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 (Woodspoint to Aero Transmission Project)	))))))	Case No. 2019-00361

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

Duke Energy Kentucky, Inc. (Duke Energy Kentucky or Company), pursuant to 807 KAR 5:001, Section 13, respectfully requests the Commission to classify and protect certain information provided by Duke Energy Kentucky in Exhibit 2 and pages 31, 32, and 33 of Exhibit 4 to its Application. The information for which Duke Energy Kentucky now seeks confidential treatment (Confidential Information), shows confidential critical utility infrastructure.

In support of this Petition, Duke Energy Kentucky states:

1. The Kentucky Open Records Act exempts from disclosure certain critical infrastructure information per KRS 61.878(1)(m). To qualify for this exemption and, therefore, maintain the confidentiality of the information, a party must establish that disclosure of the record would expose a vulnerability in providing the location of public utility critical systems. Public disclosure of the information identified herein would, in fact, prompt such a result for the reasons set forth below.

2. The information contained in Confidential Exhibits 2 and 4 contain confidential records and analysis that include and contain detailed depictions, locations, schematic drawings, and maps of confidential utility infrastructure, which is protected for security and safety reasons

as defined under KRS 61.878(1)(m)(1). If publicly released, this information would provide details regarding utility infrastructure that, in the wrong hands, could be exploited and used in ways that could create security and potential public safety risks. Therefore, this information should remain confidential.

3. The Confidential Information is distributed within Duke Energy Kentucky, only to those who must have access for business reasons, and is generally recognized as confidential and proprietary in the energy industry.

4. The Confidential Information for which Duke Energy Kentucky is seeking confidential treatment is not known outside of Duke Energy Corporation.

5. Duke Energy Kentucky does not object to limited disclosure of the Confidential Information described herein, pursuant to an acceptable protective agreement, with the Attorney General or other intervenors with a legitimate interest in reviewing the same for the purpose of participating in this case.

6. This information was, and remains, integral to Duke Energy Kentucky's effective execution of business decisions and safety of its systems. And such information is generally regarded as confidential or proprietary. Indeed, as the Kentucky Supreme Court has found, "information concerning the inner workings of a corporation is 'generally accepted as confidential or proprietary.'" *Hoy v. Kentucky Industrial Revitalization Authority*, 904 S.W.2d 766, 768 (Ky. 1995).

7. In accordance with the provisions of 807 KAR 5:001, Section 13(3), the Company is filing one copy of the Confidential Information separately under seal, and one copy without the confidential information included.

8. Duke Energy Kentucky respectfully requests that the Confidential Information be withheld from public disclosure until such time as the facilities depicted therein are no longer in service. This will assure that the Confidential Information – if disclosed after that time – will no longer be commercially sensitive so as to likely impair the interests of the Company or its customers if publicly disclosed.

9. 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,

Rocco O. D'Ascenzo (92796)
Deputy General Counsel
Duke Energy Business Services LLC
139 East Fourth Street, 1303 Main
Cincinnati, Ohio 45201-0960
Phone: (513) 287-4320
Fax: (513) 287-4385
E-mail: rocco.d'ascenzo@duke-energy.com

CERTIFICATE OF SERVICE

This is to certify that a copy of the foregoing Application of Duke Energy Kentucky, Inc. has been served via overnight mail to the following party on this 31st day of October 2019.

Hon. Rebecca Goodman
Office of the Attorney General
Utility Intervention and Rate Division
700 Capital Avenue, Ste. 20
Frankfort, Kentucky 40601

Rocco O. D'Ascenzo

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 (Woodspoint to Aero Transmission Line Project)	))))))	Case No. 2019-00361

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) for approval of to construct and operate a new single circuit 138-kilovolt (kV) transmission line. The proposed line will be approximately two (2) linear miles in lengths and connect the Woodspoint 138-kV Substation to the Aero 138-kV Substation (collectively, the Woodspoint to Aero Transmission Project or Project). 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. A copy of its articles of incorporation is on file with the Commission in Case No. 2013-00097 and are hereby incorporated by reference.

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, 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
Associate General Counsel
Duke Energy Kentucky, Inc.
139 East Fourth Street, Cincinnati, OH 45202
Rocco.D'Ascenzo@duke-energy.com
KYfilings@duke-energy.com

Background

5. Duke Energy Kentucky has identified a need to construct a new 138 kV electric transmission line, approximately two (2) linear miles in length, in Boone County, Kentucky extending from the to be constructed Woodspoint Substation to the to be constructed Aero Substation.[1] A map showing the proposed location of the Project is

[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 (Oakbrook to Aero Transmission Project),* Case No. 2019-00251, Application (August 23, 2019); The Company's application includes a request to construct the proposed Aero Substation.

included in Exhibit 1. This Project is necessary due to load growth and system reliability of the surrounding Duke Energy Kentucky transmission and distribution systems.

6. Boone County is the fourth most populous and is one of the fastest developing counties in the Commonwealth of Kentucky.[2] 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 Project

7. Duke Energy Kentucky proposes to construct approximately two (2) linear miles of new single circuit 138-kV transmission line in Boone County, Kentucky. The proposed line comes out of the new Woodspoint Substation, to be located to the south of Airport Ford off of Burlington Pike (State Route 18), and heads northwest across Service Road and Mall Road (State Route 3157). The route crosses between the Hyundai and Nissan car dealerships then crosses over Hopeful Church Road (State Route 842) and behind to the south of Toyota car dealership and then along the west. The route then parallels Burlington Pike (State Route 18) in front of the Honda car dealership for 0.3 miles before crossing over Burlington Pike. On the north side of Burlington Pike, the route heads north between Buick GMC and Schneider Electric Square D then crosses over Zig Zag Road. After Zig Zag Road the route crosses over Aero Parkway (State Route 1017) and into the new Aero Substation which is located south of the Cincinnati/Northern Kentucky International Airport (CVG).

[2] http://www.indexmundi.com/facts/united-states/quick-facts/kentucky/population-growth#chart

8. Duke Energy Kentucky has requested Duke Energy Ohio to provide a switching station for 138-kV equipment to feed this proposed new 138-kV transmission line for reliability of Aero Substation. Duke Energy Ohio has agreed to construct, own, and operate the Woodspoint Substation for this purpose. The Woodspoint 138-kV Substation will be located to the south of Airport Ford which is located at 8001 Burlington Pike (State Route 18) Florence, Kentucky 41042 within Boone County. Access to the substation will be off of Service Road located to the west of Airport Ford.

9. As explained in the Company's application in Case No. 2019-00251, the Aero 138-kV Substation will be constructed on an approximately 3.75-acre site located off Aero Parkway. The site will be under easement with the Cincinnati/Northern Kentucky International Airport (CVG).

10. 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 16 foundation based galvanized steel poles and 34 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. Duke Energy transmission line 138-kV standards are included in Confidential Exhibit 2.

11. 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

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

13. The Woodspoint to Aero Transmission Project will not result in a wasteful duplication of facilities. The Woodspoint to Aero 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 insufficient to support the new load and customers in the area.

14. In accordance with 807 KAR 5:001 Section 12(2)(a)-(i). Duke Energy Kentucky is filing the following information in Exhibit 3, which is incorporated herein and made a part of this Application filed in this proceeding:

Exhibit 3 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)

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

16. 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.

17. 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 Woodspoint to Aero Transmission Project will be

constructed as described in the testimony accompanying this Application. Confidential Exhibit 4 includes a copy of the siting study which depicts the full description of the route and alternative routes considered. Exhibit 5 shows the proposed route and Exhibit 6 show the alternative route segments considered as part of the siting review. 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.

18. 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 2 and Exhibits 5 and 6 contain the required information.

19. In accordance with 807 KAR 5:120 Sections 2(3) Exhibit 7 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 October 21, 2019 notice included the following information:

a. Notice of the proposed construction;
b. The docket number (Case No. 2019-00361) 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.

20. In accordance with 807 KAR 5:120 Sections 2(4), Exhibit 8 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.

21. In accordance with 807 KAR 5:120 Sections 2(5), Exhibit 9 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.

22. 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.

23. 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.

24. In accordance with Section 15(2)(f), the Company states that the total estimated cost of the initial construction for the Project is approximately $8.4 million. The estimated annual ongoing cost of operation of the Woodspoint to Aero Transmission Line Project once completed is expected to be approximately $10,000 (capital and operations and maintenance (O&M)).

25. Duke Energy Kentucky respectfully states that the Project is needed to provide reliability to growing customer load, primarily new expansion at CVG, as well as other anticipated load growth in the area. Exhibit 10 shows the proposed Project components and the existing system in the area of the Project.

Testimony and Exhibits

26. Additional facts supporting this Application are set forth in the following Direct Testimony attached to this Application as Exhibits 11 through 13:

a. Yanthi W. Boutwell, Director of Midwest Transmission Resource & Project Management, provides the need for its construction, engineering components, anticipated schedule and cost for construction;[3]

b. John Hurd, Lead Transmission Siting Specialist, discusses the siting study that was performed, the proposed route, and permitting for construction of the line, and;[4]

c. Sarah E. Lawler, Director of Rates and Regulatory Planning Ohio/Kentucky, discusses the financial aspects of the Company's Application.[5]

[3] Exhibit 11.
[4] Exhibit 12.
[5] Exhibit 13.

WHEREFORE, Duke Energy Kentucky respectfully requests that the Commission:

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

Respectfully submitted,

Rocco O. D'Ascenzo (92796)
Deputy General Counsel
Duke Energy Business Services LLC
139 East Fourth Street, 1303 Main
Cincinnati, Ohio 45201-0960
Phone: (513) 287-4320
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CERTIFICATE OF SERVICE

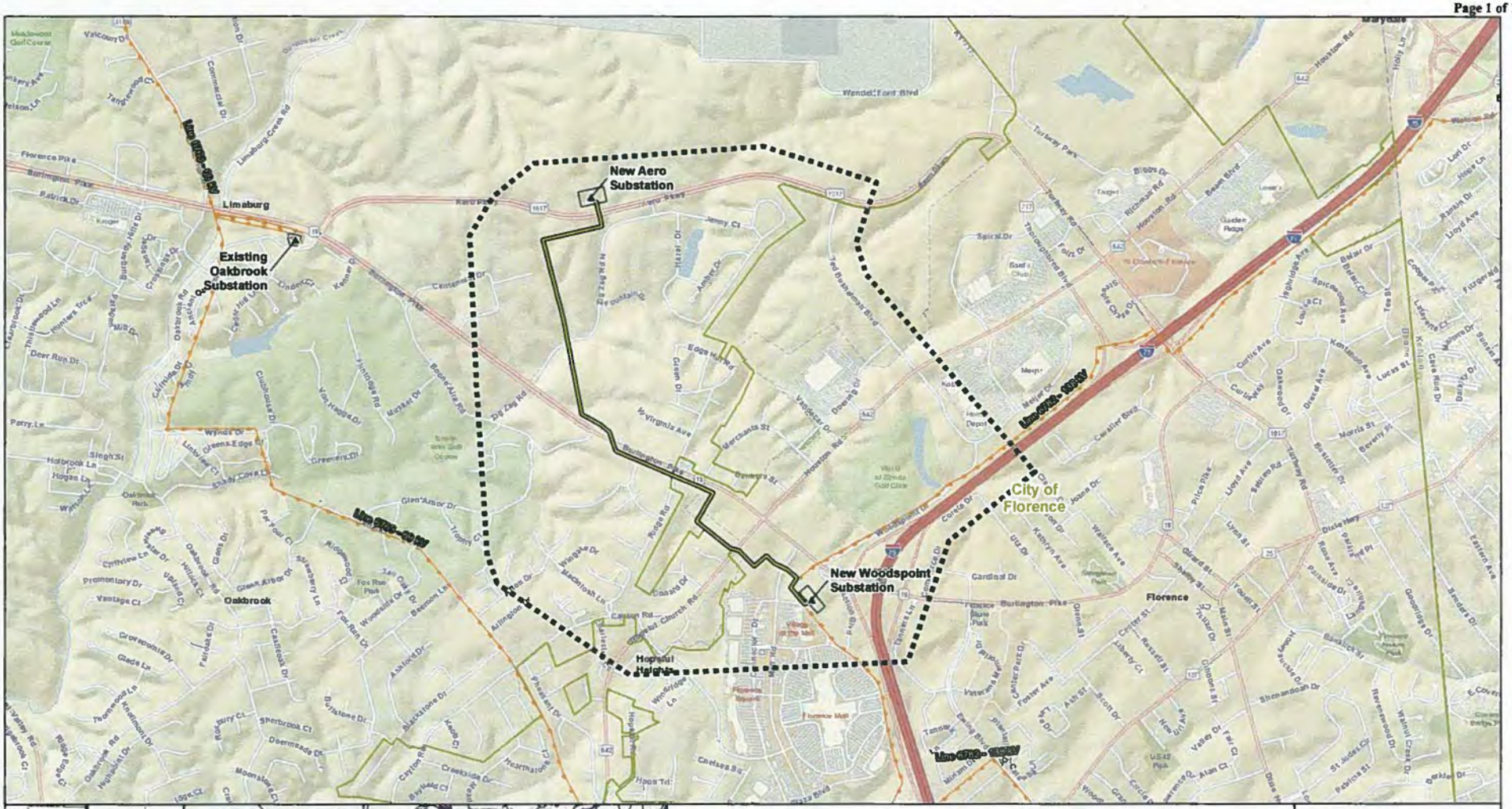
This is to certify that a copy of the foregoing Application of Duke Energy Kentucky, Inc. has been served via overnight mail to the following party on this 31st day of October 2019.

Hon. Rebecca Goodman
Office of the Attorney General
Utility Intervention and Rate Division
700 Capital Avenue, Ste. 20
Frankfort, Kentucky 40601

Rocco O. D'Ascenzo

List of Exhibits

Exhibit 1:	Project Location Map
Exhibit 2:	Duke Energy 138-kV Transmission Line Standards – Confidential
Exhibit 3:	Financial Statement
Exhibit 4:	Siting Study
Exhibit 5:	Proposed Route
Exhibit 6:	Alternative Route Segments
Exhibit 7:	Verified Statement
Exhibit 8:	Copy of Notice and Landowner List
Exhibit 9:	Newspaper Notice
Exhibit 10:	Present System and Proposed Project Components
Exhibit 11:	Yanthi W. Boutwell Testimony
Exhibit 12:	John K. Hurd Testimony
Exhibit 13:	Sarah E. Lawler Testimony



Notes
1. Coordinate System: NAD 1983 StatePlane Kentucky North FIPS 1601 Feet
2. Data Sources Include: Stantec, Duke, NADS, City of Florence
3. Background: ESRI World Street Map

DUKE ENERGY

Exhibit 1:
Project Location

DRAWN BY: BWT
DATE: 2019-10-29

CONFIDENTIAL PROPRIETARY TRADE SECRET

APPLICATION
CONFIDENTIAL EXHIBIT 2

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 August 31, 2019:

Capital Stock and Additional Paid-in Capital
As of August 31, 2019
($ per 1,000)

Capital Stock	$8,780
Premiums thereon	18,839
Total Capital Contributions from Parent (since 2006)	58,594
Contribution from Parent Company for Purchase of Generation Assets	140,061
Total Capital Stock and Additional Paid-in-Capital	$226,274

(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 four 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 2018
1st Supplemental	3/7/2006	65,000,000	65,000,000	6.200%	3/10/2036	4,030,000
2nd Supplemental	9/22/2009	100,000,000	100,000,000	4.650%	10/1/2019	4,650,000
3rd Supplemental	1/5/2016	45,000,000	45,000,000	3.420%	1/15/2026	1,539,000
3rd Supplemental	1/5/2016	50,000,000	50,000,000	4.450%	1/15/2046	2,225,000
4th Supplemental	9/7/2017	30,000,000	30,000,000	3.350%	9/15/2029	1,027,333
4th Supplemental	9/7/2017	30,000,000	30,000,000	4.110%	9/15/2047	1,260,400
4th Supplemental	9/7/2017	30,000,000	30,000,000	4.260%	9/15/2057	1,306,400
5th Supplemental	10/3/2018	25,000,000	25,000,000	4.010%	10/15/2023	0
5th Supplemental	10/3/2018	40,000,000	40,000,000	4.180%	10/15/2028	0
5th Supplemental	12/12/2018	35,000,000	35,000,000	4.620%	12/15/2048	0
6th Supplemental	7/17/2019	40,000,000	40,000,000	4.320%	7/15/2049	0
			490,000,000			16,038,133

(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.

Not applicable.

(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 as follows:

Indenture	Date of Issue	Principal Amount Authorized and Issued	Principal Amount Outstanding	Rate of Interest	Date of Maturity	Interest Paid Year 2018
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	2.54%[2]	8/1/2027	1,270,337
			76,720,000			2,301,729

[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. The average floating-rate of interest on the bonds for 2018 was 1.41%.
[2] The interest rate represents the average floating-rate of interest on the bonds for 2018 The interest rate on the bonds resets on the first day of every month based on 70% of the sum of one-month LIBOR and a credit spread of 1.125%.

The Company had no outstanding financing leases as of August 31, 2019.

The Company had $98,808,000 of money pool borrowings outstanding as of August 31, 2019, $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
December 31, 2014	0.00	0	585,333	8,779,995
December 31, 2015	93.96	55,000,000	585,333	8,779,995
December 31, 2016	17.08	10,000,000	585,333	8,779,995
December 31, 2017	0.00	0	585,333	8,779,995
December 31, 2018	0.00	0	585,333	8,779,995

(9) Section 12(2)(i) A detailed Income Statement and Balance Sheet

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

	Twelve Months Ended August 31 2019
Operating Revenues	
Electric	368,261
Gas	108,287
Total operating revenues	476,548
Operating Expenses	
Fuel used in electric generation and purchased power	122,874
Natural gas purchased	45,018
Operation, maintenance and other	138,724
Depreciation and amortization	77,192
Property and other taxes	15,654
Goodwill and other impairment charges	-
Total operating expenses	399,462
Gains on Sales of Other Assets and Other, net	157
Operating Income	77,243
Other Income and Expenses, net	6,189
Interest Expense	22,148
Income Before Income Taxes	61,284
Income Tax Expense	12,502
Income From Continuing Operations	48,782
Income From Discontinued Operations, net of tax	-
Net Income	48,782

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

(in thousands, except share amounts)	August 31, 2019	December 31, 2018
ASSETS		
Current Assets		
Cash and Cash Equivalents	**6,271**	7,773
Receivables (net of allowance for doubtful accounts of $342 at August 31, 2019 and $221 at December 31, 2018)	**6,372**	9,450
Receivables from affiliated companies	**15,732**	29,195
Notes Receivables from affiliated companies	**-**	-
Inventory	**44,656**	40,595
Regulatory Assets	**12,738**	10,562
Other	**14,423**	11,961
Total Current Assets	**100,192**	109,536
Property, Plant and Equipment		
Cost	**2,659,871**	2,517,897
Less Accumulated Depreciation and Amortization	**(993,428)**	(965,124)
Net Property Plant and Equipment	**1,666,443**	1,552,773
Other Noncurrent Assets		
Regulatory Assets	**110,619**	113,652
Operating Lease Right-of-Use assets	**9,271**	-
Other	**8,327**	9,922
Total Other Noncurrent Assets	**128,217**	123,574
Total Assets	**1,894,852**	1,785,883
LIABILITIES AND COMMON STOCKHOLDERS' EQUITY		
Current Liabilities		
Accounts Payable	**35,313**	45,759
Accounts payable to affiliated companies	**17,255**	17,503
Notes payable to affiliated companies	**73,080**	38,875
Taxes Accrued	**13,179**	18,143
Interest Accrued	**7,912**	6,115
Current Maturities of Long-Term Debt	**100,000**	100,396
Asset Retirement Obligations	**6,296**	6,448
Regulatory Liabilities	**16,448**	14,294
Other	**23,985**	19,291
Total Current Liabilities	**293,468**	266,824
Long-Term Debt	**464,618**	424,714
Notes payable to affiliated companies	**25,000**	25,000
Other Noncurrent Liabilities		
Deferred Income Taxes	**229,191**	214,719
Asset Retirement Obligations	**50,085**	56,378
Regulatory Liabilities	**140,999**	156,116
Operating Lease Liabilities	**9,082**	-
Accrued Pension and Other Post-Retirement Benefit Costs	**25,317**	21,734
Investment Tax Credit	**3,694**	3,522
Other	**21,705**	20,653
Total Other Noncurrent Liabilities	**480,073**	473,122
Commitments and Contingencies		
Equity		
Common Stock, $15.00 par value, 1,000,000 shares authorized and 585,333 shares outstanding at March 31, 2017 and December 31, 2016	**8,780**	8,780
Additional Paid in Capital	**217,494**	217,494
Retained Earnings	**405,419**	369,950
Total Duke Energy Corporation Stockholders' Equity	**631,693**	596,224
Noncontrolling Interests	**-**	-
Total Liabilities and Equity	**1,894,852**	1,785,883

Aero to Woodspoint Transmission Line Project

Line Route Evaluation Report for
Detailed Project No. M18007706

Stantec

Prepared for:
Duke Energy
139 East Main Street
Cincinnati, OH 45202

Prepared by:
Stantec Consulting Services Inc.

September 4, 2019

Sign-off Sheet

This document entitled Aero to Woodspoint Transmission Line Project 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 considering 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 consider 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 resulting from decisions made or actions taken based on this document.

Prepared by _____

(signature)

Betsy Ewoldt

Reviewed by _____

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Approved by _____

(signature)

Curt Bjurlin

Table of Contents

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

Executive Summary

Stantec was retained by Duke Energy Kentucky, Inc. (Duke Energy Kentucky) to conduct a line route evaluation (LRE) for the Aero to Woodspoint Transmission Line Project located in Boone County, Kentucky. The new 138-kV line is needed to feed the Aero Substation and projected customer demand near the Cincinnati/Northern Kentucky International Airport (CVG Airport) in rapidly growing Boone County.

The LRE process included the identification of an approximately 2.24-square mile Study Area, data collection, public and stakeholder outreach, Alternative Route analysis, and the selection of a Preferred Route. Through the LRE process, 174 Alternative Routes were identified. An analysis was performed in which ecology, land use, cultural, and engineering constraints were identified, calculated, and then weighted based on sensitivity to electrical transmission line construction. Overall scores were calculated, and the Alternative Routes were ranked. Lower scores were considered more favorable.

The scores of the ten most favorable Alternative Routes ranged from 16.3 to 20.8 and were only separated by 4.5 points. In contrast the least favorable route had a score of 62.2, over 40 points higher. The ten most favorable routes were in the western portion of the Study Area and shared many common segments. They exited the Woodspoint Substation to the north or west, proceeded to the north along the southwest side of Burlington Pike (State Highway 18) before heading north to the Aero Substation.

Route 15 was selected as the Preferred Route for the Aero to Woodspoint 138 kV Transmission Line. While Route 15 did not have the lowest overall score, at 20.39 points, it was the most favorable route in terms of Duke Energy Kentucky engineering constraints, landowner relationship, proximity to existing road crossings and improvements, and minimization of impacts to future development in the area. Route 15 had the third best engineering score out of the 174 routes, which was related to avoidance of development constraints along existing roads, shorter route length, and minimal existing underground utilities within its ROW. Route 15 had similar land use and cultural scores to other top-ranked routes but had a higher ecological score due to the presence of a forested woodlot in the vicinity of Zig Zag Road and potential for small, non-forested wetlands within its ROW. While tree clearing is not desirable for transmission line siting, the location of this route reduced impacts to landowners because it followed property lines when crossing the woodlot and avoided residential dwellings along Zig Zag Road. Route 80 was the best scoring route, at 16.26 points; it scored second out of 174 routes in the land use criteria group and had the best ecological and cultural scores of the top ten routes. It was not selected as the Preferred Route because it exited the Woodspoint Substation at a location that is constrained by existing transmission and underground utilities and would enter the road intersection of Mall Road (State Highway 3157) and State Highway 18 where construction and maintenance would be difficult.

Abbreviations

Duke Energy Kentucky	Duke Energy Kentucky, Inc.
EMF	Electromagnetic Fields
GIS	Geographic Information System
kV	Kilovolt
KHC	Kentucky Heritage Council
KYOSA	Kentucky Office of State Archaeology
LRE	Line Route Evaluation
NHD	United States Geological Survey National Hydrologic Dataset
NWI	United States Fish and Wildlife Service National Wetlands Inventory
PAB	Palustrine Aquatic Bed
PEM	Palustrine Emergent Wetland
PFO	Palustrine Forested Wetland
PSS	Palustrine Scrub-Shrub Wetland
ROW	Right-of-Way
Stantec	Stantec Consulting Services Inc.
T&E	Threatened and Endangered Species
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

1.0 INTRODUCTION

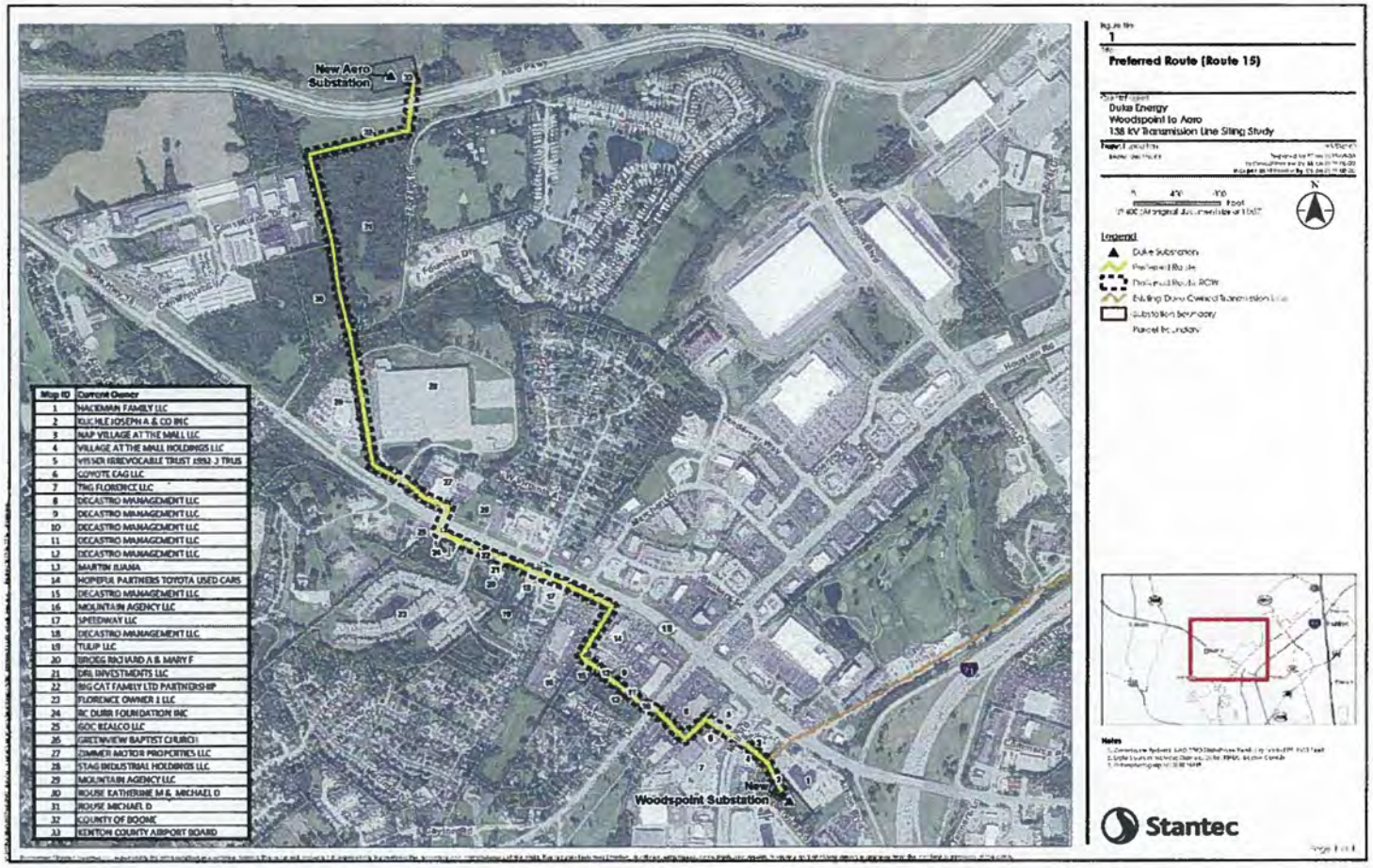
1.1 PROPOSED ACTION

Duke Energy Kentucky is planning to construct and operate a new 138 kilovolt (kV) overhead transmission line in Boone County, Kentucky. The new line begins at the Woodspoint Substation, located adjacent to a car dealership to the south of the Line 6762 138 kV Transmission Line. The route exits the substation to the northwest, crosses Mall Road (State Highway 3157), traverses commercial parking lots with a turn to the southwest and another turn to the northwest, before crossing Hopeful Church Road (State Highway 842). The route then continues northwest along a parcel boundary before turning northeast to meet Burlington Pike (State Highway 18). This portion of the route is approximately 0.6 miles in length. It then parallels the south side of State Highway 18 for 0.4 miles, before crossing the road and following the north side of the highway for another 0.2 miles. The route then turns generally north for 0.8 miles by following parcel lines, turning east prior to reaching Aero Parkway (State Highway 1017), and turning north again to cross Aero Parkway and enter the Aero Substation. As proposed, the overall route length is approximately 2.0 linear miles.

This project is one of two new 138 kV lines proposed for the area that are needed to support commercial and residential development, including the construction and operation of a new Amazon Prime Air Hub located on the Cincinnati/Northern Kentucky International Airport (CVG Airport) property. The line will consist of monopole structures and the Duke Energy Kentucky standard right-of-way is 100 feet. Where the proposed transmission line parallels an existing road right-of-way, the standard right-of-way for new lines is 75 feet. Duke Energy Kentucky's Preferred Route, Route 15, exits the Woodspoint Substation to the northwest, crosses Mall Road, passes commercial development, where it then turns southwest and then northwest and crosses Hopeful Church Road. The route continues along the edge of an abandoned residential property and multiple commercial properties and then turns northeast, traveling between two commercial properties. The route turns northwest and runs parallel to State Highway 18 for approximately 0.2 miles, then crosses State Highway 18 and turns northwest, paralleling State Highway 18 along the north side of the road before turning north between two commercial properties. The route then heads north following several commercial and undeveloped, forested property boundaries before turning east prior to reaching Aero Parkway. The route then turns north, crossing Aero Parkway to enter the proposed Aero Substation site from the south (Figure 1. Preferred Route). The area is comprised of commercial, industrial, residential, recreation, and airport zoning districts and was undergoing development for the Amazon Prime Air Hub at the time of the study.

Duke Energy Kentucky retained Stantec to perform a line route evaluation (LRE) to identify and evaluate potential routes for the Woodspoint to Aero Transmission Line Project. This process identified 47 segments, which were developed into 174 Alternative Routes (Figure 2. Segment Network). The Alternative Routes were carried forward for a detailed weighted analysis, culminating with Route 15, as described above, being selected as the Preferred Route. The complete LRE process is described in more detail in the sections to follow.

AERO TO WOODSPOINT TRANSMISSION LINE PROJECT



Map ID	Current Owner
1	HACKMAN FAMILY LLC
2	KUCHLE JOSEPH A & CO INC
3	NAP VILLAGE AT THE MALL LLC
4	VILLAGE AT THE MALL HOLDINGS LLC
5	VISSER IRREVOCABLE TRUST 1992 3 TRUS
6	COYOTE CAG LLC
7	TNG FLORENCE LLC
8	DECASTRO MANAGEMENT LLC
9	DECASTRO MANAGEMENT LLC
10	DECASTRO MANAGEMENT LLC
11	DECASTRO MANAGEMENT LLC
12	DECASTRO MANAGEMENT LLC
13	MARTIN JUANA
14	HOPEFUL PARTNERS TOYOTA USED CARS
15	DECASTRO MANAGEMENT LLC
16	MOUNTAIN AGENCY LLC
17	SPEEDWAY LLC
18	DECASTRO MANAGEMENT LLC
19	TULIP LLC
20	BRODIG RICHARD A & MARY F
21	DRL INVESTMENTS LLC
22	BIG CAT FAMILY LTD PARTNERSHIP
23	FLORENCE OWNER 1 LLC
24	RC DURR FOUNDATION INC
25	GOC REALCO LLC
26	GREENVIEW BAPTIST CHURCH
27	ZIMMER MOTOR PROPERTIES LLC
28	STAG INDUSTRIAL HOLDINGS LLC
29	MOUNTAIN AGENCY LLC
30	ROUSE KATHERINE M & MICHAEL D
31	ROUSE MICHAEL D
32	COUNTY OF BOONE
33	KENTON COUNTY AIRPORT BOARD

1.2 LRE PROCESS AND METHODOLOGY REVIEW

Routing is an iterative process in which information is compiled, analyzed, and communicated to identify a Preferred Route. This report provides a summary of:

- the opportunities and constraints in the Project Study Area that shaped the development of Alternative Routes;
- the decision-making process that led to the selection of the Preferred Route; and
- the potential impacts of the Preferred Route on the natural and human environment.

The siting team that conducted the LRE was multidisciplinary, consisting of members from Duke Energy Kentucky and Stantec experienced in transmission line siting, planning, engineering, permitting, public engagement, project management, real estate, and agency and public outreach. Numerous segments were identified and presented to the public at an open house to collect feedback. After close of a 30-day comment period, the segments were converted into 174 full length Alternative Routes and evaluated by a weighted analysis of opportunities and constraints data. Following the analysis, the Alternative Routes were ranked and reviewed along with landowner feedback and agency correspondence to determine the Preferred Route. Each step in this process is further detailed in Section 2.

2.0 ROUTE EVALUATION

2.1 STUDY AREA DESCRIPTION

The 2.24-square mile Study Area is in the City of Florence, an unincorporated portion of Boone County, Kentucky, and encompasses Aero Substation and Woodspoint Substation (Figure 3. Study Area, Appendix A).

The Study Area is characterized by mixed residential and commercial development, interspersed by hay fields, fallow fields, and woodlots. Existing development includes the Boone Links and City of Florence golf courses, CVG Airport, suburban housing development, warehouse facilities, car dealerships, storage facilities, restaurants, and other retail buildings. Major travel corridors include State Highway 18, Mall Road, Hopeful Church Road, Houston Road, and Aero Parkway. Buried utilities including water, sanitary sewer, and storm sewer lines are sited along most roadsides and under parking lots in the Study Area. The Study Area was established to include all reasonable corridors for siting the new line. Dense residential bounded the Study Area to the southwest and southeast, while the CVG airport bounded the Study Area to the north.

United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) data indicated minimal presence of wetlands and other jurisdictional water features within the Study Area. The land on the north side of Aero Parkway was partially forested, but due to planned construction for the Amazon Prime Air Hub, those trees had been recently cleared at the time of the study. There are other remnant woodlots, primarily in the northern part of the Study Area.

2.2 SITING GUIDELINES

The siting team developed the siting guidelines below to be applied throughout the LRE process:

- Minimize the removal or substantial interference with the use of existing residences;
- Minimize the removal of existing barns, garages, commercial buildings, and other non-residential structures;
- Minimize interference with the use and operation of existing schools, recognized places of worship, cemeteries, and facilities used for cultural, historical, and recreational purposes;
- Minimize interference with economic activities, including agricultural and silvicultural activities;
- Minimize the crossing of environmentally and culturally sensitive lands, such as recreation lands, designated battlefields and other designated historic sites, national and state forests and parks, nature preserves, conservation lands and easements, large lakes 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;
- Minimize substantial visual impact on residential areas and public resources; and
- Minimize route length, circuity, cost, and special design requirements.

2.3 ALTERNATIVE ROUTE DEVELOPMENT

2.3.1 Data Collection

Upon identification of the Study Area and development of the siting guidelines, a project Geographic Information System (GIS) was compiled from publicly available data sets. Multiple sources of information were consulted during the LRE process and are listed below in Table 1.

Stantec obtained data from federal and state agencies to identify environmentally sensitive features and imperiled species locations within the Study Area (Appendix B). The Kentucky Natural Heritage Program (KNHP) was contacted to determine if any of the endangered, threatened, or special concern plants and animals or exemplary natural communities monitored by the Office of Kentucky Nature Preserves had documented occurrences within the Study Area. The KNHP identified two species that may be locally present; the vesper sparrow (*Pooecetes graminus*) and northern leopard frog (*Rana pipiens*). The KNHP also noted that many natural areas in Kentucky have never been surveyed thoroughly and as such, they could not provide a definitive statement on the presence, absence, or condition of biological elements in any part of Kentucky. The last observations within the Study Area for the vesper sparrow and northern leopard frog were in 1950 and 1934, respectively.

Based on available information from the USFWS, there was the potential for 14 federally protected species to be present within the Study Area. These species include the gray bat (*Myotis grisescens*), Indiana bat (*Myotis sodalis*), northern long-eared bat (*Myotis septentrionalis*), clubshell (*Pleurobema clava*), fanshell (*Cyprogenia stegaria*), northern riffleshell (*Epioblasma torulosa rangiana*), orangefoot pimpleback (*Plethobasus cooperianus*), purple cat's paw (*Epioblasma obliquata obliquata*), rabbitsfoot (*Quadrula cylindrica cylindrica*), ring pink (*Obovaria retusa*), rough pigtoe (*Pleurobema plenum*), sheepnose (*Plethobasus cyphyus*), spectaclecase (*Cumberlandia monodonta*), and running buffalo clover (*Trifolium stoloniferum*). Due to the absence of perennial streams and the nature of the Project, it is unlikely that the Project will impact any of the nine mussel species. Potentially suitable habitat for running buffalo clover may be present within the Preferred Route ROW. If suitable habitat is identified, a species-specific survey should be conducted by qualified biologists.

Stantec submitted a request on behalf of Duke Energy Kentucky to Boone County to obtain utilities data within the Study Area. Boone County provided GIS shapefiles of city utilities and a map of these features was produced for Duke Energy Kentucky's use in project planning and engineering (Figure 4. Environmental and Engineering Constraints Map, Appendix A).

Stantec contacted the Kentucky Heritage Council (KHC) and Kentucky Office of State Archaeology (KYOSA) to get information for state-listed resources and the National Register of Historic Places (NRHP). Within the Study Area there were eight state listed archaeological sites.

Table 1. Data Sources

Sub-Category	Agency Source	Acquisition Date	Vintage Date	Notes
Aerial Imagery	NAIP	Streaming Service	2017	
Airport Boundary	CVG Master Plan	2/15/2019	6/20/2013	
Airport Runway Protection Zone	CVG Master Plan	2/15/2019	6/20/2013	
Archaeology Sites	Kentucky Office of State Archaeology	1/28/2019	1/28/2019	
Cemeteries	ESRI Boone County, KY	1/4/2019 03/2019	2/5/2018	Verified cemetery locations via Boone County GIS data viewer
Contours	USDA	1/2/2019	1/2/2019	Derived from LiDAR Elevation Dataset
County Land Use Data	Boone County, KY	1/23/2019	2009	
Existing Transmission Lines	Duke Energy	1/8/2019	1/8/2019	
Floodplain	Federal Emergency Management Agency	1/3/2019	6/29/2017	
Forested Areas	Digitized from NAIP 2016	5/22/2019	5/22/2019	Digitized from NAIP Imagery, confirmed clearing along north side of Aero Parkway 04/2019
Institutions - Schools	ESRI	1/4/2019	2/5/2018	Field verified 04/2019
Institutions - Places of worship	ESRI	1/4/2019	2/5/2018	Field verified 04/2019
Institutions - Hospitals	ESRI	1/4/2019	2/5/2018	Field verified 04/2019
Institutions -Daycares	ESRI	1/4/2019	2/5/2018	Field verified 04/2019
Local Recreational Trails	Kentucky Infrastructure Authority	1/4/2019	11/15/2007	
Local Roads	Kentucky Transportation Cabinet, Planning	1/4/2019	2015	
LiDAR 2 Meter Elevation Dataset	USDA	1/3/2019	2015	
Municipal Sanitary Sewer	Boone County, KY	1/23/2019	1/23/2019	
Municipal Storm Sewer	Boone County, KY	1/23/2019	1/23/2019	
Municipal Waterlines	Boone County, KY	1/23/2019	1/23/2019	
NADS Roads	North America Detailed Streets	3/15/2011	2005	
NPMS Pipelines	NPMS Public Viewer	1/4/2019	1/4/2019	
NRHP Listed Resources	NRHP	1/4/2019	10/20/2017	
Property Crossed	Duke Real Estate/Boone County GIS	4/9/2019	4/9/2019	
Residences	Microsoft	1/3/2019	Bing imagery date	Field verified 04/2019
Recreational Areas - Golf Courses	Duke Real Estate/Boone County GIS	4/9/2019	4/9/2019	Extracted boundary from parcel data
Slope	USDA	1/3/2019	1/3/2019	Derived from LiDAR Elevation Dataset
Stated Listed Cultural Resources	Kentucky Heritage Council	2/11/2019	2/11/2019	
Streams	USGS National Hydrography Dataset	1/3/2019	10/1/2018	Field verified 04/2019

Sub-Category	Agency Source	Acquisition Date	Vintage Date	Notes
Stream/River Area	USGS National Hydrography Dataset	1/3/2019	10/1/2018	Field verified 04/2019
Threatened and Endangered Species	USFWS iPaC Planning Tool KY State Nature Preserves Commission	1/31/2019 1/18/2019	1/31/2019 1/18/2019	
Waterbodies	USGS National Hydrography Dataset	1/3/2019	10/1/2018	Field verified 04/2019
Wetlands	USFWS National Wetland Inventory	1/3/2019	10/1/2018	Field verified 04/2019
Wildlife Management Areas	KY Dept of Fish and Wildlife Resources	1/3/2019	1/5/2016	

USDA- United States Department of Agriculture, USGS- United States Geological Survey.

