate Purchase		**$2,503,465**

M19030901

Funding Project Name	Hebron to 15268C Tap-Install New 69kV Line Route L		FP Number	M190309	
Detail Project Name	M19030901				
Detail Project Description	Hebron to 15268C Tap-Install New 69kV Line Route L - Distribution				
Estimate Prepared by	Burns & McDonnell	Date Entered:		Date Revised:	
Detail Project Number	Hebron to 15268C Tap-Install New 69kV Line Route L - Distribution				

Install

	Hours	Cost	Unit/Day	Dur
Dist Line Material		$950		
Line Engineering Exempt	40	$3,827	4	10
Line Construction Contract	286	$35,762	100	3

Removal

Line Construction Contract	31	$3,850	100	0

Total Dist Line	**$44,389**

Funding Project Name	Hebron to 15268C Tap-Install New 69kV Line Route W		FP Number	M190309	
Detail Project Name	M19030902				
Detail Project Description	Hebron to 15268C Tap-Install New 69kV Line Route W				
Estimate Prepared by	Burns & McDonnell	Date Entered:		Date Revised:	
Detail Project Number	Hebron to 15268C Tap-Install New 69				

(A) Cost of Property Additions

Material and Related Exp

Material Categories

		Quantity	Cost w/ Tax
L71728	Conductor	39,000	$273,000
L71722	OPGW	14,000	$63,000
L71752	Pole Foundations	16	$603,000
L71724	Light Duty Steel Poles	10	$137,500
L71748	Engineered Steel Poles	16	$1,707,112
Package Material	**Subtotal (Specific Materials)**		**$2,783,612**
L71722	Line Package Material		$172,700
	Subtotal (Package Material)		**$172,700**
	Total Material Purchases		**$2,956,312**

TRANSMISSION LINE MATERIAL

		Total Cost w/ Tax
Trans Line Pkg Material	$172,700	$172,700

Trans Conductor	Ft x 3	Unit Cost/ft	Total Cost	Total Cost w/ Tax
954ACSR45x7 Rail	39,000	$7.00	$273,000	$273,000
	39,000		$273,000	$273,000

OPGW	Ft	Unit Cost/ft	Total Cost	Total Cost w/ Tax
OPGW AFL-Teleco DNO-7721	14,000	$4.50	$63,000	$63,000

Foundations	Qty	Unit Cost	Total Cost	Total Cost w/ Tax
Install (4) engineered tangent or runni	4	$25,200	$100,800	$100,800
Install (12) engineered deadend struc	12	$41,850	$502,200	$502,200
	16		603,000	603,000

Light Duty Steel Pole Size/Class	Qty	Cost per Pole	Total Cost	Total Cost w/Tax
105 H4	10	$13,750	$137,500	$137,500
	10		1,343,500	1,343,500

Engineered Steel Pole Size/Class	Qty	Cost per Pole	Total Cost	Total Cost w/Tax
Install (4) engineered tangent or runni	4	$77,017	$308,068	$308,068
Install (12) engineered deadend struc	12	#######	$1,399,044	$1,399,044
	16		1,707,112	1,707,112

Labor and Allocated Expenses

Engineering

			Hours	Cost	Dur		Estimator Comments
		DE Internal Tline	160				
L30600	Tline Conceptual Design		64	$2,732	1004		
L31700	TLine Detailed Engineering		96	$4,098	1004		
L54000	TLine Support During Construction		3	$137			
L71732	TLine Contracted Engineering			$763,392	1004		
		TLine Engr Total		**$770,359**			

			Hours	Cost	Dur		Estimator Comments
		DE Internal Sys Prot	160				
L41000	System Protection		160	$6,053	40		
		System Prot Total		**$6,053**			

Total Engineering Costs	**$776,412**
Total Engineering Contract Cost	**$763,392**

Construction Labor and Contracted

Cost of Install

				Hours	Cost	Units Per Day	Dur	Estimator Comments
L54200	TLine Substation Crew	DE Internal		936	$35,828	10	94	
L71736	TLine Internal Crew Vehicle				$6,091		94	
L71736	Mobilization			0	$30,000			
L71736	TLine Construction Contract **Non Labor (Rentals other than equip)**				$56,755		94	
L71736	TLine Construction Contract **Material**				$102,000		94	
L71736	TLine Construction Contract **Equipment**				$468,100		94	
	TLine Construction Contracted **Labor**			9,362				
L71736	Labor factor		1.00	9362	$1,170,250	100	94	
	TLine Construction Contractor **Contracted Oversight**			936	$149,792	10	94	
		Total TLine			**$2,018,816**			

				Hours	Cost	Units Per Day	Dur	Estimator Comments
L54250	Foundation Substation Crew	DE Internal		1,946	$74,473	10	195	
L71734	Foundation Internal Crew Vehicle				$12,660		195	
L71734	Foundation Construction Contract **Non Labor (Rentals other than equip)**				$15,000		195	
L71734	Foundation Construction Contract **Equipment**				$973,000		195	
	Foundation Construction Contracted **Labor**			19,460				
L71734	Labor factor		1.00	19460	$2,432,500	100	195	
	Foundation Construction Contractor **Contracted Oversight**			1946	$311,360	10	195	
		Total Foundation			**$3,818,994**			

Total Construction Install Costs	**$5,837,810**

Contract Construction Labor & Equip	**$5,043,850**
Contract Oversight	**$461,152**
Contract NonLabor/Matl	**$172,755**
Total Construction Contract	**$5,678,757**

	Capital O&M		Hours	Cost	Units Per Day	Dur	Estimator Comments
L71740	Vegetation Contract	70% | 30%		$197,800	5000	22	$154,000.00
L30100	Route Survey		125	$11,900	16		
L32440	LIDAR Survey		3373	$337,334	16		
L50350	Staking Survey		82	$7,800	16		
L71736	Traffic Control			$206,400			
L50375	Environmental Site Work/SWPPP			$10,000			
L31200, L31900, L33400	Environmental Permit Acquisition - Floodway			$20,000			
L31200, L31900, L33400	Environmental Permit Acquisition - Listed Species			$20,000			
L31200, L31900, L33400	Environmental Permit Acquisition - SWPPP			$20,000			
L31200, L31900, L33400	OPSB Permit			$60,000			
L40100	Highway Permits			$20,000			
L71732	Soil Borings			$171,732			
L30300, L50300, L61700	Public Engagement			$1,000			
L71736	Matting			$368,500			
		Total Misc		**$1,382,466**			

Total Install (Matl, Engr, Const, Misc)	**$10,933,000**

			Hours	Cost	Units Per Day	Dur	Estimator Comments
L54350	TLine Substation Crew	DE Internal	45	$1,714	10	4	
L71738	TLine Internal Crew Vehicle			$291		4	
L71738	TLine Construction Contract **Equipment**			$28,000		4	
	TLine Construction Contracted **Labor**		448				
L71738	Labor factor	1.00	448	$56,000	100	4	
	TLine Construction Contractor **Contracted Oversight**		45	$7,168	10	4	
		Total Tline Retire		**$93,174**			

			Hours	Cost	Units Per Day	Dur	Estimator Comments
L71738	Traffic Control			$24,000			
L71738	Environmental Site Work/SWPPP			$10,000			
		Total Misc		**$34,000**			

Total Retirement (Const, Misc)	**$127,174**

Construction Labor and Contracted O&M

			Hours	Cost	Units Per Day	Dur	Estimator Comments
L71744	Vegetation Contract			$46,200	5000	9	
		Total Tline O&M		**$46,200**			

Total Install, Retire, and O&M Cost	**$11,072,374**

Funding Project Name	**Hebron to 15268C Tap-Install New 69k**	**FP Number**	**M190309**
Detail Project Name	**TLine RLE**		
Detail Project Description			
	Date Entered:	**Date Revised:**	
	Estimate Prepared By:		
Detail Project Number	**Tline RLE**		

Miles of TLine	2.0	
Width of RoW (Ft)	100	**Acres**
Total Sq Ft	1,056,000	24.2
Land Cost/Acre	$108,058	
Land cost w/o Factor	2,619,588	
Factor of Land Value	100%	
Land Cost with Factor	2,619,588	

		Hours	**Cost**
L30085	Siting Site Selection **Internal Labor**	100	$4,646
L30085	Siting Site Selection **Contractor**		$50,000
L31100	Siting Preferred Site **Internal Labor**	100	$4,646
L31100	Siting Preferred Site **Contractor**		$50,000
	Total Siting		**$109,292**
L31100	Route Negotiations	360	$36,000
L31350	Land Cost		$2,619,588
	Total Real Estate		**$2,655,588**
L30100	Survey	211	$20,000
	Total Survey		**$20,000**
L30300, L61700	Public Engagement		$2,500
	Total Public Engagement		**$2,500**
	Total Real Estate Purchase		**$2,787,380**

Funding Project Name	Hebron to 15268C Tap-Install New 69kV Line Route W			FP Number	M190309
Detail Project Name	M19030901				
Detail Project Description	Hebron to 15268C Tap-Install New 69kV Line Route W - Distribution				
Estimate Prepared by	Burns & McDonnell	Date Entered:		Date Revised:	
Detail Project Number	Hebron to 15268C Tap-Install New 69kV Line Route W - Distribution				

Install

	Hours	Cost	Unit/Day	Dur
Dist Line Material		$950		
Line Engineering Exempt	40	$3,827	4	10
Line Construction Contract	286	$35,762	100	3

Removal

Line Construction Contract	31	$3,850	100	0

O&M

Line Construction Contract	0	$0	100	0

Total Dist Line	$44,389

Funding Project Name	Hebron to 15268C Tap-Install New 69kV Line Route AN		FP Number	M190309	
Detail Project Name	M19030902				
Detail Project Description	Hebron to 15268C Tap-Install New 69kV Line Route AN				
Estimate Prepared by	Burns & McDonnell	Date Entered:		Date Revised:	
Detail Project Number	Hebron to 15268C Tap-Install New 69				

