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Skill. Integrity. Efficiency.

March 15, 2018

VIA FEDERAL EXPRESS

Gwen R. Pinson
Executive Director
Public Service Commission
211 Sower Boulevard, P.O. Box 615
Frankfort, Kentucky 40602-0615

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MAR 16 2018

PUBLIC SERVICE
COMMISSION

Re: In the Matter of: The Application of Big Rivers Electric Corporation for a Certificate of Public Convenience and Necessity, Case No. 2018-00004

Dear Ms. Pinson:

Enclosed for filing pursuant to 807 KAR 5:120 are (1) an original and six copies of the application of Big Rivers Electric Corporation for a certificate of public convenience and necessity; (2) three copies of a map showing the location of the proposed transmission line; and (3) one copy of a map showing alternative routes that were considered. Please feel free to contact me if you have any questions.

Sincerely,

Tyson Kamuf

TAK/abg

Enclosures

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MAR 16 2018

PUBLIC SERVICE
COMMISSION



Your Touchstone Energy® Cooperative 

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION OF KENTUCKY

In the Matter of:

APPLICATION OF BIG RIVERS ELECTRIC)
 CORPORATION FOR A CERTIFICATE OF)
 PUBLIC CONVENIENCE AND NECESSITY TO)
 CONSTRUCT AND ACQUIRE A 345 KV)
 TRANSMISSION LINE IN)
 HANCOCK COUNTY, KENTUCKY)

Case No.
2018-00004

APPLICATION with EXHIBITS

FILED: March 16, 2018

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MAR 16 2018

PUBLIC SERVICE
COMMISSION

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

APPLICATION OF BIG RIVERS ELECTRIC)	
CORPORATION FOR A CERTIFICATE OF)	
PUBLIC CONVENIENCE AND NECESSITY)	Case No.
TO CONSTRUCT AND ACQUIRE A 345 KV)	2018-00004
TRANSMISSION LINE IN HANCOCK)	
COUNTY, KENTUCKY)	

APPLICATION

Big Rivers Electric Corporation ("Big Rivers") files this application ("Application") pursuant to KRS 278.020 and 807 KAR 5:120, seeking a certificate of public convenience and necessity to construct a 345 kilovolt ("kV") transmission line in Hancock County, Kentucky. In support of this Application, Big Rivers states as follows:

1. The applicant, Big Rivers, is a rural electric cooperative corporation organized pursuant to KRS Chapter 279. Its address is P.O. Box 24, 201 Third Street, Henderson, Kentucky 42419. Big Rivers' address for electronic mail service is regulatory@bigrivers.com. 807 KAR 5:120, Section 2(1)(a); 807 KAR 5:001, Section 14(1).

2. Big Rivers owns generating assets and purchases, transmits and sells electricity at wholesale. Its principal purpose is to provide the wholesale electricity requirements of its three distribution cooperative member/owners: Jackson Purchase Energy Corporation, Kenergy Corp. ("Kenergy"), and Meade County Rural Electric Cooperative Corporation (collectively, the "Members"). The distribution cooperatives in turn provide retail electric service to approximately 116,000 consumer/retail members located in 22 western Kentucky counties: Ballard, Breckenridge,

1 Caldwell, Carlisle, Crittenden, Daviess, Graves, Grayson, Hancock, Hardin, Henderson, Hopkins,
2 Livingston, Lyon, Marshall, McCracken, McLean, Meade, Muhlenberg, Ohio, Union and Webster.

3 3. Big Rivers was incorporated in the Commonwealth of Kentucky on June 14, 1961,
4 and hereby attests that it is currently in good standing in Kentucky. 807 KAR 5:120, Section
5 2(1)(a); 807 KAR 5:001, Section 14(2).

6 4. Big Rivers seeks approval from the Public Service Commission ("Commission") to
7 construct and acquire the approximately 3.3 mile-long Kentucky portion (the "Kentucky Portion") of
8 a new, approximately 31 mile-long 345 kV transmission line extending from Big Rivers' Coleman
9 Extra High Voltage ("EHV") substation in Hancock County, Kentucky to the Duff substation located
10 in Dubois County, Indiana that is part of the 2015 Midcontinent Independent System Operator
11 ("MISO") Transmission Expansion Plan that was awarded to Republic Transmission, LLC
12 ("Republic"), as the "Selected Developer" (the "MISO Project"). Republic is owned by an affiliate
13 of LS Power Associates, L.P., a development, investment and operating company focused on power
14 generation, electric transmission, and energy infrastructure, and Hoosier Energy Rural Electric
15 Cooperative, Inc., an Indiana member-owned, not-for-profit electric generation and transmission
16 cooperative. Big Rivers and Republic have entered into the Asset Purchase Agreement ("APA")
17 dated as of March 14, 2018, attached to this Application as Exhibit A, which provides the terms
18 upon which Big Rivers will participate in the construction of the Kentucky Portion, and eventually
19 own, operate and maintain the Kentucky Portion.