2.3.2 Segment Network Identification and Field Reconnaissance

Once data had been assembled, Stantec worked with representatives from the Duke Energy Kentucky siting team to further identify feasible siting corridors within the Study Area. The Duke Energy Kentucky and Stantec siting leads, John Hurd and Bryan Thiermann, respectively, visited the site on January 9, 2019 to conduct an initial review of transmission siting opportunities and constraints. The team then used the project siting guidelines as a reference document while identifying draft segments that minimized impacts to existing land uses. A total of 47 segments were identified through this process, consisting of a mixture of roadside, parking lot, and parcel line alignments. Duke Energy Kentucky and Stantec held multiple meetings with a diverse group of internal subject matter experts to refine the Segment Network. A detailed field reconnaissance of the Segment Network was then conducted to verify the data compiled in the project GIS. The field reconnaissance was conducted on April 9th and 10th, 2019 by Nathan Noland and Aaron Kwolek of Stantec from public rights-of-way. Observers did not enter private property. During the reconnaissance, sensitive receptors (residences, schools, and churches) were verified and photographs were taken to document existing site conditions. A photo location map characterizing select features in the Study Area is included in Appendix A (Figure 6. Photo Location Map). A photograph log that corresponds to the photo location map is included in Appendix C.

2.3.3 Public and Stakeholder Outreach

Duke Energy Kentucky met with the representatives from the City of Florence and Boone County in May of 2019. Duke Energy Kentucky provided an overview of the Project and route alternatives that were going to be presented at the Open House on June 19, 2019.

Duke Energy Kentucky submitted a letter and map of the Segment Network to all property owners within 500 feet of the route segments informing of them of the Project and inviting them to attend an open house (Appendix C). The open house was held on June 19, 2019 from 4:00-7:00 pm with a 30-day comment period to follow. Twenty-four (24) individuals attended the open house and comprised a mix of property owners, elected officials, and members of the general public. A questionnaire was provided to open house attendees to seek feedback and rate various routing considerations on a scale from one to five with regards to sensitivity to

transmission line construction. Two (2) completed surveys were received during the open house. Representatives from Duke Energy were able to review Project details with attendees and discuss their concerns. In addition, five (5) comments were provided at GIS stations in reference to specific properties.

During the 30-day comment period, one additional completed survey was received. The completed surveys were from a resident who was on the open house mailing list, a Union City Engineer, and one anonymous homeowner.

Survey responses are tallied and ranked in Table 2. The following is a summary of all comments received, either on surveys or at GIS stations:

- Respondents expressed concerns over the proximity of the line to homes and potential effects on property value resulting from aesthetic changes and impact to commercial/industrial properties.
- Concerns about Segments 23 and 47 being too close to residences, Segment 25 crossing Aero Parkway and the bike/walking path, and Segment 46 being a visual/health impairment.
- One landowner would like to see the transmission line placed underground.
- One landowner was worried about EMFs and would like to see Segment 47 moved to the north side of Aero Parkway. Landowner also had concerns about trespassing if the line were to be built at this location.
- One landowner stopped by to let us know he understands and supports the Project. He understands the needs of the Project due to development within the area.

Table 2. Public Ranking of Routing Considerations

Routing Considerations	Score	Public Rank
Proximity to homes	15	1
View from residences	13	2
Proximity to public facilities (church, hospital, schools)	11	3
Place new line where there are already existing distribution lines	11	3
Impact to threatened and endangered species	11	3
Impact to residential trees	11	3
Maintain or improve reliable electric services	11	3
Impact to historical and archaeological resources	10	4
Impact to commercial/industrial properties	10	4
Proximity to recreation areas, parks, and trails	10	4
View from roadways	8	5
Impact to wetlands and waterbodies	4	6

3.0 ROUTE EVALUATION

Following field reconnaissance, the close of the 30-day comment period, and Project team review, the 47 Segments were developed into 174 full-length Alternative Routes, which were evaluated in a weighted analysis.

The analysis began by identifying and grouping the opportunities and constraint data that had been assembled as part of the Project GIS. Opportunities and constraints data were classified into three tiers (criteria group, criteria, and sub-criteria) and then weighted with regards to sensitivity to electrical transmission line construction and operation. The weights assigned to the criteria were decided based on the combination of public feedback gathered on this Project (Section 2.3.3, above) and many projects over many years, Project specific considerations, and the combined experience of the siting team for this Project. Once the data were collected, the siting team met to review weights from previous projects and decide on weights that were appropriate for this Project. Table 2 shows the criteria groups, criteria, and sub-criteria used in the weighted analysis for this Project.

Table 3. Criteria Group, Criteria, and Sub-Criteria Weights

Criteria Group & Weight		Criteria & Weight		Sub-Criteria & Weight	
Ecology	25%	Wetlands	30%	Acres of PFO/PSS wetlands in ROW	0%
				Acres of PEM, PAB, PUB wetlands and riverine in ROW	100%
		Streams	20%	Number of streams crossed by centerline	100%
		Land Cover	30%	Acres of forested land within ROW	100%
		Protected Species	10%	Count of Federal & state T&E occurrences within 1,000 feet of centerline	100%
		Floodplain	10%	Linear feet of floodway crossed by centerline	0%
				Linear feet of 100-year floodplain crossed by centerline	100%
Land Use	45%	Residences	40%	Number of residences within the ROW	0%
				Number of residences within 200 feet of ROW	70%
				Number of residences between 200-500 feet of ROW	30%
		Properties	5%	Number of properties crossed by ROW	100%
		Institutional Uses	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%

AERO TO WOODSPOINT TRANSMISSION LINE PROJECT

Criteria Group & Weight		Criteria & Weight		Sub-Criteria & Weight	
Land Use	45%	Agricultural & Industrial Uses	5%	Acres of agricultural and other industrial uses in ROW	100%
		New easement required	5%	Acres of new easement required	100%
		Paralleling Linear Infrastructure	10%	Percent of centerline not paralleling existing transmission ROW	100%
Cultural	10%	NRHP Listed Resources	50%	Number of NRHP listed resources within 1,000 feet of centerline	100%
		State Architectural Resources	20%	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%
Engineering	20%	Route Length	20%	Length of route in linear feet	100%
		Rail & Road Crossings	5%	Number of highway, road, or railroad crossings	100%
		Slope	10%	Linear feet of centerline within slope >20%	100%
		Angles	15%	Number of turn angles >20 degrees	100%
		Span	10%	Linear feet of longest span (if a span greater than 400 feet is required)	100%
		Asset Protection	15%	Percent of route within 75 feet of roadway	100%
		Co-located Distribution	10%	Length of Route co-located with distribution	100%
		Underground Utilities	15%	Length or Route with underground utilities in 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 text indicate there were no data recorded for any of the routes.

Each sub-criterion was calculated by route and the raw data were normalized so that the data could be combined in the model. 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 for Route A = 5 / 13

Where: 5 is the number of properties with unique ownership for Route A

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

There were no features present along any of the Alternative Routes for several of the sub-criteria, and therefore no data to calculate (grayed sub-criteria text in Table 2). Where there were multiple sub-criteria within a criterion, such as within residences, and there were no features to calculate for one of the sub-criteria, the weights of the other sub-criteria were adjusted in some cases to maintain their importance. For example, within residences, there are three sub-criteria but there were no features present for "Number of residences within the ROW." The weighting of

that sub-criterion was made zero and its weight was applied proportionally to "Number of residences within 200 feet of the ROW" and "Number of residences within 200-500 feet of the ROW." All criteria shown in Appendix D reflect the final, adjusted weights used in the analysis.

The 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 0.0225, whereby the sub-criteria weight of 100 percent was multiplied by properties crossed criteria weight of 5 percent and the land use criteria group weight of 45 percent. The sub-criterion scores for each route were then added together to arrive at an overall score for that route.

4.0 RESULTS AND DISCUSSION

Once an overall score was established for each of the 174 Alternative Routes, the routes were ranked with the lowest score being the top ranked route. The scores were not considered a definitive comparison of routes. Rather, they provided a useful index of the relative overall impact associated with the Alternative Routes for the criteria being measured. The goal was to identify the least impactful route, using both the weighted analysis and unquantifiable features of the routes as identified through field reconnaissance and landowner interactions. The results of the weighted analysis of the ten most favorable routes are shown in Table 4 and Figure 7, below. The results of the weighted analysis and rank of all 174 alternative routes is located in Appendix D. Route 80 scored the best overall, followed closely by Routes 68, 63, 56, 32, 20, 75, 51, 15, and 8. The scores of the top 10 ranked routes are separated by only 4.5 points, whereas the lowest and highest route scores are 16.26 and 62.24, respectively.

There was a natural break between the scores of the routes in eastern portion of the Study Area and the routes to the western portion of the Study Area. After discussion with Duke Energy Kentucky and due to the higher scores in land use, ecology, and engineering, all route options that used Segment 47 and traversed the eastern part of the study area were omitted from further consideration. Some of the factors that contributed to the poorer performance of those routes were proximity to residences, line length, and proximity to unique properties such as golf courses and churches.

For the routes in the western portion of the Study Area, certain segments affected overall performance of the routes that contained them. For example, routes that used Segment 1 performed more poorly because they added additional length, more turns, and were constrained by development in the vicinity of roads and commercial development. Routes that used Segment 18 also performed more poorly because they passed in front of the Florence Baptist Church and several residential dwellings on the northeast side of State Highway 18. Routes that used Segment 13 added unnecessary turns and were constrained by existing development.

For the ten most favorable routes, the ecology criteria group was affected by wetlands and forested land in the ROW. None of the top ten routes crossed the 100-year floodway and all crossed three stream features that appeared to be easy to span. Forested land impacts ranged between 5.92 and 7.27 acres of required clearing, with route 15 having the most required clearing of the top ten routes and route 80 having the least. Impacts to wetlands are expected to be avoided; however, if avoidance is not possible impacts may occur. Therefore, wetlands within the ROW were calculated and weighted. Acreage of wetlands within the ROW ranged from 0.13 to 0.2 acres for the ten most favorable routes.

Composite Land Use criteria group scores ranged from 2.94 to 4.25 for the top ten routes (Table 4). Residents within 200 to 500 feet of the ROW, properties crossed, institutional land uses within 1000 feet of the centerline, agricultural and industrial lands, and new easement requirements all contributed to the variation (Appendix D). The top ten routes passed through a mix of commercial development and woodlots and shared many similar segments, therefore the

minimal variation in results was expected. These routes performed better than the majority of the other 174 routes for land use (Table 4).

The results of the cultural data search did not strongly affect the decision-making process. While several resources were recorded in the Study Area, they were all listed as undetermined or "other" (Appendix B). Most were buildings along Zig Zag Road. There were four cemeteries identified within the Study Area, but none were located within the ROW of a route (Appendix B). The scores of the top 10 routes had a minimal separation of 0.2 points.

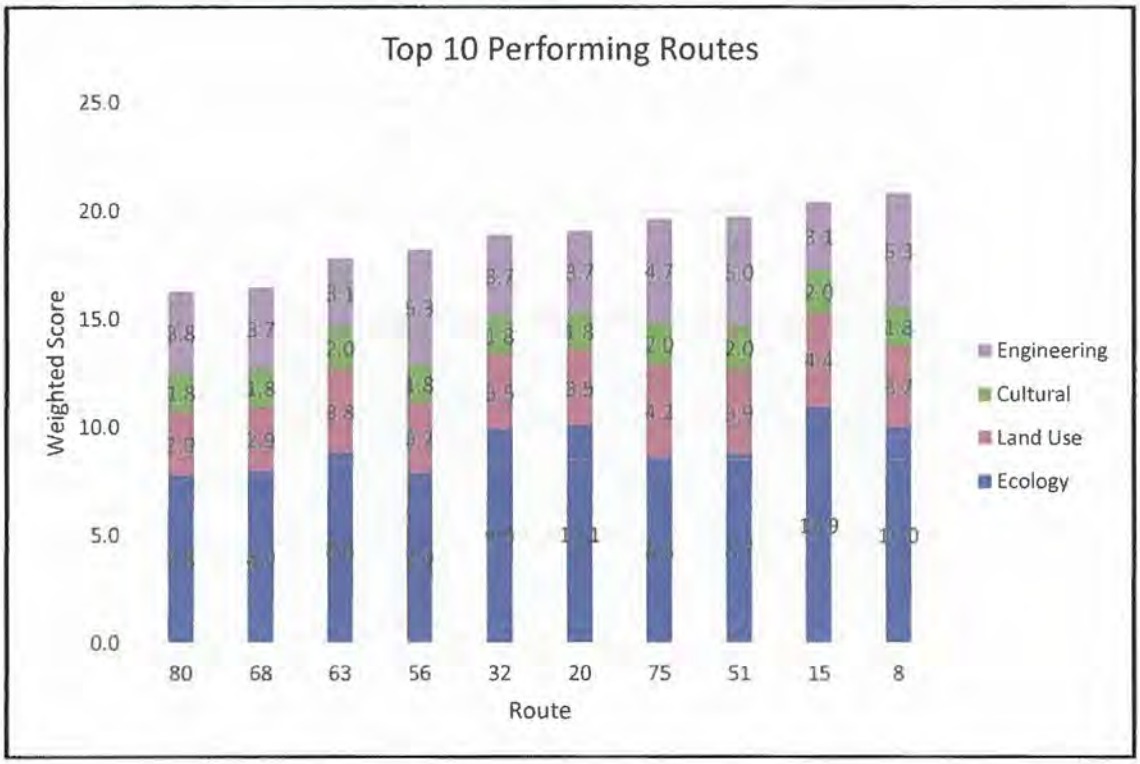
All routes paralleled either Houston Road, Merchants Street, or State Highway 18 for some portion of their ROW. There are widespread underground utilities in the area that are adjacent to or within road ROWs including water, sanitary, stormwater, and natural gas conveyances. Roadside siting is considered less optimal for voltages of 138kV or above because it may constrain access to the transmission line during construction and operations. Further, there is a risk that transmission lines sited along roads may need to be relocated at a future date due to road widening. That said, roadside siting may present the best available option in highly developed study areas like this Project. Composite engineering criteria group scores ranged from 3.10 to 5.29 for the top ten routes (Table 4). There was variation between the top ten routes in all engineering criteria group scores except for highway crossings, of which all top ten routes had three (Appendix D). Routes 15 and 63 scored third and fourth, respectively, in the engineering category out of all 174 routes, and were the best performing of the top ten routes (Table 4).

Route 32 was ranked as the 11th best route overall. Route 32 and many of the subsequent ranked routes used Segment 18, which crossed State Highway 18 further southeast than the top ten routes. This caused the centerline to cross in front of the Florence Baptist Church and residential properties on the north side of State Highway 18. Incorporating this segment caused these routes to have higher scores, even though the other segments were the same as those found in the ten most favorable routes.

Table 4. Weighted Analysis of Ten Most Favorable Routes

Route	Ecology		Land Use		Cultural		Engineering		Total	
	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank
80	7.78	49	2.95	2	1.78	80	3.76	17	16.26	1
68	7.97	57	2.94	1	1.78	80	3.75	16	16.44	2
63	8.81	64	3.84	8	2.00	143	3.13	4	17.78	3
56	7.89	54	3.23	3	1.78	80	5.29	49	18.18	4
32	9.90	68	3.46	6	1.78	80	3.73	14	18.87	5
20	10.09	74	3.46	5	1.78	80	3.72	13	19.04	6
75	8.62	60	4.25	11	2.00	143	4.72	36	19.59	7
51	8.73	62	3.91	10	2.00	143	5.04	43	19.69	8
15	10.93	87	4.35	12	2.00	143	3.10	3	20.39	9
8	10.02	71	3.74	7	1.78	80	5.25	48	20.79	10

Figure 7. Distribution of Criteria Group Scores



4.1 PREFERRED ROUTE SELECTION

Route 15 was selected as the Preferred Route for the Aero to Woodspoint 138 kV Transmission Line. While Route 15 did not have the lowest overall score, at 20.39 points, it was the most favorable route in terms of Duke Energy Kentucky engineering constraints, landowner relationship, proximity to existing road crossings and improvements, and minimization of impacts to future development in the area. Route 15 had the third best engineering score out of the 174 routes, which was related to avoidance of development constraints along existing roads, shorter route length, and minimal existing underground utilities within its ROW. Route 15 had similar land use and cultural scores to other top-ranked routes but had a higher ecological score due to the presence of a forested woodlot in the vicinity of Zig Zag Road and potential for small, non-forested wetlands within its ROW. While tree clearing is not desirable for transmission line siting, the location of this route reduced impacts to landowners because it followed property lines when crossing the woodlot and avoided residential dwellings along Zig Zag Road.

Route 80 was the best scoring route, at 16.26 points; it scored second out of 174 routes in the land use criteria group and had the best ecological and cultural scores of the top ten routes. It was not selected as the Preferred Route because it exited Woodspoint Substation at a location that is constrained by existing transmission and underground utilities and would have entered the road intersection of Mall Road and State Highway 18 at a difficult location for construction and maintenance.

Within the top ten most favorable routes, there were several locations where the routes diverged by only one segment. By way of illustrating the decision-making process, the siting team chose Segment 4 over Segments 5 and 6 because it avoids paralleling existing transmission in an area constrained by underground utilities, avoids signage and driveways of businesses on State Highway 18, and minimizes colocation with distribution and communications lines on State Highway 18. It also avoids potential interference with future intersection improvements at the intersection of State Highway 18 and Mall Road. The siting team also chose Segment 8 over Segments 9 and 10 because it avoids signage and store frontage driveways and minimizes paralleling and colocation with distribution and communications lines. It also avoids potential interference with future intersection improvements at State Highway 18 and Hopeful Church/Houston Road. Segment 24 was selected over Segment 23 because it follows parcel lines, leaving the parcel open for future development, and avoids potential for interference with existing residences and potential future straightening and expansion of Zig Zag Road.

In summary, by selecting Route 15, Duke Energy Kentucky was able to integrate with existing developments and minimize potential to impact future land uses. It is recommended that Duke Energy Kentucky remain in close contact with municipal authorities and affected property owners to ensure that pole siting does not interfere with existing or proposed underground utilities. Further, as the Project moves to construction, it is recommended that Duke Energy Kentucky coordinate with the appropriate roadway authorities to confirm that pole placement does not encroach on clear zones and that future road widening projects are taken into consideration.

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APPENDIX A – FIGURES

Exhibit 4 - Public
Page 25 of 96

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Figure No.
2

Title
Segment Network

Client/Project
Duke Energy
Woodspoint to Aero
138 kV Transmission Line Siting Study

Project Location
Boone County, KY

193706563

Prepared by ST on 2019-08-30
Technical Review by SE on 2019-08-30
Independent Review by CB on 2019-08-30

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

N

Legend
- Duke Substation
- Segment Network
- Existing Duke Owned Transmission Line
- Substation Boundary
- Parcel Boundary

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

Stantec

Exhibit 4 - Public
Page 26 of 96

Figure No.
3

Title
Study Area Map

Client/Project
Duke Energy
Woodspoint to Aero
138 kV Transmission Line Siting Study

Project Location
Boone County, KY

193706563
Prepared by BT on 2019-06-30
Technical Review by BB on 2019-06-30
Independent Review by CB on 2019-06-30

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

N

Legend
- Duke Substation
- Existing Duke Owned Transmission Line
- Study Area
- Airport Property
- Golf Course

Notes
1. Coordinate System: NAD 1983 StatePlane Kentucky North FIPS 1601 Feet
2. Data Sources Include: Stantec, Ovia, NAIP, Boone County
3. Orthophotography: NAIP 2018

Stantec

Exhibit 4 - Public
Page 27 of 96

Route ID	Route Segments	Analysis Rank
80	3, 5, 6, 9, 10, 11, 12, 16, 19, 20, 23, 25	1
68	3, 4, 7, 9, 10, 11, 12, 16, 19, 20, 23, 25	2
63	3, 4, 8, 11, 12, 16, 19, 20, 23, 25	3
56	2, 7, 9, 10, 11, 12, 16, 19, 20, 23, 25	4
32	3, 5, 6, 9, 10, 11, 12, 16, 19, 20, 24, 25	5
20	3, 4, 7, 9, 10, 11, 12, 16, 19, 20, 24, 25	6
75	3, 5, 6, 7, 8, 11, 12, 16, 19, 20, 23, 25	7
51	2, 8, 11, 12, 16, 19, 20, 23, 25	8
15	3, 4, 8, 11, 12, 16, 19, 20, 24, 25	9
8	2, 7, 9, 10, 11, 12, 16, 19, 20, 24, 25	10

Figure No.
4

Title
Environmental and Engineering Constraints

Client/Project
Duke Energy
Woodspoint to Aero
138 kV Transmission Line Siting Study

Project Location
Boone County, KY

193706563

Prepared by BT on 2019-08-30
Technical Review by BE on 2019-08-30
Independent Review by CS on 2019-08-30

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

N

Legend
- Duke Substation
- Preferred Route (Route 15)
- Top 10 Scoring Route Segments
- Other Route Segments
- Existing Duke Owned Transmission Line
- Substation Boundary
- Water Lines
- Buried Storm Sewer Lines
- Sewer Line
- 10ft Elevation Contours
- Parcel Boundary
- NWI Wetlands

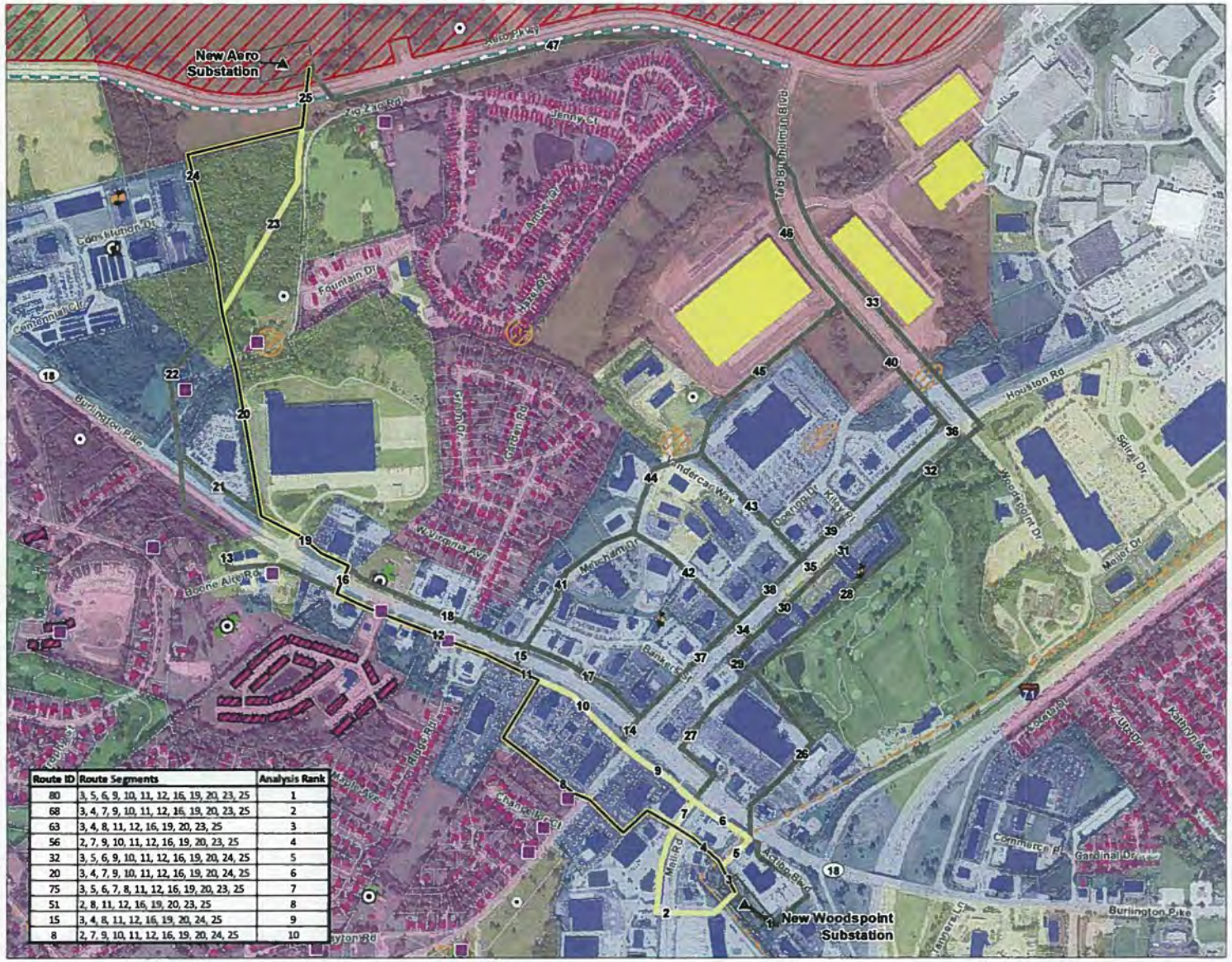
FEMA Flood Hazard Areas
- 100 Year Flood Zone

National Hydrography Dataset
- Perennial
- Intermittent
- Waterbody

Notes
1. Coordinate System: NAD 1983 StatePlane Kentucky North FIPS 1601 Feet
2. Data Sources Include: Stantec, Duke, NADS, USFWS, USGS, FEMA, Boone Co.
3. Orthophotography: 2018 NAIP

Stantec

Exhibit 4 - Public
Page 28 of 96



Route ID	Route Segments	Analysis Rank
80	3, 5, 6, 9, 10, 11, 12, 16, 19, 20, 23, 25	1
68	3, 4, 7, 9, 10, 11, 12, 16, 19, 20, 23, 25	2
63	3, 4, 8, 11, 12, 16, 19, 20, 23, 25	3
56	2, 7, 9, 10, 11, 12, 16, 19, 20, 23, 25	4
32	3, 5, 6, 9, 10, 11, 12, 16, 19, 20, 24, 25	5
20	3, 4, 7, 9, 10, 11, 12, 16, 19, 20, 24, 25	6
75	3, 5, 6, 7, 8, 11, 12, 16, 19, 20, 23, 25	7
51	2, 8, 11, 12, 16, 19, 20, 23, 25	8
15	3, 4, 8, 11, 12, 16, 19, 20, 24, 25	9
8	2, 7, 9, 10, 11, 12, 16, 19, 20, 24, 25	10

Figure No.
5

Title
Social and Land Use Constraints

Client/Project
Duke Energy
Woodspointto Aero
138 kV Transmission Line Siting Study

Project Location
Boone County, KY

193706563

Prepared by ST on 2019-08-30
Technical Review by SE on 2019-08-30
Independent Review by CS on 2019-08-30

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

N

Legend

- Duke Substation
- Preferred Route (Route 15)
- Top 10 Scoring Route Segments
- Other Route Segments
- Existing Duke Owned Transmission Line
- Substation Boundary
- Parcel Boundary
- Aero Bike Trail
- Airport Property

Zoning District
- Airport District
- Commercial Districts
- Employment Districts
- Residential Districts
- Public Facilities Districts
- Recreation District

- Cemetery
- Place of Worship
- Daycare
- KHC Historic Structures (NHRP Undetermined)
- Archaeological Site (NRHP not assessed)

Building Type
- Church
- Commercial
- Daycare
- Industrial
- Single Family Residential
- Multi-Family Residential

Notes
1. Coordinate System: NAD 1983 StatePlane Kentucky North FIPS 1601 Feet
2. Data Sources Include: Stantec, Duke, NAD5, KYGIA, Boone Co., KHC, ESRI
3. Orthophotography: 2018 NAIP

Stantec

Exhibit 4 - Public
Page 29 of 96

Figure No.
6

Title
Photo Location Map

Client/Project
Duke Energy
Woodspoint to Aero
138 kV Transmission Line Siting Study

Project Location
Boone County, KY

193706563

Prepared by BT on 2019-08-30
Technical Review by BE on 2019-08-30
Independent Review by CS on 2019-08-30

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

N

Legend
- Duke Substation
- Alternative Route
- Photo Location
- Existing Duke Owned Transmission Line
- Substation Boundary

Notes
1. Coordinate System: NAD 1983 StatePlane Kentucky North FIPS 1601 Feet
2. Data Sources Include: Stantec, Duke, NAD5, Boone County
3. Orthophotography: 2018 NAIP

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APPENDIX B – DATA SOURCE CORRESPONDENCE

CONFIDENTIAL PROPRIETARY TRADE SECRET

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IPaC Information for Planning and Consultation **U.S. Fish & Wildlife Service**

IPaC resource list

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

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

Location

Boone County, Kentucky

Local office

Kentucky Ecological Services Field Office

(502) 695-0468
(502) 695-1024

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

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

Endangered species

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

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

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

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

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

Listed species

[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

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

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

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

Mammals

NAME	STATUS
Gray Bat Myotis grisescens No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6329	Endangered
Indiana Bat Myotis sodalis This species only needs to be considered if the following condition applies: • All activities in this location should consider possible effects to this species. The project area includes "potential" habitat. There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat Myotis septentrionalis This species only needs to be considered if the following condition applies: • The specified area includes areas in which incidental take would not be prohibited under the 4(d) rule. For reporting purposes, please use the "streamlined consultation form," linked to in the "general project design guidelines" for the species. No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Threatened

Clams

NAME	STATUS
Clubshell Pleurobema clava This species only needs to be considered if the following condition applies: • The species may be affected by projects that significantly impact, directly or indirectly, the following rivers: Barren, Green, Licking, or Ohio. No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/3789	Endangered
Fanshell Cyprogenia stegaria This species only needs to be considered if the following condition applies: • The species may be affected by projects that significantly impact, directly or indirectly, the following rivers: Barren, Green, Licking, Ohio, Rolling Fork, or Tennessee. No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4822	Endangered

Northern Riffleshell Epioblasma torulosa rangiana — Endangered

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

- The species may be affected by projects that significantly impact, directly or indirectly, the following rivers: Green, Licking, or Ohio.

No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/527

Orangefoot Pimpleback (pearlymussel) Plethobasus cooperianus — Endangered

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

- The species may be affected by projects that significanlty impact, directly or indirectly, the following rivers: Green, Ohio, Salt, or Tennessee.

No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/1132

Purple Cat's Paw (=purple Cat's Paw Pearlymussel) Epioblasma obliquata obliquata — Endangered

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

- The species may be affected by projects that significantly impact, directly or indirectly, the following rivers: Green, Licking, or Ohio.

No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/5602

Rabbitsfoot Quadrula cylindrica cylindrica — Threatened

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

- The species may be affected by projects that significantly impact, directly or indirectly, the following rivers: Barren, Cumberland (below the falls), Green, Ohio, Rolling Fork, South Fork Kentucky, or Tennessee.

There is final critical habitat for this species. Your location is outside the critical habitat.
https://ecos.fws.gov/ecp/species/5165

Ring Pink (mussel) Obovaria retusa — Endangered

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

- The species may be affected by projects that significantly impact, directly or indirectly, the following rivers: Barren, Cumberland (below the falls), Green, Ohio, or Tennessee.

No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/4128

Rough Pigtoe Pleurobema plenum — Endangered

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

- The species may be affected by projects that significantly impact, directly or indirectly, the following rivers: Barren, Green, Licking, or Ohio.

No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/6894

Sheepnose Mussel Plethobasus cyphyus — Endangered

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

- The species may be affected by projects that significantly impact, directly or indirectly, the following rivers: Barren, Green, Kentucky, Licking, Ohio, or Tennessee.

No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/6903

Spectaclecase (mussel) Cumberlandia monodonta — Endangered

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

- The species may be affected by projects that significantly impact, directly or indirectly, the following rivers: Barren, Cumberland (below the falls), Green, Little South Fork of the Cumberland, Ohio, or Tennessee.

No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/7867

Flowering Plants

NAME	STATUS
Running Buffalo Clover Trifolium stoloniferum	Endangered

No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/2529

Critical habitats

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

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act

[1] and the Bald and Golden Eagle Protection Act[2].

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

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

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

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES

NOT LIKELY BREED IN YOUR PROJECT AREA.)

Blue-winged Warbler Vermivora pinus
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
Breeds May 1 to Jun 30

Cerulean Warbler Dendroica cerulea
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/2974
Breeds Apr 23 to Jul 20

Prairie Warbler Dendroica discolor
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
Breeds May 1 to Jul 31

Red-headed Woodpecker Melanerpes erythrocephalus
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
Breeds May 10 to Sep 10

Rusty Blackbird Euphagus carolinus
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
Breeds elsewhere

Wood Thrush Hylocichla mustelina
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
Breeds May 10 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

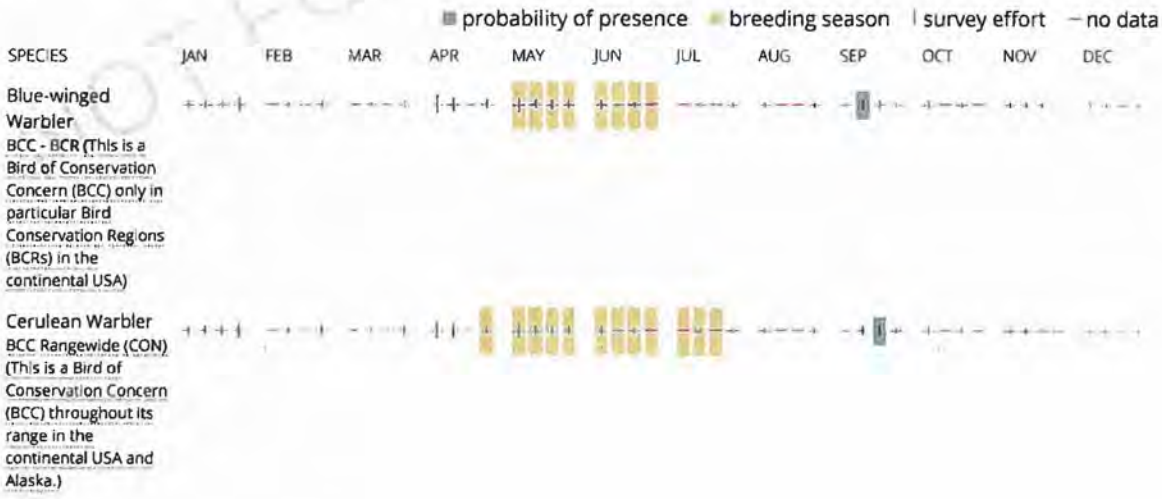
Breeding Season ( )
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



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

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

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

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

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

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the E-bird Explore Data Tool.

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

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

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

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

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

What are the levels of concern for migratory birds?

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

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

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

Details about birds that are potentially affected by offshore projects

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

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

What if I have eagles on my list?

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

Proper Interpretation and Use of Your Migratory Bird Report

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

Facilities

National Wildlife Refuge lands

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

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

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

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

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

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

PEM1Fh

FRESHWATER FORESTED/SHRUB WETLAND

PFO1A

FRESHWATER POND

PUBHh

PUBFh

RIVERINE

R2UBH

R4SBC

R5UBH

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

Data limitations

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

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

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

Data exclusions

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

Data precautions

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

MATTHEW G. BEVIN
GOVERNOR

CHARLES G. SNAVELY
SECRETARY

ENERGY AND ENVIRONMENT CABINET
OFFICE OF KENTUCKY NATURE PRESERVES
300 SOWER BOULEVARD
FRANKFORT, KENTUCKY 40601
(502) 573-2886

ZEB WEESE
EXECUTIVE DIRECTOR

January 18, 2019

Dan Godec
Stantec Consulting Services, Inc.
11687 Lebanon Road
Cincinnati, OH 45241

Project:	Duke Energy Aero Project; 193706563
Project ID:	19-0050
Project Type:	Area Study (no buffer)
Site Acreage:	1,984.28
Site Lat/Lon:	39.010280 / -84.662957
County:	Boone
USGS Quad:	BURLINGTON; UNION
Watershed HUC12:	Upper Gunpowder Creek
Physiographic Region:	Outer Bluegrass

Dear Dan Godec,

This letter is in response to your data request for the project referenced above. We have reviewed our Natural Heritage Program Database to determine if any of the endangered, threatened, or special concern plants and animals or exemplary natural communities monitored by the Office of Kentucky Nature Preserves occur within your general project area. Your project does pose a concern at this time, therefore please see the attached reports for more detailed information.

I would like to take this opportunity to remind you of the terms of the data request license, which you agreed upon in order to submit your request. The license agreement states "Data and data products received from the Office of Kentucky Nature Preserves, including any portion thereof, may not be reproduced in any form or by any means without the express written authorization of the Office of Kentucky Nature Preserves." The exact location of plants, animals, and natural communities, if released by the Office of Kentucky Nature Preserves, may not be released in any document or correspondence. These products are provided on a temporary basis for the express project (described above) of the requester, and may not be redistributed, resold or copied without the written permission of the Biological Assessment Branch (300 Sower Blvd - 4th Floor, Frankfort, KY, 40601. Phone: (502) 782-7828).

Please note that the quantity and quality of data collected by the Kentucky Natural Heritage Program are dependent on the research and observations of many individuals and organizations. In most cases, this information is not the result of comprehensive or site-specific field surveys; many natural areas in Kentucky have never been thoroughly surveyed and new plants and animals are still being discovered. For these reasons, the Kentucky Natural Heritage Program cannot provide a definitive statement on the presence, absence, or condition of biological elements in any part of Kentucky. Heritage reports summarize the existing information known to the Kentucky Natural Heritage Program at the time of the request regarding the biological elements or locations in question. They should never be

regarded as final statements on the elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments. We would greatly appreciate receiving any pertinent information obtained as a result of on-site surveys.

If you have any questions, or if I can be of further assistance, please do not hesitate to contact me.

Sincerely,

Evelyn Pickett
Geoprocessing Specialist

Standard Occurrence Report
KSNPC monitored species within 1 Feet of Project Area

EO ID	Scientific Name	Common Name	GRank	SRank	SPROT	USESA	STWG	Last Obs Date	Precision	EO Rank	Lat / Lon	Directions	Habitat
7023	*Pooecetes gramineus*	Vesper Sparrow	G5	S1B	E		Y	1950-07-09	C	U	38.9629 / -84.7476	Boone Co.	Plains, prairie, dry shrublands, savanna, weedy pastures, fields, sagebrush, arid scrub and woodland clearings (B83COM01NA).
10672	*Rana pipiens*	Northern Leopard Frog	G5	S3	S		Y	1934-04-07	G	H	38.9989 / -84.6266	Florence.	Breeds in natural and manmade ponds. Otherwise uses moist grassland, meadows and margins.

THESE DATA ARE VALID ONLY ON THE DATE ON WHICH THE REPORT WAS GENERATED.
THESE DATA MAY ONLY BE USED FOR THE PROJECT NAMED ABOVE.

Duke Energy Aero Project

January 18, 2019

- Project Boundary
- Buffered Project Boundary
- Element Occurences

1:19,604

0 0.15 0.3 0.6 mi

0 0.275 0.55 1.1 km

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri

APPENDIX C – PHOTOGRAPH LOG

Stantec

Duke Energy Kentucky, Inc.
Woodspoint to Aero 138 kV Transmission Route Siting Study
Boone County, Kentucky

Photo Location 1. View of proposed Aero Station north of Aero Parkway. Photograph taken facing north.

Photo Location 1. View of proposed route south of proposed Aero Station. Photograph taken facing south

Stantec

Duke Energy Kentucky, Inc.
Woodspoint to Aero 138 kV Transmission Route Siting Study
Boone County, Kentucky

Photo Location 1. View of the proposed route along Aero Parkway just south of proposed Aero Station. Photograph taken facing east.

Photo Location 2. View of proposed route crossing at the intersection of Zig Zag Road and Aero Parkway. Photograph taken facing east.

Stantec

Duke Energy Kentucky, Inc.
Woodspoint to Aero 138 kV Transmission Route Siting Study
Boone County, Kentucky

Photo Location 2. View of proposed route crossing at the intersection of Zig Zag Road and Aero Parkway. Photograph taken facing west.

Photo Location 3. View of proposed route along Ted Bushelman Boulevard. Photograph taken facing north.

Stantec

Duke Energy Kentucky, Inc.
Woodspoint to Aero 138 kV Transmission Route Siting Study
Boone County, Kentucky

Photo Location 3. View of proposed route crossing at Ted Bushelman Boulevard. Photograph taken facing northeast.

Photo Location 4. View of proposed route along Ted Bushelman Boulevard. Photograph taken facing northwest.

Stantec

Duke Energy Kentucky, Inc.
Woodspoint to Aero 138 kV Transmission Route Siting Study
Boone County, Kentucky

Photo Location 4. View of proposed route along Ted Bushelman Boulevard. Photograph taken facing west.

Photo Location 5. View of proposed route crossing at the intersection of Houston Road and Ted Bushelman Boulevard. Photograph taken facing northwest along Ted Bushelman Boulevard.