Light Duty Steel Pole Size/Class	Qty	Cost per Pole	Total Cost	Total Cost w/Tax
105 H4	12	$13,750	$165,000	$165,000
	12		165,000	165,000

Engineered Steel Pole Size/Class	Qty	Cost per Pole	Total Cost	Total Cost w/Tax
Install (3) engineered tangent or runni	3	$77,017	$231,051	$231,051
Install (13) engineered deadend struct	13	$116,587	$1,515,631	$1,515,631
	16		1,746,682	1,746,682

TRANSMISSION LINE MATERIAL		Total Cost w/ Tax
Trans Line Pkg Material	$185,100	$185,100

Trans Conductor	Ft x 3	Unit Cost/ft	Total Cost	Total Cost w/ Tax
954ACSR45x7 Rail	37,000	$7.00	$259,000	$259,000
	37,000		$259,000	$259,000

OPGW	Ft	Unit Cost/ft	Total Cost	Total Cost w/ Tax
OPGW AFL-Teleco DNO-7721	13,000	$4.50	$58,500	$58,500

Foundations	Qty	Unit Cost	Total Cost	Total Cost w/ Tax
Install (3) engineered tangent or runni	3	$25,200	$75,600	$75,600
Install (13) engineered deadend struct	13	$41,850	$544,050	$544,050
	16		619,650	619,650

(A) Cost of Property Additions

Material and Related Exp

CBS	Material Categories		Quantity	Cost w/ Tax
L71728	Conductor		37,000	$259,000
L71722	OPGW		13,000	$58,500
L71752	Pole Foundations		16	$619,650
L71724	Light Duty Steel Poles		12	$165,000
L71748	Engineered Steel Poles		16	$1,746,682
Package Material	Subtotal (Specific Materials)			$2,848,832
L71722	Line Package Material			$185,100
	Subtotal (Package Material)			$185,100
Total Material Purchases				$3,033,932

Labor and Allocated Expenses

Engineering

			Hours	Cost	Dur		Estimator Comments
		DE Internal Tline	160				
L30600	Tline Conceptual Design		64	$2,732	1001		
L31700	TLine Detailed Engineering		96	$4,098	1001		
L54000	TLine Support During Construction		3	$137			
L71732	TLine Contracted Engineering			$760,653	1001		
		TLine Engr Total		$767,620			

			Hours	Cost	Dur		Estimator Comments
		DE Internal Sys Prot	160				
L41000	System Protection		160	$6,053	40		
		System Prot Total		$6,053			

Total Engineering Costs	$773,673
Total Engineering Contract Cost	$760,653

Construction Labor and Contracted

Cost of Install

				Hours	Cost	Units Per Day	Dur	Estimator Comments
L54200	TLine Substation Crew	DE Internal		942	$36,050	10	94	
L71736	TLine Internal Crew Vehicle				$6,129		94	
L71736	Mobilization		0		$30,000			
L71736	TLine Construction Contract **Non Labor (Rentals other than equip)**				$200,256		94	
L71736	TLine Construction Contract **Material**				$102,000		94	
L71736	TLine Construction Contract **Equipment**				$471,000		94	
	TLine Construction Contracted **Labor**			9,420				
L71736		Labor factor	1.00	9420	$1,177,500	100	94	
	TLine Construction Contractor **Contracted Oversight**			942	$150,720	10	94	
			Total TLine		$2,173,655			

			Hours	Cost	Units Per Day	Dur	Estimator Comments
L54250	Foundation Substation Crew	DE Internal	1,980	$75,785	10	198	
L71734	Foundation Internal Crew Vehicle			$12,883		198	
L71734	Foundation Construction Contract **Non Labor (Rentals other than equip)**			$15,000		198	
L71734	Foundation Construction Contract **Equipment**			$990,140		198	
	Foundation Construction Contracted **Labor**		19,803				
L71734		Labor factor 1.00	19803	$2,475,349	100	198	
	Foundation Construction Contractor **Contracted Oversight**		1980	$316,845	10	198	
		Total Foundation		$3,886,002			

Total Construction Install Costs	$6,059,657

Contract Construction Labor & Equip	$5,113,988
Contract Oversight	$467,565
Contract NonLabor/Matl	$317,256
Total Construction Contract	$5,898,809

Capital O&M				Hours	Cost	Units Per Day	Dur	Estimator Comments
L71740	Vegetation Contract	70%	30%		$137,200	5000	27	$196,000.00
L30100	Route Survey			169	$16,100	16		
L32440	LIDAR Survey			353	$35,267	16		
L50350	Staking Survey			88	$8,400	16		
L71736	Traffic Control				$206,400			
L50375	Environmental Site Work/SWPPP				$10,000			
L31200, L31900, L33400	Environmental Permit Acquisition - Floodway				$20,000			
L31200, L31900, L33400	Environmental Permit Acquisition - Listed Species				$20,000			
L31200, L31900, L33400	Environmental Permit Acquisition - SWPPP				$20,000			
L31200, L31900, L33400	OPSB Permit				$60,000			
L40100	Highway Permits				$20,000			
L71732	Soil Borings				$214,666			
L30300, L50300, L61700	Public Engagement				$1,000			
L71736	Matting				$234,500			
				Total Misc	$1,003,533			

Total Install (Matl, Engr, Const, Misc)	$10,870,794

Construction Labor and Contracted Removal/Retirement

				Hours	Cost	Units Per Day	Dur	Estimator Comments
L54350	TLine Substation Crew	DE Internal		45	$1,714	10	4	
L71738	TLine Internal Crew Vehicle				$291		4	
L71738	TLine Construction Contract **Equipment**				$28,000		4	
	TLine Construction Contracted **Labor**			448				
L71738		Labor factor	1.00	448	$56,000	100	4	
	TLine Construction Contractor **Contracted Oversight**			45	$7,168	10	4	
			Total Tline Retire		$93,174			

			Hours	Cost	Units Per Day	Dur	Estimator Comments
L71738	Traffic Control			$24,000			
L71738	Environmental Site Work/SWPPP			$10,000			
		Total Misc		$34,000			

Total Retirement (Const, Misc)	$127,174

Construction Labor and Contracted O&M

			Hours	Cost	Units Per Day	Dur	Estimator Comments
L71744	Vegetation Contract			$58,800	5000	12	
		Total Tline O&M		$58,800			

Total Install, Retire, and O&M Cost	$11,022,768

Funding Project Name	Hebron to 15268C Tap-Install New 69	FP Number	M190309
Detail Project Name	TLine RLE		
Detail Project Description			
	Date Entered:	Date Revised:	
	Estimate Prepared By:		
Detail Project Number	Tline RLE		

Miles of TLine	2.1	
Width of RoW (Ft)	100	Acres
Total Sq Ft	1,108,800	25.5
Land Cost/Acre	$108,868	
Land cost w/o Factor	2,771,185	
Factor of Land Value	100%	
Land Cost with Factor	2,771,185	

		Hours	Cost
L30085	Siting Site Selection **Internal Labor**	100	$4,646
L30085	Siting Site Selection **Contractor**		$50,000
L31100	Siting Preferred Site **Internal Labor**	100	$4,646
L31100	Siting Preferred Site **Contractor**		$50,000
	Total Siting		**$109,292**
L31100	Route Negotiations	360	$36,000
L31350	Land Cost		$2,771,185
	Total Real Estate		**$2,807,185**
L30100	Survey	221	$21,000
	Total Survey		**$21,000**
L30300, L61700	Public Engagement		$2,500
	Total Public Engagement		**$2,500**
	Total Real Estate Purchase		**$2,939,977**

Funding Project Name	Hebron to 15268C Tap-Install New 69kV Line Route AN		FP Number	M190309	
Detail Project Name	M19030901				
Detail Project Description	Hebron to 15268C Tap-Install New 69kV Line Route AN - Distribution				
Estimate Prepared by	Burns & McDonnell	Date Entered:		Date Revised:	
Detail Project Number	Hebron to 15268C Tap-Install New 69kV Line Route AN - Distribution				

Install

	Hours	Cost	Unit/Day	Dur
Dist Line Material		$950		
Line Engineering Exempt	40	$3,827	4	10
Line Construction Contract	286	$35,762	100	3

Removal

Line Construction Contract	31	$3,850	100	0

O&M

Line Construction Contract	0	$0	100	0

Total Dist Line	$44,389

M19030902

Funding Project Name	Hebron to 15268C Tap-Install New 69kV Line Route G		FP Number	M190309	
Detail Project Name	M19030902				
Detail Project Description	Hebron to 15268C Tap-Install New 69kV Line Route G				
Estimate Prepared by	Burns & McDonnell	Date Entered:		Date Revised:	
Detail Project Number	Hebron to 15268C Tap-Install New 69				

(A) Cost of Property Additions

Material and Related Exp

CBS	Material Categories		Quantity	Cost w/ Tax
L71728		Conductor	30,000	$210,000
L71722		OPGW	11,000	$49,500
L71752		Pole Foundations	15	$511,200
L71724		Light Duty Steel Poles	9	$123,750
L71748		Engineered Steel Poles	15	$1,471,815
Package Material		Subtotal (Specific Materials)		$2,366,265
L71722		Line Package Material		$145,800
		Subtotal (Package Material)		$145,800
		Total Material Purchases		$2,512,065

Light Duty Steel Pole Size/Class	Qty	Cost per Pole	Total Cost	Total Cost w/Tax
105 H4	9	$13,750	$123,750	$123,750
	9		123,750	123,750

Engineered Steel Pole Size/Class	Qty	Cost per Pole	Total Cost	Total Cost w/Tax
Install (7) engineered tangent or runni	7	$77,017	$539,119	$539,119
Install (8) engineered deadend structu	8	$116,587	$932,696	$932,696
	15		1,471,815	1,471,815

TRANSMISSION LINE MATERIAL		Total Cost w/ Tax
Trans Line Pkg Material	$145,800	$145,800

Trans Conductor	Ft x 3	Unit	Total Cost	Total Cost
954ACSR45x7 Rail	30,000	$7.00	$210,000	$210,000
	30,000		$210,000	$210,000

OPGW	Ft	Unit Cost/ft	Total Cost	Total Cost w/ Tax
OPGW AFL-Teleco DNO-7721	11,000	$4.50	$49,500	$49,500

Foundations	Qty	Unit Cost	Total Cost	Total Cost w/ Tax
Install (7) engineered tangent or runni	7	$25,200	$176,400	$176,400
Install (8) engineered deadend structu	8	$41,850	$334,800	$334,800
	15		511,200	511,200

Labor and Allocated Expenses

Engineering

			Hours	Cost	Dur		Estimator Comments
		DE Internal Tline	160				
L30600	Tline Conceptual Design		64	$2,732	936		
L31700	TLine Detailed Engineering		96	$4,098	936		
L54000	TLine Support During Construction		3	$137			
L71732	TLine Contracted Engineering			$711,693	936		
		TLine Engr Total		$718,660			

			Hours	Cost	Dur		Estimator Comments
		DE Internal Sys Prot	160				
L41000	System Protection		160	$6,053	40		
		System Prot Total		$6,053			

Total Engineering Costs	$724,713
Total Engineering Contract Cost	$711,693

Construction Labor and Contracted

Cost of Install

				Hours	Cost	Units Per Day	Dur	Estimator Comments
L54200	TLine Substation Crew	DE Internal		823	$31,481	10	82	
L71736	TLine Internal Crew Vehicle				$5,352		82	
L71736	Mobilization			0	$30,000			
L71736	TLine Construction Contract **Non Labor (Rentals other than equip)**				$352,300		82	
L71736	TLine Construction Contract **Material**				$102,000		82	
L71736	TLine Construction Contract **Equipment**				$411,300		82	
	TLine Construction Contracted **Labor**			8,226				
L71736		Labor factor	1.00	8226	$1,028,250	100	82	
	TLine Construction Contractor **Contracted Oversight**			823	$131,616	10	82	
		Total TLine			$2,092,299			

				Hours	Cost	Units Per Day	Dur	Estimator Comments
L54250	Foundation Substation Crew	DE Internal		1,743	$66,697	10	174	
L71734	Foundation Internal Crew Vehicle				$11,338		174	
L71734	Foundation Construction Contract **Non Labor (Rentals other than equip)**				$15,000		174	
L71734	Foundation Construction Contract **Material**				$108,763		174	
L71734	Foundation Construction Contract **Equipment**				$871,396		174	
	Foundation Construction Contracted **Labor**			17,428				
L71734		Labor factor	1.00	17428	$2,178,490	100	174	
	Foundation Construction Contractor **Contracted Oversight**			1743	$278,847	10	174	
		Total Foundation			$3,530,531			

Total Construction Install Costs	$5,622,829

Contract Construction Labor & Equip	$4,489,436
Contract Oversight	$410,463
Contract NonLabor/Matl	$578,063
Total Construction Contract	$5,477,962

		Capital O&M		Hours	Cost	Units Per Day	Dur	Estimator Comments
L71740	Vegetation Contract	70%	30%		$83,300	5000	17	$119,000.00
L30100	Route Survey			125	$11,900	16		
L32440	LIDAR Survey			261	$26,067	16		
L50350	Staking Survey			76	$7,200	16		
L71736	Traffic Control				$206,400			
L61600	Damages				$660,000	1000		Gas Station easement allowance
L50375	Environmental Site Work/SWPPP				$10,000			
L31200, L31900, L33400	Environmental Permit Acquisition - Floodway				$20,000			
L31200, L31900, L33400	Environmental Permit Acquisition - Listed Species				$20,000			
L31200, L31900, L33400	Environmental Permit Acquisition - SWPPP				$20,000			
L31200, L31900, L33400	OPSB Permit				$60,000			
L40100	Highway Permits				$20,000			
L71732	Soil Borings				$160,999			
L30300, L50300, L61700	Public Engagement				$1,000			
L71736	Matting				$134,000			
				Total Misc	$1,440,866			

Total Install (Matl, Engr, Const, Misc)	$10,300,473

Construction Labor and Contracted Removal/Retirement

				Hours	Cost	Units Per Day	Dur	Estimator Comments
L54350	TLine Substation Crew	DE Internal		48	$1,845	10	5	
L71738	TLine Internal Crew Vehicle				$314		5	
L71738	TLine Construction Contract **Equipment**				$30,125		5	
	TLine Construction Contracted **Labor**			482				
L71738		Labor factor	1.00	482	$60,250	100	5	
	TLine Construction Contractor **Contracted Oversight**			48	$7,712	10	5	
		Total Tline Retire			$100,245			

			Hours	Cost	Units Per Day	Dur	Estimator Comments
L71738	Traffic Control			$24,000			
L71738	Environmental Site Work/SWPPP			$10,000			
		Total Misc		$34,000			

Total Retirement (Const, Misc)	$134,245

Construction Labor and Contracted O&M

			Hours	Cost	Units Per Day	Dur	Estimator Comments
L71744	Vegetation Contract			$35,700	5000	7	
		Total Tline O&M		$35,700			

Total Install, Retire, and O&M Cost	$10,436,418

TLine RLE

Funding Project Name	**Hebron to 15268C Tap-Install New 69**	**FP Number**	**M190309**
Detail Project Name	**TLine RLE**		
Detail Project Description			
	Date Entered:	**Date Revised:**	
	Estimate Prepared By:		
Detail Project Number	**Tline RLE**		

Miles of TLine	1.5	
Width of RoW (Ft)	100	**Acres**
Total Sq Ft	807,840	18.5
Land Cost/Acre	$218,855	
Land cost w/o Factor	4,058,765	
Factor of Land Value	100%	
Land Cost with Factor	4,058,765	

		Hours	**Cost**
L30085	Siting Site Selection **Internal Labor**	100	$4,646
L30085	Siting Site Selection **Contractor**		$50,000
L31100	Siting Preferred Site **Internal Labor**	100	$4,646
L31100	Siting Preferred Site **Contractor**		$50,000
	Total Siting		**$109,292**
L31100	Route Negotiations	360	$36,000
L31350	Land Cost		$4,058,765
	Total Real Estate		**$4,094,765**
L30100	Survey	161	$15,300
	Total Survey		**$15,300**
L30300, L61700	Public Engagement		$2,500
	Total Public Engagement		**$2,500**
	Total Real Estate Purchase		**$4,221,857**

M19030901

Funding Project Name	Hebron to 15268C Tap-Install New 69kV Line Route G		FP Number	M190309	
Detail Project Name	M19030901				
Detail Project Description	Hebron to 15268C Tap-Install New 69kV Line Route G - Distribution				
Estimate Prepared by	Burns & McDonnell	Date Entered:		Date Revised:	
Detail Project Number	Hebron to 15268C Tap-Install New 69kV Line Route G - Distribution				

Install

	Hours	Cost	Unit/Day	Dur
Dist Line Material		$15,200		
Line Engineering Exempt	384	$36,475	4	96
Line Construction Contract	2479	$309,836	100	25

Removal

Line Construction Contract	493	$61,600	100	5

O&M

Line Construction Contract	0	$0	100	0

Total Dist Line	**$423,111**

Funding Project Name	Hebron to 15268C Tap-Install New 69kV Line Route AH		FP Number	M190309	
Detail Project Name	M19030902				
Detail Project Description	Hebron to 15268C Tap-Install New 69kV Line Route AH				
Estimate Prepared by	Burns & McDonnell	Date Entered:		Date Revised:	
Detail Project Number	Hebron to 15268C Tap-Install New 69				

(A) Cost of Property Additions

Material and Related Exp

Material Categories

		Quantity	Cost w/ Tax
L71728	Conductor	40,000	$280,000
L71722	OPGW	14,000	$63,000
L71752	Pole Foundations	19	$711,900
L71724	Light Duty Steel Poles	13	$178,750
L71748	Engineered Steel Poles	19	$2,017,303
Package Material	Subtotal (Specific Materials)		$3,250,953
L71722	Line Package Material		$208,400
	Subtotal (Package Material)		$208,400
	Total Material Purchases		$3,459,353

Light Duty Steel Pole Size/Class	Qty	Cost per Pole	Total Cost	Total Cost w/Tax
105 H4	13	$13,750	$178,750	$178,750
	13		178,750	178,750

Engineered Steel Pole Size/Class	Qty	Cost per Pole	Total Cost	Total Cost w/Tax
Install (5) engineered tangent or runnir	5	$77,017	$385,085	$385,085
Install (14) engineered deadend struct	14	$116,587	$1,632,218	$1,632,218
	19		2,017,303	2,017,303

TRANSMISSION LINE MATERIAL		Total Cost w/ Tax
Trans Line Pkg Material	$208,400	$208,400

Trans Conductor	Ft x 3	Unit Cost/ft	Total Cost	Total Cost w/ Tax
954ACSR45x7 Rail	40,000	$7.00	$280,000	$280,000
	40,000		$280,000	$280,000

OPGW	Ft	Unit Cost/ft	Total Cost	Total Cost w/ Tax
OPGW AFL-Teleco DNO-7721	14,000	$4.50	$63,000	$63,000

Foundations	Qty	Unit Cost	Total Cost	Total Cost w/ Tax
Install (5) engineered tangent or runnir	5	$25,200	$126,000	$126,000
Install (14) engineered deadend struct	14	$41,850	$585,900	$585,900
	19		711,900	711,900