Stantec

Duke Energy Kentucky, Inc.
Woodspoint to Aero 138 kV Transmission Route Siting Study
Boone County, Kentucky

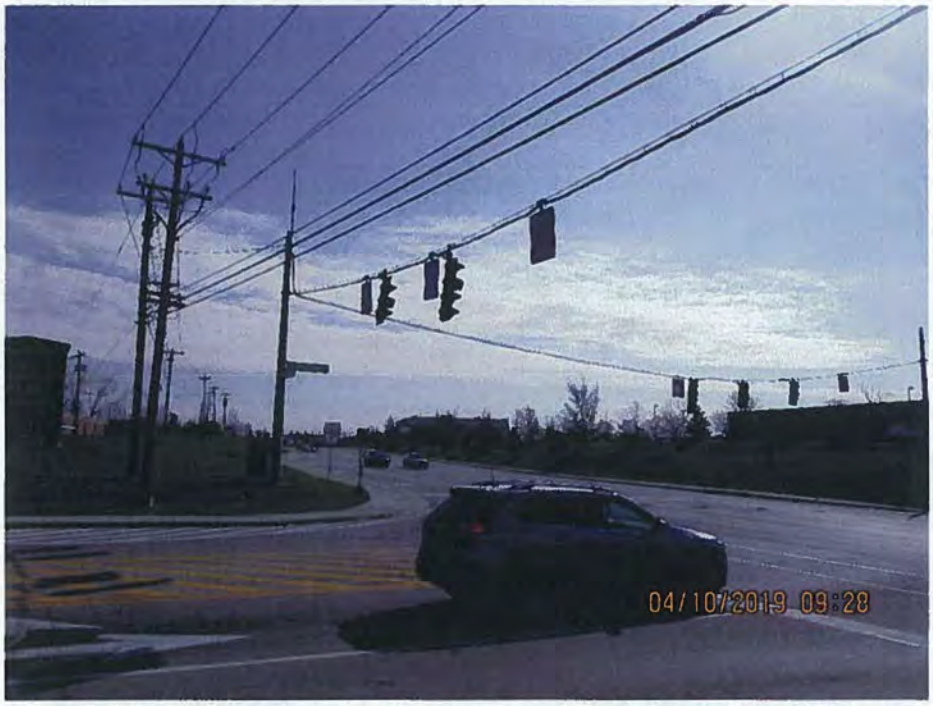


Photo Location 5. View of proposed route crossing at the intersection of Houston Road and Ted Bushelman Boulevard. Photograph taken facing northeast.

Photo Location 6. View of proposed route crossing at Zig Zag Road. Photograph taken facing southwest.

Stantec

Duke Energy Kentucky, Inc.
Woodspoint to Aero 138 kV Transmission Route Siting Study
Boone County, Kentucky

Photo Location 6. View of proposed route crossing at Zig Zag Road. Photograph taken facing northwest.

Photo Location 7. View of proposed route crossing at Zig Zag Road. Photograph taken facing southwest.

Stantec

Duke Energy Kentucky, Inc.
Woodspoint to Aero 138 kV Transmission Route Siting Study
Boone County, Kentucky

Photo Location 7. View of proposed route crossing at Zig Zag Road. Photograph taken facing north.

Photo Location 8. View of proposed route along KY-18. Photograph taken facing northwest.

Stantec

Duke Energy Kentucky, Inc.
Woodspoint to Aero 138 kV Transmission Route Siting Study
Boone County, Kentucky

Photo Location 8. View of proposed route along KY-18. Photograph taken facing southeast.

Photo Location 9. View of proposed route along KY-18. Photograph taken facing northwest.

Stantec

Duke Energy Kentucky, Inc.
Woodspoint to Aero 138 kV Transmission Route Siting Study
Boone County, Kentucky

Photo Location 9. View of proposed route along KY-18. Photograph taken facing southeast.

Photo Location 9. View of proposed route crossing along KY-18. Photograph taken facing south.

Stantec

Duke Energy Kentucky, Inc.
Woodspoint to Aero 138 kV Transmission Route Siting Study
Boone County, Kentucky

Photo Location 10. View of proposed route crossing at the intersection of Ridge Road and KY-18. Photograph taken facing southwest.

Photo Location 10. View of proposed route crossing at the intersection of Ridge Road and KY-18. Photograph taken facing west.

Stantec

Duke Energy Kentucky, Inc.
Woodspoint to Aero 138 kV Transmission Route Siting Study
Boone County, Kentucky

Photo Location 10. View of proposed route crossing at the intersection of Ridge Road and KY-18. Photograph taken facing southeast.

Photo Location 11. View of proposed route crossing at the intersection of Houston Road and KY-18. Photograph taken facing northwest along KY-18.

Stantec

Duke Energy Kentucky, Inc.
Woodspoint to Aero 138 kV Transmission Route Siting Study
Boone County, Kentucky

Photo Location 11. View of proposed route crossing at the intersection of Houston Road and KY-18. Photograph taken facing northeast.

Photo Location 12. View of proposed route crossing at Houston Road just south of the intersection with KY-18. Photograph taken facing southeast.

Stantec

Duke Energy Kentucky, Inc.
Woodspoint to Aero 138 kV Transmission Route Siting Study
Boone County, Kentucky

Photo Location 12. View of proposed route crossing at Houston Road just south of the intersection with KY-18. Photograph taken facing northeast along Houston Road.

Photo Location 13. View of proposed route crossing at the intersection of Houston Road and KY-18. Photograph taken facing northeast along Houston Road.

Stantec

Duke Energy Kentucky, Inc.
Woodspoint to Aero 138 kV Transmission Route Siting Study
Boone County, Kentucky

Photo Location 13. View of proposed route crossing at the intersection of Houston Road and KY-18. Photograph taken facing east.

Photo Location 14. View of proposed route crossing at Mall Road and KY-18. Photograph taken facing northwest.

Stantec

Duke Energy Kentucky, Inc.
Woodspoint to Aero 138 kV Transmission Route Siting Study
Boone County, Kentucky

Photo Location 14. View of proposed route crossing at Mall Road and KY-18. Photograph taken facing northeast.

Photo Location 14. View of proposed route crossing at Mall Road and KY-18. Photograph taken facing south.

Stantec

Duke Energy Kentucky, Inc.
Woodspoint to Aero 138 kV Transmission Route Siting Study
Boone County, Kentucky

Photo Location 15. View of proposed route crossing at the intersection of Mall Road and access to shopping center just west of Mall Road. Photograph taken facing east.

Photo Location 15. View of proposed route along Mall Road. Photograph taken facing north.

Stantec

Duke Energy Kentucky, Inc.
Woodspoint to Aero 138 kV Transmission Route Siting Study
Boone County, Kentucky

Photo Location 16. View of proposed route just north of Florence Mall and southwest of Woodspoint Station (Proposed). Photograph taken facing west.

Photo Location 16. View of proposed route crossing from Florence Mall to Woodspoint Station (Proposed). Photograph taken facing northeast.

Stantec

Duke Energy Kentucky, Inc.
Woodspoint to Aero 138 kV Transmission Route Siting Study
Boone County, Kentucky

Photo Location 17. View of proposed route crossing at Mall Road just south of the intersection of Mall Road and KY-18. Photograph taken facing east.

Photo Location 17. View of proposed route crossing at Mall Road just south of the intersection of Mall Road and KY-18. Photograph taken facing north.

Stantec

Duke Energy Kentucky, Inc.
Woodspoint to Aero 138 kV Transmission Route Siting Study
Boone County, Kentucky

Photo Location 18. View of proposed route at Woodspoint Station (Proposed). Photograph taken facing northeast.

Photo Location 19. View of proposed route at Woodspoint Station (Proposed). Photograph taken facing northeast.

Stantec

Duke Energy Kentucky, Inc.
Woodspoint to Aero 138 kV Transmission Route Siting Study
Boone County, Kentucky

Photo Location 20. View of proposed route crossing at the intersection of Woodspoint Drive and KY-18. Photograph taken facing northwest.

Photo Location 20. View of proposed route crossing at the intersection of Woodspoint Drive and KY-18. Photograph taken facing southwest.

Stantec

Duke Energy Kentucky, Inc.
Woodspoint to Aero 138 kV Transmission Route Siting Study
Boone County, Kentucky

Photo Location 21. View of proposed route crossing at the intersection of Houston Road and KY-18. Photograph taken facing northeast along Houston Road.

Photo Location 21. View of proposed route crossing at the intersection of Houston Road and KY-18. Photograph taken facing northwest.

Stantec

Duke Energy Kentucky, Inc.
Woodspoint to Aero 138 kV Transmission Route Siting Study
Boone County, Kentucky

Photo Location 21. View of proposed route crossing at the intersection of Houston Road and KY-18. Photograph taken facing southwest.

Photo Location 22. View of proposed route crossing at the intersection of Houston Road and Merchant Drive. Photograph taken facing southwest along Houston Road.

Stantec

Duke Energy Kentucky, Inc.
Woodspoint to Aero 138 kV Transmission Route Siting Study
Boone County, Kentucky

Photo Location 22. View of proposed route crossing at the intersection of Houston Road and Merchant Drive. Photograph taken facing northwest across Houston Road.

Photo Location 22. View of proposed route crossing at the intersection of Houston Road and Merchant Drive. Photograph taken facing northeast along Houston Road.

Stantec

Duke Energy Kentucky, Inc.
Woodspoint to Aero 138 kV Transmission Route Siting Study
Boone County, Kentucky

Photo Location 23. View of proposed route crossing at the intersection of Vandercar Way and Houston Road. Photograph taken facing southwest along Houston Road.

Photo Location 24. View of proposed route crossing at the intersection of Vandercar Way and Doering Drive. Photograph taken facing southeast along Vandercar Way.

Stantec

Duke Energy Kentucky, Inc.
Woodspoint to Aero 138 kV Transmission Route Siting Study
Boone County, Kentucky

Photo Location 24. View of proposed route crossing at the intersection of Vandercar Way and Doering Drive. Photograph taken facing northwest along Vandercar Way.

Photo Location 25. View of proposed route crossing at the intersection of Seligman Drive and Vandercar Way. Photograph taken facing south along Seligman Drive.

Stantec

Duke Energy Kentucky, Inc.
Woodspoint to Aero 138 kV Transmission Route Siting Study
Boone County, Kentucky

Photo Location 25. View of proposed route crossing at the intersection of Seligman Drive and Vandercar Way. Photograph taken facing northeast.

Photo Location 26. View of proposed route crossing at the intersection of Seligman Drive and Merchant Drive. Photograph taken facing east along Seligman Drive.

Stantec

Duke Energy Kentucky, Inc.
Woodspoint to Aero 138 kV Transmission Route Siting Study
Boone County, Kentucky

Photo Location 26. View of proposed route crossing at the intersection of Seligman Drive and Merchant Drive. Photograph taken facing north.

APPENDIX D – WEIGHTED RESULTS TABLES

		ECOLOGY CRITERIA GROUP											
		Streams			Wetlands			Forest			Floodplain		
		Stream crossings by centerline (count)			PEM, PAB, PUB and riverine in ROW (acres)			Forested land in ROW (acres)			100-Year floodplain crossed by centerline (feet)		
Criteria Group Weight:		25%			25%			25%			25%		
Criteria Weight:		20%			30%			30%			10%		
Sub-Criteria Weight:		100%			100%			100%			100%		
Weighted Multiplier:		0.0500			0.0750			0.0750			0.0250		
Route	Segments	Value	Normalized	Weighted Value	Value	Normalized	Weighted Value	Value	Normalized	Weighted Value	Value	Normalized	Weighted Value
1	2, 8, 11, 12, 13, 22, 24, 25	4	100	5.00	0.23	37	2.76	8.16	97	7.29	114	5	0.13
2	2, 8, 11, 12, 16, 19, 21, 22, 24, 25	4	100	5.00	0.23	37	2.76	7.03	81	6.04	114	5	0.13
3	2, 8, 11, 12, 16, 19, 20, 24, 25	3	50	2.50	0.20	28	2.13	7.20	83	6.22	88	0	0.00
4	2, 8, 11, 15, 18, 19, 21, 22, 24, 25	4	100	5.00	0.23	37	2.76	7.00	80	6.01	114	5	0.13
5	2, 8, 11, 15, 18, 19, 20, 24, 25	3	50	2.50	0.20	28	2.13	7.17	83	6.19	88	0	0.00
6	2, 7, 9, 10, 11, 12, 13, 22, 24, 25	4	100	5.00	0.23	37	2.76	7.40	86	6.45	114	5	0.13
7	2, 7, 9, 10, 11, 12, 16, 19, 21, 22, 24, 25	4	100	5.00	0.23	37	2.76	6.28	69	5.20	114	5	0.13
8	2, 7, 9, 10, 11, 12, 16, 19, 20, 24, 25	3	50	2.50	0.20	28	2.13	6.44	72	5.38	88	0	0.00
9	2, 7, 9, 10, 11, 15, 18, 19, 21, 22, 24, 25	4	100	5.00	0.23	37	2.76	6.25	69	5.17	114	5	0.13
10	2, 7, 9, 10, 11, 15, 18, 19, 20, 24, 25	3	50	2.50	0.20	28	2.13	6.41	71	5.35	88	0	0.00
11	2, 7, 9, 14, 17, 18, 19, 21, 22, 24, 25	4	100	5.00	0.23	37	2.76	6.25	69	5.17	114	5	0.13
12	2, 7, 9, 14, 17, 18, 19, 20, 24, 25	3	50	2.50	0.20	28	2.13	6.41	71	5.35	88	0	0.00
13	3, 4, 8, 11, 12, 13, 22, 24, 25	4	100	5.00	0.23	37	2.76	8.23	98	7.37	114	5	0.13
14	3, 4, 8, 11, 12, 16, 19, 21, 22, 24, 25	4	100	5.00	0.23	37	2.76	7.11	82	6.12	114	5	0.13
15	3, 4, 8, 11, 12, 16, 19, 20, 24, 25	3	50	2.50	0.20	28	2.13	7.27	84	6.30	88	0	0.00
16	3, 4, 8, 11, 15, 18, 19, 21, 22, 24, 25	4	100	5.00	0.23	37	2.76	7.07	81	6.09	114	5	0.13
17	3, 4, 8, 11, 15, 18, 19, 20, 24, 25	3	50	2.50	0.20	28	2.13	7.24	84	6.27	88	0	0.00
18	3, 4, 7, 9, 10, 11, 12, 13, 22, 24, 25	4	100	5.00	0.23	37	2.76	7.47	87	6.53	114	5	0.13
19	3, 4, 7, 9, 10, 11, 12, 16, 19, 21, 22, 24, 25	4	100	5.00	0.23	37	2.76	6.35	70	5.28	114	5	0.13
20	3, 4, 7, 9, 10, 11, 12, 16, 19, 20, 24, 25	3	50	2.50	0.20	28	2.13	6.51	73	5.46	88	0	0.00
21	3, 4, 7, 9, 10, 11, 15, 18, 19, 21, 22, 24, 25	4	100	5.00	0.23	37	2.76	6.32	70	5.25	114	5	0.13
22	3, 4, 7, 9, 10, 11, 15, 18, 19, 20, 24, 25	3	50	2.50	0.20	28	2.13	6.48	72	5.43	88	0	0.00
23	3, 4, 7, 9, 14, 17, 18, 19, 21, 22, 24, 25	4	100	5.00	0.23	37	2.76	6.32	70	5.25	114	5	0.13
24	3, 4, 7, 9, 14, 17, 18, 19, 20, 24, 25	3	50	2.50	0.20	28	2.13	6.48	72	5.43	88	0	0.00
25	3, 5, 6, 7, 8, 11, 12, 13, 22, 24, 25	4	100	5.00	0.23	37	2.76	8.05	96	7.17	114	5	0.13
26	3, 5, 6, 7, 8, 11, 12, 16, 19, 21, 22, 24, 25	4	100	5.00	0.23	37	2.76	6.93	79	5.92	114	5	0.13
27	3, 5, 6, 7, 8, 11, 12, 16, 19, 20, 24, 25	3	50	2.50	0.20	28	2.13	7.09	81	6.11	88	0	0.00
28	3, 5, 6, 7, 8, 11, 15, 18, 19, 21, 22, 24, 25	4	100	5.00	0.23	37	2.76	6.90	79	5.89	114	5	0.13
29	3, 5, 6, 7, 8, 11, 18, 19, 20, 24, 25	3	50	2.50	0.20	28	2.13	7.06	81	6.07	88	0	0.00
30	3, 5, 6, 9, 10, 11, 12, 13, 22, 24, 25	4	100	5.00	0.23	37	2.76	7.29	84	6.33	114	5	0.13
31	3, 5, 6, 9, 10, 11, 12, 16, 19, 21, 22, 24, 25	4	100	5.00	0.23	37	2.76	6.17	68	5.09	114	5	0.13
32	3, 5, 6, 9, 10, 11, 12, 16, 19, 20, 24, 25	3	50	2.50	0.20	28	2.13	6.34	70	5.27	88	0	0.00
33	3, 5, 6, 9, 10, 11, 18, 19, 21, 22, 24, 25	4	100	5.00	0.23	37	2.76	6.14	67	5.05	114	5	0.13
34	3, 5, 6, 9, 10, 11, 18, 19, 20, 24, 25	3	50	2.50	0.20	28	2.13	6.30	70	5.23	88	0	0.00
35	3, 5, 6, 9, 14, 17, 18, 19, 21, 22, 24, 25	4	100	5.00	0.23	37	2.76	6.14	67	5.05	114	5	0.13
36	3, 5, 6, 9, 14, 17, 18, 19, 20, 24, 25	3	50	2.50	0.20	28	2.13	6.30	70	5.23	88	0	0.00
37	1, 6, 7, 8, 11, 12, 13, 22, 24, 25	4	100	5.00	0.41	87	6.51	8.35	100	7.50	114	5	0.13
38	1, 6, 7, 8, 11, 12, 16, 19, 21, 22, 24, 25	4	100	5.00	0.41	87	6.51	7.23	83	6.26	114	5	0.13
39	1, 6, 7, 8, 11, 12, 16, 19, 20, 24, 25	3	50	2.50	0.38	78	5.88	7.39	86	6.44	88	0	0.00
40	1, 6, 7, 8, 11, 18, 19, 21, 22, 24, 25	4	100	5.00	0.41	87	6.51	7.20	83	6.22	114	5	0.13
41	1, 6, 7, 8, 11, 18, 19, 20, 24, 25	3	50	2.50	0.38	78	5.88	7.36	85	6.40	88	0	0.00
42	1, 6, 9, 10, 11, 12, 13, 22, 24, 25	4	100	5.00	0.41	87	6.51	7.59	89	6.66	114	5	0.13
43	1, 6, 9, 10, 11, 12, 16, 19, 21, 22, 24, 25	4	100	5.00	0.41	87	6.51	6.47	72	5.42	114	5	0.13
44	1, 6, 9, 10, 11, 12, 16, 19, 20, 24, 25	3	50	2.50	0.38	78	5.88	6.63	75	5.60	88	0	0.00
45	1, 6, 9, 10, 11, 18, 19, 21, 22, 24, 25	4	100	5.00	0.41	87	6.51	6.44	72	5.38	114	5	0.13
46	1, 6, 9, 10, 11, 18, 19, 20, 24, 25	3	50	2.50	0.38	78	5.88	6.60	74	5.56	88	0	0.00
47	1, 6, 9, 14, 17, 18, 19, 21, 22, 24, 25	4	100	5.00	0.41	87	6.51	6.44	72	5.38	114	5	0.13
48	1, 6, 9, 14, 17, 18, 19, 20, 24, 25	3	50	2.50	0.38	78	5.88	6.60	74	5.56	88	0	0.00
49	2, 8, 11, 12, 13, 22, 23, 25	4	100	5.00	0.15	14	1.05	7.78	92	6.87	114	5	0.13
50	2, 8, 11, 12, 16, 19, 21, 22, 23, 25	4	100	5.00	0.15	14	1.05	6.66	75	5.63	114	5	0.13
51	2, 8, 11, 12, 16, 19, 20, 23, 25	3	50	2.50	0.12	6	0.43	6.82	77	5.81	88	0	0.00
52	2, 8, 11, 18, 19, 21, 22, 23, 25	4	100	5.00	0.15	14	1.05	6.63	75	5.59	114	5	0.13
53	2, 8, 11, 18, 19, 20, 23, 25	3	50	2.50	0.12	6	0.43	6.79	77	5.77	88	0	0.00
54	2, 7, 9, 10, 11, 12, 13, 22, 23, 25	4	100	5.00	0.15	14	1.05	7.03	80	6.03	114	5	0.13
55	2, 7, 9, 10, 11, 12, 16, 19, 21, 22, 23, 25	4	100	5.00	0.15	14	1.05	5.90	64	4.79	114	5	0.13
56	2, 7, 9, 10, 11, 12, 16, 19, 20, 23, 25	3	50	2.50	0.12	6	0.43	6.07	66	4.97	88	0	0.00
57	2, 7, 9, 10, 11, 18, 19, 21, 22, 23, 25	4	100	5.00	0.15	14	1.05	5.87	63	4.75	114	5	0.13
58	2, 7, 9, 10, 11, 18, 19, 20, 23, 25	3	50	2.50	0.12	6	0.43	6.03	66	4.93	88	0	0.00
59	2, 7, 9, 14, 17, 18, 19, 21, 22, 23, 25	4	100	5.00	0.15	14	1.05	5.87	63	4.75	114	5	0.13
60	2, 7, 9, 14, 17, 18, 19, 20, 23, 25	3	50	2.50	0.12	6	0.43	6.03	66	4.93	88	0	0.00
61	3, 4, 8, 11, 12, 13, 22, 23, 25	4	100	5.00	0.15	14	1.05	7.85	93	6.95	114	5	0.13
62	3, 4, 8, 11, 12, 16, 19, 21, 22, 23, 25	4	100	5.00	0.15	14	1.05	6.73	76	5.71	114	5	0.13
63	3, 4, 8, 11, 12, 16, 19, 20, 23, 25	3	50	2.50	0.12	6	0.43	6.89	78	5.89	88	0	0.00
64	3, 4, 8, 11, 18, 19, 21, 22, 23, 25	4	100	5.00	0.15	14	1.05	6.70	76	5.67	114	5	0.13
65	3, 4, 8, 11, 18, 19, 20, 23, 25	3	50	2.50	0.12	6	0.43	6.86	78	5.85	88	0	0.00
66	3, 4, 7, 9, 10, 11, 12, 13, 22, 23, 25	4	100	5.00	0.15	14	1.05	7.10	81	6.11	114	5	0.13
67	3, 4, 7, 9, 10, 11, 12, 16, 19, 21, 22, 23, 25	4	100	5.00	0.15	14	1.05	5.97	65	4.87	114	5	0.13
68	3, 4, 7, 9, 10, 11, 12, 16, 19, 20, 23, 25	3	50	2.50	0.12	6	0.43	6.14	67	5.05	88	0	0.00

		ECOLOGY CRITERIA GROUP											
		Streams			Wetlands			Forest			Floodplain		
		Stream crossings by centerline (count)			PEM, PAB, PUB and riverine in ROW (acres)			Forested land in ROW (acres)			100-Year floodplain crossed by centerline (feet)		
Criteria Group Weight:		25%			25%			25%			25%		
Criteria Weight:		20%			30%			30%			10%		
Sub-Criteria Weight:		100%			100%			100%			100%		
Weighted Multiplier:		0.0500			0.0750			0.0750			0.0250		
Route	Segments	Value	Normalized	Weighted Value	Value	Normalized	Weighted Value	Value	Normalized	Weighted Value	Value	Normalized	Weighted Value
69	3, 4, 7, 9, 10, 11, 18, 19, 21, 22, 23, 25	4	100	5.00	0.15	14	1.05	5.94	64	4.83	114	5	0.13
70	3, 4, 7, 9, 10, 11, 18, 19, 20, 23, 25	3	50	2.50	0.12	6	0.43	6.10	67	5.01	88	0	0.00
71	3, 4, 7, 9, 14, 17, 18, 19, 21, 22, 23, 25	4	100	5.00	0.15	14	1.05	5.94	64	4.83	114	5	0.13
72	3, 4, 7, 9, 14, 17, 18, 19, 20, 23, 25	3	50	2.50	0.12	6	0.43	6.10	67	5.01	88	0	0.00
73	3, 5, 6, 7, 8, 11, 12, 13, 22, 23, 25	4	100	5.00	0.15	14	1.05	7.68	90	6.75	114	5	0.13
74	3, 5, 6, 7, 8, 11, 12, 16, 19, 21, 22, 23, 25	4	100	5.00	0.15	14	1.05	6.55	73	5.51	114	5	0.13
75	3, 5, 6, 7, 8, 11, 12, 16, 19, 20, 23, 25	3	50	2.50	0.12	6	0.43	6.72	76	5.69	88	0	0.00
76	3, 5, 6, 7, 8, 11, 18, 19, 21, 22, 23, 25	4	100	5.00	0.15	14	1.05	6.52	73	5.47	114	5	0.13
77	3, 5, 6, 7, 8, 11, 18, 19, 20, 23, 25	3	50	2.50	0.12	6	0.43	6.69	75	5.65	88	0	0.00
78	3, 5, 6, 9, 10, 11, 12, 13, 22, 23, 25	4	100	5.00	0.15	14	1.05	6.92	79	5.91	114	5	0.13
79	3, 5, 6, 9, 10, 11, 12, 16, 19, 21, 22, 23, 25	4	100	5.00	0.15	14	1.05	5.80	62	4.67	114	5	0.13
80	3, 5, 6, 9, 10, 11, 12, 16, 19, 20, 23, 25	3	50	2.50	0.12	6	0.43	5.96	65	4.85	88	0	0.00
81	3, 5, 6, 9, 10, 11, 18, 19, 21, 22, 23, 25	4	100	5.00	0.15	14	1.05	5.77	62	4.64	114	5	0.13
82	3, 5, 6, 9, 10, 11, 18, 19, 20, 23, 25	3	50	2.50	0.12	6	0.43	5.93	64	4.81	88	0	0.00
83	3, 5, 6, 9, 14, 17, 18, 19, 21, 22, 23, 25	4	100	5.00	0.15	14	1.05	5.77	62	4.64	114	5	0.13
84	3, 5, 6, 9, 14, 17, 18, 19, 20, 23, 25	3	50	2.50	0.12	6	0.43	5.93	64	4.81	88	0	0.00
85	1, 6, 7, 8, 11, 12, 13, 22, 23, 25	4	100	5.00	0.33	64	4.81	7.98	94	7.08	114	5	0.13
86	1, 6, 7, 8, 11, 12, 16, 19, 21, 22, 23, 25	4	100	5.00	0.33	64	4.81	6.85	78	5.84	114	5	0.13
87	1, 6, 7, 8, 11, 12, 16, 19, 20, 23, 25	3	50	2.50	0.30	56	4.18	7.02	80	6.02	88	0	0.00
88	1, 6, 7, 8, 11, 18, 19, 21, 22, 23, 25	4	100	5.00	0.33	64	4.81	6.82	77	5.81	114	5	0.13
89	1, 6, 7, 8, 11, 18, 19, 20, 23, 25	3	50	2.50	0.30	56	4.18	6.98	80	5.99	88	0	0.00
90	1, 6, 9, 10, 11, 12, 13, 22, 23, 25	4	100	5.00	0.33	64	4.81	7.22	83	6.25	114	5	0.13
91	1, 6, 9, 10, 11, 12, 16, 19, 21, 22, 23, 25	4	100	5.00	0.33	64	4.81	6.10	67	5.00	114	5	0.13
92	1, 6, 9, 10, 11, 12, 16, 19, 20, 23, 25	3	50	2.50	0.30	56	4.18	6.26	69	5.18	88	0	0.00
93	1, 6, 9, 10, 11, 18, 19, 21, 22, 23, 25	4	100	5.00	0.33	64	4.81	6.06	66	4.97	114	5	0.13
94	1, 6, 9, 10, 11, 18, 19, 20, 23, 25	3	50	2.50	0.30	56	4.18	6.23	69	5.15	88	0	0.00
95	1, 6, 9, 14, 17, 18, 19, 21, 22, 23, 25	4	100	5.00	0.33	64	4.81	6.06	66	4.97	114	5	0.13
96	1, 6, 9, 14, 17, 18, 19, 20, 23, 25	3	50	2.50	0.30	56	4.18	6.23	69	5.15	88	0	0.00
97	2, 8, 11, 41, 44, 45, 46, 47	2	0	0.00	0.11	0	0.00	2.85	19	1.41	482	77	1.91
98	2, 7, 9, 10, 11, 41, 44, 45, 46, 47	2	0	0.00	0.11	0	0.00	2.10	8	0.57	482	77	1.91
99	2, 7, 9, 14, 17, 41, 44, 45, 46, 47	2	0	0.00	0.11	0	0.00	2.10	8	0.57	482	77	1.91
100	2, 7, 9, 14, 37, 42, 44, 45, 46, 47	2	0	0.00	0.11	0	0.00	2.13	8	0.60	482	77	1.91
101	2, 7, 9, 14, 37, 38, 43, 45, 46, 47	2	0	0.00	0.11	0	0.00	2.07	7	0.54	436	68	1.69
102	2, 7, 9, 14, 37, 38, 39, 40, 46, 47	3	50	2.50	0.14	9	0.66	1.69	2	0.12	542	88	2.20
103	2, 7, 27, 29, 34, 42, 44, 45, 46, 47	2	0	0.00	0.11	0	0.00	2.75	17	1.29	482	77	1.91
104	2, 7, 27, 29, 34, 38, 43, 45, 46, 47	2	0	0.00	0.11	0	0.00	2.69	16	1.22	436	68	1.69
105	2, 7, 27, 29, 34, 38, 39, 40, 46, 47	3	50	2.50	0.14	9	0.66	2.31	11	0.80	542	88	2.20
106	2, 7, 27, 29, 30, 35, 43, 45, 46, 47	2	0	0.00	0.11	0	0.00	2.69	16	1.22	436	68	1.69
107	2, 7, 27, 29, 30, 35, 39, 40, 46, 47	3	50	2.50	0.14	9	0.66	2.31	11	0.80	542	88	2.20
108	2, 7, 27, 29, 30, 31, 32, 36, 40, 46, 47	4	100	5.00	0.26	45	3.41	3.82	33	2.47	603	100	2.50
109	2, 7, 27, 28, 32, 36, 40, 46, 47	4	100	5.00	0.26	45	3.41	6.65	75	5.62	603	100	2.50
110	3, 4, 8, 11, 41, 44, 45, 46, 47	2	0	0.00	0.11	0	0.00	2.92	20	1.48	482	77	1.91
111	3, 4, 7, 9, 10, 11, 41, 44, 45, 46, 47	2	0	0.00	0.11	0	0.00	2.17	9	0.65	482	77	1.91
112	3, 4, 7, 9, 14, 17, 41, 44, 45, 46, 47	2	0	0.00	0.11	0	0.00	2.17	9	0.65	482	77	1.91
113	3, 4, 7, 9, 14, 37, 42, 44, 45, 46, 47	2	0	0.00	0.11	0	0.00	2.20	9	0.68	482	77	1.91
114	3, 4, 7, 9, 14, 37, 38, 43, 45, 46, 47	2	0	0.00	0.11	0	0.00	2.14	8	0.61	436	68	1.69
115	3, 4, 7, 9, 14, 37, 38, 39, 40, 46, 47	3	50	2.50	0.14	9	0.66	1.76	3	0.20	542	88	2.20
116	3, 4, 7, 27, 29, 34, 42, 44, 45, 46, 47	2	0	0.00	0.11	0	0.00	2.82	18	1.36	482	77	1.91
117	3, 4, 7, 27, 29, 34, 38, 43, 45, 46, 47	2	0	0.00	0.11	0	0.00	2.76	17	1.30	436	68	1.69
118	3, 4, 7, 27, 29, 34, 38, 39, 40, 46, 47	3	50	2.50	0.14	9	0.66	2.38	12	0.88	542	88	2.20
119	3, 4, 7, 27, 29, 30, 35, 43, 45, 46, 47	2	0	0.00	0.11	0	0.00	2.76	17	1.30	436	68	1.69
120	3, 4, 7, 27, 29, 30, 35, 39, 40, 46, 47	3	50	2.50	0.14	9	0.66	2.38	12	0.88	542	88	2.20
121	3, 4, 7, 27, 29, 30, 31, 32, 36, 40, 46, 47	4	100	5.00	0.26	45	3.41	3.89	34	2.55	603	100	2.50
122	3, 4, 7, 27, 28, 32, 36, 40, 46, 47	4	100	5.00	0.26	45	3.41	6.72	76	5.69	603	100	2.50
123	3, 5, 6, 7, 8, 11, 41, 44, 45, 46, 47	2	0	0.00	0.11	0	0.00	2.75	17	1.29	482	77	1.91
124	3, 5, 6, 9, 10, 11, 41, 44, 45, 46, 47	2	0	0.00	0.11	0	0.00	1.99	6	0.45	482	77	1.91
125	3, 5, 6, 9, 14, 17, 41, 44, 45, 46, 47	2	0	0.00	0.11	0	0.00	1.99	6	0.45	482	77	1.91
126	3, 5, 6, 9, 14, 37, 42, 44, 45, 46, 47	2	0	0.00	0.11	0	0.00	2.02	6	0.48	482	77	1.91
127	3, 5, 6, 9, 14, 37, 38, 43, 45, 46, 47	2	0	0.00	0.11	0	0.00	1.96	6	0.42	436	68	1.69
128	3, 5, 6, 9, 14, 37, 38, 39, 40, 46, 47	3	50	2.50	0.14	9	0.66	1.59	0	0.00	542	88	2.20
129	3, 5, 6, 27, 29, 34, 42, 44, 45, 46, 47	2	0	0.00	0.11	0	0.00	2.64	16	1.17	482	77	1.91
130	3, 5, 6, 27, 29, 34, 38, 43, 45, 46, 47	2	0	0.00	0.11	0	0.00	2.58	15	1.10	436	68	1.69
131	3, 5, 6, 27, 29, 34, 38, 39, 40, 46, 47	3	50	2.50	0.14	9	0.66	2.20	9	0.69	542	88	2.20
132	3, 5, 6, 27, 29, 30, 35, 43, 45, 46, 47	2	0	0.00	0.11	0	0.00	2.58	15	1.10	436	68	1.69
133	3, 5, 6, 27, 29, 30, 35, 39, 40, 46, 47	3	50	2.50	0.14	9	0.66	2.20	9	0.69	542	88	2.20
134	3, 5, 6, 27, 29, 30, 31, 32, 36, 40, 46, 47	4	100	5.00	0.26	45	3.41	3.71	31	2.36	603	100	2.50
135	3, 5, 6, 27, 28, 32, 36, 40, 46, 47	4	100	5.00	0.26	45	3.41	6.54	73	5.50	603	100	2.50
136	3, 5, 26, 29, 34, 42, 44, 45, 46, 47	2	0	0.00	0.11	0	0.00	3.53	29	2.15	482	77	1.91

		ECOLOGY CRITERIA GROUP											
		Streams			Wetlands			Forest			Floodplain		
		Stream crossings by centerline (count)			PEM, PAB, PUB and riverine in ROW (acres)			Forested land in ROW (acres)			100-Year floodplain crossed by centerline (feet)		
Criteria Group Weight:		25%			25%			25%			25%		
Criteria Weight:		20%			30%			30%			10%		
Sub-Criteria Weight:		100%			100%			100%			100%		
Weighted Multiplier:		0.0500			0.0750			0.0750			0.0250		
Route	Segments	Value	Normalized	Weighted Value	Value	Normalized	Weighted Value	Value	Normalized	Weighted Value	Value	Normalized	Weighted Value
137	3, 5, 26, 29, 34, 38, 43, 45, 46, 47	2	0	0.00	0.11	0	0.00	3.47	28	2.09	436	68	1.69
138	3, 5, 26, 29, 34, 38, 39, 40, 46, 47	3	50	2.50	0.14	9	0.66	3.09	22	1.67	542	88	2.20
139	3, 5, 26, 29, 30, 35, 43, 45, 46, 47	2	0	0.00	0.11	0	0.00	3.47	28	2.09	436	68	1.69
140	3, 5, 26, 29, 30, 35, 39, 40, 46, 47	3	50	2.50	0.14	9	0.66	3.09	22	1.67	542	88	2.20
141	3, 5, 26, 29, 30, 31, 32, 36, 40, 46, 47	4	100	5.00	0.26	45	3.41	4.60	45	3.34	603	100	2.50
142	3, 5, 26, 28, 32, 36, 40, 46, 47	4	100	5.00	0.26	45	3.41	7.39	86	6.43	603	100	2.50
143	1, 6, 7, 8, 11, 41, 44, 45, 46, 47	2	0	0.00	0.28	50	3.75	3.05	22	1.62	482	77	1.91
144	1, 6, 9, 10, 11, 41, 44, 45, 46, 47	2	0	0.00	0.28	50	3.75	2.29	10	0.78	482	77	1.91
145	1, 6, 9, 14, 17, 41, 44, 45, 46, 47	2	0	0.00	0.28	50	3.75	2.29	10	0.78	482	77	1.91
146	1, 6, 9, 14, 37, 42, 44, 45, 46, 47	2	0	0.00	0.28	50	3.75	2.32	11	0.81	482	77	1.91
147	1, 6, 9, 14, 37, 38, 43, 45, 46, 47	2	0	0.00	0.28	50	3.75	2.26	10	0.75	436	68	1.69
148	1, 6, 9, 14, 37, 38, 39, 40, 46, 47	3	50	2.50	0.31	59	4.41	1.88	4	0.33	542	88	2.20
149	1, 6, 27, 29, 34, 42, 44, 45, 46, 47	2	0	0.00	0.28	50	3.75	2.94	20	1.50	482	77	1.91
150	1, 6, 27, 29, 34, 38, 43, 45, 46, 47	2	0	0.00	0.28	50	3.75	2.88	19	1.44	436	68	1.69
151	1, 6, 27, 29, 34, 38, 39, 40, 46, 47	3	50	2.50	0.31	59	4.41	2.50	14	1.02	542	88	2.20
152	1, 6, 27, 29, 30, 35, 43, 45, 46, 47	2	0	0.00	0.28	50	3.75	2.88	19	1.44	436	68	1.69
153	1, 6, 27, 29, 30, 35, 39, 40, 46, 47	3	50	2.50	0.31	59	4.41	2.50	14	1.02	542	88	2.20
154	1, 6, 27, 29, 30, 31, 32, 36, 40, 46, 47	4	100	5.00	0.44	95	7.16	4.01	36	2.69	603	100	2.50
155	1, 6, 27, 28, 32, 36, 40, 46, 47	4	100	5.00	0.44	95	7.16	6.84	78	5.83	603	100	2.50
156	1, 26, 29, 34, 42, 44, 45, 46, 47	2	0	0.00	0.28	50	3.75	3.83	33	2.48	482	77	1.91
157	1, 26, 29, 34, 38, 43, 45, 46, 47	2	0	0.00	0.28	50	3.75	3.77	32	2.42	436	68	1.69
158	1, 26, 29, 34, 38, 39, 40, 46, 47	3	50	2.50	0.31	59	4.41	3.39	27	2.00	542	88	2.20
159	1, 26, 29, 30, 35, 43, 45, 46, 47	2	0	0.00	0.28	50	3.75	3.77	32	2.42	436	68	1.69
160	1, 26, 29, 30, 35, 39, 40, 46, 47	3	50	2.50	0.31	59	4.41	3.39	27	2.00	542	88	2.20
161	1, 26, 29, 30, 31, 32, 36, 40, 46, 47	4	100	5.00	0.44	95	7.16	4.89	49	3.67	603	100	2.50
162	1, 26, 28, 32, 36, 40, 46, 47	4	100	5.00	0.44	95	7.16	7.68	90	6.76	603	100	2.50
163	2, 7, 27, 29, 30, 31, 32, 33, 47	4	100	5.00	0.28	50	3.75	3.82	33	2.48	599	99	2.48
164	2, 7, 27, 28, 32, 33, 47	4	100	5.00	0.28	50	3.75	6.66	75	5.62	599	99	2.48
165	3, 4, 7, 27, 29, 30, 31, 32, 33, 47	4	100	5.00	0.28	50	3.75	3.89	34	2.56	599	99	2.48
166	3, 4, 7, 27, 28, 32, 33, 47	4	100	5.00	0.28	50	3.75	6.73	76	5.70	599	99	2.48
167	3, 5, 6, 27, 29, 30, 31, 32, 33, 47	4	100	5.00	0.28	50	3.75	3.72	32	2.36	599	99	2.48
168	3, 5, 6, 27, 28, 32, 33, 47	4	100	5.00	0.28	50	3.75	6.55	73	5.51	599	99	2.48
169	3, 5, 26, 29, 30, 31, 32, 33, 47	4	100	5.00	0.28	50	3.75	4.60	45	3.35	599	99	2.48
170	3, 5, 26, 28, 32, 33, 47	4	100	5.00	0.28	50	3.75	7.39	86	6.44	599	99	2.48
171	1, 6, 27, 29, 30, 31, 32, 33, 47	4	100	5.00	0.45	100	7.50	4.01	36	2.69	599	99	2.48
172	1, 6, 27, 28, 32, 33, 47	4	100	5.00	0.45	100	7.50	6.85	78	5.84	599	99	2.48
173	1, 26, 29, 30, 31, 32, 33, 47	4	100	5.00	0.45	100	7.50	4.90	49	3.68	599	99	2.48
174	1, 26, 28, 32, 33, 47	4	100	5.00	0.45	100	7.50	7.69	90	6.77	599	99	2.48
Min		2	–	–	0.11	–	–	1.59	–	–	88	–	–
Max		4	–	–	0.45	–	–	8.35	–	–	603	–	–
Range		2	–	–	0.35	–	–	6.76	–	–	515	–	–
Calculation details:		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 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 type as A.		