Labor and Allocated Expenses

Engineering

		Hours	Cost	Dur		Estimator Comments
	DE Internal Tline	160				
L30600	TLine Conceptual Design	64	$2,732	1148		
L31700	TLine Detailed Engineering	96	$4,098	1148		
L54000	TLine Support During Construction	3	$137			
L71732	TLine Contracted Engineering		$872,150	1148		
	TLine Engr Total		**$879,117**			

		Hours	Cost	Dur		Estimator Comments
	DE Internal Sys Prot	160				
L41000	System Protection	160	$6,053	40		
	System Prot Total		**$6,053**			

Total Engineering Costs	**$885,170**
Total Engineering Contract Cost	**$872,150**

Construction Labor and Contracted

Cost of Install

			Hours	Cost	Units Per Day	Dur	Estimator Comments
L54200	TLine Substation Crew	DE Internal	1,062	$40,643	10	106	
L71736	TLine Internal Crew Vehicle			$6,909		106	
L71736	Mobilization		0	$30,000			
L71736	TLine Construction Contract **Non Labor (Rentals other than equ**			$400,449		106	
L71736	TLine Construction Contract **Material**			$102,000		106	
L71736	TLine Construction Contract **Equipment**			$531,000		106	
	TLine Construction Contracted **Labor**		10,620				
L71736	Labor factor	1.00	10620	$1,327,500	100	106	
	TLine Construction Contractor **Contracted Oversight**		1062	$169,920	10	106	
	Total TLine			**$2,608,421**			

			Hours	Cost	Units Per Day	Dur	Estimator Comments
L54250	Foundation Substation Crew	DE Internal	2,310	$88,418	10	231	
L71734	Foundation Internal Crew Vehicle			$15,031		231	
L71734	Foundation Construction Contract **Non Labor (Rentals other than**			$15,000		231	
L71734	Foundation Construction Contract **Equipment**			$1,155,193		231	
	Foundation Construction Contracted **Labor**		23,104				
L71734	Labor factor	1.00	23104	$2,887,983	100	231	
	Foundation Construction Contractor **Contracted Oversight**		2310	$369,662	10	231	
	Total Foundation			**$4,531,287**			

Total Construction Install Costs	**$7,139,708**
Contract Construction Labor & Equi	**$5,901,676**
Contract Oversight	**$539,582**
Contract NonLabor/Matl	**$517,449**
Total Construction Contract	**$6,958,706**

		Capital	O&M	Hours	Cost	Units	Dur	Estimator Comments
L71740	Vegetation Contract	70%	30%		$137,200	5000	27	$196,000.00
L30100	Route Survey			169	$16,100	16		
L32440	LIDAR Survey			353	$35,267	16		
L50350	Staking Survey			101	$9,600	16		
L71736	Traffic Control				$206,400			
L50375	Environmental Site Work/SWPPP				$10,000			
L31200, L31900, L33400	Environmental Permit Acquisition - Floodway				$20,000			
L31200, L31900, L33400	Environmental Permit Acquisition - Listed Species				$20,000			
L31200, L31900, L33400	Environmental Permit Acquisition - SWPPP				$20,000			
L31200, L31900, L33400	OPSB Permit				$60,000			
L40100	Highway Permits				$20,000			
L71732	Soil Borings				$214,666			
L30300, L50300, L61700	Public Engagement				$1,000			
L71736	Matting				$234,500			
				Total Misc	**$1,004,733**			

Total Install (Matl, Engr, Const, Misc	**$12,488,964**

Construction Labor and Contracted Removal/Retirement

			Hours	Cost	Units Per Day	Dur	Estimator Comments
L54350	TLine Substation Crew	DE Internal	45	$1,714	10	4	
L71738	TLine Internal Crew Vehicle			$291		4	
L71738	TLine Construction Contract **Equipment**			$28,000		4	
	TLine Construction Contracted **Labor**		448				
L71738	Labor factor	1.00	448	$56,000	100	4	
	TLine Construction Contractor **Contracted Oversight**		45	$7,168	10	4	
	Total Tline Retire			**$93,174**			

		Hours	Cost	Units Per Day	Dur	Estimator Comments
L71738	Traffic Control		$24,000			
L71738	Environmental Site Work/SWPPP		$10,000			
	Total Misc		**$34,000**			

Total Retirement (Const, Misc)	**$127,174**

Construction Labor and Contracted O&M

		Hours	Cost	Units Per Day	Dur	Estimator Comments
L71744	Vegetation Contract		$58,800	5000	12	
	Total Tline O&M		**$58,800**			

Total Install, Retire, and O&M Cost	**$12,640,938**

Funding Project Name	**Hebron to 15268C Tap-Install New 69kV Line Route AH**	**FP Number**	**M190309**
Detail Project Name	**TLine RLE**		
etail Project Descriptic			
	Date Entered:	**Date Revised:**	
	Estimate Prepared By:		
Detail Project Number	**Tline RLE**		

Miles of TLine	2.3	
Width of RoW (Ft)	100	**Acres**
Total Sq Ft	1,230,240	28.2
Land Cost/Acre	$110,843	
Land cost w/o Factor	3,130,475	
Factor of Land Value	100%	
Land Cost with Factc	3,130,475	

	Hours	Cost
Siting Site Selection **Internal Labor**	100	$4,646
Siting Site Selection **Contractor**		$50,000
Siting Preferred Site **Internal Labor**	100	$4,646
Siting Preferred Site **Contractor**		$50,000
Total Siting		**$109,292**
Route Negotiations	360	$36,000
Land Cost		$3,130,475
Total Real Estate		**$3,166,475**
Survey	245	$23,300
Total Survey		**$23,300**
Public Engagement		$2,500
Total Public Engagement		**$2,500**
Total Real Estate Purchase		**$3,301,567**

Funding Project Name	Hebron to 15268C Tap-Install New 69kV Line Route AH		FP Number	M190309	
Detail Project Name	M19030901				
Detail Project Description	Hebron to 15268C Tap-Install New 69kV Line Route AH - Distribution				
Estimate Prepared by	Burns & McDonnell	Date Entered:		Date Revised:	
Detail Project Number	Hebron to 15268C Tap-Install New 69kV Line Route AH - Distribution				

Install

	Hours	Cost	Unit/Day	Dur
Dist Line Material		$950		
Line Engineering Exempt	40	$3,827	4	10
Line Construction Contract	286	$35,761	100	3

Removal

Line Construction Contract	31	$3,850	100	0

Total Dist Line	$44,388

M19030902

Funding Project Name	Hebron to 15268C Tap-Install New 69kV Line Route M		FP Number	M190309	
Detail Project Name	M19030902				
Detail Project Description	Hebron to 15268C Tap-Install New 69kV Line Route M				
Estimate Prepared by	Burns & McDonnell	Date Entered:		Date Revised:	
Detail Project Number	Hebron to 15268C Tap-Install New 69				

(A) Cost of Property Additions

Material and Related Exp

Material Categories

		Quantity	Cost w/ Tax
L71728	Conductor	35,000	$245,000
L71722	OPGW	13,000	$58,500
L71752	Pole Foundations	15	$544,500
L71724	Light Duty Steel Poles	15	$206,250
L71748	Engineered Steel Poles	15	$1,550,955
Package Material	Subtotal (Specific Materials)		$2,605,205
L71722	Line Package Material		$178,500
	Subtotal (Package Material)		$178,500
	Total Material Purchases		$2,783,705

Light Duty Steel Pole Size/Class	Qty	Cost per Pole	Total Cost	Total Cost w/Tax
105 H4	15	$13,750	$206,250	$206,250
	15		206,250	206,250

Engineered Steel Pole Size/Class	Qty	Cost per Pole	Total Cost	Total Cost w/Tax
Install (5) engineered tangent or runni	5	$77,017	$385,085	$385,085
Install (10) engineered deadend struct	10	$116,587	$1,165,870	$1,165,870
	15		1,550,955	1,550,955

TRANSMISSION LINE MATERIAL	Total Cost w/ Tax
Trans Line Pkg Material	$178,500

Trans Conductor	Ft x 3	Unit	Total Cost	Total Cost w/ Tax
954ACSR45x7 Rail	35,000	$7.00	$245,000	$245,000
	35,000		$245,000	$245,000

OPGW	Ft	Unit Cost/ft	Total Cost	Total Cost w/ Tax
OPGW AFL-Teleco DNO-7721	13,000	$4.50	$58,500	$58,500

Foundations	Qty	Unit Cost	Total Cost	Total Cost w/ Tax
Install (5) engineered tangent or runni	5	$25,200	$126,000	$126,000
Install (10) engineered deadend struct	10	$41,850	$418,500	$418,500
	15		544,500	544,500

Labor and Allocated Expenses

Engineering

			Hours	Cost	Dur		Estimator Comments
		DE Internal Tline	160				
L30600	Tline Conceptual Design		64	$2,732	1007		
L31700	TLine Detailed Engineering		96	$4,098	1007		
L54000	TLine Support During Construction		3	$137			
L71732	TLine Contracted Engineering			$765,216	1007		
		TLine Engr Total		$772,183			

			Hours	Cost	Dur		Estimator Comments
		DE Internal Sys Prot	160				
L41000	System Protection		160	$6,053	40		
		System Prot Total		$6,053			

Total Engineering Costs	$778,236
Total Engineering Contract Cost	$765,216

Construction Labor and Contracted

Cost of Install

				Hours	Cost	Units Per Day	Dur	Estimator Comments
L54200	TLine Substation Crew	DE Internal		924	$35,361	10	92	
L71736	TLine Internal Crew Vehicle				$6,011		92	
L71736	Mobilization			0	$30,000			
L71736	TLine Construction Contract **Non Labor (Rentals other than equip)**				$420,224		92	
L71736	TLine Construction Contract **Material**				$102,000		92	
L71736	TLine Construction Contract **Equipment**				$462,000		92	
	TLine Construction Contracted **Labor**			9,240				
L71736		Labor factor	1.00	9240	$1,155,000	100	92	
	TLine Construction Contractor **Contracted Oversight**			924	$147,840	10	92	
			Total TLine		$2,358,437			