		LAND USE CRITERIA GROUP																											
		Residences						Properties Crossed			Institutional Land Use						Sensitive Areas						Agriculture & Industrial Uses			Easement Required			Paralleling Existing Transmission		
		Residential buildings within 300 feet of ROW (count)			Residential buildings within 300-500 feet of ROW (count)			Properties with unique ownership crossed by ROW (count)			Institutional uses within ROW (count)			Institutional uses within 1,000 feet of centerline (count)			Sensitive areas within ROW (acres)			Sensitive areas within 1,000 feet of ROW (acres)			Agricultural land and industrial uses in ROW (acres)			New easement required (acres)			Length not paralleling existing transmission ROW (percent of total length)		
	Criteria Group Weight:	45%			45%			45%			45%			45%			45%			45%			45%			45%			45%		
	Criteria Weight:	40%			40%			5%			15%			15%			20%			20%			5%			5%			10%		
	Sub-Criteria Weight:	70%			30%			100%			70%			30%			70%			30%			100%			100%			100%		
	Weighted Multiplier:	0.1260			0.0540			0.0225			0.0473			0.0203			0.0630			0.0270			0.0225			0.0225			0.0630		
Scale	Segments	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	Value	Normalized	Weighted Value	Value	Normalized	Weighted Value	Value	Normalized	Weighted Value
1	2, 8, 11, 12, 13, 22, 24, 25	1.00	0	0.00	36.00	19	1.04	38.00	82	1.84	0.00	0	0.00	5.00	80	1.62	0.39	0	0.00	47.81	4	0.09	0.81	77	1.73	26.31	43	0.97	100.00	0	0.00
2	2, 8, 11, 12, 16, 19, 21, 22, 24, 25	1.00	0	0.00	33.00	16	0.87	26.00	64	1.43	0.00	0	0.00	5.00	80	1.62	0.39	0	0.00	47.81	3	0.09	0.81	77	1.72	25.94	40	0.90	100.00	0	0.00
3	2, 8, 11, 12, 16, 19, 20, 24, 25	1.00	0	0.00	30.00	13	0.71	25.00	55	1.23	0.00	0	0.00	5.00	80	1.62	0.39	0	0.00	47.81	3	0.09	0.03	3	0.06	24.92	32	0.72	100.00	0	0.00
4	2, 8, 11, 18, 19, 21, 22, 24, 25	4.00	10	1.30	34.00	17	0.93	22.00	27	0.61	1.00	100	4.73	5.00	80	1.62	0.39	0	0.00	47.81	3	0.09	0.81	77	1.72	25.89	40	0.89	100.00	0	0.00
5	2, 8, 11, 18, 19, 20, 24, 25	4.00	10	1.30	31.00	14	0.76	21.00	18	0.41	1.00	100	4.73	5.00	80	1.62	0.39	0	0.00	47.81	3	0.09	0.03	3	0.06	24.87	31	0.71	100.00	0	0.00
6	2, 7, 9, 10, 11, 12, 13, 22, 24, 25	1.00	0	0.00	23.00	6	0.33	27.00	73	1.64	0.00	0	0.00	6.00	100	2.03	0.39	0	0.00	47.81	4	0.09	0.81	77	1.73	25.31	35	0.79	100.00	0	0.00
7	2, 7, 9, 10, 11, 12, 16, 19, 21, 22, 24, 25	1.00	0	0.00	20.00	3	0.16	25.00	55	1.23	0.00	0	0.00	6.00	100	2.03	0.39	0	0.00	47.81	3	0.09	0.81	77	1.72	24.94	32	0.72	100.00	0	0.00
8	2, 7, 9, 10, 11, 12, 16, 19, 20, 24, 25	1.00	0	0.00	17.00	0	0.00	24.00	45	1.02	0.00	0	0.00	6.00	100	2.03	0.39	0	0.00	47.81	3	0.09	0.03	3	0.06	23.91	24	0.54	100.00	0	0.00
9	2, 7, 9, 10, 11, 13, 18, 19, 21, 22, 24, 25	4.00	10	1.30	20.00	3	0.16	21.00	18	0.41	1.00	100	4.73	6.00	100	2.03	0.39	0	0.00	47.81	3	0.09	0.81	77	1.72	24.89	32	0.71	100.00	0	0.00
10	2, 7, 9, 10, 11, 13, 18, 19, 20, 24, 25	4.00	10	1.30	17.00	0	0.00	20.00	9	0.20	1.00	100	4.73	6.00	100	2.03	0.39	0	0.00	47.81	3	0.09	0.03	3	0.06	23.87	24	0.53	100.00	0	0.00
11	2, 7, 9, 14, 17, 18, 19, 21, 22, 24, 25	4.00	10	1.30	20.00	3	0.16	24.00	45	1.02	1.00	100	4.73	6.00	100	2.03	0.39	0	0.00	47.87	4	0.10	0.81	77	1.72	25.14	34	0.76	100.00	0	0.00
12	2, 7, 9, 14, 17, 18, 19, 20, 24, 25	4.00	10	1.30	17.00	0	0.00	23.00	36	0.82	1.00	100	4.73	6.00	100	2.03	0.39	0	0.00	47.87	4	0.10	0.03	3	0.06	24.12	26	0.57	100.00	0	0.00
13	3, 4, 8, 11, 12, 13, 22, 24, 25	1.00	0	0.00	36.00	19	1.04	29.00	91	2.05	0.00	0	0.00	5.00	80	1.62	0.39	0	0.00	47.81	4	0.09	0.81	77	1.73	24.76	31	0.69	100.00	0	0.00
14	3, 4, 8, 11, 12, 16, 19, 21, 22, 24, 25	1.00	0	0.00	33.00	16	0.87	27.00	73	1.64	0.00	0	0.00	5.00	80	1.62	0.39	0	0.00	47.81	3	0.09	0.81	77	1.72	24.36	28	0.62	100.00	0	0.00
15	3, 4, 8, 11, 12, 16, 19, 20, 24, 25	1.00	0	0.00	30.00	13	0.71	26.00	64	1.43	0.00	0	0.00	5.00	80	1.62	0.39	0	0.00	47.81	3	0.09	0.03	3	0.06	23.34	19	0.44	100.00	0	0.00
16	3, 4, 8, 11, 18, 19, 21, 22, 24, 25	4.00	10	1.30	34.00	17	0.93	23.00	36	0.82	1.00	100	4.73	5.00	80	1.62	0.39	0	0.00	47.81	3	0.09	0.81	77	1.72	24.34	27	0.61	100.00	0	0.00
17	3, 4, 8, 11, 18, 19, 20, 24, 25	4.00	10	1.30	31.00	14	0.76	22.00	27	0.61	1.00	100	4.73	5.00	80	1.62	0.39	0	0.00	47.81	3	0.09	0.03	3	0.06	23.32	19	0.43	100.00	0	0.00
18	3, 4, 7, 9, 10, 11, 12, 13, 22, 24, 25	1.00	0	0.00	23.00	6	0.33	27.00	73	1.64	0.00	0	0.00	6.00	100	2.03	0.39	0	0.00	47.81	4	0.09	0.81	77	1.73	25.73	22	0.51	100.00	0	0.00
19	3, 4, 7, 9, 10, 11, 12, 16, 19, 21, 22, 24, 25	1.00	0	0.00	20.00	3	0.16	25.00	55	1.23	0.00	0	0.00	6.00	100	2.03	0.39	0	0.00	47.81	3	0.09	0.81	77	1.72	23.36	19	0.44	100.00	0	0.00
20	3, 4, 7, 9, 10, 11, 12, 16, 19, 20, 24, 25	1.00	0	0.00	17.00	0	0.00	24.00	45	1.02	0.00	0	0.00	6.00	100	2.03	0.39	0	0.00	47.81	3	0.09	0.03	3	0.06	22.34	11	0.26	100.00	0	0.00
21	3, 4, 7, 9, 10, 11, 13, 18, 19, 21, 22, 24, 25	4.00	10	1.30	20.00	3	0.16	21.00	18	0.41	1.00	100	4.73	6.00	100	2.03	0.39	0	0.00	47.81	3	0.09	0.81	77	1.72	23.31	19	0.43	100.00	0	0.00
22	3, 4, 7, 9, 10, 11, 13, 18, 19, 20, 24, 25	4.00	10	1.30	17.00	0	0.00	20.00	9	0.20	1.00	100	4.73	6.00	100	2.03	0.39	0	0.00	47.81	3	0.09	0.03	3	0.06	22.29	11	0.25	100.00	0	0.00
23	3, 4, 7, 9, 14, 17, 18, 19, 21, 22, 24, 25	4.00	10	1.30	20.00	3	0.16	24.00	45	1.02	1.00	100	4.73	6.00	100	2.03	0.39	0	0.00	47.87	4	0.10	0.81	77	1.72	23.56	21	0.47	100.00	0	0.00
24	3, 4, 7, 9, 14, 17, 18, 19, 20, 24, 25	4.00	10	1.30	17.00	0	0.00	23.00	36	0.82	1.00	100	4.73	6.00	100	2.03	0.39	0	0.00	47.87	4	0.10	0.03	3	0.06	22.54	13	0.29	100.00	0	0.00
25	3, 4, 7, 8, 11, 12, 13, 22, 24, 25	1.00	0	0.00	36.00	19	1.04	30.00	100	2.28	0.00	0	0.00	5.00	80	1.62	0.39	0	0.00	48.33	4	0.11	0.81	77	1.73	25.84	39	0.88	100.00	0	0.00
26	3, 4, 7, 8, 11, 12, 16, 19, 21, 22, 24, 25	1.00	0	0.00	33.00	16	0.87	28.00	82	1.84	0.00	0	0.00	5.00	80	1.62	0.39	0	0.00	48.32	4	0.11	0.81	77	1.72	25.46	36	0.81	100.00	0	0.00
27	3, 4, 7, 8, 11, 12, 16, 19, 20, 24, 25	1.00	0	0.00	30.00	13	0.71	27.00	73	1.64	0.00	0	0.00	5.00	80	1.62	0.39	0	0.00	48.32	4	0.11	0.03	3	0.06	24.44	28	0.63	100.00	0	0.00
28	3, 4, 7, 8, 11, 13, 18, 19, 21, 22, 24, 25	4.00	10	1.30	34.00	17	0.93	24.00	45	1.02	1.00	100	4.73	5.00	80	1.62	0.39	0	0.00	48.32	4	0.11	0.81	77	1.73	25.42	36	0.81	100.00	0	0.00
29	3, 4, 7, 8, 11, 13, 18, 19, 20, 24, 25	4.00	10	1.30	31.00	14	0.76	23.00	36	0.82	1.00	100	4.73	5.00	80	1.62	0.39	0	0.00	48.32	4	0.11	0.03	3	0.06	24.40	28	0.62	100.00	0	0.00
30	2, 3, 6, 9, 10, 11, 12, 13, 22, 24, 25	1.00	0	0.00	23.00	6	0.33	27.00	73	1.64	0.00	0	0.00	6.00	100	2.03	0.39	0	0.00	48.33	4	0.11	0.81	77	1.73	25.69	22	0.50	100.00	0	0.00
31	2, 3, 6, 9, 10, 11, 12, 16, 19, 21, 22, 24, 25	1.00	0	0.00	20.00	3	0.16	25.00	55	1.23	0.00	0	0.00	6.00	100	2.03	0.39	0	0.00	48.32	4	0.11	0.81	77	1.72	23.31	19	0.43	100.00	0	0.00
32	2, 3, 6, 9, 10, 11, 12, 16, 19, 20, 24, 25	1.00	0	0.00	17.00	0	0.00	24.00	45	1.02	0.00	0	0.00	6.00	100	2.03	0.39	0	0.00	48.32	4	0.11	0.03	3	0.06	22.29	11	0.25	100.00	0	0.00
33	2, 3, 6, 9, 10, 11, 16, 19, 21, 22, 24, 25	4.00	10	1.30	20.00	3	0.16	21.00	18	0.41	1.00	100	4.73	6.00	100	2.03	0.39	0	0.00	48.32	4	0.11	0.81	77	1.72	23.27	19	0.42	100.00	0	0.00
34	2, 3, 6, 9, 10, 11, 16, 19, 20, 24, 25	4.00	10	1.30	17.00	0	0.00	20.00	9	0.20	1.00	100	4.73	6.00	100	2.03	0.39	0	0.00	48.32	4	0.11	0.03	3	0.06	22.25	11	0.24	100.00	0	0.00
35	2, 3, 6, 9, 14, 17, 18, 19, 21, 22, 24, 25	4.00	10	1.30	20.00	3	0.16	24.00	45	1.02	1.00	100	4.73	6.00	100	2.03	0.39	0	0.00	48.38	4	0.11	0.81	77	1.72	23.52	21	0.47	100.00	0	0.00
36	2, 3, 6, 9, 14, 17, 18, 19, 20, 24, 25	4.00	10	1.30	17.00	0	0.00	23.00	36	0.82	1.00	100	4.73	6.00	100	2.03	0.39	0	0.00	48.38	4	0.11	0.03	3	0.06	22.50	13	0.28	100.00	0	0.00
37	1, 4, 7, 8, 11, 12, 13, 22, 24, 25	1.00	0	0.00	36.00	19	1.04	30.00	100	2.28	0.00	0	0.00	5.00	80	1.62	0.39	0	0.00	48.38	4	0.11	0.81	77	1.73	38.31	59	1.32	100.00	0	0.00
38	1, 4, 7, 8, 11, 12, 16, 19, 21, 22, 24, 25	1.00	0	0.00	33.00	16	0.87	28.00	82	1.84	0.00	0	0.00	5.00	80	1.62	0.39	0	0.00	48.38	4	0.11	0.81	77	1.73	27.93	56	1.26	100.00	0	0.00
39	1, 4, 7, 8, 11, 12, 16, 19, 20, 24, 25	1.00	0	0.00	30.00	13	0.71	27.00	73	1.64	0.00	0	0.00	5.00	80	1.62	0.39	0	0.00	48.38	4	0.11	0.03	3	0.06	26.91	48	1.07	100.00	0	0.00
40	1, 4, 7, 8, 11, 18, 19, 21, 22, 24, 25	4.00	10	1.30	34.00	17	0.93	24.00	45	1.02	1.00	100	4.73	5.00	80	1.62	0.39	0	0.00	48.38	4	0.11	0.81	77	1.72	27.89	55	1.25	100.00	0	0.00
41	1, 4, 7, 8, 11, 18, 19, 20, 24, 25	4.00	10	1.30	31.00	14	0.76	23.00	36	0.82	1.00	100	4.73	5.00	80	1.62	0.39	0	0.00	48.38	4	0.11	0.03	3	0.06	26.86	47	1.07	100.00	0	0.00
42	1, 4, 9, 10, 11, 12, 13, 22, 24, 25	1.00	0	0.00	23.00	6	0.33	27.00	73	1.64	0.00	0	0.00	6.00	100	2.03	0.39	0	0.00	48.38	4	0.11	0.81	77	1.73	26.16	42	0.94	100.00	0	0.00
43	1, 4, 9, 10, 11, 12, 16, 19, 21, 22, 24, 25	1.00	0	0.00	20.00	3	0.16	25.00	55	1.23	0.00	0	0.00	6.00	100	2.03	0.39	0	0.00	48.38	4	0.11	0.81	77	1.72	25.78	39	0.87	100.00	0	0.00
44	1, 4, 9, 10, 11, 12, 16, 19, 20, 24, 25	1.00	0	0.00	17.00	0	0.00	24.00	45	1.02	0.00	0	0.00	6.00	100	2.03	0.39	0	0.00	48.38	4	0.11	0.03	3	0.06	24.76	31	0.69	100.00	0	0.00
45	1, 4, 9, 10, 11, 18, 19, 21, 22, 24, 25	4.00	10	1.30	20.00	3	0.16	21.00	18	0.41	1.00	100	4.73	6.00	100	2.03	0.39	0	0.00	48.38	4	0.11	0.81	77	1.72	25.73	38	0.86	100.00	0	0.00
46	1, 4, 9, 10, 11, 18, 19, 20, 24, 25	4.00	10	1.30	17.00	0	0.00	20.00	9	0.20	1.00	100	4.73	6.00	100	2.03	0.39	0	0.00	48.38	4	0.11	0.03	3	0.06	24.71	30	0.68	100.00	0	0.00
47	1, 4, 9, 14, 17, 18, 19, 21, 22, 24, 25	4.00	10	1.30	20.00	3	0.16	24.00	45	1.02	1.00	100	4.73	6.00	100	2.03	0.39	0	0.00	48.44	4	0.11	0.81	77	1.72	25.99	40	0.91	100.00	0	0.00
48	1, 4, 9, 14, 17, 18, 19, 20, 24, 25	4.00	10	1.30	17.00	0	0.00	23.00	36	0.82	1.00	100	4.73	6.00	100	2.03	0.39	0	0.00	48.44	4	0.11	0.03	3	0.06	24.96	32	0.73	100.00	0	0.00
49	2, 8, 11, 12, 13, 22, 24, 25	1.00	0	0.00	36.00	21	1.15	28.00	82	1.84	0.00	0	0.00	4.00	60	1.22	0.39	0	0.00	43.47	0	0.00	1.06	100	2.25	24.98	32	0.73	100.00	0	0.00
50	2, 8, 11, 12, 16, 19, 21, 22, 23, 25	1.00	0	0.00	35.00	18	0.98	26.00	64	1.43	0.00	0	0.00	4.00	60	1.22	0.39	0	0.00	43.46	0	0.00	1.05	100	2.24	24.60	29	0.66	100.00	0	0.00
51	2, 8, 11, 12, 16, 19, 20, 23, 25	1.00	0	0.00	32.00	15	0.82	25.00	55	1.23	0.00	0	0.00	3.00	40	0.81	0.39	0	0.00	43.46	0	0.00	0.27	26	0.58	23.58	21	0.48	100.00	0	0.00
52	2, 8, 11, 18, 19, 21, 22, 23, 25	4.00	10	1.30	36.00	19	1.04	22.00	27	0.61	1.00	100	4.73	4.00	60	1.22	0.39	0	0.00	43.46	0	0.00	1.05	100	2.24	24.56	29	0.65	100.00	0	0.00
53	2, 8, 11, 18, 19, 20, 23, 25	4.00	10	1.30	33.00	16	0.87	21.00	18	0.41	1.00	100	4.73	3.00	40	0.81	0.39	0	0.00	43.46	0	0.00	0.27	26	0.58	23.53	21	0.47	100.00	0	0.00
54	2, 7, 9, 10, 11, 12, 13, 22, 23, 25	1.00	0	0.00	25.00	8	0.44	27.00	73	1.64	0.00	0	0.00	5.00	80	1.62	0.39	0	0.00	43.47	0	0.00	1.06	100	2.25	23.98	24	0.55	100.00	0	0.00
55	2, 7, 9, 10, 11, 12, 16, 19, 21, 22, 23, 25	1.00	0	0.00	22.00	5	0.27	25.00	55	1.23	0.00	0	0.00	5.00	80	1.62	0.39	0	0.00	43.46	0	0.00	1.06	100	2.24	23.60	21	0.48	100.00	0	0.00
56	2, 7, 9, 10, 11, 12, 16, 19, 20, 23, 25	1.00	0	0.00	19.00	2	0.11	24.00	45	1.02	0.00	0	0.00	4.00	60	1.22	0.39	0	0.00	43.46	0	0.00	0.27	26	0.58	22.58	13	0.30	100.00	0	0.00
57	2, 7, 9, 10, 11, 18, 19, 21, 22, 23, 25	4.00	10	1.30	22.00	5	0.27	21.00	18	0.41	1.00	100	4.73	5.00	80	1.62	0.39	0	0.00	43.46	0	0.00	1.05	100	2.24	23.56	21	0.47	100.00	0	0.00
58	2, 7, 9, 10, 11, 18, 19, 20, 23, 25	4.00	10	1.30	19.00	2	0.11	20.00	9	0.20	1.00	100	4.73	4.00	60	1.22	0.39	0	0.00	43.46	0	0.00	0.27	26	0.58	23.53	13	0.29	100.00	0	0.00
59	2, 7, 9, 14, 17, 18, 19, 21, 22, 23, 25	4.00	10	1.30	20.00	3	0.27	24.00	45	1.02	1.00	100	4.73	5.00	80	1.62	0.39	0	0.00	43.52	0	0.00	1.06	100	2.24	23.81	23	0.52	100.00	0	0.00
60	2, 7, 9, 14, 17, 18, 19, 20, 23, 25	4.00	10	1.30	19.00	2	0.11	23.00	36	0.82	1.00	100	4.73	4.00	60	1.22	0.39	0	0.00	43.52	0	0.00	0.27	26	0.58	22.78	15	0.34	100.00	0	0.00
61	3, 4, 8, 11, 12, 13, 22, 23, 25	1.00	0	0.00	36.00	21	1.15	29.00	91	2.05	0.00	0	0.00	4.00	60	1.22	0.39	0	0.00	43.47	0	0.00	1.06	100	2.25	23.43	20	0.45	100.00	0	0.00
62	3, 4, 8, 11, 12, 16, 19, 21, 22, 23, 25	1.00	0	0.00	33.00	18	0.98	27.00	73	1.64	0.00	0	0.00	4.00	60	1.22	0.39	0	0.00	43.46	0	0.00	1.06	100	2.24	23.05	17	0.38	100.00	0	0.00
63	3, 4, 8, 11, 12, 16, 19, 20, 23, 25	1.00	0	0.00	32.00	15	0.82	26.00	64	1.43	0.00	0	0.00	3.00	40	0.81	0.39	0	0.00	43.46	0	0.00	0.27	26	0.58	22.03	9	0.20	100.00	0	0.00
64	3, 4, 8, 11, 18, 19, 21, 22, 23, 25	4.00	10	1.30	36.00	19	1.04	23.00	36	0.82	1.00	100	4.73	4.00	60	1.22	0.39	0	0.00	43.46	0	0.00	1.06	100	2.24	23.00	17	0.37	100.00	0	0.00
65	3, 4, 8, 11, 18, 19, 20, 23, 25	4.00	10	1.30	33.00	16	0.87	22.00	27	0.61	1.00	100	4.73	3.00	40	0.81	0.39	0	0.00	43.46	0	0.00	0.27	26	0.58	21.95	9	0.19	100.00	0	0.00
66	3, 4, 7, 9, 10, 11, 12, 13, 22, 23, 25	1.00	0	0.00	25.00	8	0.44	27.00	73	1.64	0.00	0	0.00	5.00	80	1.62	0.39	0	0.00	43.47	0	0.00	1.06	100	2.25	22.40	12	0.27	100.00	0	0.00
67	3, 4, 7, 9, 10, 11, 12, 16, 19, 21, 22, 23, 25	1.00	0	0.00	22.00	5	0.27	25.00	55	1.23	0.00	0	0.00	5.00	80	1.62	0.39	0	0.00	43.46	0	0.00	1.06	100	2.24	22.02	9	0.20	100.00	0	0.00
68	3, 4, 7, 9, 10, 11, 12, 16, 19, 20, 23, 25	1.00	0	0.00	19.00	2	0.11	24.00	45	1.02	0.00	0	0.00	4.00	60	1.22	0.39	0	0.00	43.46	0	0.00	0.27	26	0.58	21.00	1	0.02	100.00	0	0.00
69	3, 4, 7, 9, 10, 11, 18, 19, 21, 22, 23, 25	4.00	10	1.30	22.00	5	0.27	21.00	18	0.41	1.00	100	4.73	5.00	80	1.62	0.39	0	0.00	43.46	0	0.00	1.05	100	2.24	21.98	8	0.19	100.00	0	0.00
70	3, 4, 7, 9, 10, 11, 18, 19, 20, 23, 25	4.00	10	1.30	19.00	2	0.11	20.00	9	0.20	1.00	100	4.73	4.00	60	1.22	0.39	0	0.00	43.46	0	0.00	0.27	26	0.58	20.95	0	0.01	100.00	0	0.00
71	3, 4, 7, 9, 14, 17, 18, 19, 21, 22, 23, 25	4.00	10	1.30	22.00	5	0.27	24.00	45	1.02	1.00	100	4.73	5.00	80	1.62	0.39	0	0.00	43.52	0	0.00	1.05	100	2.24	22.23	10	0.24	100.00	0	0.00
72	3, 4, 7, 9, 14, 17, 18, 19, 20, 23, 25	4.00	10	1.30	19.00	2	0.11	23.00	36	0.82	1.00	100	4.73	4.00	60	1.22	0.39	0	0.00	43.52	0	0.00	0.27	26	0.58	21.21	2	0.05	100.00	0	0.00
73	2, 3, 6, 7, 8, 11, 12, 13, 22, 23, 25	1.00	0	0.00	36.00	21	1.15	30.00	100	2.28	0.00	0	0.00	4.00	60	1.22	0.39	0	0.00	43.98	0	0.01	1.06	100	2.25	24.51	29	0.64	100.00	0	0.00
74	2, 3, 6, 7, 8, 11, 12, 16, 19, 21, 22, 23, 25	1.00	0	0.00	35.00	18	0.98	28.00	82	1.84	0.00	0	0.00	4.00	60	1.22	0.39	0	0.00	43.97	0	0.01	1.05	100	2.24	24.13	26	0.58	100.00	0	0.00
75	2, 3, 6, 7, 8, 11, 12, 16, 19, 20, 23, 25	1.00	0	0.00	32.00	15	0.82	27.00	73	1.64	0.00	0	0.00	3.00	40	0.81	0.39	0	0.00	43.97	0	0.01	0.27	26	0.58	23.11	17	0.39	100.00	0	0.00

		LAND USE CRITERIA GROUP																											
		Residences						Properties Crossed			Institutional Land Use						Sensitive Areas						Agricultural & Industrial Uses			Easement Required			Paralleling Existing Transmission		
		Residential buildings within 200 feet of ROW (count)			Residential buildings within 200-500 feet of ROW (count)			Properties with unique ownership crossed by ROW (count)			Institutional uses within ROW (count)			Institutional uses within 1,000 feet of centerline (count)			Sensitive areas within ROW (acres)			Sensitive areas within 1,000 feet of ROW (acres)			Agricultural land and industrial uses in ROW (acres)			New easement required (acres)			Length not paralleling existing transmission ROW (percent of total length)		
Criteria Group Weight:		45%			45%			45%			45%			45%			45%			45%			45%			45%			45%		
Criteria Weight:		40%			40%			5%			15%			15%			20%			20%			5%			5%			10%		
Sub-Criteria Weight:		70%			30%			100%			70%			30%			70%			30%			100%			100%			100%		
Weighted Multiplier:		0.1260			0.0540			0.0225			0.0473			0.0203			0.0438			0.0378			0.0225			0.0225			0.0450		
Route	Segments	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	Value	Normalized	Weighted Value	Value	Normalized	Weighted Value	Value	Normalized	Weighted Value
76	3, 5, 6, 7, 8, 11, 18, 19, 21, 22, 23, 25	4.00	10	1.30	36.00	19	1.04	24.00	45	1.02	1.00	100	4.73	4.00	60	1.22	0.39	0	0.00	43.97	0	0.01	1.05	100	2.24	24.09	35	0.57	100.00	0	0.00
77	3, 5, 6, 7, 8, 11, 18, 19, 20, 23, 25	4.00	10	1.30	33.00	16	0.87	23.00	36	0.82	1.00	100	4.73	3.00	40	0.81	0.39	0	0.00	43.97	0	0.01	0.27	26	0.58	23.06	17	0.38	100.00	0	0.00
78	3, 5, 6, 9, 10, 11, 12, 13, 22, 23, 25	1.00	0	0.00	25.00	8	0.44	27.00	73	1.64	0.00	0	0.00	5.00	80	1.62	0.39	0	0.00	43.96	0	0.01	1.06	100	2.25	22.36	12	0.26	100.00	0	0.00
79	3, 5, 6, 9, 10, 11, 12, 16, 19, 21, 22, 23, 25	1.00	0	0.00	22.00	5	0.27	25.00	55	1.23	0.00	0	0.00	5.00	80	1.62	0.39	0	0.00	43.97	0	0.01	1.05	100	2.24	21.98	9	0.19	100.00	0	0.00
80	3, 5, 6, 9, 10, 11, 12, 16, 19, 20, 23, 25	1.00	0	0.00	19.00	2	0.11	24.00	45	1.02	0.00	0	0.00	4.00	60	1.22	0.39	0	0.00	43.97	0	0.01	0.27	26	0.58	20.96	0	0.01	100.00	0	0.00
81	3, 5, 6, 9, 10, 11, 18, 19, 21, 22, 23, 25	4.00	10	1.30	22.00	5	0.27	21.00	18	0.41	1.00	100	4.73	5.00	80	1.62	0.39	0	0.00	43.97	0	0.01	1.05	100	2.24	21.93	8	0.18	100.00	0	0.00
82	3, 5, 6, 9, 10, 11, 18, 19, 20, 23, 25	4.00	10	1.30	19.00	2	0.11	20.00	9	0.20	1.00	100	4.73	4.00	60	1.22	0.39	0	0.00	43.97	0	0.01	0.27	26	0.58	20.91	0	0.00	100.00	0	0.00
83	3, 5, 6, 9, 14, 17, 18, 19, 21, 22, 23, 25	4.00	10	1.30	22.00	5	0.27	24.00	45	1.02	1.00	100	4.73	5.00	80	1.62	0.39	0	0.00	44.03	0	0.01	1.05	100	2.24	22.19	10	0.23	100.00	0	0.00
84	3, 5, 6, 9, 14, 17, 18, 19, 20, 23, 25	4.00	10	1.30	19.00	2	0.11	23.00	36	0.82	1.00	100	4.73	4.00	60	1.22	0.39	0	0.00	44.03	0	0.01	0.27	26	0.58	21.16	2	0.04	100.00	0	0.00
85	1, 4, 7, 8, 11, 12, 13, 22, 23, 25	1.00	0	0.00	38.00	21	1.15	30.00	100	2.25	0.00	0	0.00	4.00	60	1.22	0.39	0	0.00	44.04	0	0.01	1.06	100	2.25	26.98	48	1.09	100.00	0	0.00
86	1, 4, 7, 8, 11, 12, 16, 19, 21, 22, 23, 25	1.00	0	0.00	35.00	18	0.98	28.00	82	1.84	0.00	0	0.00	4.00	60	1.22	0.39	0	0.00	44.03	0	0.01	1.05	100	2.24	26.60	45	1.02	100.00	0	0.00
87	1, 4, 7, 8, 11, 12, 16, 19, 20, 23, 25	1.00	0	0.00	32.00	15	0.82	27.00	73	1.64	0.00	0	0.00	3.00	40	0.81	0.39	0	0.00	44.03	0	0.01	0.27	26	0.58	25.57	37	0.83	100.00	0	0.00
88	1, 4, 7, 8, 11, 18, 19, 21, 22, 23, 25	4.00	10	1.30	36.00	19	1.04	24.00	45	1.02	1.00	100	4.73	4.00	60	1.22	0.39	0	0.00	44.03	0	0.01	1.05	100	2.24	24.55	45	1.01	100.00	0	0.00
89	1, 4, 7, 8, 11, 18, 19, 20, 23, 25	4.00	10	1.30	33.00	16	0.87	23.00	36	0.82	1.00	100	4.73	3.00	40	0.81	0.39	0	0.00	44.03	0	0.01	0.27	26	0.58	25.53	37	0.83	100.00	0	0.00
90	1, 4, 9, 10, 11, 12, 13, 22, 23, 25	1.00	0	0.00	25.00	8	0.44	27.00	73	1.64	0.00	0	0.00	5.00	80	1.62	0.39	0	0.00	44.04	0	0.01	1.06	100	2.25	24.82	31	0.70	100.00	0	0.00
91	1, 4, 9, 10, 11, 12, 16, 19, 21, 22, 23, 25	1.00	0	0.00	22.00	5	0.27	25.00	55	1.23	0.00	0	0.00	5.00	80	1.62	0.39	0	0.00	44.03	0	0.01	1.05	100	2.24	24.45	28	0.63	100.00	0	0.00
92	1, 4, 9, 10, 11, 12, 16, 19, 20, 23, 25	1.00	0	0.00	19.00	2	0.11	24.00	45	1.02	0.00	0	0.00	4.00	60	1.22	0.39	0	0.00	44.03	0	0.01	0.27	26	0.58	23.42	20	0.45	100.00	0	0.00
93	1, 4, 9, 10, 13, 18, 19, 21, 22, 23, 25	4.00	10	1.30	22.00	5	0.27	21.00	18	0.41	1.00	100	4.73	5.00	80	1.62	0.39	0	0.00	44.03	0	0.01	1.05	100	2.24	24.40	28	0.63	100.00	0	0.00
94	1, 4, 9, 10, 11, 18, 19, 20, 23, 25	4.00	10	1.30	19.00	2	0.11	20.00	9	0.20	1.00	100	4.73	4.00	60	1.22	0.39	0	0.00	44.03	0	0.01	0.27	26	0.58	23.38	20	0.44	100.00	0	0.00
95	1, 4, 9, 14, 17, 18, 19, 21, 22, 23, 25	4.00	10	1.30	22.00	5	0.27	24.00	45	1.02	1.00	100	4.73	5.00	80	1.62	0.39	0	0.00	44.09	1	0.01	1.08	100	2.24	24.65	30	0.67	100.00	0	0.00
96	1, 4, 9, 14, 17, 18, 19, 20, 23, 25	4.00 [1]	10	1.30	19.00	2	0.11	23.00	36	0.82	1.00	100	4.73	4.00	60	1.22	0.39	0	0.00	44.09	1	0.01	0.27	26	0.58	23.63	22	0.49	100.00	0	0.00
97	2, 8, 15, 41, 44, 45, 46, 47	30.00	100	12.60	116.00	100	5.40	24.00	45	1.02	0.00	0	0.00	1.00	0	0.00	0.90	11	0.67	108.98	53	1.42	0.00	0	0.00	31.49	84	1.89	100.00	0	0.00
98	2, 7, 9, 10, 11, 41, 44, 45, 46, 47	30.00	100	12.60	102.00	86	4.64	23.00	36	0.82	0.00	0	0.00	1.00	0	0.00	0.90	11	0.67	108.98	53	1.42	0.00	0	0.00	30.48	76	1.71	100.00	0	0.00
99	2, 7, 9, 14, 17, 41, 44, 45, 46, 47	30.00	100	12.60	102.00	86	4.64	25.00	55	1.23	0.00	0	0.00	1.00	0	0.00	0.90	11	0.67	109.04	53	1.42	0.00	0	0.00	30.69	75	1.75	100.00	0	0.00
100	2, 7, 9, 14, 37, 42, 44, 45, 46, 47	30.00	100	12.60	87.00	71	3.82	23.00	36	0.82	0.00	0	0.00	1.00	0	0.00	0.90	11	0.67	121.74	63	1.70	0.00	0	0.00	30.27	74	1.67	100.00	0	0.00
101	2, 7, 9, 14, 37, 38, 43, 45, 46, 47	30.00	100	12.60	87.00	71	3.82	19.00	0	0.00	0.00	0	0.00	2.00	20	0.41	0.90	11	0.67	132.93	72	1.94	0.00	0	0.00	29.93	72	1.61	100.00	0	0.00
102	2, 7, 9, 14, 37, 38, 39, 40, 46, 47	30.00	100	12.60	87.00	71	3.82	22.00	27	0.61	0.00	0	0.00	2.00	20	0.41	0.90	11	0.67	147.64	84	2.26	0.00	0	0.00	29.87	71	1.60	100.00	0	0.00
103	2, 7, 27, 29, 34, 42, 44, 45, 46, 47	30.00	100	12.60	87.00	71	3.82	24.00	45	1.02	0.00	0	0.00	1.00	0	0.00	0.93	11	0.70	128.23	68	1.84	0.00	0	0.00	30.22	74	1.67	100.00	0	0.00
104	2, 7, 27, 29, 34, 38, 43, 45, 46, 47	30.00	100	12.60	87.00	71	3.82	20.00	9	0.20	0.00	0	0.00	2.00	20	0.41	0.93	11	0.70	137.28	75	2.04	0.00	0	0.00	29.88	71	1.61	100.00	0	0.00
105	2, 7, 27, 29, 34, 38, 39, 40, 46, 47	30.00	100	12.60	87.00	71	3.82	24.00	45	1.02	0.00	0	0.00	2.00	20	0.41	0.93	11	0.70	151.99	87	2.36	0.00	0	0.00	29.83	71	1.60	100.00	0	0.00
106	2, 7, 27, 29, 30, 33, 43, 45, 46, 47	30.00	100	12.60	87.00	71	3.82	20.00	9	0.20	0.00	0	0.00	2.00	20	0.41	0.93	11	0.70	142.45	80	2.15	0.00	0	0.00	29.92	72	1.61	100.00	0	0.00
107	2, 7, 27, 29, 30, 33, 39, 40, 46, 47	30.00	100	12.60	87.00	71	3.82	24.00	45	1.02	0.00	0	0.00	2.00	20	0.41	0.93	11	0.70	154.45	89	2.41	0.00	0	0.00	29.84	71	1.60	100.00	0	0.00
108	2, 7, 27, 29, 30, 31, 32, 34, 40, 46, 47	30.00	100	12.60	87.00	71	3.82	25.00	55	1.23	0.00	0	0.00	2.00	20	0.41	2.40	42	2.66	156.61	91	2.46	0.00	0	0.00	29.94	72	1.62	100.00	0	0.00
109	2, 7, 27, 28, 32, 34, 40, 46, 47	30.00	100	12.60	87.00	71	3.82	29.00	91	2.05	0.00	0	0.00	2.00	20	0.41	4.60	88	5.57	164.20	97	2.62	0.00	0	0.00	29.80	71	1.60	100.00	0	0.00
110	2, 4, 8, 11, 41, 44, 45, 46, 47	30.00	100	12.60	116.00	100	5.40	25.00	55	1.23	0.00	0	0.00	1.00	0	0.00	0.90	11	0.67	108.98	53	1.42	0.00	0	0.00	29.93	72	1.61	100.00	0	0.00
111	2, 4, 7, 9, 10, 11, 41, 44, 45, 46, 47	30.00	100	12.60	102.00	86	4.64	23.00	36	0.82	0.00	0	0.00	1.00	0	0.00	0.90	11	0.67	108.98	53	1.42	0.00	0	0.00	38.91	64	1.43	100.00	0	0.00
112	2, 4, 7, 9, 14, 17, 41, 44, 45, 46, 47	30.00	100	12.60	102.00	86	4.64	25.00	55	1.23	0.00	0	0.00	1.00	0	0.00	0.90	11	0.67	109.04	53	1.42	0.00	0	0.00	29.11	65	1.47	100.00	0	0.00
113	2, 4, 7, 9, 14, 37, 42, 44, 45, 46, 47	30.00	100	12.60	87.00	71	3.82	23.00	36	0.82	0.00	0	0.00	1.00	0	0.00	0.90	11	0.67	121.74	63	1.70	0.00	0	0.00	28.69	62	1.39	100.00	0	0.00
114	2, 4, 7, 9, 14, 37, 38, 43, 45, 46, 47	30.00	100	12.60	87.00	71	3.82	19.00	0	0.00	0.00	0	0.00	2.00	20	0.41	0.90	11	0.67	132.93	72	1.94	0.00	0	0.00	28.35	59	1.33	100.00	0	0.00
115	2, 4, 7, 9, 14, 37, 38, 39, 40, 46, 47	30.00	100	12.60	87.00	71	3.82	22.00	27	0.61	0.00	0	0.00	2.00	20	0.41	0.90	11	0.67	147.84	84	2.26	0.00	0	0.00	28.29	59	1.32	100.00	0	0.00
116	2, 4, 7, 27, 29, 34, 42, 44, 45, 46, 47	30.00	100	12.60	87.00	71	3.82	24.00	45	1.02	0.00	0	0.00	1.00	0	0.00	0.93	11	0.70	128.23	68	1.84	0.00	0	0.00	28.64	62	1.38	100.00	0	0.00
117	2, 4, 7, 27, 29, 34, 38, 43, 45, 46, 47	30.00	100	12.60	87.00	71	3.82	20.00	9	0.20	0.00	0	0.00	2.00	20	0.41	0.93	11	0.70	137.28	75	2.04	0.00	0	0.00	28.30	59	1.32	100.00	0	0.00
118	2, 4, 7, 27, 29, 34, 38, 39, 40, 46, 47	30.00	100	12.60	87.00	71	3.82	24.00	45	1.02	0.00	0	0.00	2.00	20	0.41	0.93	11	0.70	151.99	87	2.36	0.00	0	0.00	28.25	58	1.31	100.00	0	0.00
119	2, 4, 7, 27, 29, 30, 33, 43, 45, 46, 47	30.00	100	12.60	87.00	71	3.82	20.00	9	0.20	0.00	0	0.00	2.00	20	0.41	0.93	11	0.70	142.45	80	2.15	0.00	0	0.00	28.34	59	1.33	100.00	0	0.00
120	2, 4, 7, 27, 29, 30, 33, 39, 40, 46, 47	30.00	100	12.60	87.00	71	3.82	24.00	45	1.02	0.00	0	0.00	2.00	20	0.41	0.93	11	0.70	154.45	89	2.41	0.00	0	0.00	28.26	58	1.32	100.00	0	0.00
121	2, 4, 7, 27, 29, 30, 31, 32, 34, 40, 46, 47	30.00	100	12.60	87.00	71	3.82	25.00	55	1.23	0.00	0	0.00	2.00	20	0.41	2.40	42	2.66	156.61	91	2.46	0.00	0	0.00	28.36	59	1.33	100.00	0	0.00
122	2, 4, 7, 27, 28, 32, 34, 40, 46, 47	30.00	100	12.60	87.00	71	3.82	29.00	91	2.05	0.00	0	0.00	2.00	20	0.41	4.60	88	5.57	164.20	97	2.62	0.00	0	0.00	28.27	59	1.32	100.00	0	0.00
123	2, 3, 4, 7, 8, 11, 41, 44, 45, 46, 47	30.00	100	12.60	116.00	100	5.40	26.00	64	1.43	0.00	0	0.00	1.00	0	0.00	0.90	11	0.67	109.49	53	1.43	0.00	0	0.00	31.01	80	1.81	100.00	0	0.00
124	2, 3, 4, 9, 10, 11, 41, 44, 45, 46, 47	30.00	100	12.60	103.00	86	4.64	23.00	36	0.82	0.00	0	0.00	1.00	0	0.00	0.90	11	0.67	109.49	53	1.43	0.00	0	0.00	28.86	63	1.42	100.00	0	0.00
125	2, 3, 4, 9, 14, 17, 41, 44, 45, 46, 47	30.00	100	12.60	102.00	86	4.64	25.00	55	1.23	0.00	0	0.00	1.00	0	0.00	0.90	11	0.67	109.55	53	1.44	0.00	0	0.00	29.07	65	1.46	100.00	0	0.00
126	2, 3, 4, 9, 14, 37, 42, 44, 45, 46, 47	30.00	100	12.60	87.00	71	3.82	23.00	36	0.82	0.00	0	0.00	1.00	0	0.00	0.90	11	0.67	121.97	63	1.70	0.00	0	0.00	28.64	62	1.38	100.00	0	0.00
127	2, 3, 4, 9, 14, 37, 38, 43, 45, 46, 47	30.00	100	12.60	87.00	71	3.82	19.00	0	0.00	0.00	0	0.00	2.00	20	0.41	0.90	11	0.67	133.16	72	1.95	0.00	0	0.00	28.31	59	1.32	100.00	0	0.00
128	2, 3, 4, 9, 14, 37, 38, 39, 40, 46, 47	30.00	100	12.60	87.00	71	3.82	22.00	27	0.61	0.00	0	0.00	2.00	20	0.41	0.90	11	0.67	147.87	84	2.27	0.00	0	0.00	28.25	58	1.31	100.00	0	0.00
129	2, 3, 4, 27, 29, 34, 42, 44, 45, 46, 47	30.00	100	12.60	87.00	71	3.82	24.00	45	1.02	0.00	0	0.00	1.00	0	0.00	0.93	11	0.70	128.23	68	1.84	0.00	0	0.00	28.58	61	1.37	100.00	0	0.00
130	2, 3, 4, 27, 29, 34, 38, 43, 45, 46, 47	30.00	100	12.60	87.00	71	3.82	20.00	9	0.20	0.00	0	0.00	2.00	20	0.41	0.93	11	0.70	137.28	75	2.04	0.00	0	0.00	28.23	58	1.31	100.00	0	0.00
131	2, 3, 4, 27, 29, 34, 38, 39, 40, 46, 47	30.00	100	12.60	87.00	71	3.82	24.00	45	1.02	0.00	0	0.00	2.00	20	0.41	0.93	11	0.70	151.99	87	2.36	0.00	0	0.00	28.18	58	1.30	100.00	0	0.00
132	2, 3, 4, 27, 29, 30, 33, 43, 45, 46, 47	30.00	100	12.60	87.00	71	3.82	20.00	9	0.20	0.00	0	0.00	2.00	20	0.41	0.93	11	0.70	142.45	80	2.15	0.00	0	0.00	28.27	59	1.32	100.00	0	0.00
133	2, 3, 4, 27, 29, 30, 33, 39, 40, 46, 47	30.00	100	12.60	87.00	71	3.82	24.00	45	1.02	0.00	0	0.00	2.00	20	0.41	0.93	11	0.70	154.45	89	2.41	0.00	0	0.00	28.19	58	1.30	100.00	0	0.00
134	2, 3, 4, 27, 29, 30, 31, 32, 34, 40, 46, 47	30.00	100	12.60	87.00	71	3.82	25.00	55	1.23	0.00	0	0.00	2.00	20	0.41	2.40	42	2.66	156.61	91	2.46	0.00	0	0.00	28.30	59	1.32	100.00	0	0.00
135	2, 3, 4, 27, 28, 32, 34, 40, 46, 47	30.00	100	12.60	87.00	71	3.82	29.00	91	2.05	0.00	0	0.00	2.00	20	0.41	4.60	88	5.57	164.20	97	2.62	0.00	0	0.00	28.20	58	1.30	100.00	0	0.00
136	2, 3, 26, 29, 34, 42, 44, 45, 46, 47	30.00	100	12.60	87.00	71	3.82	23.00	36	0.82	0.00	0	0.00	1.00	0	0.00	1.48	23	1.44	136.80	75	2.03	0.00	0	0.00	27.95	56	1.26	100.00	0	0.00
137	2, 3, 26, 29, 34, 38, 43, 45, 46, 47	30.00	100	12.60	87.00	71	3.82	19.00	0	0.00	0.00	0	0.00	2.00	20	0.41	1.48	23	1.44	145.28	82	2.21	0.00	0	0.00	27.61	53	1.20	100.00	0	0.00
138	2, 3, 26, 29, 34, 38, 39, 40, 46, 47	30.00	100	12.60	87.00	71	3.82	23.00	36	0.82	0.00	0	0.00	2.00	20	0.41	1.48	23	1.44	159.98	94	2.53	0.00	0	0.00	27.58	53	1.19	100.00	0	0.00
139	2, 3, 26, 29, 30, 33, 43, 45, 46, 47	30.00	100	12.60	87.00	71	3.82	19.00	0	0.00	0.00	0	0.00	2.00	20	0.41	1.48	23	1.44	149.32	85	2.30	0.00	0	0.00	27.66	54	1.21	100.00	0	0.00
140	2, 3, 26, 29, 30, 33, 39, 40, 46, 47	30.00	100	12.60	87.00	71	3.82	23.00	36	0.82	0.00	0	0.00	2.00	20	0.41	1.48	23	1.44	161.32	95	2.56	0.00	0	0.00	27.56	53	1.19	100.00	0	0.00
141	2, 3, 26, 29, 30, 31, 32, 34, 40, 46, 47	30.00	100	12.60	87.00	71	3.82	24.00	45	1.02	0.00	0	0.00	2.00	20	0.41	2.96	54	3.40	163.47	97	2.61	0.00	0	0.00	27.67	54	1.21	100.00	0	0.00
142	2, 3, 26, 28, 32, 34, 40, 46, 47	30.00	100	12.60	87.00	71	3.82	27.00	73	1.64	0.00	0	0.00	0.00	0	0.00	5.14	100	6.29	167.79	100	2.70	0.00	0	0.00	27.53	53	1.18	100.00	0	0.00
143	1, 4, 7, 8, 11, 41, 44, 45, 46, 47	30.00	100	12.60	116.00	100	5.40	26.00	64	1.43	0.00	0	0.00	1.00	0	0.00	0.90	11	0.67	109.55	53	1.44	0.00	0	0.00	33.48	100	2.25	100.00	0	0.00
144	1, 4, 9, 10, 11, 41, 44, 45, 46, 47	30.00	100	12.60	102.00	86	4.64	23.00	36	0.82	0.00	0	0.00	1.00	0	0.00	0.90	11	0.67	109.55	53	1.44	0.00	0	0.00	31.33	83	1.87	100.00	0	0.00
145	1, 4, 9, 14, 17, 41, 44, 45, 46, 47	30.00	100	12.60	102.00	86	4.64	25.00	55	1.23	0.00	0	0.00	1.00	0	0.00	0.90	11	0.67	109.61	53	1.44	0.00	0	0.00	31.54	85	1.90	100.00	0	0.00
146	1, 4, 9, 14, 37, 42, 44, 45, 46, 47	30.00	100	12.60	87.00	71	3.82	23.00	36	0.82	0.00	0	0.00	1.00	0	0.00	0.90	11	0.67	122.03	63	1.71	0.00	0	0.00	31.11	81	1.83	100.00	0	0.00
147	1, 4, 9, 14, 37, 38, 43, 45, 46, 47	30.00	100	12.60	87.00	71	3.82	19.00	0	0.00	0.00	0	0.00	2.00	20	0.41	0.90	11	0.67	133.22	72	1.95	0.00	0	0.00	30.77	78	1.77	100.00	0	0.00
148	1, 4, 9, 14, 37, 38, 39, 40, 46, 47	30.00	100	12.60	87.00	71	3.82	22.00	27	0.61	0.00	0	0.00	2.00	20	0.41	0.90	11	0.67	147.93	84	2.27	0.00	0	0.00	30.72	78	1.76	100.00	0	0.00
149	1, 4, 27, 29, 34, 42, 44, 45, 46, 47	30.00	100	12.60	87.00	71	3.82	24.00	45	1.02	0.00	0	0.00	1.00	0	0.00	0.93	11	0.70	128.26	68	1.84	0.00	0	0.00	31.04	81	1.81	100.00	0	0.00
150	1, 4, 27, 29, 34, 38, 43, 45, 46, 47	30.00	100	12.60	87.00	71	3.82	20.00	9	0.20	0.00	0	0.00	2.00	20	0.41	0.93	11	0.70	137.31	75	2.04	0.00	0	0.00	30.70	78	1.75	100.00	0	0.00

		LAND USE CRITERIA GROUP																											
		Residences						Properties Crossed			Institutional Land Use						Sensitive Areas						Agriculture & Industrial Use			Easement Required			Paralleling Existing Transmission		
		Residential buildings within 200 feet of ROW (count)			Residential buildings within 200-500 feet of ROW (count)			Properties with unique ownership crossed by ROW (count)			Institutional uses within ROW (count)			Institutional uses within 1,000 feet of centerline (count)			Sensitive areas within ROW (acres)			Sensitive areas within 1,000 feet of ROW (acres)			Agricultural land and industrial uses in ROW (acres)			New easement required (acres)			Length not paralleling existing transmission ROW (percent of total length)		
Criteria Group Weight:		45%			45%			45%			45%			45%			45%			45%			45%			45%			45%		
Criteria Weight:		40%			40%			5%			15%			15%			20%			20%			5%			5%			10%		
Sub-Criteria Weight:		70%			30%			100%			70%			30%			70%			30%			100%			100%			100%		
Weighted Multiplier:		0.1260			0.0540			0.0225			0.0473			0.0203			0.0630			0.0270			0.0225			0.0225			0.0450		
Route	Segments	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	Value	Normalized	Weighted Value	Value	Normalized	Weighted Value	Value	Normalized	Weighted Value
151	1, 6, 27, 29, 34, 38, 39, 40, 46, 47	30.00	100	12.60	87.00	71	3.82	24.00	45	1.02	0.00	0	0.00	2.00	20	0.41	0.93	11	0.70	152.02	87	2.36	0.00	0	0.00	30.65	77	1.74	100.00	0	0.00
152	1, 6, 27, 29, 30, 33, 43, 45, 46, 47	30.00	100	12.60	87.00	71	3.82	20.00	9	0.20	0.00	0	0.00	2.00	20	0.41	0.93	11	0.70	142.48	80	2.15	0.00	0	0.00	30.74	78	1.76	100.00	0	0.00
153	1, 6, 27, 29, 30, 33, 39, 40, 46, 47	30.00	100	12.60	87.00	71	3.82	24.00	45	1.02	0.00	0	0.00	2.00	20	0.41	0.93	11	0.70	154.48	89	2.41	0.00	0	0.00	30.66	78	1.74	100.00	0	0.00
154	1, 6, 27, 29, 30, 31, 32, 36, 40, 46, 47	30.00	100	12.60	87.00	71	3.82	25.00	55	1.23	0.00	0	0.00	2.00	20	0.41	2.40	42	2.66	156.64	91	2.46	0.00	0	0.00	30.76	78	1.76	100.00	0	0.00
155	1, 6, 27, 28, 32, 36, 40, 46, 47	30.00	100	12.60	87.00	71	3.82	29.00	91	2.05	0.00	0	0.00	2.00	20	0.41	4.60	88	5.57	164.23	97	2.62	0.00	0	0.00	30.67	78	1.75	100.00	0	0.00
156	1, 26, 29, 34, 42, 44, 45, 46, 47	30.00	100	12.60	87.00	71	3.82	23.00	36	0.82	0.00	0	0.00	1.00	0	0.00	1.48	23	1.44	136.80	75	2.03	0.00	0	0.00	30.41	76	1.70	100.00	0	0.00
157	1, 26, 29, 34, 38, 43, 45, 46, 47	30.00	100	12.60	87.00	71	3.82	19.00	0	0.00	0.00	0	0.00	2.00	20	0.41	1.48	23	1.44	145.28	82	2.21	0.00	0	0.00	30.07	73	1.64	100.00	0	0.00
158	1, 26, 29, 34, 38, 39, 40, 46, 47	30.00	100	12.60	87.00	71	3.82	23.00	36	0.82	0.00	0	0.00	2.00	20	0.41	1.48	23	1.44	159.98	94	2.53	0.00	0	0.00	30.02	72	1.63	100.00	0	0.00
159	1, 26, 29, 30, 33, 42, 45, 46, 47	30.00	100	12.60	87.00	71	3.82	19.00	0	0.00	0.00	0	0.00	2.00	20	0.41	1.48	23	1.44	149.32	85	2.30	0.00	0	0.00	30.11	73	1.65	100.00	0	0.00
160	1, 26, 29, 30, 33, 39, 40, 46, 47	30.00	100	12.60	87.00	71	3.82	23.00	36	0.82	0.00	0	0.00	2.00	20	0.41	1.48	23	1.44	161.32	95	2.56	0.00	0	0.00	30.03	73	1.63	100.00	0	0.00
161	1, 26, 29, 30, 31, 32, 36, 40, 46, 47	30.00	100	12.60	87.00	71	3.82	24.00	45	1.02	0.00	0	0.00	2.00	20	0.41	2.96	54	3.40	163.47	97	2.61	0.00	0	0.00	30.13	73	1.65	100.00	0	0.00
162	1, 26, 28, 32, 36, 40, 46, 47	30.00	100	12.60	87.00	71	3.82	27.00	73	1.64	0.00	0	0.00	2.00	20	0.41	5.14	100	6.29	167.79	100	2.70	0.00	0	0.00	29.99	72	1.63	100.00	0	0.00
163	2, 7, 27, 29, 30, 31, 32, 33, 47	30.00	100	12.60	87.00	71	3.82	25.00	55	1.23	0.00	0	0.00	2.00	20	0.41	2.41	42	2.67	156.61	91	2.46	0.00	0	0.00	30.29	75	1.68	100.00	0	0.00
164	2, 7, 27, 28, 32, 33, 47	30.00	100	12.60	87.00	71	3.82	29.00	91	2.05	0.00	0	0.00	2.00	20	0.41	4.61	89	5.58	164.21	97	2.62	0.00	0	0.00	30.19	74	1.66	100.00	0	0.00
165	3, 4, 7, 27, 29, 30, 31, 32, 33, 47	30.00	100	12.60	87.00	71	3.82	25.00	55	1.23	0.00	0	0.00	2.00	20	0.41	2.41	42	2.67	156.61	91	2.46	0.00	0	0.00	28.71	62	1.40	100.00	0	0.00
166	3, 4, 7, 27, 28, 32, 33, 47	30.00	100	12.60	87.00	71	3.82	29.00	91	2.05	0.00	0	0.00	2.00	20	0.41	4.61	89	5.58	164.21	97	2.62	0.00	0	0.00	28.61	61	1.38	100.00	0	0.00
167	3, 5, 6, 27, 29, 30, 31, 32, 33, 47	30.00	100	12.60	87.00	71	3.82	25.00	55	1.23	0.00	0	0.00	2.00	20	0.41	2.41	42	2.67	156.61	91	2.46	0.00	0	0.00	28.64	61	1.38	100.00	0	0.00
168	3, 5, 6, 27, 28, 32, 33, 47	30.00	100	12.60	87.00	71	3.82	29.00	91	2.05	0.00	0	0.00	2.00	20	0.41	4.61	89	5.58	164.21	97	2.62	0.00	0	0.00	28.54	61	1.37	100.00	0	0.00
169	3, 5, 26, 29, 30, 31, 32, 33, 47	30.00	100	12.60	87.00	71	3.82	24.00	45	1.02	0.00	0	0.00	2.00	20	0.41	2.97	54	3.41	163.47	97	2.61	0.00	0	0.00	28.01	56	1.27	100.00	0	0.00
170	3, 5, 26, 28, 32, 33, 47	30.00	100	12.60	87.00	71	3.82	27.00	73	1.64	0.00	0	0.00	2.00	20	0.41	5.15	100	6.30	167.80	100	2.70	0.00	0	0.00	27.87	55	1.25	100.00	0	0.00
171	1, 6, 27, 29, 30, 31, 32, 33, 47	30.00	100	12.60	87.00	71	3.82	25.00	55	1.23	0.00	0	0.00	2.00	20	0.41	2.41	42	2.67	156.64	91	2.46	0.00	0	0.00	31.11	81	1.83	100.00	0	0.00
172	1, 6, 27, 28, 32, 33, 47	30.00	100	12.60	87.00	71	3.82	29.00	91	2.05	0.00	0	0.00	2.00	20	0.41	4.61	89	5.58	164.23	97	2.62	0.00	0	0.00	31.01	80	1.81	100.00	0	0.00
173	1, 26, 29, 30, 31, 32, 33, 47	30.00	100	12.60	87.00	71	3.82	24.00	45	1.02	0.00	0	0.00	2.00	20	0.41	2.97	54	3.41	163.47	97	2.61	0.00	0	0.00	30.48	76	1.71	100.00	0	0.00
174	1, 26, 28, 32, 33, 47	30.00	100	12.60	87.00	71	3.82	27.00	73	1.64	0.00	0	0.00	2.00	20	0.41	5.15	100	6.30	167.80	100	2.70	0.00	0	0.00	30.34	75	1.69	100.00	0	0.00
Min		1	--	--	17	--	--	19	--	--	0	--	--	1	--	--	0.39	--	--	43.46	--	--	0.00	--	--	20.91	--	--	100	--	--
Max		30	--	--	116	--	--	30	--	--	1	--	--	6	--	--	5.15	--	--	167.80	--	--	1.06	--	--	33.48	--	--	100	--	--
Range		29	--	--	99	--	--	11	--	--	1	--	--	5	--	--	4.76	--	--	124.34	--	--	1.06	--	--	12.57	--	--	0	--	--
Calculation details:		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.			Parcels that intersect the ROW dissolved by owner (one owner with multiple parcels counted once).			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.			Parks, preserves, trails, agency-managed areas, golf courses, and airport property within 1,000 feet of ROW.			Agricultural and industrial land use was determined by the Boone County's 2009 land use data.			Total new ROW area needed excluding areas of existing ROW					

		CULTURAL CRITERIA GROUP					
		State Listed Resources			Archaeological Sites		
		State listed resoures within 1,000 feet of centerline (count)			Known archaeological sites within ROW (count)		
	Criteria Group Weight:	10%			10%		
	Criteria Weight:	20%			15%		
	Sub-Criteria Weight:	100%			100%		
	Weighted Multiplier:	0.0200			0.0150		
Route	**Segments**	Value	Normalized	Weighted Value	Value	Normalized	Weighted Value
1	2, 8, 11, 12, 13, 22, 24, 25	10	100	2.00	0	0	0.00
2	2, 8, 11, 12, 16, 19, 21, 22, 24, 25	10	100	2.00	0	0	0.00
3	2, 8, 11, 12, 16, 19, 20, 24, 25	10	100	2.00	0	0	0.00
4	2, 8, 11, 15, 18, 19, 21, 22, 24, 25	10	100	2.00	0	0	0.00
5	2, 8, 11, 15, 18, 19, 20, 24, 25	10	100	2.00	0	0	0.00
6	2, 7, 9, 10, 11, 12, 13, 22, 24, 25	9	89	1.78	0	0	0.00
7	2, 7, 9, 10, 11, 12, 16, 19, 21, 22, 24, 25	9	89	1.78	0	0	0.00
8	2, 7, 9, 10, 11, 12, 16, 19, 20, 24, 25	9	89	1.78	0	0	0.00
9	2, 7, 9, 10, 11, 15, 18, 19, 21, 22, 24, 25	9	89	1.78	0	0	0.00
10	2, 7, 9, 10, 11, 15, 18, 19, 20, 24, 25	9	89	1.78	0	0	0.00
11	2, 7, 9, 14, 17, 18, 19, 21, 22, 24, 25	9	89	1.78	0	0	0.00
12	2, 7, 9, 14, 17, 18, 19, 20, 24, 25	9	89	1.78	0	0	0.00
13	3, 4, 8, 11, 12, 13, 22, 24, 25	10	100	2.00	0	0	0.00
14	3, 4, 8, 11, 12, 16, 19, 21, 22, 24, 25	10	100	2.00	0	0	0.00
15	3, 4, 8, 11, 12, 16, 19, 20, 24, 25	10	100	2.00	0	0	0.00
16	3, 4, 8, 11, 15, 18, 19, 21, 22, 24, 25	10	100	2.00	0	0	0.00
17	3, 4, 8, 11, 15, 18, 19, 20, 24, 25	10	100	2.00	0	0	0.00
18	3, 4, 7, 9, 10, 11, 12, 13, 22, 24, 25	9	89	1.78	0	0	0.00
19	3, 4, 7, 9, 10, 11, 12, 16, 19, 21, 22, 24, 25	9	89	1.78	0	0	0.00
20	3, 4, 7, 9, 10, 11, 12, 16, 19, 20, 24, 25	9	89	1.78	0	0	0.00
21	3, 4, 7, 9, 10, 11, 15, 18, 19, 21, 22, 24, 25	9	89	1.78	0	0	0.00
22	3, 4, 7, 9, 10, 11, 15, 18, 19, 20, 24, 25	9	89	1.78	0	0	0.00
23	3, 4, 7, 9, 14, 17, 18, 19, 21, 22, 24, 25	9	89	1.78	0	0	0.00
24	3, 4, 7, 9, 14, 17, 18, 19, 20, 24, 25	9	89	1.78	0	0	0.00
25	3, 5, 6, 7, 8, 11, 12, 13, 22, 24, 25	10	100	2.00	0	0	0.00
26	3, 5, 6, 7, 8, 11, 12, 16, 19, 21, 22, 24, 25	10	100	2.00	0	0	0.00
27	3, 5, 6, 7, 8, 11, 12, 16, 19, 20, 24, 25	10	100	2.00	0	0	0.00
28	3, 5, 6, 7, 8, 11, 15, 18, 19, 21, 22, 24, 25	10	100	2.00	0	0	0.00
29	3, 5, 6, 7, 8, 11, 18, 19, 20, 24, 25	10	100	2.00	0	0	0.00
30	3, 5, 6, 9, 10, 11, 12, 13, 22, 24, 25	9	89	1.78	0	0	0.00
31	3, 5, 6, 9, 10, 11, 12, 16, 19, 21, 22, 24, 25	9	89	1.78	0	0	0.00
32	3, 5, 6, 9, 10, 11, 12, 16, 19, 20, 24, 25	9	89	1.78	0	0	0.00
33	3, 5, 6, 9, 10, 11, 18, 19, 21, 22, 24, 25	9	89	1.78	0	0	0.00
34	3, 5, 6, 9, 10, 11, 18, 19, 20, 24, 25	9	89	1.78	0	0	0.00
35	3, 5, 6, 9, 14, 17, 18, 19, 21, 22, 24, 25	9	89	1.78	0	0	0.00
36	3, 5, 6, 9, 14, 17, 18, 19, 20, 24, 25	9	89	1.78	0	0	0.00
37	1, 6, 7, 8, 11, 12, 13, 22, 24, 25	10	100	2.00	0	0	0.00
38	1, 6, 7, 8, 11, 12, 16, 19, 21, 22, 24, 25	10	100	2.00	0	0	0.00

		CULTURAL CRITERIA GROUP					
		State Listed Resources			Archaeological Sites		
		State listed resoures within 1,000 feet of centerline (count)			Known archaeological sites within ROW (count)		
	Criteria Group Weight:	10%			10%		
	Criteria Weight:	20%			15%		
	Sub-Criteria Weight:	100%			100%		
	Weighted Multiplier:	0.0200			0.0150		
Route	Segments	Value	Normalized	Weighted Value	Value	Normalized	Weighted Value
39	1, 6, 7, 8, 11, 12, 16, 19, 20, 24, 25	10	100	2.00	0	0	0.00
40	1, 6, 7, 8, 11, 18, 19, 21, 22, 24, 25	10	100	2.00	0	0	0.00
41	1, 6, 7, 8, 11, 18, 19, 20, 24, 25	10	100	2.00	0	0	0.00
42	1, 6, 9, 10, 11, 12, 13, 22, 24, 25	9	89	1.78	0	0	0.00
43	1, 6, 9, 10, 11, 12, 16, 19, 21, 22, 24, 25	9	89	1.78	0	0	0.00
44	1, 6, 9, 10, 11, 12, 16, 19, 20, 24, 25	9	89	1.78	0	0	0.00
45	1, 6, 9, 10, 11, 18, 19, 21, 22, 24, 25	9	89	1.78	0	0	0.00
46	1, 6, 9, 10, 11, 18, 19, 20, 24, 25	9	89	1.78	0	0	0.00
47	1, 6, 9, 14, 17, 18, 19, 21, 22, 24, 25	9	89	1.78	0	0	0.00
48	1, 6, 9, 14, 17, 18, 19, 20, 24, 25	9	89	1.78	0	0	0.00
49	2, 8, 11, 12, 13, 22, 23, 25	10	100	2.00	0	0	0.00
50	2, 8, 11, 12, 16, 19, 21, 22, 23, 25	10	100	2.00	0	0	0.00
51	2, 8, 11, 12, 16, 19, 20, 23, 25	10	100	2.00	0	0	0.00
52	2, 8, 11, 18, 19, 21, 22, 23, 25	10	100	2.00	0	0	0.00
53	2, 8, 11, 18, 19, 20, 23, 25	10	100	2.00	0	0	0.00
54	2, 7, 9, 10, 11, 12, 13, 22, 23, 25	9	89	1.78	0	0	0.00
55	2, 7, 9, 10, 11, 12, 16, 19, 21, 22, 23, 25	9	89	1.78	0	0	0.00
56	2, 7, 9, 10, 11, 12, 16, 19, 20, 23, 25	9	89	1.78	0	0	0.00
57	2, 7, 9, 10, 11, 18, 19, 21, 22, 23, 25	9	89	1.78	0	0	0.00
58	2, 7, 9, 10, 11, 18, 19, 20, 23, 25	9	89	1.78	0	0	0.00
59	2, 7, 9, 14, 17, 18, 19, 21, 22, 23, 25	9	89	1.78	0	0	0.00
60	2, 7, 9, 14, 17, 18, 19, 20, 23, 25	9	89	1.78	0	0	0.00
61	3, 4, 8, 11, 12, 13, 22, 23, 25	10	100	2.00	0	0	0.00
62	3, 4, 8, 11, 12, 16, 19, 21, 22, 23, 25	10	100	2.00	0	0	0.00
63	3, 4, 8, 11, 12, 16, 19, 20, 23, 25	10	100	2.00	0	0	0.00
64	3, 4, 8, 11, 18, 19, 21, 22, 23, 25	10	100	2.00	0	0	0.00
65	3, 4, 8, 11, 18, 19, 20, 23, 25	10	100	2.00	0	0	0.00
66	3, 4, 7, 9, 10, 11, 12, 13, 22, 23, 25	9	89	1.78	0	0	0.00
67	3, 4, 7, 9, 10, 11, 12, 16, 19, 21, 22, 23, 25	9	89	1.78	0	0	0.00
68	3, 4, 7, 9, 10, 11, 12, 16, 19, 20, 23, 25	9	89	1.78	0	0	0.00
69	3, 4, 7, 9, 10, 11, 18, 19, 21, 22, 23, 25	9	89	1.78	0	0	0.00
70	3, 4, 7, 9, 10, 11, 18, 19, 20, 23, 25	9	89	1.78	0	0	0.00
71	3, 4, 7, 9, 14, 17, 18, 19, 21, 22, 23, 25	9	89	1.78	0	0	0.00
72	3, 4, 7, 9, 14, 17, 18, 19, 20, 23, 25	9	89	1.78	0	0	0.00
73	3, 5, 6, 7, 8, 11, 12, 13, 22, 23, 25	10	100	2.00	0	0	0.00
74	3, 5, 6, 7, 8, 11, 12, 16, 19, 21, 22, 23, 25	10	100	2.00	0	0	0.00
75	3, 5, 6, 7, 8, 11, 12, 16, 19, 20, 23, 25	10	100	2.00	0	0	0.00
76	3, 5, 6, 7, 8, 11, 18, 19, 21, 22, 23, 25	10	100	2.00	0	0	0.00

		CULTURAL CRITERIA GROUP					
		State Listed Resources			Archaeological Sites		
		State listed resoures within 1,000 feet of centerline (count)			Known archaeological sites within ROW (count)		
Criteria Group Weight:		10%			10%		
Criteria Weight:		20%			15%		
Sub-Criteria Weight:		100%			100%		
Weighted Multiplier:		0.0200			0.0150		
Route	**Segments**	Value	Normalized	Weighted Value	Value	Normalized	Weighted Value
77	3, 5, 6, 7, 8, 11, 18, 19, 20, 23, 25	10	100	2.00	0	0	0.00
78	3, 5, 6, 9, 10, 11, 12, 13, 22, 23, 25	9	89	1.78	0	0	0.00
79	3, 5, 6, 9, 10, 11, 12, 16, 19, 21, 22, 23, 25	9	89	1.78	0	0	0.00
80	3, 5, 6, 9, 10, 11, 12, 16, 19, 20, 23, 25	9	89	1.78	0	0	0.00
81	3, 5, 6, 9, 10, 11, 18, 19, 21, 22, 23, 25	9	89	1.78	0	0	0.00
82	3, 5, 6, 9, 10, 11, 18, 19, 20, 23, 25	9	89	1.78	0	0	0.00
83	3, 5, 6, 9, 14, 17, 18, 19, 21, 22, 23, 25	9	89	1.78	0	0	0.00
84	3, 5, 6, 9, 14, 17, 18, 19, 20, 23, 25	9	89	1.78	0	0	0.00
85	1, 6, 7, 8, 11, 12, 13, 22, 23, 25	10	100	2.00	0	0	0.00
86	1, 6, 7, 8, 11, 12, 16, 19, 21, 22, 23, 25	10	100	2.00	0	0	0.00
87	1, 6, 7, 8, 11, 12, 16, 19, 20, 23, 25	10	100	2.00	0	0	0.00
88	1, 6, 7, 8, 11, 18, 19, 21, 22, 23, 25	10	100	2.00	0	0	0.00
89	1, 6, 7, 8, 11, 18, 19, 20, 23, 25	10	100	2.00	0	0	0.00
90	1, 6, 9, 10, 11, 12, 13, 22, 23, 25	9	89	1.78	0	0	0.00
91	1, 6, 9, 10, 11, 12, 16, 19, 21, 22, 23, 25	9	89	1.78	0	0	0.00
92	1, 6, 9, 10, 11, 12, 16, 19, 20, 23, 25	9	89	1.78	0	0	0.00
93	1, 6, 9, 10, 11, 18, 19, 21, 22, 23, 25	9	89	1.78	0	0	0.00
94	1, 6, 9, 10, 11, 18, 19, 20, 23, 25	9	89	1.78	0	0	0.00
95	1, 6, 9, 14, 17, 18, 19, 21, 22, 23, 25	9	89	1.78	0	0	0.00
96	1, 6, 9, 14, 17, 18, 19, 20, 23, 25	9	89	1.78	0	0	0.00
97	2, 8, 11, 41, 44, 45, 46, 47	5	44	0.89	1	100	1.50
98	2, 7, 9, 10, 11, 41, 44, 45, 46, 47	4	33	0.67	1	100	1.50
99	2, 7, 9, 14, 17, 41, 44, 45, 46, 47	4	33	0.67	1	100	1.50
100	2, 7, 9, 14, 37, 42, 44, 45, 46, 47	3	22	0.44	1	100	1.50
101	2, 7, 9, 14, 37, 38, 43, 45, 46, 47	3	22	0.44	0	0	0.00
102	2, 7, 9, 14, 37, 38, 39, 40, 46, 47	3	22	0.44	1	100	1.50
103	2, 7, 27, 29, 34, 42, 44, 45, 46, 47	3	22	0.44	1	100	1.50
104	2, 7, 27, 29, 34, 38, 43, 45, 46, 47	3	22	0.44	0	0	0.00
105	2, 7, 27, 29, 34, 38, 39, 40, 46, 47	3	22	0.44	1	100	1.50
106	2, 7, 27, 29, 30, 35, 43, 45, 46, 47	3	22	0.44	0	0	0.00
107	2, 7, 27, 29, 30, 35, 39, 40, 46, 47	3	22	0.44	1	100	1.50
108	2, 7, 27, 29, 30, 31, 32, 36, 40, 46, 47	3	22	0.44	1	100	1.50
109	2, 7, 27, 28, 32, 36, 40, 46, 47	3	22	0.44	1	100	1.50
110	3, 4, 8, 11, 41, 44, 45, 46, 47	5	44	0.89	1	100	1.50
111	3, 4, 7, 9, 10, 11, 41, 44, 45, 46, 47	4	33	0.67	1	100	1.50
112	3, 4, 7, 9, 14, 17, 41, 44, 45, 46, 47	4	33	0.67	1	100	1.50
113	3, 4, 7, 9, 14, 37, 42, 44, 45, 46, 47	3	22	0.44	1	100	1.50
114	3, 4, 7, 9, 14, 37, 38, 43, 45, 46, 47	3	22	0.44	0	0	0.00

		CULTURAL CRITERIA GROUP					
		State Listed Resources			Archaeological Sites		
		State listed resoures within 1,000 feet of centerline (count)			Known archaeological sites within ROW (count)		
	Criteria Group Weight:	10%			10%		
	Criteria Weight:	20%			15%		
	Sub-Criteria Weight:	100%			100%		
	Weighted Multiplier:	0.0200			0.0150		
Route	Segments	Value	Normalized	Weighted Value	Value	Normalized	Weighted Value
115	3, 4, 7, 9, 14, 37, 38, 39, 40, 46, 47	3	22	0.44	1	100	1.50
116	3, 4, 7, 27, 29, 34, 42, 44, 45, 46, 47	2	11	0.22	1	100	1.50
117	3, 4, 7, 27, 29, 34, 38, 43, 45, 46, 47	2	11	0.22	0	0	0.00
118	3, 4, 7, 27, 29, 34, 38, 39, 40, 46, 47	2	11	0.22	1	100	1.50
119	3, 4, 7, 27, 29, 30, 35, 43, 45, 46, 47	2	11	0.22	0	0	0.00
120	3, 4, 7, 27, 29, 30, 35, 39, 40, 46, 47	2	11	0.22	1	100	1.50
121	3, 4, 7, 27, 29, 30, 31, 32, 36, 40, 46, 47	2	11	0.22	1	100	1.50
122	3, 4, 7, 27, 28, 32, 36, 40, 46, 47	2	11	0.22	1	100	1.50
123	3, 5, 6, 7, 8, 11, 41, 44, 45, 46, 47	5	44	0.89	1	100	1.50
124	3, 5, 6, 9, 10, 11, 41, 44, 45, 46, 47	4	33	0.67	1	100	1.50
125	3, 5, 6, 9, 14, 17, 41, 44, 45, 46, 47	4	33	0.67	1	100	1.50
126	3, 5, 6, 9, 14, 37, 42, 44, 45, 46, 47	3	22	0.44	1	100	1.50
127	3, 5, 6, 9, 14, 37, 38, 43, 45, 46, 47	3	22	0.44	0	0	0.00
128	3, 5, 6, 9, 14, 37, 38, 39, 40, 46, 47	3	22	0.44	1	100	1.50
129	3, 5, 6, 27, 29, 34, 42, 44, 45, 46, 47	2	11	0.22	1	100	1.50
130	3, 5, 6, 27, 29, 34, 38, 43, 45, 46, 47	2	11	0.22	0	0	0.00
131	3, 5, 6, 27, 29, 34, 38, 39, 40, 46, 47	2	11	0.22	1	100	1.50
132	3, 5, 6, 27, 29, 30, 35, 43, 45, 46, 47	2	11	0.22	0	0	0.00
133	3, 5, 6, 27, 29, 30, 35, 39, 40, 46, 47	2	11	0.22	1	100	1.50
134	3, 5, 6, 27, 29, 30, 31, 32, 36, 40, 46, 47	2	11	0.22	1	100	1.50
135	3, 5, 6, 27, 28, 32, 36, 40, 46, 47	2	11	0.22	1	100	1.50
136	3, 5, 26, 29, 34, 42, 44, 45, 46, 47	1	0	0.00	1	100	1.50
137	3, 5, 26, 29, 34, 38, 43, 45, 46, 47	1	0	0.00	0	0	0.00
138	3, 5, 26, 29, 34, 38, 39, 40, 46, 47	1	0	0.00	1	100	1.50
139	3, 5, 26, 29, 30, 35, 43, 45, 46, 47	1	0	0.00	0	0	0.00
140	3, 5, 26, 29, 30, 35, 39, 40, 46, 47	1	0	0.00	1	100	1.50
141	3, 5, 26, 29, 30, 31, 32, 36, 40, 46, 47	1	0	0.00	1	100	1.50
142	3, 5, 26, 28, 32, 36, 40, 46, 47	1	0	0.00	1	100	1.50
143	1, 6, 7, 8, 11, 41, 44, 45, 46, 47	5	44	0.89	1	100	1.50
144	1, 6, 9, 10, 11, 41, 44, 45, 46, 47	4	33	0.67	1	100	1.50
145	1, 6, 9, 14, 17, 41, 44, 45, 46, 47	4	33	0.67	1	100	1.50
146	1, 6, 9, 14, 37, 42, 44, 45, 46, 47	3	22	0.44	1	100	1.50
147	1, 6, 9, 14, 37, 38, 43, 45, 46, 47	3	22	0.44	0	0	0.00
148	1, 6, 9, 14, 37, 38, 39, 40, 46, 47	3	22	0.44	1	100	1.50
149	1, 6, 27, 29, 34, 42, 44, 45, 46, 47	2	11	0.22	1	100	1.50
150	1, 6, 27, 29, 34, 38, 43, 45, 46, 47	2	11	0.22	0	0	0.00
151	1, 6, 27, 29, 34, 38, 39, 40, 46, 47	2	11	0.22	1	100	1.50
152	1, 6, 27, 29, 30, 35, 43, 45, 46, 47	2	11	0.22	0	0	0.00

		CULTURAL CRITERIA GROUP					
		State Listed Resources			Archaeological Sites		
		State listed resoures within 1,000 feet of centerline (count)			Known archaeological sites within ROW (count)		
	Criteria Group Weight:	10%			10%		
	Criteria Weight:	20%			15%		
	Sub-Criteria Weight:	100%			100%		
	Weighted Multiplier:	0.0200			0.0150		
Route	**Segments**	Value	Normalized	Weighted Value	Value	Normalized	Weighted Value
153	1, 6, 27, 29, 30, 35, 39, 40, 46, 47	2	11	0.22	1	100	1.50
154	1, 6, 27, 29, 30, 31, 32, 36, 40, 46, 47	2	11	0.22	1	100	1.50
155	1, 6, 27, 28, 32, 36, 40, 46, 47	2	11	0.22	1	100	1.50
156	1, 26, 29, 34, 42, 44, 45, 46, 47	1	0	0.00	1	100	1.50
157	1, 26, 29, 34, 38, 43, 45, 46, 47	1	0	0.00	0	0	0.00
158	1, 26, 29, 34, 38, 39, 40, 46, 47	1	0	0.00	1	100	1.50
159	1, 26, 29, 30, 35, 43, 45, 46, 47	1	0	0.00	0	0	0.00
160	1, 26, 29, 30, 35, 39, 40, 46, 47	1	0	0.00	1	100	1.50
161	1, 26, 29, 30, 31, 32, 36, 40, 46, 47	1	0	0.00	1	100	1.50
162	1, 26, 28, 32, 36, 40, 46, 47	1	0	0.00	1	100	1.50
163	2, 7, 27, 29, 30, 31, 32, 33, 47	3	22	0.44	1	100	1.50
164	2, 7, 27, 28, 32, 33, 47	3	22	0.44	1	100	1.50
165	3, 4, 7, 27, 29, 30, 31, 32, 33, 47	2	11	0.22	1	100	1.50
166	3, 4, 7, 27, 28, 32, 33, 47	2	11	0.22	1	100	1.50
167	3, 5, 6, 27, 29, 30, 31, 32, 33, 47	2	11	0.22	1	100	1.50
168	3, 5, 6, 27, 28, 32, 33, 47	2	11	0.22	1	100	1.50
169	3, 5, 26, 29, 30, 31, 32, 33, 47	1	0	0.00	1	100	1.50
170	3, 5, 26, 28, 32, 33, 47	1	0	0.00	1	100	1.50
171	1, 6, 27, 29, 30, 31, 32, 33, 47	2	11	0.22	1	100	1.50
172	1, 6, 27, 28, 32, 33, 47	2	11	0.22	1	100	1.50
173	1, 26, 29, 30, 31, 32, 33, 47	1	0	0.00	1	100	1.50
174	1, 26, 28, 32, 33, 47	1	0	0.00	1	100	1.50
Min		1	--	--	0	--	--
Max		10	--	--	1	--	--
Range		9	--	--	1	--	--
	Calculation details:	Kentucky Heritage Council historic structures. All structures had undetermined status.			Kentucky Office of State Archaeology sites. Do not include inventory sites that do not meet NR criteria.		