				Hours	Cost	Units Per Day	Dur	Estimator Comments
L54250	Foundation Substation Crew	DE Internal		1,821	$69,693	10	182	
L71734	Foundation Internal Crew Vehicle				$11,848		182	
L71734	Foundation Construction Contract **Non Labor (Rentals other than equip)**				$15,000		182	
L71734	Foundation Construction Contract **Material**				$108,763		182	
L71734	Foundation Construction Contract **Equipment**				$910,542		182	
	Foundation Construction Contracted **Labor**			18,211				
L71734		Labor factor	1.00	18211	$2,276,354	100	182	
	Foundation Construction Contractor **Contracted Oversight**			1821	$291,373	10	182	
			Total Foundation		$3,683,572			

Total Construction Install Costs	$6,042,009

Contract Construction Labor & Equip	$4,803,895
Contract Oversight	$439,213
Contract NonLabor/Matl	$645,987
Total Construction Contract	$5,889,096

		Capital O&M		Hours	Cost	Units Per Day	Dur	Estimator Comments
L71740	Vegetation Contract	70%	30%		$83,300	5000	17	$119,000.00
L71740	Vegetation Const Access Contract				$0	1250	0	
L30100	Route Survey			147	$14,000	16		
L32440	LIDAR Survey			307	$30,667	16		
L50350	Staking Survey			95	$9,000	16		
L71736	Traffic Control				$206,400			
L61800	Damages				$660,000	1000		Gas Station easement allowance
L50375	Environmental Site Work/SWPPP				$10,000			
L31200, L31900, L33400	Environmental Permit Acquisition - Floodway				$20,000			
L31200, L31900, L33400	Environmental Permit Acquisition - Listed Species				$20,000			
L31200, L31900, L33400	Environmental Permit Acquisition - SWPPP				$20,000			
L31200, L31900, L33400	OPSB Permit				$60,000			
L40100	Highway Permits				$20,000			
L71732	Soil Borings				$160,999			
L30300, L50300, L61700	Public Engagement				$1,000			
L71736	Matting				$134,000			
				Total Misc	$1,449,366			

Total Install (Matl, Engr, Const, Misc)	$11,053,316

Construction Labor and Contracted Removal/Retirement

				Hours	Cost	Units Per Day	Dur	Estimator Comments
L54350	TLine Substation Crew	DE Internal		48	$1,845	10	5	
L71738	TLine Internal Crew Vehicle				$314		5	
L71738	TLine Construction Contract **Equipment**				$30,125		5	
	TLine Construction Contracted **Labor**			482				
L71738		Labor factor	1.00	482	$60,250	100	5	
	TLine Construction Contractor **Contracted Oversight**			48	$7,712	10	5	
			Total Tline Retire		$100,245			

			Hours	Cost	Units Per Day	Dur	Estimator Comments
L71738	Traffic Control			$24,000			
L71738	Environmental Site Work/SWPPP			$10,000			
		Total Misc		$34,000			

Total Retirement (Const, Misc)	$134,245

Construction Labor and Contracted O&M

			Hours	Cost	Units Per Day	Dur	Estimator Comments
L71744	Vegetation Contract			$35,700	5000	7	
		Total Tline O&M		$35,700			

Total Install, Retire, and O&M Cost	$11,189,261

TLine RLE

Funding Project Name	**Hebron to 15268C Tap-Install New 69I**	**FP Number**	**M190309**
Detail Project Name	**TLine RLE**		
Detail Project Description			
	Date Entered:	**Date Revised:**	
	Estimate Prepared By:		
Detail Project Number	**Tline RLE**		

Miles of TLine	1.9	
Width of RoW (Ft)	100	**Acres**
Total Sq Ft	997,920	22.9
Land Cost/Acre	$204,480	
Land cost w/o Factor	4,684,449	
Factor of Land Value	100%	
Land Cost with Factor	4,684,449	

		Hours	Cost
L30085	Siting Site Selection **Internal Labor**	100	$4,646
L30085	Siting Site Selection **Contractor**		$50,000
L31100	Siting Preferred Site **Internal Labor**	100	$4,646
L31100	Siting Preferred Site **Contractor**		$50,000
	Total Siting		**$109,292**
L31100	Route Negotiations	360	$36,000
L31350	Land Cost		$4,684,449
	Total Real Estate		**$4,720,449**
L30100	Survey	199	$18,900
	Total Survey		**$18,900**
L30300, L61700	Public Engagement		$2,500
	Total Public Engagement		**$2,500**
	Total Real Estate Purchase		**$4,851,141**

M19030901

Funding Project Name	Hebron to 15268C Tap-Install New 69kV Line Route M		FP Number	M190309	
Detail Project Name	M19030901				
Detail Project Description	Hebron to 15268C Tap-Install New 69kV Line Route M - Distribution				
Estimate Prepared by	Burns & McDonnell	Date Entered:		Date Revised:	
Detail Project Number	Hebron to 15268C Tap-Install New 69kV Line Route M - Distribution				

Install

	Hours	Cost	Unit/Day	Dur
Dist Line Material		$15,200		
Line Engineering Exempt	384	$36,475	4	96
Line Construction Contract	2479	$309,836	100	25

Removal

Line Construction Contract	493	$61,600	100	5

Total Dist Line	**$423,111**

Funding Project Name	**Hebron to 15268C Tap-Install New 69kV Line Route A**	**FP Number**	**M190309**
Detail Project Name	**M19030902**		
Detail Project Description	**Hebron to 15268C Tap-Install New 69kV Line Route A**		
Estimate Prepared by	**Burns & McDonnell**	**Date Entered:**	**Date Revised:**
Detail Project Number	**Hebron to 15268C Tap-Install New 69kV Line Route A**		

(A) Cost of Property Additions

Material and Related Exp

		Quantity	
L71728	Conductor	35000	245000
L71722	OPGW	13000	58500
L71752	Pole Foundations	20	703800
L71724	Light Duty Steel Poles	12	165000
L71748	Engineered Steel Poles	20	2015180
	Subtotal (Specific Materials)		**3187480**
L71722	Line Package Material		200400
	Subtotal (Package Material)		**200400**
Total Material Purchases			**3387880**

			Hours	Cost	Dur		Estimator Comments
		DE Internal Tline	160				
L30600	Tline Conceptual Design		64	2732	1212		
L31700	TLine Detailed Engineering		96	4098	1212		
L54000	TLine Support During Construction		3	137			
L71732	TLine Contracted Engineering			921188	1212		
	TLine Engr Total			**928155**			

			Hours	Cost	Dur		Estimator Comments
		DE Internal Sys P	160				
L41000	System Protection		160	6053	40		
	System Prot Total			**6053**			

Total Engineering Costs	**934208**
Total Engineering Contract Cost	**921188**

			Hours	Cost	Units Per	Dur	Estimator Comments
L54200	TLine Substation Crew	DE Internal	1038	39709	10	104	
L71736	TLine Internal Crew Vehicle			6751		104	
L71736	Mobilization		0	30000			
L71736	TLine Construction Contract **Non Labor (Rentals other than e**			554662		104	
L71736	TLine Construction Contract **Material**			102000		104	
L71736	TLine Construction Contract **Equipment**			518800		104	
	TLine Construction Contracted **Labor**		10376				
L71736	Labor factor	1	10376	1297000	100	104	
	TLine Construction Contractor **Contracted Oversight**		1038	166016	10	104	
	Total TLine			**2714937**			

			Hours	Cost	Units Per	Dur	Estimator Comments
L54250	Foundation Substation Crew	DE Internal	2357	90185	10	236	
L71734	Foundation Internal Crew Vehicle			15332		236	
L71734	Foundation Construction Contract **Non Labor (Rentals other t**			15000		236	
L71734	Foundation Construction Contract **Material**			108763		236	
L71734	Foundation Construction Contract **Equipment**			1178278		236	
L71734	Labor factor	1	23566	2945695	100	236	
	Foundation Construction Contractor **Contracted Oversight**		2357	377049	10	236	
	Total Foundation			**4730302**			

Total Construction Install Costs	**7445239**

Contract Construction Labor & Equi	**5939773**
Contract Oversight	**543065**
Contract NonLabor/Matl	**780425**
Total Construction Contract	**7263263**

		Capital	O&M	Hours	Cost	Units Per	Dur	Estimator Comments
L71740	Vegetation Contract	1	0		83300	5000	17	119000
L30100	Route Survey			147	14000	16		
L32440	LIDAR Survey			307	30667	16		
L50350	Staking Survey			101	9600	16		
L71736	Traffic Control				206400			
L61600	Damages				660000	1000		Gas Station easement allowance
L50375	Environmental Site Work/SWPPP				10000			
L31200, L31900, L33400	Environmental Permit Acquisition - Floodway				20000			
L31200, L31900, L33400	Environmental Permit Acquisition - Listed Species				20000			
L31200, L31900, L33400	Environmental Permit Acquisition - SWPPP				20000			
L31200, L31900, L33400	OPSB Permit				60000			
L40100	Highway Permits				20000			
L71732	Soil Borings				214666			
L30300, L50300, L61700	Public Engagement				1000			
L71736	Matting				234500			
				Total Misc	**1604133**			

Total Install (Matl, Engr, Const, Misc	**13371460**

			Hours	Cost	Units Per	Dur	Estimator Comments
L54350	TLine Substation Crew	DE Internal	48	1845	10	5	
L71738	TLine Internal Crew Vehicle			314		5	
L71738	TLine Construction Contract **Equipment**			30125		5	
L71738	Labor factor	1	482	60250	100	5	
	TLine Construction Contractor **Contracted Oversight**		48	7712	10	5	
	Total Tline Retire			**100245**			

			Hours	Cost	Units Per	Dur	Estimator Comments
L71738	Traffic Control			24000			
L71738	Environmental Site Work/SWPPP			10000			
			Total Misc	**34000**			

Total Retirement (Const, Misc)	**134245**

L71744	Vegetation Contract			35700	5000	7	
	Total Tline O&M			**35700**			

Total Install, Retire, and O&M Cost	**13507405**

TRANSMISSION LINE MATERIAL		Total Cost w/ Tax
Trans Line Pkg Material	200400	200400

Trans Conductor	Ft x 3	Unit Cost/ft	Total Cost	Total Cost w/ Tax
954ACSR45x7 Rail	35000	7	245000	245000
	35000		**245000**	**245000**

OPGW	Ft	Unit Cost/ft	Total Cost	Total Cost w/ Tax
OPGW AFL-Teleco DNO-7721	13000	5	58500	**58500**

Foundations	Qty	Unit Cost	Total Cost	Total Cost w/ Tax
Install (8) engineered tangent or runnin	8	25200	201600	201600
Install (12) engineered deadend structu	12	41850	502200	502200
	20		**703800**	**703800**

Light Duty Steel Pole Size/Class	Qty	Cost per Pole	Total Cost	Total Cost w/Tax
105 H4	12	13750	165000	165000
	12		**165000**	**165000**

Engineered Steel Pole Size/Class	Qty	Cost per Pole	Total Cost	Total Cost w/Tax
Install (8) engineered tangent or runnin	8	77017	616136	616136
Install (12) engineered deadend structu	12	116587	1399044	1399044
	20		**2015180**	**2015180**

Funding Project Name	**Hebron to 15268C Tap-Install New 69kV Line Route A**	**FP Number**	**M190309**
Detail Project Name	**TLine RLE**		
Detail Project Description			
	Date Entered:	**Date Revised:**	
	Estimate Prepared By:		
Detail Project Number	**Tline RLE**		

Miles of TLine	1.8	
Width of RoW (Ft)	100	**Acres**
Total Sq Ft	966,240	22.2
Land Cost/Acre	$191,983	
Land cost w/o Factor	4,258,532	
Factor of Land Value	100%	
Land Cost with Factor	4,258,532	

		Hours	**Cost**
L30085	Siting Site Selection **Internal Labor**	88	$4,065
L30085	Siting Site Selection **Contractor**		$35,000
L31100	Siting Preferred Site **Internal Labor**	88	$4,065
L31100	Siting Preferred Site **Contractor**		$35,000
	Total Siting		**$78,131**
L31100	Route Negotiations	240	$24,000
L31350	Land Cost		$4,258,532
	Total Real Estate		**$4,282,532**
L30100	Survey	193	$18,300
	Total Survey		**$18,300**
L30300, L61700	Public Engagement		$2,500
	Total Public Engagement		**$2,500**
	Total Real Estate Purchase		**$4,381,463**

Funding Project Name	Hebron to 15268C Tap-Install New 69kV Line Route A		FP Number	M190309
Detail Project Name	M19030901			
Detail Project Description	Hebron to 15268C Tap-Install New 69kV Line Route A - Distribution			
Estimate Prepared by	Burns & McDonnell	Date Entered:		Date Revised:
Detail Project Number	Hebron to 15268C Tap-Install New 69kV Line Route A - Distribution			

Install

	Hours	Cost	Unit/Day	Dur
Dist Line Material		$15,200		
Line Engineering Exempt	384	$36,475	4	96
Line Construction Contract	2479	$309,836		

Removal

Line Construction Contract	493	$61,600	100	5

O&M

Line Construction Contract	0	$0	100	0

Total Dist Line	$423,111

M19030902

Funding Project Name	**Hebron to 15268C Tap-Install New 69kV Line Route Al**		**FP Number**	**M190309**	
Detail Project Name	**M19030902**				
Detail Project Description	**Hebron to 15268C Tap-Install New 69kV Line Route Al**				
Estimate Prepared by	**Burns & McDonnell**	**Date Entered:**		**Date Revised:**	
Detail Project Number	**Hebron to 15268C Tap-Install New**				

(A) Cost of Property Additions

Material and Related Exp

Material Categories

		Quantity	Cost w/ Tax
L71728	Conductor	40,000	$280,000
L71722	OPGW	14,000	$63,000
L71752	Pole Foundations	18	$636,750
L71724	Light Duty Steel Poles	18	$247,500
L71748	Engineered Steel Poles	18	$1,821,576
Package Material	**Subtotal (Specific Materials)**		**$3,048,826**
L71722	Line Package Material		$200,400
	Subtotal (Package Material)		**$200,400**
	Total Material Purchases		**$3,249,226**

Labor and Allocated Expenses

Engineering

		Hours	Cost	Dur		Estimator Comments
	DE Internal Tline	160				
L30600	Tline Conceptual Design	64	$2,732	1212		
L31700	TLine Detailed Engineering	96	$4,098	1212		
L54000	TLine Support During Construction	3	$137			
L71732	TLine Contracted Engineering		$921,188	1212		
	TLine Engr Total		**$928,155**			

		Hours	Cost	Dur		Estimator Comments
	DE Internal Sys Prot	160				
L41000	System Protection	160	$6,053	40		
	System Prot Total		**$6,053**			

Total Engineering Costs	**$934,208**
Total Engineering Contract Cost	**$921,188**

Construction Labor and Contracted

Cost of Install

				Hours	Cost	Units Per Day	Dur	Estimator Comments
L54200	TLine Substation Crew	DE Internal		1,038	$39,709	10	104	
L71736	TLine Internal Crew Vehicle				$6,751		104	
L71736	Mobilization			0	$30,000			
L71736	TLine Construction Contract **Non Labor (Rentals other than equip)**				$382,019		104	
L71736	TLine Construction Contract **Material**				$102,000		104	
L71736	TLine Construction Contract **Equipment**				$518,800		104	
	TLine Construction Contracted **Labor**			10,376				
L71736	Labor factor		1.00	10376	$1,297,000	100	104	
	TLine Construction Contractor **Contracted Oversight**			1038	$166,016	10	104	
	Total TLine				**$2,542,294**			

				Hours	Cost	Units Per Day	Dur	Estimator Comments
L54250	Foundation Substation Crew	DE Internal		2,357	$90,187	10	236	
L71734	Foundation Internal Crew Vehicle				$15,332		236	
L71734	Foundation Construction Contract **Non Labor (Rentals other than equip)**				$15,000		236	
L71734	Foundation Construction Contract **Material**				$108,763		236	
L71734	Foundation Construction Contract **Equipment**				$1,178,300		236	
	Foundation Construction Contracted **Labor**			23,566				
L71734	Labor factor		1.00	23566	$2,945,750	100	236	
	Foundation Construction Contractor **Contracted Oversight**			2357	$377,056	10	236	
	Total Foundation				**$4,730,388**			

Total Construction Install Costs	**$7,272,682**

Contract Construction Labor & Equip	**$6,939,850**
Contract Oversight	**$543,072**
Contract NonLabor/Matl	**$607,782**
Total Construction Contract	**$7,090,704**

			Capital O&M	Hours	Cost	Units Per Day	Dur	Estimator Comments
L71740	Vegetation Contract	70%	30%		$53,900	5000	11	$77,000.00
L30100	Route Survey			147	$14,000	16		
L32440	LiDAR Survey			307	$30,667	16		
L50350	Staking Survey			114	$10,800	16		
L71736	Traffic Control				$206,400			
L61600	Damages				$660,000	1000		Gas Station easement allowance
L50375	Environmental Site Work/SWPPP				$10,000			
L31200, L31900, L33400	Environmental Permit Acquisition - Floodway				$20,000			
L31200, L31900, L33400	Environmental Permit Acquisition - Listed Species				$20,000			
L31200, L31900, L33400	Environmental Permit Acquisition - SWPPP				$20,000			
L31200, L31900, L33400	OPSB Permit				$60,000			
L40100	Highway Permits				$20,000			
L71732	Soil Borings				$214,666			
L30300, L50300, L61700	Public Engagement				$1,000			
L71736	Matting				$234,500			
	Total Misc				**$1,575,933**			

Total Install (Matl, Engr, Const, Misc)	**$13,032,049**

Construction Labor and Contracted Removal/Retirement

				Hours	Cost	Units Per Day	Dur	Estimator Comments
L54350	TLine Substation Crew	DE Internal		48	$1,845	10	5	
L71738	TLine Internal Crew Vehicle				$314		5	
L71738	TLine Construction Contract **Equipment**				$30,125		5	
	TLine Construction Contracted **Labor**			482				
L71738	Labor factor		1.00	482	$60,250	100	5	
	TLine Construction Contractor **Contracted Oversight**			48	$7,712	10	5	
	Total Tline Retire				**$100,245**			

		Hours	Cost	Units Per Day	Dur	Estimator Comments
L71738	Traffic Control		$24,000			
L71738	Environmental Site Work/SWPPP		$10,000			
	Total Misc		**$34,000**			

Total Retirement (Const, Misc)	**$134,245**

Construction Labor and Contracted O&M

				Hours	Cost	Units Per Day	Dur	Estimator Comments
OM08	CL	L71744	Vegetation Contract		$23,100	5000	5	
			Total Tline O&M		**$23,100**			

Total Install, Retire, and O&M Cost	**$13,155,394**

Light Duty Steel Pole Size/Class	Qty	Cost per Pole	Total Cost	Total Cost w/Tax
105 H4	18	$13,750	$247,500	$247,500
	18		**247,500**	**247,500**

Engineered Steel Pole Size/Class	Qty	Cost per Pole	Total Cost	Total Cost w/Tax
Install (7) engineered tangent or runn	7	$77,017	$539,119	$539,119
Install (11) engineered deadend struc	11	$116,587	$1,282,457	$1,282,457
	18		**1,821,576**	**1,821,576**