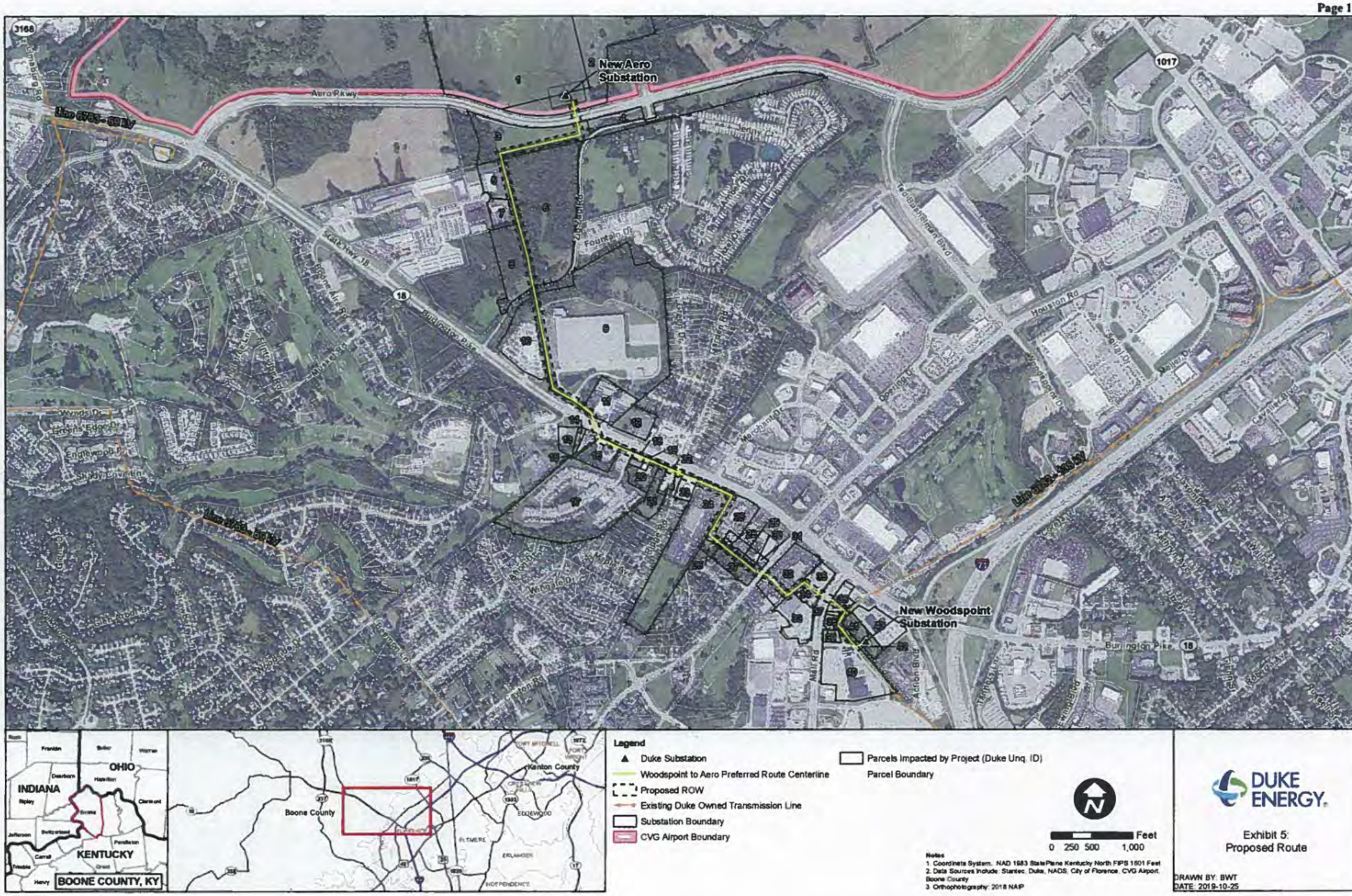
		ENGINEERING CRITERIA GROUP																		
		Route Length			Highway and Rail Crossings			Steep Slopes			Turn Angles			Asset Protection			Co-located Distribution			Underground Utilities		
		Route length (feet)			Highway or railroad crossings (count)			Route length with slope >20% (feet)			Turn angles > 20 degrees (count)			Route length within 75 feet of a road (feet)			Route length co-located with distribution lines (feet)			Routh length with underground utilities within ROW (feet)		
	Criteria Group Weight:	20%			20%			20%			20%			20%			20%			20%		
	Criteria Weight:	20%			5%			10%			15%			15%			10%			15%		
	Sub-Criteria Weight:	100%			100%			100%			100%			100%			100%			100%		
	Weighted Multiplier:	0.0400			0.0100			0.0200			0.0300			0.0300			0.0200			0.0300		
Route	Segments	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
1	2, 8, 11, 12, 13, 22, 24, 25	11511	43	1.71	3	0	0.00	1560	27	0.54	18	69	2.06	4788	27	0.81	3291	52	1.05	4972	44	1.33
2	2, 8, 11, 12, 16, 19, 21, 22, 24, 25	11350	40	1.60	3	0	0.00	1227	9	0.18	15	50	1.50	4131	17	0.51	3043	48	0.95	5103	47	1.40
3	2, 8, 11, 12, 16, 19, 20, 24, 25	10904	32	1.27	3	0	0.00	1297	13	0.26	13	38	1.13	3715	11	0.33	3234	51	1.02	4393	34	1.01
4	2, 8, 11, 15, 18, 19, 21, 22, 24, 25	11336	40	1.59	3	0	0.00	1220	9	0.17	17	63	1.88	4093	17	0.50	1735	23	0.46	5107	47	1.41
5	2, 8, 11, 15, 18, 19, 20, 24, 25	10890	32	1.26	3	0	0.00	1290	12	0.25	15	50	1.50	3677	10	0.31	1926	26	0.53	4397	34	1.01
6	2, 7, 9, 10, 11, 12, 13, 22, 24, 25	11056	35	1.38	3	0	0.00	1557	27	0.54	14	44	1.31	5492	37	1.12	4898	83	1.66	5689	58	1.73
7	2, 7, 9, 10, 11, 12, 16, 19, 21, 22, 24, 25	10895	32	1.27	3	0	0.00	1225	9	0.18	11	25	0.75	4835	28	0.83	4649	78	1.56	5819	60	1.81
8	2, 7, 9, 10, 11, 12, 16, 19, 20, 24, 25	10449	24	0.94	3	0	0.00	1295	13	0.25	9	13	0.38	4419	21	0.64	4841	82	1.63	5109	47	1.41
9	2, 7, 9, 10, 11, 15, 18, 19, 21, 22, 24, 25	10881	31	1.25	3	0	0.00	1217	8	0.17	13	38	1.13	4796	27	0.81	3341	53	1.07	5823	60	1.81
10	2, 7, 9, 10, 11, 15, 18, 19, 20, 24, 25	10435	23	0.93	3	0	0.00	1287	12	0.24	11	25	0.75	4380	21	0.63	3533	57	1.14	5113	47	1.41
11	2, 7, 9, 14, 17, 18, 19, 21, 22, 24, 25	10983	33	1.33	3	0	0.00	1223	9	0.17	13	38	1.13	5184	33	0.98	2482	37	0.74	5214	49	1.47
12	2, 7, 9, 14, 17, 18, 19, 20, 24, 25	10537	25	1.00	3	0	0.00	1293	13	0.25	11	25	0.75	4769	27	0.80	2674	41	0.81	4504	36	1.07
13	3, 4, 8, 11, 12, 13, 22, 24, 25	10824	30	1.21	3	0	0.00	1546	26	0.52	16	56	1.69	4090	17	0.50	3003	47	0.94	3900	24	0.73
14	3, 4, 8, 11, 12, 16, 19, 21, 22, 24, 25	10663	27	1.10	3	0	0.00	1213	8	0.16	13	38	1.13	3433	7	0.20	2755	42	0.84	4030	27	0.80
15	3, 4, 8, 11, 12, 16, 19, 20, 24, 25	10217	19	0.77	3	0	0.00	1283	12	0.24	11	25	0.75	3017	1	0.02	2946	46	0.92	3320	14	0.41
16	3, 4, 8, 11, 15, 18, 19, 21, 22, 24, 25	10648	27	1.09	3	0	0.00	1206	8	0.16	15	50	1.50	3394	6	0.19	1447	17	0.35	4034	27	0.81
17	3, 4, 8, 11, 15, 18, 19, 20, 24, 25	10203	19	0.76	3	0	0.00	1276	12	0.23	13	38	1.13	2979	0	0.00	1638	21	0.42	3324	14	0.41
18	3, 4, 7, 9, 10, 11, 12, 13, 22, 24, 25	10369	22	0.88	3	0	0.00	1543	26	0.52	14	44	1.31	4794	27	0.81	4610	77	1.55	4616	38	1.13
19	3, 4, 7, 9, 10, 11, 12, 16, 19, 21, 22, 24, 25	10208	19	0.76	3	0	0.00	1211	8	0.16	11	25	0.75	4136	17	0.52	4361	73	1.45	4747	40	1.21
20	3, 4, 7, 9, 10, 11, 12, 16, 19, 20, 24, 25	9762	11	0.44	3	0	0.00	1281	12	0.24	9	13	0.38	3721	11	0.33	4553	76	1.52	4037	27	0.81
21	3, 4, 7, 9, 10, 11, 15, 18, 19, 21, 22, 24, 25	10193	19	0.75	3	0	0.00	1203	8	0.15	13	38	1.13	4098	17	0.50	3053	48	0.96	4751	40	1.21
22	3, 4, 7, 9, 10, 11, 15, 18, 19, 20, 24, 25	9748	11	0.43	3	0	0.00	1273	11	0.23	11	25	0.75	3682	10	0.31	3245	51	1.03	4041	27	0.81
23	3, 4, 7, 9, 14, 17, 18, 19, 21, 22, 24, 25	10295	21	0.83	3	0	0.00	1209	8	0.16	13	38	1.13	4486	22	0.67	2194	32	0.63	4141	29	0.87
24	3, 4, 7, 9, 14, 17, 18, 19, 20, 24, 25	9850	13	0.50	3	0	0.00	1279	12	0.24	11	25	0.75	4070	16	0.49	2386	35	0.70	3431	16	0.47
25	3, 5, 6, 7, 8, 11, 12, 13, 22, 24, 25	11442	42	1.66	3	0	0.00	1539	26	0.52	19	75	2.25	4666	25	0.75	3610	58	1.17	4078	28	0.83
26	3, 5, 6, 7, 8, 11, 12, 16, 19, 21, 22, 24, 25	11280	39	1.55	3	0	0.00	1207	8	0.16	16	56	1.69	4009	15	0.46	3361	54	1.07	4208	30	0.90
27	3, 5, 6, 7, 8, 11, 12, 16, 19, 20, 24, 25	10835	31	1.22	3	0	0.00	1277	12	0.23	14	44	1.31	3593	9	0.27	3553	57	1.15	3498	17	0.51
28	3, 5, 6, 7, 8, 11, 15, 18, 19, 21, 22, 24, 25	11266	38	1.54	3	0	0.00	1199	7	0.15	18	69	2.06	3970	15	0.44	2053	29	0.58	4212	30	0.91
29	3, 5, 6, 7, 8, 11, 18, 19, 20, 24, 25	10820	30	1.21	3	0	0.00	1269	11	0.22	16	56	1.69	3555	9	0.26	2245	32	0.65	3502	17	0.51
30	3, 5, 6, 9, 10, 11, 12, 13, 22, 24, 25	10476	24	0.96	3	0	0.00	1482	23	0.45	13	38	1.13	4859	28	0.84	4770	80	1.61	4795	41	1.23
31	3, 5, 6, 9, 10, 11, 12, 16, 19, 21, 22, 24, 25	10315	21	0.84	3	0	0.00	1150	5	0.10	11	25	0.75	4202	18	0.55	4521	76	1.51	4925	43	1.30
32	3, 5, 6, 9, 10, 11, 12, 16, 19, 20, 24, 25	9869	13	0.52	3	0	0.00	1220	9	0.17	8	6	0.19	3786	12	0.36	4712	79	1.59	4215	30	0.91
33	3, 5, 6, 9, 10, 11, 18, 19, 21, 22, 24, 25	10301	21	0.83	3	0	0.00	1142	4	0.09	12	31	0.94	4163	18	0.53	3213	51	1.02	4929	44	1.31
34	3, 5, 6, 9, 10, 11, 18, 19, 20, 24, 25	9855	13	0.51	3	0	0.00	1212	8	0.16	10	19	0.56	3748	11	0.34	3405	54	1.09	4219	30	0.91
35	3, 5, 6, 9, 14, 17, 18, 19, 21, 22, 24, 25	10403	23	0.91	3	0	0.00	1147	5	0.09	12	31	0.94	4552	23	0.70	2354	35	0.69	4319	32	0.97
36	3, 5, 6, 9, 14, 17, 18, 19, 20, 24, 25	9957	15	0.58	3	0	0.00	1217	8	0.17	10	19	0.56	4136	17	0.52	2545	38	0.76	3609	19	0.57
37	1, 6, 7, 8, 11, 12, 13, 22, 24, 25	12394	59	2.36	3	0	0.00	1566	27	0.55	23	100	3.00	5390	36	1.08	3736	61	1.22	3977	26	0.77
38	1, 6, 7, 8, 11, 12, 16, 19, 21, 22, 24, 25	12233	56	2.24	3	0	0.00	1233	9	0.19	20	81	2.44	4733	26	0.78	3487	56	1.12	4108	28	0.85
39	1, 6, 7, 8, 11, 12, 16, 19, 20, 24, 25	11787	48	1.92	3	0	0.00	1303	13	0.26	18	69	2.06	4317	20	0.60	3679	60	1.19	3398	15	0.45
40	1, 6, 7, 8, 11, 18, 19, 21, 22, 24, 25	12219	56	2.23	3	0	0.00	1225	9	0.18	22	94	2.81	4694	26	0.77	2179	31	0.62	4112	28	0.85

		ENGINEERING CRITERIA GROUP																			
		Route Length			Highway and Rail Crossings			Steep Slopes			Turn Angles			Asset Protection			Co-located Distribution			Underground Utilities		
		Route length (feet)			Highway or railroad crossings (count)			Route length with slope >20% (feet)			Turn angles > 20 degrees (count)			Route length within 75 feet of a road (feet)			Route length co-located with distribution lines (feet)			Routh length with underground utilities within ROW (feet)		
	Criteria Group Weight:	20%			20%			20%			20%			20%			20%			20%		
	Criteria Weight:	20%			5%			10%			15%			15%			10%			15%		
	Sub-Criteria Weight:	100%			100%			100%			100%			100%			100%			100%		
	Weighted Multiplier:	0.0400			0.0100			0.0200			0.0300			0.0300			0.0200			0.0300		
Route	Segments	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
41	1, 6, 7, 8, 11, 18, 19, 20, 24, 25	11773	48	1.90	3	0	0.00	1295	13	0.25	20	81	2.44	4279	19	0.58	2371	35	0.70	3402	15	0.45
42	1, 6, 9, 10, 11, 12, 13, 22, 24, 25	11429	41	1.65	3	0	0.00	1508	24	0.48	17	63	1.88	5583	39	1.16	4896	83	1.66	4694	39	1.18
43	1, 6, 9, 10, 11, 12, 16, 19, 21, 22, 24, 25	11268	38	1.54	3	0	0.00	1176	6	0.12	14	44	1.31	4926	29	0.87	4647	78	1.56	4824	42	1.25
44	1, 6, 9, 10, 11, 12, 16, 19, 20, 24, 25	10822	30	1.21	3	0	0.00	1246	10	0.20	12	31	0.94	4510	23	0.68	4839	82	1.63	4114	28	0.85
45	1, 6, 9, 10, 11, 18, 19, 21, 22, 24, 25	11253	38	1.53	3	0	0.00	1168	6	0.12	16	56	1.69	4887	28	0.85	3339	53	1.06	4828	42	1.25
46	1, 6, 9, 10, 11, 18, 19, 20, 24, 25	10807	30	1.20	3	0	0.00	1238	10	0.19	14	44	1.31	4472	22	0.67	3531	57	1.14	4118	28	0.85
47	1, 6, 9, 14, 17, 18, 19, 21, 22, 24, 25	11355	40	1.60	3	0	0.00	1174	6	0.12	16	56	1.69	5276	34	1.02	2480	37	0.74	4219	30	0.91
48	1, 6, 9, 14, 17, 18, 19, 20, 24, 25	10910	32	1.28	3	0	0.00	1244	10	0.20	14	44	1.31	4860	28	0.84	2671	41	0.81	3509	17	0.51
49	2, 8, 11, 12, 13, 22, 23, 25	10923	32	1.29	3	0	0.00	1479	23	0.45	16	56	1.69	5246	34	1.01	4198	70	1.39	4972	44	1.33
50	2, 8, 11, 12, 16, 19, 21, 22, 23, 25	10761	29	1.17	3	0	0.00	1147	5	0.09	13	38	1.13	4589	24	0.72	3949	65	1.30	5103	47	1.40
51	2, 8, 11, 12, 16, 19, 20, 23, 25	10316	21	0.84	3	0	0.00	1217	8	0.17	13	38	1.13	4173	18	0.53	4141	68	1.37	4393	34	1.01
52	2, 8, 11, 18, 19, 21, 22, 23, 25	10747	29	1.16	3	0	0.00	1139	4	0.08	15	50	1.50	4550	23	0.70	2642	40	0.80	5107	47	1.41
53	2, 8, 11, 18, 19, 20, 23, 25	10301	21	0.83	3	0	0.00	1209	8	0.16	15	50	1.50	4134	17	0.52	2833	44	0.87	4397	34	1.01
54	2, 7, 9, 10, 11, 12, 13, 22, 23, 25	10468	24	0.95	3	0	0.00	1477	22	0.45	12	31	0.94	5949	44	1.33	5805	100	2.00	5689	58	1.73
55	2, 7, 9, 10, 11, 12, 16, 19, 21, 22, 23, 25	10306	21	0.84	3	0	0.00	1144	4	0.09	9	13	0.38	5292	34	1.03	5556	95	1.91	5819	60	1.81
56	2, 7, 9, 10, 11, 12, 16, 19, 20, 23, 25	9861	13	0.51	3	0	0.00	1214	8	0.17	9	13	0.38	4876	28	0.85	5748	99	1.98	5109	47	1.41
57	2, 7, 9, 10, 11, 18, 19, 21, 22, 23, 25	10292	21	0.83	3	0	0.00	1137	4	0.08	11	25	0.75	5254	34	1.02	4248	70	1.41	5823	60	1.81
58	2, 7, 9, 10, 11, 18, 19, 20, 23, 25	9846	13	0.50	3	0	0.00	1207	8	0.16	11	25	0.75	4838	28	0.83	4440	74	1.48	5113	47	1.41
59	2, 7, 9, 14, 17, 18, 19, 21, 22, 23, 25	10394	23	0.90	3	0	0.00	1142	4	0.09	11	25	0.75	5642	40	1.19	3389	54	1.08	5214	49	1.47
60	2, 7, 9, 14, 17, 18, 19, 20, 23, 25	9948	14	0.58	3	0	0.00	1212	8	0.16	11	25	0.75	5226	33	1.00	3581	58	1.16	4504	36	1.07
61	3, 4, 8, 11, 12, 13, 22, 23, 25	10235	20	0.78	3	0	0.00	1465	22	0.44	14	44	1.31	4548	23	0.70	3910	64	1.28	3900	24	0.73
62	3, 4, 8, 11, 12, 16, 19, 21, 22, 23, 25	10074	17	0.67	3	0	0.00	1133	4	0.08	11	25	0.75	3890	14	0.41	3661	59	1.19	4030	27	0.80
63	3, 4, 8, 11, 12, 16, 19, 20, 23, 25	9628	9	0.34	3	0	0.00	1203	8	0.15	11	25	0.75	3475	7	0.22	3853	63	1.26	3320	14	0.41
64	3, 4, 8, 11, 18, 19, 21, 22, 23, 25	10060	16	0.66	3	0	0.00	1125	3	0.07	13	38	1.13	3852	13	0.39	2354	35	0.69	4034	27	0.81
65	3, 4, 8, 11, 18, 19, 20, 23, 25	9614	8	0.33	3	0	0.00	1195	7	0.14	13	38	1.13	3436	7	0.20	2545	38	0.76	3324	14	0.41
66	3, 4, 7, 9, 10, 11, 12, 13, 22, 23, 25	9780	11	0.45	3	0	0.00	1463	22	0.43	12	31	0.94	5251	34	1.01	5517	95	1.89	4616	38	1.13
67	3, 4, 7, 9, 10, 11, 12, 16, 19, 21, 22, 23, 25	9619	8	0.34	3	0	0.00	1130	4	0.07	9	13	0.38	4594	24	0.72	5268	90	1.80	4747	40	1.21
68	3, 4, 7, 9, 10, 11, 12, 16, 19, 20, 23, 25	9173	0	0.01	3	0	0.00	1200	8	0.15	9	13	0.38	4178	18	0.54	5460	93	1.87	4037	27	0.81
69	3, 4, 7, 9, 10, 11, 18, 19, 21, 22, 23, 25	9605	8	0.32	3	0	0.00	1123	3	0.07	11	25	0.75	4555	23	0.70	3960	65	1.30	4751	40	1.21
70	3, 4, 7, 9, 10, 11, 18, 19, 20, 23, 25	9159	0	0.00	3	0	0.00	1193	7	0.14	11	25	0.75	4140	17	0.52	4152	69	1.37	4041	27	0.81
71	3, 4, 7, 9, 14, 17, 18, 19, 21, 22, 23, 25	9707	10	0.40	3	0	0.00	1128	4	0.07	11	25	0.75	4944	29	0.88	3101	49	0.97	4141	29	0.87
72	3, 4, 7, 9, 14, 17, 18, 19, 20, 23, 25	9261	2	0.07	3	0	0.00	1198	7	0.15	11	25	0.75	4528	23	0.69	3293	52	1.05	3431	16	0.47
73	3, 5, 6, 7, 8, 11, 12, 13, 22, 23, 25	10853	31	1.23	3	0	0.00	1459	21	0.43	17	63	1.88	5123	32	0.96	4517	76	1.51	4078	28	0.83
74	3, 5, 6, 7, 8, 11, 12, 16, 19, 21, 22, 23, 25	10692	28	1.12	3	0	0.00	1127	4	0.07	14	44	1.31	4466	22	0.66	4268	71	1.42	4208	30	0.90
75	3, 5, 6, 7, 8, 11, 12, 16, 19, 20, 23, 25	10246	20	0.79	3	0	0.00	1197	7	0.15	14	44	1.31	4051	16	0.48	4460	74	1.49	3498	17	0.51
76	3, 5, 6, 7, 8, 11, 18, 19, 21, 22, 23, 25	10677	28	1.11	3	0	0.00	1119	3	0.06	16	56	1.69	4428	22	0.65	2960	46	0.92	4212	30	0.91
77	3, 5, 6, 7, 8, 11, 18, 19, 20, 23, 25	10232	20	0.78	3	0	0.00	1189	7	0.14	16	56	1.69	4012	15	0.46	3152	50	0.99	3502	17	0.51
78	3, 5, 6, 9, 10, 11, 12, 13, 22, 23, 25	9888	13	0.53	3	0	0.00	1402	18	0.37	11	25	0.75	5317	35	1.04	5677	98	1.95	4795	41	1.23
79	3, 5, 6, 9, 10, 11, 12, 16, 19, 21, 22, 23, 25	9726	10	0.41	3	0	0.00	1069	0	0.01	9	13	0.38	4659	25	0.75	5428	93	1.86	4925	43	1.30
80	3, 5, 6, 9, 10, 11, 12, 16, 19, 20, 23, 25	9281	2	0.09	3	0	0.00	1139	4	0.08	8	6	0.19	4244	19	0.56	5619	96	1.93	4215	30	0.91
81	3, 5, 6, 9, 10, 11, 18, 19, 21, 22, 23, 25	9712	10	0.40	3	0	0.00	1061	0	0.00	10	19	0.56	4621	24	0.73	4120	68	1.36	4929	44	1.31
82	3, 5, 6, 9, 10, 11, 18, 19, 20, 23, 25	9266	2	0.08	3	0	0.00	1131	4	0.08	10	19	0.56	4205	18	0.55	4311	72	1.43	4219	30	0.91

		ENGINEERING CRITERIA GROUP																			
		Route Length			Highway and Rail Crossings			Steep Slopes			Turn Angles			Asset Protection			Co-located Distribution			Underground Utilities		
		Route length (feet)			Highway or railroad crossings (count)			Route length with slope >20% (feet)			Turn angles > 20 degrees (count)			Route length within 75 feet of a road (feet)			Route length co-located with distribution lines (feet)			Routh length with underground utilities within ROW (feet)		
Criteria Group Weight:		20%			20%			20%			20%			20%			20%			20%		
Criteria Weight:		20%			5%			10%			15%			15%			10%			15%		
Sub-Criteria Weight:		100%			100%			100%			100%			100%			100%			100%		
Weighted Multiplier:		0.0400			0.0100			0.0200			0.0300			0.0300			0.0200			0.0300		
Route	Segments	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
83	3, 5, 6, 9, 14, 17, 18, 19, 21, 22, 23, 25	9814	12	0.48	3	0	0.00	1067	0	0.01	10	19	0.56	5009	30	0.91	3261	52	1.03	4319	32	0.97
84	3, 5, 6, 9, 14, 17, 18, 19, 20, 23, 25	9368	4	0.15	3	0	0.00	1137	4	0.08	10	19	0.56	4594	24	0.72	3452	55	1.11	3609	19	0.57
85	1, 6, 7, 8, 11, 12, 13, 22, 23, 25	11805	48	1.93	3	0	0.00	1485	23	0.46	21	88	2.63	5847	43	1.28	4643	78	1.56	3977	26	0.77
86	1, 6, 7, 8, 11, 12, 16, 19, 21, 22, 23, 25	11644	45	1.81	3	0	0.00	1153	5	0.10	18	69	2.06	5190	33	0.99	4394	73	1.46	4108	28	0.85
87	1, 6, 7, 8, 11, 12, 16, 19, 20, 23, 25	11198	37	1.49	3	0	0.00	1223	9	0.17	18	69	2.06	4775	27	0.80	4586	77	1.54	3398	15	0.45
88	1, 6, 7, 8, 11, 18, 19, 21, 22, 23, 25	11630	45	1.80	3	0	0.00	1145	5	0.09	20	81	2.44	5152	32	0.97	3086	48	0.97	4112	28	0.85
89	1, 6, 7, 8, 11, 18, 19, 20, 23, 25	11184	37	1.48	3	0	0.00	1215	8	0.17	20	81	2.44	4736	26	0.78	3278	52	1.04	3402	15	0.45
90	1, 6, 9, 10, 11, 12, 13, 22, 23, 25	10840	31	1.23	3	0	0.00	1428	20	0.40	15	50	1.50	6041	46	1.37	5803	100	2.00	4694	39	1.18
91	1, 6, 9, 10, 11, 12, 16, 19, 21, 22, 23, 25	10679	28	1.11	3	0	0.00	1095	2	0.04	12	31	0.94	5383	36	1.07	5554	95	1.90	4824	42	1.25
92	1, 6, 9, 10, 11, 12, 16, 19, 20, 23, 25	10233	20	0.78	3	0	0.00	1165	6	0.11	12	31	0.94	4968	30	0.89	5745	99	1.98	4114	28	0.85
93	1, 6, 9, 10, 11, 18, 19, 21, 22, 23, 25	10664	27	1.10	3	0	0.00	1087	1	0.03	14	44	1.31	5345	35	1.06	4246	70	1.41	4828	42	1.25
94	1, 6, 9, 10, 11, 18, 19, 20, 23, 25	10219	19	0.77	3	0	0.00	1157	5	0.10	14	44	1.31	4929	29	0.87	4438	74	1.48	4118	28	0.85
95	1, 6, 9, 14, 17, 18, 19, 21, 22, 23, 25	10767	29	1.17	3	0	0.00	1093	2	0.03	14	44	1.31	5733	41	1.23	3387	54	1.08	4219	30	0.91
96	1, 6, 9, 14, 17, 18, 19, 20, 23, 25	10321	21	0.85	3	0	0.00	1163	6	0.11	14	44	1.31	5318	35	1.04	3578	58	1.16	3509	17	0.51
97	2, 8, 11, 41, 44, 45, 46, 47	13765	84	3.36	3	0	0.00	2101	56	1.12	18	69	2.06	6248	49	1.46	944	8	0.16	5950	63	1.88
98	2, 7, 9, 10, 11, 41, 44, 45, 46, 47	13310	76	3.03	3	0	0.00	2099	56	1.12	14	44	1.31	6951	59	1.77	2551	38	0.77	6667	76	2.28
99	2, 7, 9, 14, 17, 41, 44, 45, 46, 47	13412	77	3.10	3	0	0.00	2105	56	1.13	16	56	1.69	7339	65	1.95	1692	22	0.44	6057	65	1.94
100	2, 7, 9, 14, 37, 42, 44, 45, 46, 47	13222	74	2.96	3	0	0.00	2077	55	1.10	13	38	1.13	7226	63	1.90	3162	50	1.00	6759	78	2.33
101	2, 7, 9, 14, 37, 38, 43, 45, 46, 47	13070	71	2.85	3	0	0.00	2021	52	1.04	11	25	0.75	6525	53	1.58	3523	57	1.13	6593	75	2.24
102	2, 7, 9, 14, 37, 38, 39, 40, 46, 47	13036	71	2.83	3	0	0.00	2461	76	1.51	8	6	0.19	7974	74	2.23	5048	86	1.71	7953	100	3.00
103	2, 7, 27, 29, 34, 42, 44, 45, 46, 47	13240	74	2.97	3	0	0.00	2454	75	1.50	17	63	1.88	6952	59	1.77	1336	15	0.30	5441	53	1.59
104	2, 7, 27, 29, 34, 38, 43, 45, 46, 47	13089	72	2.86	3	0	0.00	2398	72	1.44	15	50	1.50	6251	49	1.46	1698	22	0.44	5276	50	1.50
105	2, 7, 27, 29, 34, 38, 39, 40, 46, 47	13055	71	2.84	3	0	0.00	2839	96	1.92	12	31	0.94	7699	70	2.11	3222	51	1.02	6635	75	2.26
106	2, 7, 27, 29, 30, 35, 43, 45, 46, 47	13094	72	2.87	3	0	0.00	2342	69	1.38	13	38	1.13	6741	56	1.68	980	8	0.17	5015	45	1.35
107	2, 7, 27, 29, 30, 35, 39, 40, 46, 47	13060	71	2.84	3	0	0.00	2782	93	1.86	12	31	0.94	8189	77	2.32	2505	37	0.75	6374	71	2.12
108	2, 7, 27, 29, 30, 31, 32, 36, 40, 46, 47	13098	72	2.87	3	0	0.00	2652	86	1.72	10	19	0.56	7870	73	2.18	1339	15	0.31	5822	60	1.81
109	2, 7, 27, 28, 32, 36, 40, 46, 47	13035	71	2.82	3	0	0.00	2597	83	1.66	10	19	0.56	6081	46	1.38	954	8	0.16	4710	39	1.18
110	3, 4, 8, 11, 41, 44, 45, 46, 47	13078	71	2.86	3	0	0.00	2087	55	1.11	16	56	1.69	5549	38	1.15	656	2	0.05	4877	43	1.28
111	3, 4, 7, 9, 10, 11, 41, 44, 45, 46, 47	12623	63	2.52	3	0	0.00	2085	55	1.11	14	44	1.31	6253	49	1.46	2263	33	0.66	5594	56	1.68
112	3, 4, 7, 9, 14, 17, 41, 44, 45, 46, 47	12725	65	2.60	3	0	0.00	2091	56	1.11	16	56	1.69	6641	54	1.63	1404	17	0.33	4984	45	1.34
113	3, 4, 7, 9, 14, 37, 42, 44, 45, 46, 47	12534	61	2.46	3	0	0.00	2063	54	1.08	13	38	1.13	6528	53	1.58	2874	44	0.89	5686	58	1.73
114	3, 4, 7, 9, 14, 37, 38, 43, 45, 46, 47	12383	59	2.35	3	0	0.00	2007	51	1.02	11	25	0.75	5827	42	1.27	3235	51	1.03	5521	55	1.64
115	3, 4, 7, 9, 14, 37, 38, 39, 40, 46, 47	12349	58	2.32	3	0	0.00	2447	75	1.50	8	6	0.19	7275	64	1.92	4760	80	1.60	6880	80	2.40
116	3, 4, 7, 27, 29, 34, 42, 44, 45, 46, 47	12553	62	2.47	3	0	0.00	2440	74	1.49	17	63	1.88	6253	49	1.46	1049	10	0.20	4369	33	0.99
117	3, 4, 7, 27, 29, 34, 38, 43, 45, 46, 47	12401	59	2.36	3	0	0.00	2385	71	1.43	15	50	1.50	5553	38	1.15	1410	17	0.33	4203	30	0.90
118	3, 4, 7, 27, 29, 34, 38, 39, 40, 46, 47	12367	58	2.34	3	0	0.00	2825	95	1.91	12	31	0.94	7001	60	1.79	2934	46	0.91	5562	55	1.66
119	3, 4, 7, 27, 29, 30, 35, 43, 45, 46, 47	12407	59	2.37	3	0	0.00	2328	68	1.37	13	38	1.13	6043	46	1.37	692	3	0.06	3942	25	0.75
120	3, 4, 7, 27, 29, 30, 35, 39, 40, 46, 47	12373	59	2.34	3	0	0.00	2768	92	1.84	12	31	0.94	7491	67	2.01	2217	32	0.64	5301	51	1.52
121	3, 4, 7, 27, 29, 30, 31, 32, 36, 40, 46, 47	12410	59	2.37	3	0	0.00	2638	85	1.70	10	19	0.56	7172	62	1.87	1051	10	0.20	4749	40	1.21
122	3, 4, 7, 27, 28, 32, 36, 40, 46, 47	12348	58	2.32	3	0	0.00	2583	82	1.64	10	19	0.56	5383	36	1.07	666	3	0.05	3637	19	0.58
123	3, 5, 6, 7, 8, 11, 41, 44, 45, 46, 47	13695	83	3.31	3	0	0.00	2081	55	1.10	19	75	2.25	6125	47	1.40	1263	14	0.28	5056	46	1.38

		ENGINEERING CRITERIA GROUP																			
		Route Length			Highway and Rail Crossings			Steep Slopes			Turn Angles			Asset Protection			Co-located Distribution			Underground Utilities		
		Route length (feet)			Highway or railroad crossings (count)			Route length with slope >20% (feet)			Turn angles > 20 degrees (count)			Route length within 75 feet of a road (feet)			Route length co-located with distribution lines (feet)			Routh length with underground utilities within ROW (feet)		
Criteria Group Weight:		20%			20%			20%			20%			20%			20%			20%		
Criteria Weight:		20%			5%			10%			15%			15%			10%			15%		
Sub-Criteria Weight:		100%			100%			100%			100%			100%			100%			100%		
Weighted Multiplier:		0.0400			0.0100			0.0200			0.0300			0.0300			0.0200			0.0300		
Route	Segments	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
124	3, 5, 6, 9, 10, 11, 41, 44, 45, 46, 47	12730	65	2.60	3	0	0.00	2023	52	1.04	13	38	1.13	6318	50	1.49	2422	36	0.72	5772	59	1.78
125	3, 5, 6, 9, 14, 17, 41, 44, 45, 46, 47	12832	67	2.68	3	0	0.00	2029	52	1.05	15	50	1.50	6707	55	1.66	1563	20	0.39	5163	48	1.44
126	3, 5, 6, 9, 14, 37, 42, 44, 45, 46, 47	12642	63	2.54	3	0	0.00	2002	51	1.02	12	31	0.94	6594	54	1.61	3034	47	0.95	5864	61	1.83
127	3, 5, 6, 9, 14, 37, 38, 43, 45, 46, 47	12490	61	2.43	3	0	0.00	1946	48	0.96	10	19	0.56	5893	43	1.30	3395	54	1.09	5699	58	1.74
128	3, 5, 6, 9, 14, 37, 38, 39, 40, 46, 47	12456	60	2.40	3	0	0.00	2386	72	1.43	7	0	0.00	7341	65	1.95	4919	83	1.66	7058	83	2.50
129	3, 5, 6, 27, 29, 34, 42, 44, 45, 46, 47	12660	64	2.55	3	0	0.00	2379	71	1.42	18	69	2.06	6319	50	1.49	1208	13	0.26	4547	36	1.09
130	3, 5, 6, 27, 29, 34, 38, 43, 45, 46, 47	12509	61	2.44	3	0	0.00	2323	68	1.36	16	56	1.69	5618	39	1.18	1569	20	0.39	4381	33	1.00
131	3, 5, 6, 27, 29, 34, 38, 39, 40, 46, 47	12475	60	2.42	3	0	0.00	2763	92	1.84	13	38	1.13	7067	61	1.82	3094	49	0.97	5741	59	1.76
132	3, 5, 6, 27, 29, 30, 35, 43, 45, 46, 47	12514	61	2.44	3	0	0.00	2266	65	1.30	14	44	1.31	6108	47	1.40	852	6	0.12	4120	28	0.85
133	3, 5, 6, 27, 29, 30, 35, 39, 40, 46, 47	12480	61	2.42	3	0	0.00	2706	89	1.78	13	38	1.13	7556	68	2.04	2376	35	0.70	5480	54	1.62
134	3, 5, 6, 27, 29, 30, 31, 32, 36, 40, 46, 47	12518	61	2.45	3	0	0.00	2576	82	1.64	11	25	0.75	7238	63	1.90	1210	13	0.26	4928	44	1.31
135	3, 5, 6, 27, 28, 32, 36, 40, 46, 47	12455	60	2.40	3	0	0.00	2521	79	1.58	11	25	0.75	5449	37	1.10	826	6	0.11	3816	23	0.68
136	3, 5, 26, 29, 34, 42, 44, 45, 46, 47	12371	59	2.34	3	0	0.00	2501	78	1.56	17	63	1.88	5259	34	1.02	1577	20	0.40	5334	51	1.53
137	3, 5, 26, 29, 34, 38, 43, 45, 46, 47	12220	56	2.23	3	0	0.00	2446	75	1.50	15	50	1.50	4558	23	0.70	1939	27	0.53	5168	48	1.44
138	3, 5, 26, 29, 34, 38, 39, 40, 46, 47	12186	55	2.21	3	0	0.00	2886	99	1.97	12	31	0.94	6006	45	1.35	3463	56	1.11	6527	73	2.20
139	3, 5, 26, 29, 30, 35, 43, 45, 46, 47	12225	56	2.23	3	0	0.00	2389	72	1.43	13	38	1.13	5048	31	0.92	1221	13	0.26	4907	43	1.29
140	3, 5, 26, 29, 30, 35, 39, 40, 46, 47	12191	55	2.21	3	0	0.00	2829	96	1.91	12	31	0.94	6496	52	1.57	2746	42	0.84	6267	69	2.06
141	3, 5, 26, 29, 30, 31, 32, 36, 40, 46, 47	12229	56	2.24	3	0	0.00	2699	88	1.77	10	19	0.56	6177	48	1.43	1580	20	0.40	5715	58	1.75
142	3, 5, 26, 28, 32, 36, 40, 46, 47	12166	55	2.19	3	0	0.00	2644	86	1.71	11	25	0.75	4388	21	0.63	1195	13	0.25	4602	37	1.12
143	1, 6, 7, 8, 11, 41, 44, 45, 46, 47	14648	100	4.00	3	0	0.00	2107	57	1.13	22	94	2.81	6849	58	1.73	1389	16	0.32	4955	44	1.32
144	1, 6, 9, 10, 11, 41, 44, 45, 46, 47	13683	82	3.30	3	0	0.00	2050	53	1.07	16	56	1.69	7042	60	1.81	2549	38	0.76	5672	57	1.72
145	1, 6, 9, 14, 17, 41, 44, 45, 46, 47	13785	84	3.37	3	0	0.00	2055	54	1.07	18	69	2.06	7431	66	1.99	1689	22	0.44	5062	46	1.38
146	1, 6, 9, 14, 37, 42, 44, 45, 46, 47	13594	81	3.23	3	0	0.00	2028	52	1.04	15	50	1.50	7318	65	1.94	3160	50	1.00	5764	59	1.77
147	1, 6, 9, 14, 37, 38, 43, 45, 46, 47	13443	78	3.12	3	0	0.00	1972	49	0.98	13	38	1.13	6617	54	1.62	3521	57	1.13	5598	56	1.68
148	1, 6, 9, 14, 37, 38, 39, 40, 46, 47	13409	77	3.10	3	0	0.00	2412	73	1.46	10	19	0.56	8065	76	2.27	5046	86	1.71	6958	81	2.44
149	1, 6, 27, 29, 34, 42, 44, 45, 46, 47	13613	81	3.25	3	0	0.00	2405	73	1.45	21	88	2.63	7043	60	1.81	1334	15	0.30	4446	35	1.04
150	1, 6, 27, 29, 34, 38, 43, 45, 46, 47	13461	78	3.14	3	0	0.00	2349	70	1.39	19	75	2.25	6342	50	1.50	1695	22	0.44	4281	31	0.94
151	1, 6, 27, 29, 34, 38, 39, 40, 46, 47	13427	78	3.11	3	0	0.00	2790	93	1.87	16	56	1.69	7791	72	2.15	3220	51	1.02	5640	57	1.71
152	1, 6, 27, 29, 30, 35, 43, 45, 46, 47	13466	78	3.14	3	0	0.00	2293	67	1.33	17	63	1.88	6832	57	1.72	978	8	0.17	4020	27	0.80
153	1, 6, 27, 29, 30, 35, 39, 40, 46, 47	13433	78	3.11	3	0	0.00	2733	90	1.81	16	56	1.69	8280	79	2.37	2502	37	0.75	5379	52	1.56
154	1, 6, 27, 29, 30, 31, 32, 36, 40, 46, 47	13470	79	3.14	3	0	0.00	2603	83	1.67	14	44	1.31	7962	74	2.22	1337	15	0.30	4827	42	1.25
155	1, 6, 27, 28, 32, 36, 40, 46, 47	13408	77	3.10	3	0	0.00	2548	80	1.61	14	44	1.31	6173	48	1.43	952	8	0.16	3715	21	0.63
156	1, 26, 29, 34, 42, 44, 45, 46, 47	13323	76	3.03	3	0	0.00	2528	79	1.58	21	88	2.63	5983	45	1.34	1703	22	0.44	5233	49	1.48
157	1, 26, 29, 34, 38, 43, 45, 46, 47	13172	73	2.92	3	0	0.00	2472	76	1.52	19	75	2.25	5282	34	1.03	2065	29	0.58	5067	46	1.38
158	1, 26, 29, 34, 38, 39, 40, 46, 47	13138	72	2.90	3	0	0.00	2912	100	2.00	16	56	1.69	6730	56	1.67	3589	58	1.16	6427	72	2.15
159	1, 26, 29, 30, 35, 43, 45, 46, 47	13177	73	2.93	3	0	0.00	2415	73	1.46	17	63	1.88	5772	42	1.25	1347	15	0.31	4806	41	1.24
160	1, 26, 29, 30, 35, 39, 40, 46, 47	13144	73	2.90	3	0	0.00	2855	97	1.94	16	56	1.69	7220	63	1.89	2872	44	0.89	6166	67	2.00
161	1, 26, 29, 30, 31, 32, 36, 40, 46, 47	13181	73	2.93	3	0	0.00	2725	90	1.80	14	44	1.31	6901	58	1.75	1706	22	0.44	5614	56	1.69
162	1, 26, 28, 32, 36, 40, 46, 47	13119	72	2.89	3	0	0.00	2670	87	1.74	15	50	1.50	5112	32	0.95	1321	15	0.30	4502	36	1.07
163	2, 7, 27, 29, 30, 31, 32, 33, 47	13248	74	2.98	4	100	1.00	2790	93	1.87	10	19	0.56	9611	99	2.96	1206	13	0.26	4779	41	1.22
164	2, 7, 27, 28, 32, 33, 47	13185	73	2.93	4	100	1.00	2735	90	1.81	10	19	0.56	7822	72	2.16	821	5	0.11	3667	20	0.60