TRANSMISSION LINE MATERIAL		Total Cost w/ Tax
Trans Line Pkg Material	**$200,400**	**$200,400**

Trans Conductor	Ft x 3	Unit Cost/ft	Total Cost	Total Cost w/ Tax
954ACSR45x7 Rail	40,000	$7.00	$280,000	$280,000
	40,000		**$280,000**	**$280,000**

OPGW	Ft	Unit Cost/ft	Total Cost	Total Cost w/ Tax
OPGW AFL-Teleco DNO-7721	14,000	$4.50	$63,000	**$63,000**

Foundations	Qty	Unit Cost	Total Cost	Total Cost w/ Tax
Install (7) engineered tangent or runn	7	$25,200	$176,400	$176,400
Install (11) engineered deadend struc	11	$41,850	$460,350	$460,350
	18		**636,750**	**636,750**

TLine RLE

Funding Project Name	**Hebron to 15268C Tap-Install New 69I**	**FP Number**	**M190309**
Detail Project Name	**TLine RLE**		
Detail Project Description			
	Date Entered:	**Date Revised:**	
	Estimate Prepared By:		
Detail Project Number	**Tline RLE**		

Miles of TLine	2.3	
Width of RoW (Ft)	100	**Acres**
Total Sq Ft	1,214,400	27.9
Land Cost/Acre	$191,718	
Land cost w/o Factor	5,344,865	
Factor of Land Value	100%	
Land Cost with Factor	5,344,865	

		Hours	Cost
L30085	Siting Site Selection **Internal Labor**	100	$4,646
L30085	Siting Site Selection **Contractor**		$50,000
L31100	Siting Preferred Site **Internal Labor**	100	$4,646
L31100	Siting Preferred Site **Contractor**		$50,000
	Total Siting		**$109,292**
L31100	Route Negotiations	360	$36,000
L31350	Land Cost		$5,344,865
	Total Real Estate		**$5,380,865**
L30100	Survey	242	$23,000
	Total Survey		**$23,000**
L30300, L61700	Public Engagement		$2,500
	Total Public Engagement		**$2,500**
	Total Real Estate Purchase		**$5,515,657**

M19030901

Funding Project Name	Hebron to 15268C Tap-Install New 69kV Line Route Al		FP Number	M190309	
Detail Project Name	M19030901				
Detail Project Description	Hebron to 15268C Tap-Install New 69kV Line Route Al - Distribution				
Estimate Prepared by	Burns & McDonnell	Date Entered:		Date Revised:	
Detail Project Number	Hebron to 15268C Tap-Install New 69kV Line Route Al - Distribution				

Install

	Hours	Cost	Unit/Day	Dur
Dist Line Material		$15,200		
Line Engineering Exempt	384	$36,475	4	96
Line Construction Contract	2479	$309,836	100	25

Removal

Line Construction Contract	493	$61,600	100	5

Total Dist Line	**$423,111**

M19030902

Funding Project Name	Hebron to 15268C Tap-Install New 69kV Line Route AC		FP Number	M190309	
Detail Project Name	M19030902				
Detail Project Description	Hebron to 15268C Tap-Install New 69kV Line Route AC				
Estimate Prepared by	Burns & McDonnell	Date Entered:		Date Revised:	
Detail Project Number	Hebron to 15268C Tap-Install New 69				

(A) Cost of Property Additions

Material and Related Exp

CBS	Material Categories		Quantity	Cost w/ Tax
L71728		Conductor	39,000	$273,000
L71722		OPGW	14,000	$63,000
L71752		Pole Foundations	20	$703,800
L71724		Light Duty Steel Poles	16	$220,000
L71748		Engineered Steel Poles	20	$2,015,180
	Package Material	Subtotal (Specific Materials)		$3,274,980
L71722		Line Package Material		$216,200
		Subtotal (Package Material)		$216,200
	Total Material Purchases			$3,491,180

TRANSMISSION LINE MATERIAL		Total Cost w/ Tax
Trans Line Pkg Matl	$216,200	$216,200

Trans Conductor	Ft x 3	Unit Cost/ft	Total Cost	Total Cost w/ Tax
477ACSR26x7 Haw	0	$1.62	$0	$0
954ACSR45x7 Rail	39,000	$7.00	$273,000	$273,000
	39,000		$273,000	$273,000

OPGW	Ft	Unit Cost/ft	Total Cost	Total Cost w/ Tax
OPGW AFL-Teleco	14,000	$4.50	$63,000	$63,000

Foundations	Qty	Unit Cost	Total Cost	Total Cost w/ Tax
Install (8) engineere	8	$25,200	$201,600	$201,600
Install (12) engineer	12	$41,850	$502,200	$502,200
	20		703,800	703,800

Light Duty Steel	Qty	Cost per	Total Cost	Total Cost
105 H4	16	$13,750	$220,000	$220,000
	16		220,000	220,000

Engineered Steel Pole Size/Class	Qty	Cost per Pole	Total Cost	Total Cost w/Tax
Install (8) engineere	8	$77,017	$616,136	$616,136
Install (12) engineer	12	$116,587	$1,398,044	$1,398,044
	20		2,015,180	2,015,180

Labor and Allocated Expenses

Engineering

			Hours	Cost	Dur		Estimator Comments
		DE Internal Tline	160				
L30600	TLine Conceptual Design		64	$2,732	910		
L31700	TLine Detailed Engineering		96	$4,098	910		
L54000	TLine Support During Construction		3	$137			
L71732	TLine Contracted Engineering			$691,518	910		
		TLine Engr Total		$698,485			

			Hours	Cost	Dur		Estimator Comments
		DE Internal Sys Prot	160				
L41000	System Protection		160	$6,053	40		
		System Prot Total		$6,053			

Total Engineering Costs	$704,538
Total Engineering Contract Cost	$691,518

Construction Labor and Contracted

Cost of Install

				Hours	Cost	Units Per	Dur	Estimator Comments
L54200	TLine Substation Crew	DE Internal		1,041	$39,854	10	104	
L71736	TLine Internal Crew Vehicle				$6,775		104	
L71736	Mobilization			0	$30,000			
L71736	TLine Construction Contract **Non Labor (Rentals other than equip)**				$513,095		104	
L71736	TLine Construction Contract **Material**				$102,000		104	
L71736	TLine Construction Contract **Equipment**				$520,700		104	
	TLine Construction Contracted **Labor**			10,414				
L71736		Labor factor	1.00	10414	$1,301,750	100	104	
	TLine Construction Contractor **Contracted Oversight**			1041	$166,624	10	104	
			Total TLine		$2,680,799			

				Hours	Cost	Units Per	Dur	Estimator Comments
L54250	Foundation Substation Crew	DE Internal		2,373	$90,798	10	237	
L71734	Foundation Internal Crew Vehicle				$15,436		237	
L71734	Foundation Construction Contract **Non Labor (Rentals other than equip)**				$15,000		237	
L71734	Foundation Construction Contract **Material**				$213,380		237	
L71734	Foundation Construction Contract **Equipment**				$1,186,278		237	
	Foundation Construction Contracted **Labor**			23,726				
L71734		Labor factor	1.00	23726	$2,965,695	100	237	
	Foundation Construction Contractor **Contracted Oversight**			2373	$379,609	10	237	
			Total Foundation		$4,866,195			

Total Construction Install Costs	$7,546,994

Contract Construction Labor & Equip	$5,974,423
Contract Oversight	$546,233
Contract NonLabor/Matl	$843,475
Total Construction Contract	$7,364,131

		Capital O&M		Hours	Cost	Units Per	Dur	Estimator Comments
L71740	Vegetation Contract	70%	30%		$39,200	5000	8	$56,000.00
L30100	Route Survey			147	$14,000	16		
L32440	LIDAR Survey			307	$30,667	16		
L50350	Staking Survey			114	$10,800	16		
L71736	Traffic Control				$206,400			
L61600	Damages				$660,000	1000		Gas Station easement allowance
L50375	Environmental Site Work/SWPPP				$10,000			
L31200, L31900, L33400	Environmental Permit Acquisition - Floodway				$20,000			
L31200, L31900, L33400	Environmental Permit Acquisition - Listed Species				$20,000			
L31200, L31900, L33400	Environmental Permit Acquisition - SWPPP				$20,000			
L31200, L31900, L33400	OPSB Permit				$60,000			
L40100	Highway Permits				$20,000			
L71732	Soil Borings				$214,666			
L30300, L50300, L61700	Public Engagement				$1,000			
L71736	Matting				$33,500			
				Total Misc	$1,360,233			

Total Install (Matl, Engr, Const, Misc)	$13,102,945

Construction Labor and Contracted Removal/Retirement

				Hours	Cost	Units Per	Dur	Estimator Comments
L54350	TLine Substation Crew	DE Internal		48	$1,845	10	5	
L71738	TLine Internal Crew Vehicle				$314		5	
L71738	TLine Construction Contract **Equipment**				$30,125		5	
	TLine Construction Contracted **Labor**			482				
L71738		Labor factor	1.00	482	$60,250	100	5	
	TLine Construction Contractor **Contracted Oversight**			48	$7,712	10	5	
			Total Tline Retire		$100,245			

			Hours	Cost	Units Per	Dur	Estimator Comments
L71738	Traffic Control			$24,000			
L71738	Environmental Site Work/SWPPP			$10,000			
		Total Misc		$34,000			

Total Retirement (Const, Misc)	$134,245

Construction Labor and Contracted O&M

			Hours	Cost	Units Per	Dur	Estimator Comments
L71744	Vegetation Contract			$16,800	5000	3	
		Total Tline O&M		$16,800			