		ENGINEERING CRITERIA GROUP																			
		Route Length			Highway and Rail Crossings			Steep Slopes			Turn Angles			Asset Protection			Co-located Distribution			Underground Utilities		
		Route length (feet)			Highway or railroad crossings (count)			Route length with slope >20% (feet)			Turn angles > 20 degrees (count)			Route length within 75 feet of a road (feet)			Route length co-located with distribution lines (feet)			Routh length with underground utilities within ROW (feet)		
	Criteria Group Weight:	20%			20%			20%			20%			20%			20%			20%		
	Criteria Weight:	20%			5%			10%			15%			15%			10%			15%		
	Sub-Criteria Weight:	100%			100%			100%			100%			100%			100%			100%		
	Weighted Multiplier:	0.0400			0.0100			0.0200			0.0300			0.0300			0.0200			0.0300		
Route	Segments	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
165	3, 4, 7, 27, 29, 30, 31, 32, 33, 47	12560	62	2.48	4	100	1.00	2776	93	1.85	10	19	0.56	8913	88	2.65	918	7	0.15	3707	21	0.62
166	3, 4, 7, 27, 28, 32, 33, 47	12498	61	2.43	4	100	1.00	2721	90	1.79	10	19	0.56	7124	62	1.85	533	0	0.00	2594	0	0.00
167	3, 5, 6, 27, 29, 30, 31, 32, 33, 47	12668	64	2.56	4	100	1.00	2715	89	1.79	11	25	0.75	8978	89	2.68	1078	10	0.21	3885	24	0.72
168	3, 5, 6, 27, 28, 32, 33, 47	12605	63	2.51	4	100	1.00	2660	86	1.73	11	25	0.75	7189	63	1.88	693	3	0.06	2773	3	0.10
169	3, 5, 26, 29, 30, 31, 32, 33, 47	12379	59	2.35	4	100	1.00	2838	96	1.92	10	19	0.56	7918	73	2.20	1447	17	0.35	4672	39	1.16
170	3, 5, 26, 28, 32, 33, 47	12316	58	2.30	4	100	1.00	2783	93	1.86	11	25	0.75	6129	47	1.41	1062	10	0.20	3560	18	0.54
171	1, 6, 27, 29, 30, 31, 32, 33, 47	13620	81	3.25	4	100	1.00	2741	91	1.82	14	44	1.31	9702	100	3.00	1204	13	0.25	3784	22	0.67
172	1, 6, 27, 28, 32, 33, 47	13558	80	3.21	4	100	1.00	2686	88	1.76	14	44	1.31	7913	73	2.20	819	5	0.11	2672	1	0.04
173	1, 26, 29, 30, 31, 32, 33, 47	13331	76	3.04	4	100	1.00	2864	97	1.95	14	44	1.31	8642	84	2.53	1573	20	0.39	4571	37	1.11
174	1, 26, 28, 32, 33, 47	13269	75	2.99	4	100	1.00	2809	94	1.89	15	50	1.50	6853	58	1.73	1188	12	0.25	3459	16	0.48
Min		9159	–	–	3	–	–	1061	–	–	7	–	–	2979	–	–	533	–	–	2594	–	–
Max		14648	–	–	4	–	–	2912	–	–	23	–	–	9702	–	–	5805	–	–	7953	–	–
Range		5489	–	–	1	–	–	1851	–	–	16	–	–	6724	–	–	5272	–	–	5358	–	–
	Calculation details:	Length determine by route centerline.			Included Aero Parkway and Burlington Pike road crossings. The project area did not include any railroads.			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.			Determined by identifying overlap between project ROW and road ROW. For 138 kV or above, paralleling a road is considered undesirable.								


New Aero Substation
Aero Pkwy
Line 6783 - 69 KV
State Hwy 18
Burlington Pike
Fountain Dr
Houston Rd
Merchants Dr
New Woodspoint Substation
Burlington Pike
Line 5882 - 69 KV
BOONE COUNTY, KY
INDIANA
OHIO
KENTUCKY
Boone County
Kenton County
Legend
Duke Substation
Woodspoint to Aero Preferred Route Centerline
Proposed ROW
Existing Duke Owned Transmission Line
Substation Boundary
CVG Airport Boundary
Parcels Impacted by Project (Duke Unq. ID)
Parcel Boundary
Feet
0 250 500 1,000
Notes
1. Coordinate System: NAD 1983 StatePlane Kentucky North FIPS 1601 Feet
2. Data Sources Include: Stantec, Duke, NADS, City of Florence, CVG Airport, Boone County
3. Orthophotography: 2018 NAIP
DUKE ENERGY.
Exhibit 5:
Proposed Route
DRAWN BY: BWT
DATE: 2019-10-25

Legend

- Duke Substation
- Segment Network
- Existing Duke Owned Transmission Line
- Substation Boundary
- CVG Airport Boundary

Feet
0 250 500 1,000

Notes
1. Coordinate System: NAD 1983 StatePlane Kentucky North FIPS 1601 Feet
2. Data Sources Include: Stantec, Duke, NADS, City of Florence CVG Airport
3. Orthophotography: 2018 NAIP

DUKE ENERGY.

Exhibit 6:
Segment Network

DRAWN BY: BWT
DATE: 2019-10-25

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 (Woodspoint to Aero Transmission Line Project)	)	Case No. 2019-00361

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

Dawn M. Fuller, Senior Public Engagement Specialist, 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 Woodspoint to Aero Transmission Line Project will cross the property owned by the persons listed in Exhibit 8 of the application.

3. On October 21, 2019 the persons in Exhibit 8 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 8.

FURTHER AFFIANT SAYETH NAUGHT.

Dawn M. Fuller

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 30th day of October 2019.

E Minna Rolfes-Adkins

Notary Public
My Commission Expires: July 8, 2022

NOTARY PUBLIC
STATE OF OHIO

E. MINNA ROLFES-ADKINS
Notary Public, State of Ohio
My Commission Expires
July 8, 2022

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

Oct. 21, 2019

Notice of Proposed Electric Transmission Line Construction Project

Dear Property Owner:

Duke Energy Kentucky, Inc., (Duke Energy) is proposing a new electric transmission line project in Boone County. We are contacting you as part of the process to file an application seeking a certificate of public convenience and necessity from the Kentucky Public Service Commission. This project involves the approximate 2-mile construction of a new, 138-kilovolt (kV) transmission line between Aero Substation near the Amazon Prime Air Hub facility off Aero Parkway and a proposed Woodspoint Substation near Burlington Pike.

You are receiving this notice because county property records that 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 138-kV transmission line between the proposed Aero and Woodspoint substations involves the following work:

- The construction of approximately 2 miles of 138-kV transmission line.
- The transmission line will be supported by approximately 50 steel poles with an average above-ground height of 80 feet.
- The distance between poles will run an average of 175 to 275 feet.
- Right-of-way width for the project is 70 feet when the line is running adjacent to the 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 described as Case No. 2019-00361 on the Kentucky Public Service Commission's website at
https://psc.ky.gov/PSC_WebNet/ViewCaseFilings.aspx?case=2019-00361.

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. 2019-00361.

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

Gwen R. Pinson, Executive Director
Kentucky Public Service Commission
211 Sower Boulevard
Frankfort, KY 40602
502.564-3940
800.772.4636

Duke Energy anticipates filing its application with the Kentucky Public Service Commission on or after Oct. 24, 2019. The application when filed may be viewed under Case No. 2019-00361 on the commission's website at **https://psc.ky.gov/PSC_WebNet/ViewCaseFilings.aspx?case=2019-00361**.

4. You have the right to submit a timely written request for intervention in Case No. 2019-00361. 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://www.lrc.state.ky.us/kar/807/005/001.htm**.

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. 2019-00361.

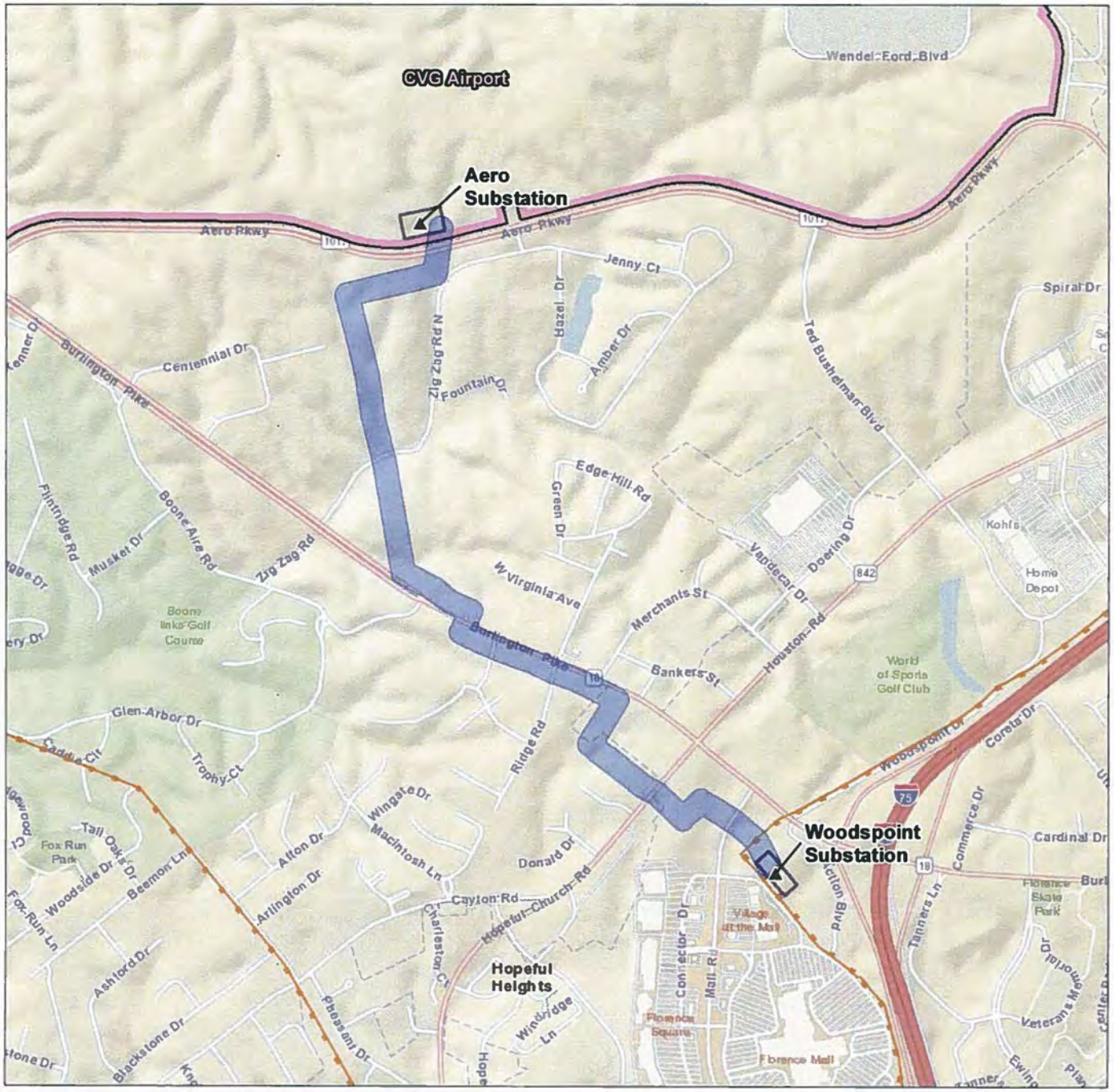
5. You also have the right to request a local public hearing regarding the application and the proposed 138-kV transmission line and related work. The requirements for requesting a local public hearing are described in 807 KAR 5:120, Section 3. See http://kyrules.elaws.us/rule/807kar5:001 for additional 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. 2019-00361.

7. Project updates may also be found on the Duke Energy Aero Reliability Project website at **duke-energy.com/Aero**.

Sincerely,

Duke Energy



Title
Preferred Route Corridor

Client/Project
Woodspoint to Aero
138 kV Transmission Line Siting Study

Project Location
Boone Co., KY

0 750 1,500 Feet

N

Legend

- ▲ Proposed Duke Substation
- Preferred Route Corridor
- Proposed Substation Site
- Existing Duke Owned Transmission Line
- CVG Airport Property Boundary

DUKE ENERGY

Data Sources: Duke Energy, Stantec, ESRI, NADS

Parcel PIN(s)	Parcel Address(es)	Mailing Owner	Mail Address	Mail City	Mail State	Mail Zip	Duke ID(s)
059.00-00-070.38	AERO PKY	COUNTY OF BOONE	P O BOX 900	BURLINGTON	KY	41005	3
059.00-00-070.45	AERO PKY	DRINGENBURG DUANE	5566 ZIG ZAG RD	FLORENCE	KY	41042	4
061.00-31-006.00	5765 CONSTITUTION DR	IRELAND PROPERTIES LLC	2260 DEVLIN PL UNIT 204	CRESCENT SPRINGS	KY	41017	5
061.00-31-008.00	5760 CONSTITUTION DR	SWEENEY CONSTITUTION REALTY, LLC	5969 CENTENNIAL DR	FLORENCE	KY	41042	7
061.00-00-036.00	1100 BURLINGTON PIKE	STAG INDUSTRIAL HOLDINGS LLC	1 FEDERAL ST 23RD FLOOR	BOSTON	MA	2110	9
061.00-00-036.01	1086 BURLINGTON PIKE	ZIMMER MOTOR PROPERTIES LLC	1086 BURLINGTON PIKE	FLORENCE	KY	41042	11
061.00-00-034.00	1050 BURLINGTON PIKE	GREENVIEW BAPTIST CHURCH	1050 BURLINGTON PIKE	FLORENCE	KY	41042	12
061.00-00-045.00	1113 BOONE AIRE RD	DALLAS STEPHEN K	PO BOX 6205	FLORENCE	KY	41042	13
061.00-00-046.00	1099 BURLINGTON PIKE	BUBBY 1688 KY , LLC	8646 SKYVIEW DR	FLORENCE	KY	41042	14
061.00-00-047.00	1085 BURLINGTON PIKE	GOC REALCO LLC	3805 EDWARDS RD STE 680	CINCINNATI	OH	45208	15
061.00-00-048.00	1065 BURLINGTON PIKE	RC DURR FOUNDATION INC	PO BOX 175710	COVINGTON	KY	41017	16
061.00-00-050.00	1043 BURLINGTON PIKE	FLORENCE OWNER 1 LLC	92 RIVER RD	SUMMIT	NJ	7901	17
061.00-00-051.00	1041 BURLINGTON PIKE	BIG CAT FAMILY LTD PARTNERSHIP	620 WINDINGS LN	CINCINNATI	OH	45220	18
061.00-00-052.00	1033 BURLINGTON PIKE	DRL INVESTMENTS LLC	1033 BURLINGTON PIKE	FLORENCE	KY	41042	19
061.00-00-052.01	1029 BURLINGTON PIKE	BROEG RICHARD A & MARY F	PO BOX 1057	FLORENCE	KY	41022-1057	20
061.00-00-053.00	1013 BURLINGTON PIKE	TULIP LLC	7450 INDUSTRIAL RD	FLORENCE	KY	41042	21
061.00-04-038.04	985 BURLINGTON PIKE	SPEEDWAY LLC	539 S MAIN ST	FINDLAY	OH	45840	23
061.00-00-056.00	8137 BURLINGTON PIKE	HOPEFUL PARTNERS TOYOTA USED CARS	602 MAIN ST UNIT 302	CINCINNATI	OH	45202	25
061.00-00-063.00	6136 HOPEFUL RD	MARTIN JUANA	7 TEE ST	FLORENCE	KY	41042	27
062.00-25-002.00	7553 MALL RD	TRG FLORENCE LLC	9301 MONTGOMERY RD STE 2B	CINCINNATI	OH	45242	33
062.00-25-002.03	7533 MALL RD	COYOTE EAG LLC	205 RUMSON RD	RUMSON	NJ	7760	34
061.00-00-117.00	7531 MALL RD	VISSER IRREVOCABLE TRUST 1992-3 TRUS	5603 N BROADWAY	DENVER	CO	80216	35
062.00-25-003.11	8039 BURLINGTON PIKE	NAP VILLAGE AT THE MALL LLC	212 E THIRD ST SUITE 300	CINCINNATI	OH	45202	36
062.00-25-003.15	7550 MALL RD	GUARDIAN SAVINGS BANK	6100 W CHESTER RD	CINCINNATI	OH	45069	39
061.00-00-120.00	8001 BURLINGTON PIKE	HACKMAN FAMILY LLC	5513 JULMAR DR	CINCINNATI	OH	45238	43
049.00-00-092.00	ZIG ZAG RD						1
060.00-00-053.00	ZIG ZAG RD	KENTON COUNTY AIRPORT BOARD	P O BOX 752000	CINCINNATI	OH	45275-2000	2
061.00-00-041.00	1154 BURLINGTON PIKE						10
061.00-00-055.00	949 BURLINGTON PIKE	MOUNTAIN AGENCY LLC	401 MILFORD PKY SUITE A	MILFORD	OH	45150-9101	24
061.00-00-054.00	1007 BURLINGTON PIKE						22
061.00-00-063.01	HOPEFUL RD						26
061.00-05-003.00	941 ASHCRAFT LN						28
061.00-05-002.00	923 ASHCRAFT LN						29
061.00-05-001.00	905 ASHCRAFT LN						30
061.00-05-004.00	934 ASHCRAFT LN						31
061.00-00-114.00	8053 BURLINGTON PIKE	DECASTRO MANAGEMENT LLC	602 MAIN ST UNIT 302	CINCINNATI	OH	45202	32
062.00-25-003.13	7508 MALL RD						37
062.00-25-003.14	7516 MALL RD						38
062.00-25-003.10	7606 MALL RD	VILLAGE AT THE MALL HOLDINGS LLC	330 PASSAIC AVE STE 110	FAIRFEILD	NJ	7004	40
061.00-00-120.01	ACTION BLVD						41
061.00-00-120.03	ACTION BLVD	KUCHLE JOSEPH A & CO INC	8001 BURLINGTON PIKE	FLORENCE	KY	41042	42
061.00-00-013.01	5891 ZIG ZAG RD						6
061.00-00-013.02	5939 ZIG ZAG RD	ROUSE KATHERINE M & MICHAEL D	5891 ZIG ZAG RD	FLORENCE	KY	41042	8

7019 0700 0000 1937 4406

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☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $.50
Total Postage and Fees $6.80

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City, State, ZIP+4® Florence, KY 41042

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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☐ Adult Signature Restricted Delivery $
Postage $.50
Total Postage and Fees $6.80

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Street and Apt. No., or PO Box No. 8001 Burlington Pike
City, State, ZIP+4® Florence, KY 41042

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☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $.50
Total Postage and Fees $6.80

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City, State, ZIP+4® Crescent Springs, KY 41017

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $.50
Total Postage and Fees $6.80

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City, State, ZIP+4® Rumson, NJ 07760

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7019 0700 0000 1937 4505

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Extra Services & Fees (check box, add fee as appropriate)
☒ Return Receipt (hardcopy) $2.80
☐ Return Receipt (electronic) $
☐ Certified Mail Restricted Delivery $
☐ Adult Signature Required $
☐ Adult Signature Restricted Delivery $
Postage $.50
Total Postage and Fees $6.80

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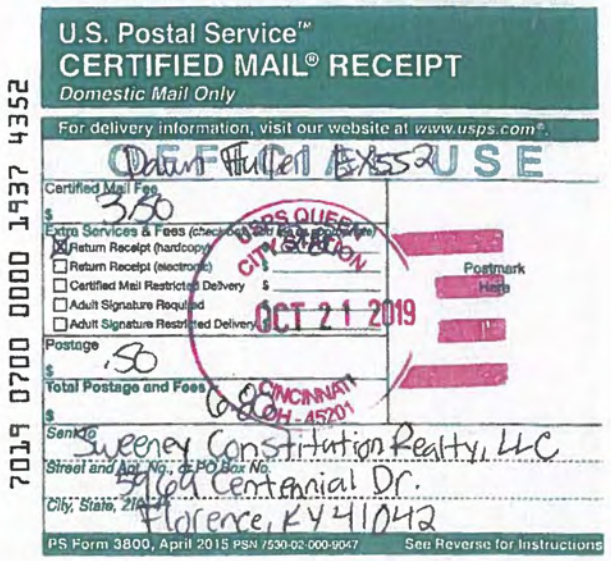

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Inside takedown of al-Baghdadi

The tip, the raid and the president's reveal

Deb Riechmann and Aamer Madhani
ASSOCIATED PRESS

WASHINGTON – The helicopters flew low and fast into the night, ferrying U.S. special forces to a compound where Islamic State leader Abu Bakr al-Baghdadi was hiding in Syria. Half a world away, President Donald Trump watched the raid in real time via a video link as troops blasted into the hideout and sent the most-wanted militant running the last steps of his life.

The daring raid was the culmination of years of steady intelligence-gathering work – and 48 hours of hurry-up planning once Washington got word that al-Baghdadi would be at a compound in northwestern Syria.

The night unfolded with methodical precision and unexpected turns. This reconstruction is based on the first-blush accounts of Trump and other administration officials eager to share the details of how the U.S. snared its top target, as well observations from startled villagers who had no idea al-Baghdadi was in their midst.

A secret two-day scramble

The White House learned Thursday there was "a high probability" that al-Baghdadi would be at an Idlib province compound.

By Friday, Trump had military options on his desk.

By Saturday morning, the administration at last had "actionable intelligence" it could exploit.

There was no hint of that interior drama as Trump headed to Camp David on Friday night to celebrate the 10th wedding anniversary of daughter Ivanka and son-in-law Jared Kushner. Then he was off to Virginia on a brisk fall Saturday for a round at one of his golf courses.

He teed off with Major League Baseball Commissioner Rob Manfred, in town for the World Series, and Sens. Lindsey Graham and David Perdue.

Trump got back to the White House at 4:18 p.m. By 5 p.m., he was in a suit in the Situation Room in the basement of the West Wing to monitor the raid.

One official said they monitored the operation with real-time imagery, but Trump's vivid description of al-Baghdadi's final moments was based on conversations with military commanders.

They named it after Kayla Mueller, an American humanitarian worker abused and killed by al-Baghdadi.

The rest of Washington had its focus on Game 4 of the World Series about to get underway a few miles away at Nationals Park.

Panic then death

Moments after the White House team had gathered, U.S. aircraft, mostly twin-rotor CH-47 helicopters, took off from Al-Asad air base in western Iraq.

Within hours, al-Baghdadi was dead.

The first inkling that something was afoot came when villagers saw helicopters swooping low on the horizon.

"We went out in the balcony to see and they started shooting, with automatic rifles. So we went inside and hid," said an unidentified villager.

Next came a large explosion – Trump said soldiers blasted a hole in the side of a building because they feared the entrance might have been booby-trapped. Al-Baghdadi fled into a network of underground bunkers and tunnels that snaked through the compound.

The stout, bearded militant leader wore a suicide vest and dragged along three children as he fled from troops.

"He reached the end of the tunnel, as our dogs chased him down," Trump said. "He ignited his vest, killing himself and the three children."

'It was him'

Al-Baghdadi's body was mutilated in the blast, and the tunnel caved in on him. To get to his corpse, troops had to dig through debris.

"There wasn't much left," Trump said, "but there are still substantial pieces that they brought back."

That's when the military raid turned into a forensics operation – and the special forces had come prepared.

They had brought along samples of al-Baghdadi's DNA.

The soldiers who conducted the raid thought the man who fled looked like al-Baghdadi, but that wasn't enough. Various accounts had heralded his death in the past, only for him to surface yet again.

This time there could be no doubt.

Lab technicians conducted an on-site DNA test to make sure and within 15 minutes of his death, positively identified the target.

"It was him," Trump said.

Trump said U.S. troops remained in the compound for about two hours after al-Baghdadi's death and recovered highly sensitive material about the Islamic State group, including information about its future plans.

After the American troops retreated, U.S. fighter jets fired six rockets at the house, leveling it.

President Donald Trump announces the death of Islamic State leader Abu Bakr al-Baghdadi in the Diplomatic Room of the White House. ANDREW HARNIK/AP

The big tease

Trump was so excited he couldn't contain himself.

He hinted of the successful military operation late Saturday by tweeting obliquely that "something very big has just happened!" White House spokesman Hogan Gidley announced the president would make a "major statement" Sunday morning.

That sent reporters in Washington and the Middle East scrambling, and news organizations soon confirmed that U.S. forces believed they had killed America's most-wanted man.

It was a measure of the strained atmosphere in Washington that two top Democrats – House Speaker Nancy Pelosi and Rep. Adam Schiff, who heads the House intelligence committee – didn't get a heads-up from Trump about the operation.

The reveal: 'the biggest'

Trump chose the Diplomatic Room to make his announcement Sunday.

In announcing al-Baghdadi's death, he leaned into comparing the successful operation with the 2011 mission to kill 9/11 mastermind Osama bin Laden.

While bin Laden orchestrated the deadliest militant attack in U.S. history, the killing of al-Baghdadi – who helped the IS group at its height control more than 34,000 square miles of territory in Iraq and Syria – was "the biggest there is," Trump said.

Duke

NOTICE OF PROPOSED ELECTRIC TRANSMISSION LINE CONSTRUCTION PROJECT

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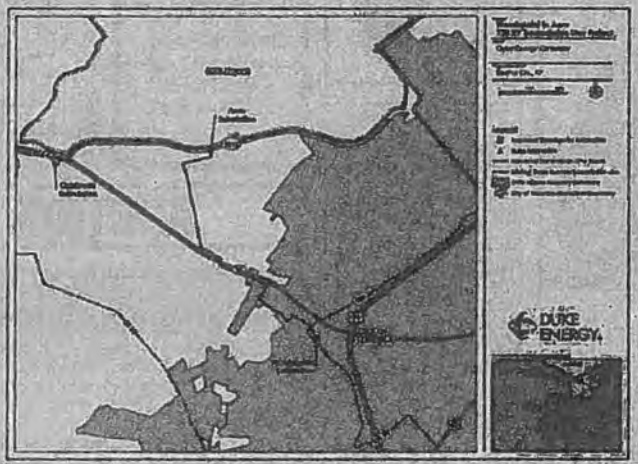

N19241C

POSTED! -- NO TRESPASSING

Call 824-3343 to place your posted ad.
$52 - 1 year or $25 - 10 weeks • Cash, Check, Visa, MasterCard or Discover

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.

•19 and 21 Knoxville Rd., Dry Ridge. 5-21-19
•6235 and 8239 Dixie Hwy., Williamstown, Ky. 41097. 5-18-20
•Henry Family Farm at 1115 Smokey Rd., Williamstown. 4-23-20

NOTICE

The Grant County Fiscal Court held th
of Ordinance No. 11-2019-0234 enacting
Ordinance Establishing Fee-Pooling and
System for the Office of the Grant County
A copy of the enacted Ordinance may be s
the County Judge/Executive during norm
Dated this 15th Day of October, 2019
ATTEST
/s/ Patricia Conrad — Patricia (Pat) Conrad, Fiscal Court Clerk
/s/ Chuck Dills — Chuck Dills, Grant County Judge/Execu

N10241C

To whom it may concern,

Duke

Robert Lambert 1984 Rev Cats Re 11/19 ing Police 2nd Degree (motor

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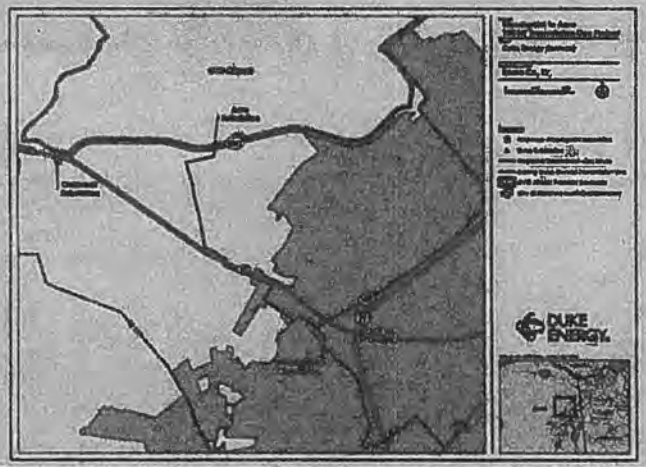

Degree #rd or > off (methamphetamine), Drug Paraphernalia Buy/Possess FPTC 1/15

Christian Nicole Faulkner 1982 Arr Poss Controlled Sub 1st Deg 1st Off (Methamphetamine), Complicity Poss Controlled Sub 1st Degree 1st Off (Methamphetamine), Drug Paraphernalia Buy/Possess, Complicity Drug Paraphernalia Buy/Possess, Complicity Convicted Felon in Possession of a Handgun PTC 12/4

Bethany Fields 1989 Rev

sent or u/18, sodomy 3rd deg, incest forcible complusion/incapable of consent or u/18, rape 3rd deg, incest forcible complusion/incapable of consent or u/18, sexual abuse 1st deg-FPTC 12/4/19

Erica Leoma Williamson 1985 Arr Attempt Murder, Assault 1st Degree, Wanton Endangerment 1st Degree (Five Counts), Terroristic Threatening 3rd Degree-FPTC 1/15/20

Betty Young 1968 Contempt Hearing Review 1/3/20

MARRIAGE LICENSES

Ciara Cherie Stephens, 4/18/96 Florence and Andrew Joseph Ralenkoffer, Edgewood, 12/21/85. Issued 10/14.

ABSENTEE

continued from page 1

responsibility."

To be qualified to vote by in-person absentee ballot, a voter must be:

Out of the county on election day

Advanced in age, disabled, or ill

Military, their Dependents, or an Overseas Citizen

Military personnel confined to base and learn of your confinement within seven days or less of an election

Student or resident who temporarily resides outside of the county

Voter or the spouse of a voter who has surgery scheduled that will require hospitalization on Election Day

Pregnant woman in third trimester.

Eligible Kentuckians may vote by in-person absentee ballot prior to November 5, General Election Day. Voters should contact their county clerks for absentee voting hours. In-person absentee voting closes on November 4, the day before the General Election. The deadline to apply for a mail-in absentee ballot with the county clerk is October 29.

Duke

OFFICIAL PUBLICATION

Smith's Towing
1495 Dolwick Dr.
Erlanger, KY 41018
859-586-8999

Smith's Towing reserves the right to place bids on the following vehicles. TITLES NOT GUARANTEED!
Listed below are vehicles in which will be sold for towing and storage charges generated by Impound. Auction date as follows: November 1st, 2019 at 10:00 AM by Smith's Towing at 1495 Dolwick Drive, Erlanger, KY 41018:

1G1PC5SB0E7304597
2014 Chevy Cruze Black
Ally Financial
Brad Dreier

1G1JC12F837228464
2003 Chevy Cavalier Bronze
Integrity Funding Ohio, LLC
Ovella L Crawford / Del V Campbell

1FADP5AU4DL537346
2013 Ford C Max SE
Citizens Bank
His LLC

1FTNE24292HA33792
2002 Ford Econoline E250
Tafel Motors

4T4BF1FK6DR309462
2013 Toyota Camry
His LLC

5NPEB4AC6CH333195
2012 Hyundai Sonata Black
US BANK EQUIPMENT FINANCE
HIS LLC

1FADP5AU3DL528671
2013 Ford CMax SE
Citizens Bank
His LLC

2C3KA43D49H614333
2009 Chrysler 300 LX- Blue
United Auto Dealer
Yacoub Chieckh

1GNDX03E33D219091
2003 Cheverolet Venture
Beige

OFFICIAL PUBLICATION

1G2WJ12M2TF255171
1996 Pontiac Grand Prix-Red
Noel Emmons

JT2AE94K8M3470649
1991 Toyota Corolla
Manuel Evangelista

3N1CE2CPXFL352052
2015 Nissan Versa Red
Credit Accpt Corp
Marc Allana McCarty

WVWDA71K18W095507
2008 Volkswagen Rabbit Blue
Amanda Jorinehart

1JJV532D3FL840443
2015 Wabash Unit 2239
Intergrated Vehicle Leasing Inc

KMHFU45E93A260482
2003 Hyundai XG350 Silver
Jacob Wagner

1JJV532U8SL227874
1995 Wabash National Trailer
Kamps Inc

JTDBT1234Y0072456
2000 Toyota Echo Silver
Keith Harperink

1JJV532D3FL840443
2015 Wabash National Corp
Intergrated Vehicle Leasing Inc
BCR,Oct17,24,31,'19#3841024

OFFICIAL PUBLICATION

MATTHEW G. BEVIN
GOVERNOR

EXECUTIVE ORDER

Secretary of State
Frankfort
Kentucky

2019-614
August 13, 2019

WRIT OF ELECTION

Sixty-Third District-House of Representatives
WHEREAS, the Honorable

OFFICIAL PUBLICATION

Legal Notice: The following vehicles stored at Cozine Towing & Recovery Services Inc., 3512 KY Hwy 2850, Verona, KY 41091, will be sold at public auction on, November 12, 2019 at 10:00am. **Cozine Towing & Recovery Services, Inc. reserves the right to place bids on the following vehicles. No titles are guaranteed.
2004 Ford SportTrac VIN: 1FMZU77K35UA94012
2005 Chevrolet Trailblazer VIN: 1GNDT13S152202523
1979 Chevrolet Camaro VIN: 1Q87G9L517093
BCR,Oct10,17,24,'19#3834999

COMMONWEALTH OF KENTUCKY
ALISON LUNDERGAN GRIMES
SECRETARY OF STATE
CERTIFICATE

I, Alison Lundergan Grimes, Secretary of State for the Commonwealth of Kentucky, do certify that the foregoing writing has been carefully compared by me with the original record thereof, now in my official custody as Secretary of State and remaining on file in my office, and found to be a true and correct copy of Executive Order No. 2019-614, dated August 13, 2019, issuing a Writ of Election to fill the vacancy in the Kentucky House of Representatives Sixty-Third District, filed in the Secretary of State's Office on August 13, 2019.
IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal. Done at Frankfort this 13th day of August, 2019.
/s/ Alison Lundergan Grimes
Secretary of State, Commonwealth of Kentucky
BCR,Oct24,'19#3848788

LEGAL NOTICE
The Boone County Planning Commission will hold a Public Hearing on **Wednesday, November 6, 2019 at 7:30**

OFFICIAL PUBLICATION

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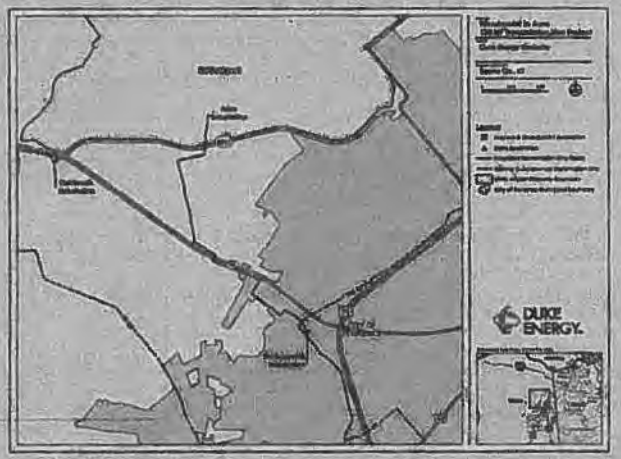

Exhibit 9
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Duke

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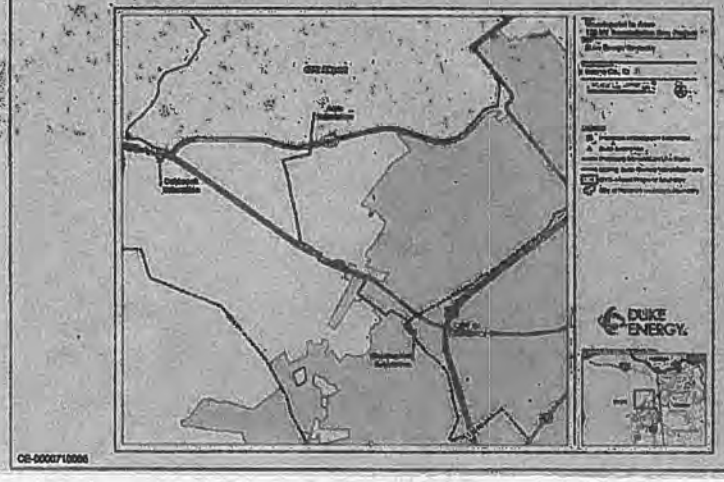

CE-0000710096

OFFICIAL PUBLICATION

Bond (insuring/bonding company shall be rated "A" by AM Best) in the amount of ten percent (10%) of the maximum total bid price, must accompany each Bid.

The Successful Bidder will be required to furnish a Construction Payment Bond and a Construction Performance Bond (insuring/bonding company shall be rated "A" by AM Best) as security for the faithful performance of the contract and the payment of all bills and obligations arising from the performance of the Contract.

Evaluation of Bids and the awarding of a final contract are subject to the reciprocal preference for Kentucky resident bidders pursuant to KRS 45A.490 to 45A.494 and (KAR 200 5:400).

Owner reserves the right to reject any or all Bids, including without limitation the right to reject any or all nonconforming, nonresponsive, incomplete, unbalanced, or conditional Bids, to waive informalities, and to reject the Bid of any Bidder. If Owner believes that it would not be in the best interest of Owner to make an award to that Bidder. Owner also reserves the right to negotiate with the apparent successful Bidder to such an extent as may be determined by Owner.

Minority Bidders are encouraged to bid.

Bids shall remain subject to acceptance for 60 days after the day of bid opening or for such longer period of time to which a Bidder may agree in writing upon request of the Owner. If a Contract is to be awarded, the Owner will give the successful Bidder a Notice of Award during the period of time during which the successful Bidder's bid remains subject to accept-

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Amy Kramer, Vice President of Engineering, Production & Distribution
Northern Kentucky Water

OFFICIAL PUBLICATION

CRUZE CRUZE LLC
1999 FORD
1FTZX1728XNA72755
CAM,Oct10,17,24,'19#3826350

NOTICE OF HEARING

Issuance of Bonds for Industrial Building and Pollution Control Facilities for Cities and Counties
KRS 103.200 – 103.285

City of Dayton, Kentucky Industrial Revenue Bonds Series 2019

(City of Dayton Industrial Revenue Bonds, Series 2019 (Manhattan Development Group's Project))

Notice is hereby given that, pursuant to a Notice of Intent for Issuance of Bonds under KRS 103.200 – 103.285 (Industrial Building and Pollution Control Facilities for Cities and Counties), the City of Dayton, Kentucky has requested the State Local Debt Officer to approve the financial plan whereby the City of Dayton, Kentucky proposes to issue Bonds in an amount not to exceed $120,000,000.00. The proceeds will provide funding for the acquisition and contruction of a market rate residential housing project, and related site amenities in the City of Dayton, Kentucky. A hearing will be held in the Conference Room, Department for Local Government, 100 Airport Road, Frankfort, Kentucky on Tuesday, November 12, 2019 at 10:00 AM, (Prevailing Eastern Time) to consider whether or not the financial plan for the issuance of the 2019 Bonds should be approved.

OFFICIAL PUBLICATION OFFICIAL PUBLICATION OFFICIAL PUBLICATION

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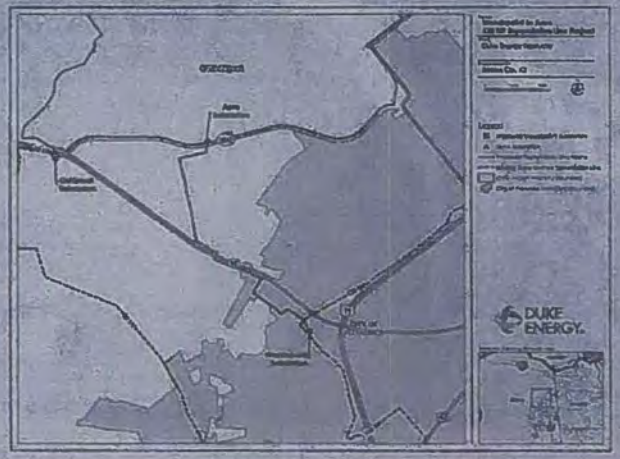

OFFICIAL PUBLICATION

LEGAL NOTICE

General Auctions General Auctions

Estate Sales Estate Sales Estate Sales

Duke

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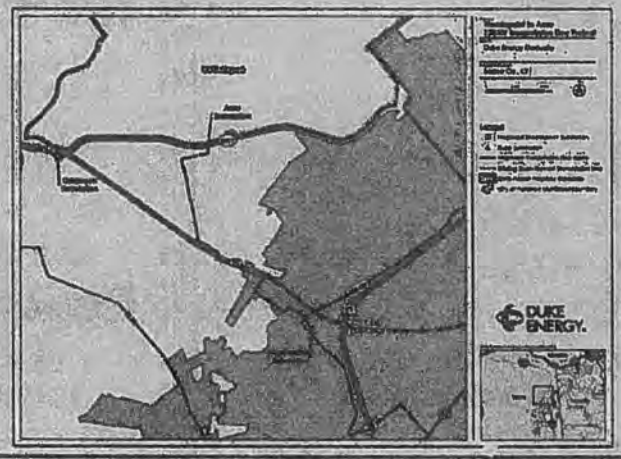


their claims as required by law.
Lana K. Webb
P.O. Box 726

THE GALLATIN COUNTY COURT-HOUSE in Warsaw, Kentucky, to the highest bidder, at public auction on

of its intent to be surety prior to or at the sale; said Bond shall be, and shall

a holiday, it would for-

help with the pumpkin carving. Small children shouldn't be allowed to use a sharp knife to cut the top or the face. There are many kits available that come with tiny saws that work better then knives and are safer, although they can cut you as well. It's best to let the kids clean out the pumpkin and draw a face on it, which you can carve for them.

Treating your kids to a spooky Halloween dinner will make them less likely to eat the candy they collect before you have a chance to check it for them.

Teaching your kids basic everyday safety such as not getting into cars or talking to strangers, watching both ways before crossing streets and crossing when the lights tell you to, will help make them safer when they are out Trick or Treating.

Make Halloween a fun, safe and happy time for your kids and they'll carry on the tradition that you taught them to their own families some day!

NOTARIZED PROOF OF PUBLICATION

STATE OF KENTUCKY

COUNTY OF Franklin

Before me, a Notary Public, in and for said County and State, this 29th **day of** October**, 2019, came** Rachel McCarty

personally known to me, who being duly sworn, states as follows: That he/she is Advertising Assistant **of the** Ky Press Service

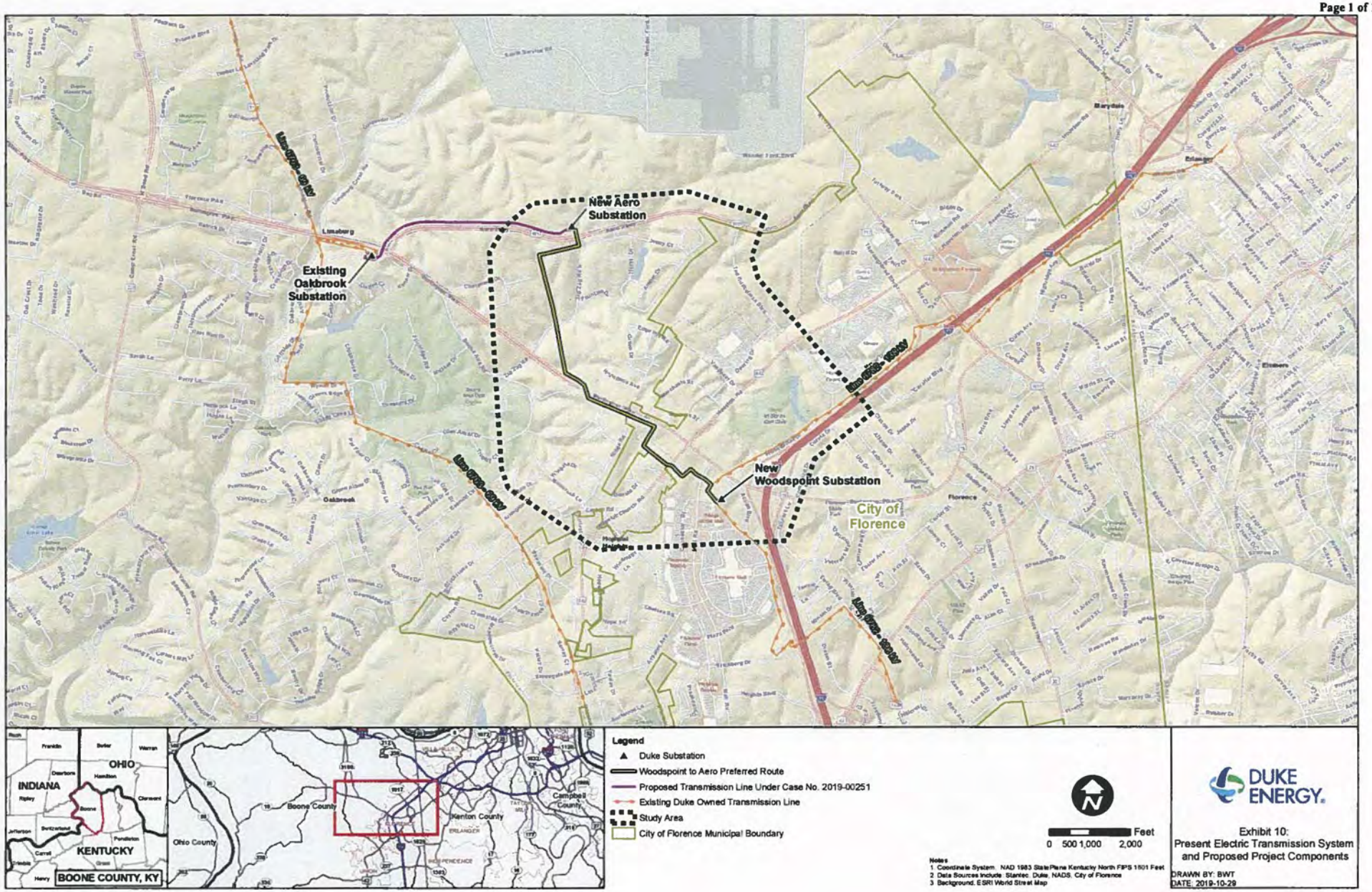
and the attached list ran the Notice of Proposed Electric Transmission Line for Duke Energy.

Rachel McCarty
Signed

Bonnie F. Howard
Notary Public

My commission expires 9-18-20

Id. # 563384



DUKE ENERGY.

Exhibit 10:
Present Electric Transmission System and Proposed Project Components

DRAWN BY: BWT
DATE: 2019-10-29

Exhibit 11

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 (Woodspoint to Aero Transmission Line Project)	)	Case No. 2019-00361

DIRECT TESTIMONY OF

YANTHI W. BOUTWELL

ON BEHALF OF

DUKE ENERGY KENTUCKY, INC.

October 31, 2019

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 Director 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. I assumed my role as Director of Midwest Transmission Resource & Project Management on May 1, 2019.

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

A. As Director 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, work management, project resource forecasting, contracting strategy, and materials strategy. 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 and have responsibility within Work Management including short-term and long-range planning, outage coordination, and NERC compliance oversight for maintenance activities, scheduling all construction and maintenance activities. 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 TESTIFIED BEFORE THE KENTUCKY PUBLIC SERVICE COMMISSION?

A. Yes. I previously provided testimony in support of the Company's Application in Case No. 2019-00251.

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 Woodspoint to Aero Transmission Line Project (the Project). In doing so, I provide an overview of the Project, Project need, details on Project components, and details the Company's compliance with the notice requirements for this proceeding. Finally, I sponsor Confidential Exhibit 2 and Exhibits 7, 8, 9, and 10 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 Woodspoint 138-kV Substation to the Aero 138-kV Substation. The Woodspoint to Aero transmission line will be approximately two (2) linear miles.

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 138-kV TRANSMISSION LINE.

A. The proposed line comes out of the yet to be constructed Woodspoint Substation, that will be located to the south of Airport Ford off of Burlington Pike (State Route 18), and heads northwest across Service Road and Mall Road (State Route 3157). The route crosses between the Hyundai and Nissan car dealerships, then crosses

over Hopeful Church Road (State Route 842) and behind to the south of Toyota car dealership and then along the west. The route then parallels Burlington Pike (State Route 18) in front of the Honda car dealership for 0.3 miles before crossing over Burlington Pike. On the north side of Burlington Pike the route heads north between Buick GMC and Schneider Electric Square D then crosses over Zig Zag Road. After Zig Zag Road the route crosses over Aero Parkway (State Route 1017) and into the new Aero Substation which is located south of the Cincinnati/Northern Kentucky International Airport (CVG).

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

A. The purpose of the Project is to provide an additional 138-kV feed to Aero Substation to provide reliability to the substation. The planned initial feed to Aero Substation will come from Oakbrook Substation and was submitted to the Commission for approval in Case No. 2019-00251. The Woodspoint Substation is in the vicinity of an existing 138-kV line that is owned and operated by Duke Energy Ohio and will provide a secondary 138-kV connection to Aero Substation. This Project is necessary as part of the overall service plan to support future load growth in the area and the reliability of the surrounding Duke Energy Kentucky transmission and distribution systems, as well as to serve the new Amazon Prime Air Hub facility by providing a looped feed to enhance reliability to the area in the event of either planned or unplanned transmission outages serving the CVG area and Boone County.

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

A. The proposed in-service date for the Project is December 31, 2020.

Q. WHAT IS THE AMAZON PRIME AIR HUB FACILITY AND WHERE IS IT LOCATED?

A. Amazon is building a new air logistics center out of the Cincinnati/Northern Kentucky International Airport (CVG) to support its business model. The logistics center will be located on the south side of the existing airport in Boone County, Kentucky. This facility is north of Company proposed facilities.

Q. CAN YOU PROVIDE ADDITIONAL INFORMATION ON THE AMAZON PRIME AIR HUB FACILITY?

A. Amazon has a phased approach to building its air hub facilities. It is leasing more than 1,100 acres from CVG to build the air hub facilities. There is three million square feet of building space planned in addition to hangers for cargo planes. Amazon is planning to have the first phase of its facilities to be operational by beginning of 2021 and fully completed around 2031.

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, Aero Substation would be on a radial feed (pending Commission's approval of Case No. 2019-00251 and energization of the Oakbrook to Aero transmission line and Aero Substation) which presents reliability concerns during storms and severe weather events. The radial configuration limits the

Company's ability to perform maintenance and switching on the transmission system as either situation would require an outage at Aero Substation and interruption to local service customers fed from Aero Substation.

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. Duke Energy Kentucky has proposed to extend service from the existing Oakbrook Substation in Case No. 2019-00251 with the Commission. For system reliability concerns with the 69-kV lines feeding Oakbrook and strengthening of the electric system, an additional feed is needed for the Aero Substation. There is not a reasonable alternative to meet this need without greater impacts to the public outside of this Project.

Q. WILL THE PROPOSED PROJECT ALSO ENHANCE DUKE ENERGY KENTUCKY'S CAPACITY TO PROVIDE 12.47-kV SERVICE TO OTHER CUSTOMERS LOCATED IN THE AREA?

A. Yes. This proposed Project, plus other transmission system improvements submitted to the Commission for CPCN approval under Case No. 2019-00251, will reinforce transmission system capacity and enhance reliability of service to other portions of the Duke Energy Kentucky transmission system. The Aero Substation will be utilized to serve existing load and new load expected to develop around CVG in Boone County, Kentucky.

Q. WHAT FUTURE LOAD GROWTH IS EXPECTED?

A. In addition to Amazon Prime Air Hub, commercial, retail, industrial and residential is growing in this and surrounding areas. A couple of examples of the growth is Al Neyer which is planning a $65 million industrial building with 1 million-square-foot distribution center and 240 apartments to the south of the new Amazon Air Hub facility.[1] GE Aviation On Wing Support Center will be moving into a 68,000 square-foot facility in Florence from its current facility in Hebron.[2] Both DHL and Aeroterm LLC have been working on getting facilities at CVG, thereby adding more load to the area.[3] In addition, there is a handful of hotels being built or have been built off of Vandercar Way, Ted Buschelman Boulevard, and Merchant Street that are adding more growth to the electrical need to support the load.

Q. DOES DUKE ENERGY KENTUCKY HAVE ANY OTHER PROJECTS PLANNED FOR THE PROPOSED AREA?

A. Yes. The work necessary to provide service to the new Amazon Prime Air Hub facility and to support other anticipated load in the area is multi-phased. Duke Energy Kentucky filed a CPCN on August 23, 2019 (Case No. 2019-00251) and anticipates filing a CPCN to install a new gas line in the near future (Case No. 2019-00388).

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[1] https://www.neyer.com/construction-commenced-erlanger-commerce-building-iii/ Last visited August 20, 2019.

[2] https://www.nkytribune.com/2019/02/ge-aviations-on-wing-support-center-expanding-with-new-facility in-northern-kentucky/ Last visited August 20, 2019.

[3] https://www.bizjournals.com/cincinnati/news/2019/04/12/new-cargo-building-at-cvg-announces-anchor tenant.html Last visited August 20, 2019;
See also https://www.bizjournals.com/cincinnati/news/2018/10/17/dhl-to-add-250-jobs-at-cvg.html Last visited August 20, 2019.

III. PROJECT CONSTRUCTION

A. Transmission Line

Q. PLEASE DESCRIBE THE PROPOSED 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 line will connect the new Woodspoint Substation located in the City of Florence to the Aero Substation off of Aero Parkway. The electrical transmission line will have approximately 50 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 mixed residential and commercial development, interspersed by hay fields, fallow fields, and woodlots. Existing development includes the Boone Links and City of Florence golf courses, CVG, suburban housing development, warehouse facilities, car dealerships, storage facilities, restaurants, and other retail buildings. Major travel corridors include Burlington Pike (State Route 18), Mall Road (State Route 3157), Houston Road (State Route 842), and Aero Parkway (State Route 1017). The land on the north side of Aero Parkway was partially forested, but due to construction for the Amazon Prime Air Hub, those trees have been recently cleared.

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 16 foundation based galvanized steel poles and 34 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.

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 CONDUCTORS THAT WILL BE USED FOR THE PROPOSED TRANSMISSION LINE.

A. The proposed structures will have one 138kV 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.

Q. WHAT IS THE STATUS OF THE ENGINEERING AND DESIGN WORK FOR THE WOODSPOINT TO AERO 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 has hired a contractor to perform surveys on underground utilities based on the 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 parallels an existing road right-of-way, the standard right-of-way for new lines is 75 feet.

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 125 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 is in progress for selecting a land acquisition vendor to start contacting property owners late November 2019.

Q. DUKE ENERGY KENTUCKY FILED MAPS ILLUSTRATING THE CENTERLINE OF THE PROPOSED TRANSMISSION LINE AS EXHIBIT 5 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 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 is shown on Exhibit 5. 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. This corridor would allow for 50 feet on either side of the proposed right-of-way 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. <u>Substation</u>

Q. PLEASE DESCRIBE THE PROPOSED WOODSPOINT 138-kV SUBSTATION.

A. Duke Energy Kentucky has requested Duke Energy Ohio to provide a switching station for 138kV equipment to feed this proposed new 138-kV transmission line

for reliability of Aero Substation. Duke Energy Ohio has agreed to construct, own, and operate the Woodspoint Substation for this purpose. The Woodspoint 138-kV Substation will be located to the south of Airport Ford which is located at 8001 Burlington Pike (State Route 18) Florence, Kentucky 41042 within Boone County. Access to the substation will be off of Service Road located to the west of Airport Ford.

Woodspoint Substation will provide switching capability for three 138-kV lines. One line will be the proposed line from Woodspoint Substation to Aero Substation. The two other lines will be created by splitting and routing an existing 138-kV line owned and operated by Duke Energy Ohio, which is located adjacent to Woodspoint Substation, into the Woodspoint Substation. This will allow for greater reliability for the supply to the Woodspoint to Aero line by eliminating interruptions of supply to the Woodspoint to Aero line if there is an event on either of the Duke Energy Ohio lines.

Q. PLEASE LIST AND DESCRIBE THE VARIOUS COMPONENTS DUKE ENERGY KENTUCKY WILL INSTALL AT THE WOODSPOINT SUBSTATION.

A. Duke Energy Kentucky will be installing three insulators and three compression dead ends at Woodspoint Substation as part of the Project.

Q. PLEASE BRIEFLY DESCRIBE THE AERO SUBSTATION?

A. The construction of the Aero 138-kV Substation is currently pending before the Commission in Case No. 2019-00251. My testimony in this proceeding only

includes the details on the equipment that will be required to bring in the new 138-kV transmission line from Woodspoint Substation.

Q. WHAT WORK IS REQUIRED TO BE PERFORMED ON THE AERO 138-kV SUBSTATION TO SUPPORT THE NEW 138-kV LINE PROPOSED IN THIS CASE?

A. The Aero 138-kV Substation will have a 138kV dead end structure, 138kV surge arrestor, 138kV CCVT, 138kV line disconnect switch, 138kV circuit breaker, and 138kV circuit breaker disconnect switches installed to support the new138kV line.

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 summer of 2020 pending easement acquisition. The line is scheduled to be energized by end of 2020 and restoration will continue into spring of 2021.

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 John K. Hurd fully describes the required permits in his 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 preferred 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 UNLIMITED 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.

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, structures, and substation facilities upon the completion of construction.

Q. PLEASE DESCRIBE THE CONSTRUCTION OF THE TRANSMISSION LINE.

A. Construction of the 138-kV 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 foundation for each structure. Some structures 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. Structure are erected and arms are installed followed by insulators and conductor. Once the line is energized and work is complete, the site will be restored.

Q. PLEASE DESCRIBE HOW DUKE ENERGY OHIO WILL CONSTRUCT THE WOODSPOINT 138-kV SUBSTATION.

A. Construction of Woodspoint Substation will start with installation of required erosion and sediment controls followed by site clearing. After the site is cleared preliminary grading will start and the site will be brought to rough grade. Once rough grade has been established the borings for reinforced concrete foundations will begin and below grade will be brought to final conditions and installation of conduits, cable trench, and ground grid will be completed. Above grade work includes the installation of all electrical transmission and distribution equipment, structural steel structures, security fence, control enclosure, switchgears, and crushed aggregate blanket.

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

A. No.

IV. FILING COMPLIANCE

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 October 21, 2019. 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 8. The required verification of mailing is attached to the application in Exhibit 7.

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 8.

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 9.

V. FINANCIAL ASPECTS OF THE PROJECT

Q. WHAT IS THE PROJECTED COST OF THE PROJECT?

A. The overall Project is estimated to cost approximately $8.4 million. That sum comprises: (a) approximately $7.3 million for the construction of the overhead line, including right-of-way acquisition, and; (b) distribution line work $1.1 million.

Q. DOES THE $8.4 MILLION COST ESTIMATE DESCRIBED ABOVE AND SET OUT IN THE APPLICATION REPRESENT A FIXED AND FINAL COST?

A. No. The $8.4 million 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. IS AMAZON CONTRIBUTING TO THE COST OF THE PROJECT?

A. No.

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.

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 and none were found which were not already anticipated by Duke Energy Kentucky.

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, a public open house for landowners and other members of the community, and an online mapping, toll-free hotline, and comment website.

VII. CONCLUSION

Q. WERE EXHIBITS 2, 7, 8, 9, AND 10 PREPARED UNDER YOUR DIRECTION AND CONTROL?

A. Yes.

Q. PLEASE EXPLAIN CONFIDENTIAL EXHIBIT 2.

A. Confidential Exhibit 2 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 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.

Q. PLEASE EXPLAIN EXHIBIT 8.

A. Exhibit 8 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.

Q. PLEASE EXPLAIN EXHIBIT 9.

A. Exhibit 9 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 10.

A. Exhibit 10 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. This exhibit also shows the Oakbrook to Aero Transmission Project pending the Commission's approval in Case No. 2019-00251.

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

A. Yes.

VERIFICATION

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

The undersigned, Yanthi W. Boutwell, Director of Midwest 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 29th day of October, 2019.

E Minna Rolfes

NOTARY PUBLIC

My Commission Expires: July 8, 2022

NOTARY PUBLIC STATE OF OHIO

E. MINNA ROLFES-ADKINS
Notary Public, State of Ohio
My Commission Expires
July 8, 2022

Exhibit 12

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 (Woodspoint to Aero Transmission Line Project)	)	Case No. 2019-00361

DIRECT TESTIMONY OF

JOHN K. HURD

ON BEHALF OF

DUKE ENERGY KENTUCKY, INC.

October 31, 2019

TABLE OF CONTENTS

I. INTRODUCTION AND PURPOSE

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is John K. Hurd, 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 Lead Transmission Siting Specialist. 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 Physical Geography in 2004 and a Master's degree in Geography in 2007 from the University of Cincinnati. I received a certificate in Geographic Information Systems (GIS) from the University of Cincinnati in 2006. In 2014 I was certified as a Geographic Information Systems Professional (GISP) from the GIS Certificate Institute (GISCI). I began my professional career at URS Corporation as a GIS analyst supporting the siting and permitting of electric and gas utility projects. In 2007, I become a project manager at URS Corporation leading the siting and permitting of transmission line and substation projects. In 2012, I joined CH2M Hill as a project manager for siting and permitting transmission line and substations and in 2013 became a GIS manager. I joined Duke Energy as a Transmission Siting Specialist in 2018.

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

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. Yes. I recently provided testimony in support of the Company's Application in Case No. 2019-00251.

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 Woodspoint to Aero 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 routes. I describe the results and conclusions of the siting study as well as the basis for the recommended proposed route. Finally, I sponsor Exhibits 1, 4, 5, and 6, which I describe below.

II. THE SITING STUDY

A. Overview

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 kV transmission line. The proposed line will connect the Woodspoint 138 kV Substation to the Company's Aero 138 kV Substation. The Woodspoint Substation will also be connected to the Line 6782 (Florence to Donaldson) 138 kV Transmission Line. The Woodspoint to Aero transmission line will be approximately 2.0 linear miles in length.

The purpose of the Project is to support future load growth in the area surrounding the Greater Cincinnati/Northern Kentucky Airport (CVG) and the reliability of the surrounding Duke Energy Kentucky transmission and distribution systems. Additionally, this Project is necessary as part of the overall service plan to serve the new Amazon Prime Air Hub facility by providing a looped feed to enhance reliability to the area in the event of either planned or unplanned transmission outages serving the CVG area and Boone County.

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 (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 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 Study Area would be a 2.24-square mile area between the existing Line 6782 138-kV transmission line and including the locations for the Woodspoint Substation and the Aero Substation. 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 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 vetted by the full siting team, updated as necessary, and presented to the public in an open house on June 19, 2019. During the open house, and for the following 30-day comment period, the siting team received comments from the public. The siting team used this extensive data collection process to create 174 routes 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 public feedback and agency correspondence to

determine the preferred route. Each step in this process is further described in the accompanying Line Route Evaluation Report in Exhibit 4.

Q. WERE YOU SOLELY RESPONSIBLE FOR THE CREATION OF THE SITING STUDY?

A. I led the siting study, but the siting team was multidisciplinary, consisting 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 agency and public outreach.

Q. WHAT ENTITIES PARTICIPATED IN THE CREATION AND DATA COLLECTION FOR THE SITING STUDY?

A. Duke Energy Kentucky and Stantec.

B. <u>138 kV Transmission Line</u>

Q. WHAT METHODOLOGY WAS USED TO EVALUATE TRANSMISSION ROUTES IN THE SITING STUDY?

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

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

A. The methodology is explained in Sections 1.2, 2, and 3 of the Line Route Evaluation Report included in Exhibit 4.

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 only about two (2) miles apart and there is considerable development in the Study Area, Duke Energy Kentucky was able to identify all feasible route alternatives.

Other methodologies were considered, such as Kentucky EPRI methodology. Both 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 methods 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 where 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 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 IN MORE DETAIL THE FIRST STEP USED BY THE SITING TEAM.

A. Duke Energy Kentucky's transmission planning group identified that Line 6782 via the Woodspoint Substation would provide power to the Aero Substation with a new transmission line connecting these two substations. The siting team then began by establishing a Study Area that would provide the opportunity to identify unique route alternatives for the new transmission line. The siting team then met to create siting guidelines that would steer the decision-making process for the Project. The Project location is shown on the map in Exhibit 1.

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

A. Approximately one half of the 2.24-square mile Study Area is located in an unincorporated portion of Boone County, Kentucky, with the remainder located in the City of Florence, Kentucky. The Study Area encompasses the Aero and Woodspoint substations. The Study Area is characterized by mixed residential and commercial development, interspersed by hay fields, fallow fields, and woodlots. Existing development includes the Boone Links and City of Florence golf courses, CVG, suburban housing development, warehouse facilities, car dealerships, storage facilities, restaurants, and other retail buildings. Major travel corridors include State Route 18, Mall Road, Houston Road, and Aero Parkway. Buried utilities, including water, sanitary sewer, and storm sewer lines, are sited along most roadsides and under parking lots in the Study Area. United States Fish and Wildlife Service National Wetland Inventory (USFWS, NWI) data indicates minimal presence of wetlands and other jurisdictional waters or water features. The land on the north side of Aero Parkway was partially forested, but due to construction for the Amazon Prime Air Hub, those trees have been recently cleared by Amazon as part of their construction at the time of the study. There are other remnant woodlots, primarily in the northern part of the Study Area.

Q. PLEASE DESCRIBE THE SECOND STEP IN THE SITING METHODOLOGY IN MORE DETAIL.

A. Data collection was the second step in the siting methodology. This included a review of the constraint maps and data collection in the field. The siting lead and

members of the analysis team conducted field reconnaissance of the Study Area on multiple occasions from public vantage points.

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 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 Study Area.

Q. PLEASE DESCRIBE THE THIRD STEP 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 Study Area to create a segment network that contained 47 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 FOURTH STEP 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. In May of 2019, the siting team met with representatives

of Boone County and the City of Florence to discuss the project and present the segment network. The siting team then sent an invitation to landowners within 500 feet of a study segment to attend an informational open house. The open house was held on June 19, 2019 and was staffed by experts in transmission planning, permitting, GIS, siting, engineering, and real estate. The open house was 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 with paper surveys to complete, as well as access to four interactive mapping stations 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, paper surveys, or through an online interactive map for the Project.

Q. PLEASE DESCRIBE THE FIFTH STEP IN THE SITING METHODOLOGY IN GREATER DETAIL.

A. The fifth step in the siting methodology was to combine the study segments into 174 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 SIXTH AND FINAL STEP IN THE SITING METHODOLOGY 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 an internal, multi-disciplinary meeting to review the analysis, discuss study area features 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 and allowed 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 correspondence with regulatory agencies, in person meetings with local officials, a public open house for landowners and other members of the community, and an online mapping, toll-free hotline, and comment website.

Q. WERE LANDOWNERS CONTACTED THROUGHOUT THE SITING PROCESS?

A. Yes.

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/Aero). 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 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. Discussions with property owners during 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.

III. RESULTS OF THE STUDY

Q. YOU PREVIOUSLY INDICATED THAT ONE HUNDRED AND SEVENTY-FOUR ALTERNATIVE ROUTES WERE DEVELOPED. PLEASE GENERALLY DESCRIBE THOSE ROUTES.

A. Generally speaking, routes either traversed the eastern portion of the Study Area, by heading east out of the Aero Substation adjacent to Aero Parkway or traversed the western portion of the Study Area by heading south out of the Aero Substation and heading cross country before following State Route 18 to the southeast. The ten most favorable routes from the weighting and scoring process all were located

in the western portion of the Study Area and utilized the State Route 18 corridor. The ten most favorable routes generally shared many of the same segments. Route 15 was selected as the preferred route and is described below.

Route 15 begins at the Woodspoint Substation, located adjacent to a car dealership to the south of the Line 6782 138 kV Transmission Line. Route 15 exits the substation to the northwest, crosses Mall Road, traverses commercial parking lots with a turn to the southwest and another turn to the northwest, before crossing Houston Road. The route then continues northwest along a parcel boundary before turning northeast to meet State Route 18. This portion of the route is approximately 0.6 miles in length. Route 15 then parallels the south side of State Route 18 for 0.4 miles, before crossing the road and following the north side of the highway for another 0.2 miles. The route then turns generally north for 0.8 miles by following parcel lines, turning east prior to reaching Aero Parkway, and turning north again to cross Aero Parkway and enter the Aero Substation.

Q. WHY WAS THE PREFERRED ROUTE SELECTED?

A. Route 15 was selected as the preferred route for the Woodspoint to Aero Transmission Line Project and is shown on the map in Exhibit 5. While Route 15 did not have the lowest overall score from the analysis, it was the most favorable route in terms of Duke Energy Kentucky engineering constraints, landowner relationship, proximity to existing road crossings and improvements, and minimization of impacts to future development in the area. Route 15 had the third best engineering score out of the 174 routes, which was related to avoidance of development constraints along existing roads, shorter route length, and minimal

existing underground utilities within its right-of-way (ROW). Route 15 had similar land use and cultural resources scores to other top-ranked routes but had a higher ecological score due to the presence of a forested woodlot in the vicinity of Zig Zag Road and potential for small, non-forested wetlands within its ROW. Route 15 was selected over other top scoring routes because it avoided an area around the Woodspoint Substation that was constrained by existing electrical transmission lines and underground utilities.

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

A. Yes. A couple landowners were concerned with proximity to existing residential dwellings that were adjacent to routes in the eastern portion of the Study Area. These residential landowners did not have concerns along the ultimately selected Preferred Route.

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

A. No.

Q. BASED UPON THE EFFORTS UNDERTAKEN BY THE SITING TEAM AND DESCRIBED ABOVE, DO YOU HAVE ANY OPINION ON THE COMPANY'S PREFERRED ROUTE FOR THE PROJECT?

A I believe the Preferred Route is optimal for this Project.

IV. 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 is in progress to identify wetlands and waterbodies within the Preferred Route's ROW 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 Division of Water (KDOW). 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 July 16, 2019. 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) federally-listed plant

species that may occur within the 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.
- A review of cultural resources in the Project vicinity will be conducted. Consultation will be performed with the Kentucky Heritage Council (KHC) – State Historic Preservation Office (SHPO).

In addition to environmental permits, there are engineering permits that will need to be obtained. Due to the proximity of the Project to CVG, permit applications will need to be filed with the Federal Aviation Administration (FAA) and Kentucky Transportation Cabinet (KYTC). The aerial crossing of State Route 18 will require approval from the KYTC and local temporary access permits for driveways along the transmission route. Duke Energy Kentucky will also need to communicate with Sanitation District 1 (SD1) and coordinate and obtain permits as required.

Q. HAVE ANY OF THE ENVIRONMENTAL PERMITS OR STUDIES BEEN COMPLETED FOR THIS PROJECT?

A. Yes. As part of the Amazon Prime Air Hub facility, United States Department of Transportation FAA used Landrum & Brown to prepare an Environmental

Assessment (EA). This EA covers the point at which the Preferred Route will enter from approximately Aero Parkway to the Aero Substation. This area is permitted to be cut and filled, which is currently underway.

After completion of the required bat survey study plan coordination with the USFWS and Kentucky Department of Fish and Wildlife Resources, Stantec completed surveys for the Indiana bat and northern long-eared bat. Bat mist net surveys were performed by Stantec in the Study Area on July 30 and August 1 through August 3, 2019. No Indiana bats or northern long-eared bats were captured during the bat mist net surveys. Upon completion of the bat surveys, Stantec, on behalf of Duke Energy Kentucky, sent the bat survey report and a concurrence request letter to the USFWS on August 26, 2019. The USFWS provided their clearance for the Preferred Route. On August 27, 2019, the USFWS provided concurrence on the bat survey report that the Indiana bat and northern long-eared bat are likely absent from the Project area. They also stated that the results of the bat survey are valid for five years (until August 3, 2024). Additional coordination with the USFWS with regard to potential adverse effects the Project may have on other federally-listed species will be completed in late 2019 and/or 2020.

Utilizing the Kentucky Office of Nature Preserves Kentucky Biological Assessment Tool, Stantec submitted a data request on January 18, 2019, regarding known occurrences of federally-listed and/or state-listed threatened and endangered species within the Study Area and its vicinity. According to the response received on January 18, 2019, no federally-listed threatened or endangered species are known from the Study Area vicinity. According to the response, an occurrence of

the state-listed endangered vesper sparrow was documented in 1950 within the Study Area vicinity.

A site file search with the KHC-SHPO will be completed by Stantec or another cultural resources consultant for information regarding known locations of cultural resources sites within the Project area and cultural resources field surveys will be completed within the Preferred Route in late 2019 and/or 2020 to support the siting review and applicable permitting activities.

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 substation or transmission line.

V. CONCLUSION

Q. PLEASE EXPLAIN EXHIBIT 1.

A. Exhibit 1 includes a map showing the proposed location of the Project.

Q. PLEASE EXPLAIN EXHIBIT 4.

A. Exhibit 4 includes a copy of the line route evaluation report which describes the siting methodology and results in detail and depicts the full description of the route and alternative routes considered. 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 5.

A. Exhibit 5 shows the proposed route for the Project.

Q. PLEASE EXPLAIN EXHIBIT 6.

A. Exhibit 6 shows the alternative route segments considered as part of the siting review process.

Q. WERE EXHIBITS 1, 4, 5, AND 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, John Hurd, Lead Transmission Siting Specialist, being duly sworn, deposes and says that he has personal knowledge of the matters set forth in the foregoing testimony and that it is true and correct to the best of his knowledge, information and belief.

John Hurd Affiant

Subscribed and sworn to before me by John Hurd on this 28th day of October, 2019.

NOTARY PUBLIC

My Commission Expires: July 8, 2022

NOTARY PUBLIC STATE OF OHIO

E. MINNA ROLFES-ADKINS
Notary Public, State of Ohio
My Commission Expires
July 8, 2022

Exhibit 13

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 (Woodspoint to Aero Transmission Line Project)	)	Case No. 2019-00361

DIRECT TESTIMONY OF

SARAH E. LAWLER

ON BEHALF OF

DUKE ENERGY KENTUCKY, INC.

October 31, 2019

TABLE OF CONTENTS

I. INTRODUCTION AND PURPOSE

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Sarah E. Lawler, 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 earned a Bachelor of Science in Accountancy from Miami University, Oxford, OH in 1993. I am also a Certified Public Accountant. I began my career in September 1993 with Coopers & Lybrand, L.L.P. as an audit associate and progressed to a senior audit associate. In August 1997, I moved to Kendle International Inc., where I held various positions in the accounting department, ultimately being promoted to Corporate Controller. In August 2003, I began working for Cinergy Corp., the parent of Duke Energy Ohio, as External Reporting Manager, where I was responsible for the Company's Securities & Exchange Commission (SEC) filings. In August 2005, I then moved into the role of Manager, Budgets & Forecasts. In June 2006, following the merger between Cinergy Corp. and Duke Energy, I became Manager, Financial Forecasting. In February 2015, I

was promoted to Utility Strategy Director, Midwest where I was responsible for the preparation of business plans and other internal managerial reporting for Duke Energy Ohio and Duke Energy Kentucky, Inc. In December 2017 I began in my current role as Director, Rates and Regulatory Planning.

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.

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 proposed line connects the Woodspoint 138-kV Substation to the Aero 138-kV Substation (the Project). I also sponsor Exhibit 3 to the Application.

II. FINANCIAL IMPACT OF THE PROJECT

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. The proposed line connects the Woodspoint 138-kV Substation to the Aero 138-kV Substation. The Woodspoint to Aero transmission line will be approximately two linear miles. This Project is necessary as part of the overall service plan to support future load growth in the area and the reliability of the surrounding Duke Energy Kentucky transmission and distribution systems, as well as to reliably serve the area around the Greater Cincinnati/Northern Kentucky Airport, including the new Amazon Prime Air Hub facility.

Q. WHAT IS THE PROJECTED COST OF THE PROJECT?

A. The overall Project is estimated to cost approximately $8.4 million. That sum comprises: (a) approximately $7.3 million for the construction of the overhead line, including right-of-way acquisition, and; (b) distribution line work $1.1 million.

Q. DOES THE $8.4 MILLION COST ESTIMATE REPRESENT A FIXED AND FINAL COST?

A. No. The $8.4 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. The Company is proposing to finance the construction through continuing operations and, if necessary, through debt issuances. The mix of debt and equity used to finance the amended project will be determined so as to allow Duke Energy Kentucky to maintain its investment-grade credit rating.

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). Once completed, the Project will be placed in-service 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).

Q. WHAT IS THE ESTIMATED IN-SERVICE DATE?

A. The estimated in-service date is December 31, 2020.

Q. PLEASE EXPLAIN HOW THE COMPANY WILL RECOVER ITS COSTS OF CONSTRUCTION.

A. The Company plans to recover the costs of this 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 in service and included in a base rate case, the estimated revenue requirement on the Project is expected to be less than one percent of total Company revenues.

III. FILING REQUIREMENTS SPONSORED BY WITNESS

Q. PLEASE LIST AND DESCRIBE THE FILING REQUIREMENT AND EXHIBIT TO THE APPLICATION THAT YOU ARE SPONSORING.

A. I am the sponsor of Exhibit 3.

Q. PLEASE EXPLAIN EXHIBIT 3.

A. Exhibit 3 is the financial statement for month end August 30, 2019 as required by 807 KAR 5:001, Section 12.

IV. CONCLUSION

Q. WAS EXHIBIT 3 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, Sarah E. Lawler, Director Rates & Regulatory Planning, 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.

SLEL

Sarah E. Lawler Affiant

Subscribed and sworn to before me by Sarah E. Lawler on this 28th day of October, 2019.

E. Minna Rolfes-Adkins

NOTARY PUBLIC

My Commission Expires: July 8, 2022

NOTARY PUBLIC STATE OF OHIO

E. MINNA ROLFES-ADKINS
Notary Public, State of Ohio
My Commission Expires
July 8, 2022