Total Install, Retire, and O&M Cost	$13,219,990

Funding Project Name	**Hebron to 15268C Tap-Install New 69k**	**FP Number**	**M190309**
Detail Project Name	**TLine RLE**		
Detail Project Description			
	Date Entered:	**Date Revised:**	
	Estimate Prepared By:		
Detail Project Number	**Tline RLE**		

Miles of TLine	2.3	
Width of RoW (Ft)	100	**Acres**
Total Sq Ft	1,194,864	27.4
Land Cost/Acre	$193,072	
Land cost w/o Factor	5,296,023	
Factor of Land Value	100%	
Land Cost with Factor	5,296,023	

		Hours	Cost
L30085	Siting Site Selection **Internal Labor**	100	$4,646
L30085	Siting Site Selection **Contractor**		$50,000
L31100	Siting Preferred Site **Internal Labor**	100	$4,646
L31100	Siting Preferred Site **Contractor**		$50,000
	Total Siting		**$109,292**
L31100	Route Negotiations	360	$36,000
L31350	Land Cost		$5,296,023
	Total Real Estate		**$5,332,023**
L30100	Survey	238	$22,630
	Total Survey		**$22,630**
L30300, L61700	Public Engagement		$2,500
	Total Public Engagement		**$2,500**
	Total Real Estate Purchase		**$5,466,445**

M19030901

Funding Project Name	Hebron to 15268C Tap-Install New 69kV Line Route AC		FP Number	M190309	
Detail Project Name	M19030901				
Detail Project Description	Hebron to 15268C Tap-Install New 69kV Line Route AC - Distribution				
Estimate Prepared by	Burns & McDonnell	Date Entered:		Date Revised:	
Detail Project Number	Hebron to 15268C Tap-Install New 69kV Line Route AC - Distribution				

Install

	Hours	Cost	Unit/Day	Dur
Dist Line Material		$15,200		
Line Engineering Exempt	384	$36,475	4	96
Line Construction Contract	2479	$309,836	100	25

Removal

Line Construction Contract	493	$61,600	100	5

O&M

Line Construction Contract	0	$0	100	0

Total Dist Line	$423,111

VERIFICATION

STATE OF INDIANA)
) **SS**
COUNTY OF HENDRICKS)

The undersigned, Betsy Ewoldt, Lead Transmission Siting Manager, being duly sworn, deposes and says that she has personal knowledge of the matters set forth in the foregoing testimony and that it is true and correct to the best of her knowledge, information and belief.

Betsy Ewoldt

Betsy Ewoldt Affiant

Subscribed and sworn to before me by Betsy Ewoldt on this 11th day of June, 2024.

NOTARY PUBLIC

My Commission Expires: 1/26/2031

Exhibit 22

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

The Electronic Application of Duke Energy Kentucky, Inc. for a Certificate of Public Convenience and Necessity to Construct A 138-kV Transmission Line And Associated Facilities In Boone County (Hebron to Oakbrook Transmission Line Project)	))))))	Case No. 2024-00158

DIRECT TESTIMONY OF

LISA D. STEINKUHL

ON BEHALF OF

DUKE ENERGY KENTUCKY, INC.

June 27, 2024

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I. INTRODUCTION AND PURPOSE

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Lisa D. Steinkuhl, and my business address is 139 East Fourth Street, Cincinnati, Ohio 45202.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by Duke Energy Business Services LLC (DEBS) as Director, Rates and Regulatory Planning for Duke Energy Kentucky, Inc., (Duke Energy Kentucky or Company) and Duke Energy Ohio, Inc. DEBS provides various administrative and other services to Duke Energy Kentucky and other affiliated companies of Duke Energy Corporation (Duke Energy).

Q. PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL EXPERIENCE.

A. I received a Bachelor's Degree in Mathematics from Western Kentucky University in Bowling Green, Kentucky. After completing my Bachelor's Degree, I received a Post Baccalaureate Certificate in Professional Accountancy from the University of Southern Indiana in Evansville, Indiana. I became a Certified Public Accountant (CPA) in the State of Ohio in 1993. I was hired by Cinergy Services, Inc., the predecessor of DEBS, in 1996, as a tax accountant. I held various positions with Cinergy Services, Inc., including responsibilities in Regulated Business Financial Operations, Commercial Business Asset Management, and Budgets and Forecasts. I joined the Rates Department in April 2006 as a Lead Rates Analyst, was promoted to Rates & Regulatory Manager in January 2014 and Utility Strategy Director in

May 2018. I have held my current position as Director, Rates & Regulatory Planning since March 2022.

Q. PLEASE SUMMARIZE YOUR RESPONSIBILITIES AS DIRECTOR, RATES AND REGULATORY PLANNING.

A. As Director, I am responsible for the preparation of financial and accounting data used in Duke Energy Ohio and Duke Energy Kentucky, Inc., retail rate filings and changes in various other rate recovery mechanisms, along with filings with the Federal Energy Regulatory Commission (FERC).

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE KENTUCKY PUBLIC SERVICE COMMISSION?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY IN THESE PROCEEDINGS?

A. The purpose of my testimony is to discuss the financial aspects of the Company's request for a Certificate of Public Convenience and Necessity (CPCN) to construct and operate a new single circuit 138 kilovolt (kV) transmission line. The new circuit will utilize portions of the existing #15268 and #6763 69 kV transmission lines and approximately 2.1 linear miles of proposed new transmission line. I also sponsor Exhibit 6 to the Application.

II. FINANCIAL IMPACT OF THE PROJECT

Q. WHAT IS THE PROJECTED COST OF THE PROJECT?

A. The overall Project is estimated to cost approximately $36 million. That sum comprises: (a) approximately $33.1 million for the construction of the overhead line, including right-of-way acquisition, (b) approximately $1.5 million for the cost of removal associated with the retirement of a portion of an existing circuit, and (c) distribution line work of $1.3 million.

Q. DOES THE $36 MILLION COST ESTIMATE REPRESENT A FIXED AND FINAL COST?

A. No. The $36 million is based on a Class 4 estimate that represents an expected range of plus 50 percent and minus 30 percent. This estimate will be further refined once engineering is finalized and prior to start of construction. The final cost for the Project will not be known until all work is complete and the right-of-way is restored.

Q. WHAT IS THE PROJECTED ONGOING COST OF OPERATION OF THE PROJECT ONCE COMPLETED?

A. The estimated annual ongoing cost of operation of the Project once completed is expected to be approximately $10,000 for general maintenance and inspection (capital and operations and maintenance (O&M)).

Q. ARE ANY CUSTOMERS DIRECTLY CONTRIBUTING TO THE COST OF THE PROJECT?

A. No.

Q. HOW DOES DUKE ENERGY KENTUCKY INTEND TO FINANCE THE PROJECT?

A. In response to 807 KAR 5:001, Section 15(2)(e), the Company is proposing to finance the construction through continuing operations and, if necessary, through debt issuances.

Q. WILL THE COST OF THE PROJECT MATERIALLY AFFECT THE FINANCIAL CONDITION OF DUKE ENERGY KENTUCKY?

A. No.

Q. PLEASE EXPLAIN HOW THE PROJECT WILL BE TREATED FROM AN ACCOUNTING PERSPECTIVE.

A. The Project is nearly all capital in nature because it is adding new facilities to serve our electric customers and improve the reliability of the delivery system. There will be an immaterial impact to the Company's O&M expenses in terms of incremental cost of operation. The capital costs will be accumulated in FERC account 107 (Construction Work in Progress) during construction and will accrue Allowance for Funds Used During Construction (AFUDC) until the Project is placed in service. After the Project is placed in-service, capital costs will transfer initially to FERC account 106 (Completed Construction not Classified) where it will begin being depreciated like any other asset that is used and useful. Once unitized, the Project will be transferred to FERC account 101 (Plant in Service). The cost of removal associated with the retirement will be recorded as a debit to FERC account 108 (Accumulated Provision for Depreciation).

Q. WHAT IS THE ESTIMATED IN-SERVICE DATE?

A. The estimated in-service date is December 31, 2027.

Q. PLEASE EXPLAIN HOW THE COMPANY WILL RECOVER ITS COSTS OF CONSTRUCTION.

A. The Company plans to recover the costs of the Project in the ordinary course of base rate proceedings.

Q. HAS THE COMPANY ESTIMATED THE IMPACT OF THIS PROJECT TO CUSTOMER RATES?

A. The Project is not expected to have a material impact on customer rates. Once the Project is in service and included in a base rate case, the estimated revenue requirement is expected to be approximately one percent of total Company revenues.

III. EXHIBITS SPONSORED BY WITNESS

Q. PLEASE LIST AND DESCRIBE EXHIBITS TO THE APPLICATION THAT YOU ARE SPONSORING.

A. I am the sponsor of Exhibit 6**.** Exhibit 6 is the financial statement for month end, March 31, 2024, as required by 807 KAR 5:001, Section 12.

IV. CONCLUSION

Q. WAS EXHIBIT 6 PREPARED UNDER YOUR DIRECTION AND CONTROL?

A. Yes.

Q. DOES THIS CONCLUDE YOUR PRE-FILED DIRECT TESTIMONY?

A. Yes.

VERIFICATION

STATE OF OHIO)
) **SS:**
COUNTY OF HAMILTON)

The undersigned, Lisa Steinkuhl, Director Rates & Regulatory Planing, being duly sworn, deposes and says that she has personal knowledge of the matters set forth in the foregoing testimony, and that it is true and correct to the best of her knowledge, information, and belief.

Lisa D Steinkuhl
Lisa Steinkuhl Affiant

Subscribed and sworn to before me by Lisa Steinkuhl on this 4th day of June, 2024.

Emilie Sunderman
NOTARY PUBLIC

My Commission Expires: July 8, 2027

NOTARY PUBLIC STATE OF OHIO

EMILIE SUNDERMAN
Notary Public
State of Ohio
My Comm. Expires
July 8, 2027