20 5. Big Rivers also seeks a finding by the Commission that Commission approval is not
21 required for Big Rivers to enter into and perform the APA, or any of the agreements attached as
22 exhibits to the APA, or in the alternative, granting Commission approval of those documents.

1 6. The purpose of the proposed transmission line is to relieve transmission line
2 congestion in southern Indiana and western Kentucky. Due to the length and voltage of the
3 Kentucky Portion, KRS 278.020 requires a certificate of public convenience and necessity for the
4 construction. The authority of the Commission to grant this certificate and the other relief sought by
5 Big Rivers in this Application is found in KRS 278.020. 807 KAR 5:120, Section 2(1)(a); 807 KAR
6 5:001, Section 14(1); 807 KAR 5:011, Section 13.

7 7. A table of each regulatory requirement for this filing, cross-referenced to the location
8 in this Application where that requirement is satisfied, is attached hereto as Exhibit B.

9 **DESCRIPTION OF THE KENTUCKY PORTION OF THE MISO PROJECT**

10 8. The route for the Kentucky Portion begins at Big Rivers' Coleman EHV substation,
11 which is located approximately 1.8 miles west-northwest of the Century Aluminum smelter and 1.6
12 miles west of Big Rivers' idled Coleman Power Plant. From this substation, the transmission line
13 section will extend northward approximately 3.3 miles to the Kentucky – Indiana boundary, near the
14 Indiana bank of the Ohio River. Big Rivers is requesting approval to construct and acquire the
15 Kentucky Portion based upon the demonstrated need for the entire MISO Project, as well as the
16 benefits that will be realized by Big Rivers and its Members. 807 KAR 5:120, Section 2(1)(b); 807
17 KAR 5:001, Section 15(2)(c).

18 9. Three copies of a proposed route map, with a scale of one inch equals 500 feet, and
19 showing the location of the proposed construction, are hereby filed with the Commission along with
20 this Application. 807 KAR 5:120, Section 2(2).

21 10. The proposed construction is required by the public convenience and necessity. As
22 shown in the “2015 Midcontinent Independent System Operator Transmission Expansion Plan
23 Executive Summary” (the “MTEP15”) attached hereto as Exhibit C, the MISO Project is required to

1 relieve transmission line congestion in southern Indiana and western Kentucky. Page 6 of the
2 MTEP15 identifies the border of Indiana and Kentucky as the area with the greatest need and
3 therefore the highest potential benefit. This project completely mitigates the congestion on the
4 MISO system around the Newtonville, Indiana, and Coleman areas and strengthens the 345 kV
5 backbone in the region. Big Rivers will have increased ability to import and export electrical power
6 due to reduced congestion. The additional electrical power will allow economic expansion and
7 provide employment opportunities for residents of Hancock County and the surrounding counties.
8 Also, Big Rivers' anticipated return on its investment in the Kentucky Portion could serve as an
9 offset to future rate increases for Big Rivers' Members. The Commission is also authorized to
10 consider the interstate benefits expected to be achieved by the proposed transmission line. 807 KAR
11 5:001 Section 15(2)(a); 807 KAR 5:120 Section 2(1)(b); KRS 278.020(1).

12 11. Big Rivers is also constructing a line terminal for the Kentucky Portion at the
13 Coleman EHV Substation. The line terminal project is not part of the Kentucky Portion or the MISO
14 Project. It is an ordinary extension of Big Rivers' existing system in the usual course of business for
15 which no certificate of public convenience and necessity is required under KRS 278.020(2).

16 12. Big Rivers considered alternative routes for the construction of the Project. The
17 evaluation of this route is summarized in the report, "Electric Transmission Line Route Selection
18 Technical Report - Line 19-J 345 kV Transmission Line Connecting the Coleman EHV Substation
19 and Proposed 345 kV Indiana Transmission Line," attached hereto as Exhibit D. That report also
20 discusses and supports the reasons for the route selection. A map depicting two alternative routes
21 not selected has been filed with the Commission along with this Application. 807 KAR 5:120
22 Section 2(2)(c).

1 13. The Kentucky Portion requires a right-of-way ranging in width from 150 to 210 feet.
2 Approximately 0.9 miles of the recommended route extending from the Coleman EHV substation
3 will be greenfield construction requiring new right-of-way. The remaining 2.4 miles of the
4 recommended route will parallel an existing Big Rivers 161 kV transmission line and will overlap
5 existing right-of-way. Approximately 65 ft. of additional right-of-way will be required along the
6 west side of the existing 161 kV transmission line right-of-way. The line will typically be
7 constructed using two-pole steel structures for tangent structures, and three pole steel for angle
8 structures and large angled dead-end structures. Access to the proposed right-of-way for the
9 construction of the new transmission line will maximize the use of existing roads in the project area,
10 and off-road movement of vehicles will be restricted to the proposed right-of-way to the extent
11 practicable. Trees within the proposed new right-of-way will be removed in order to achieve
12 National Electric Safety Code electrical clearances. Conventional construction equipment will be
13 used to frame and install the transmission line steel poles. The electrical conductors will then be
14 strung, dead-ended, and clipped-in using conventional equipment and processes. Sketches of
15 proposed typical structures are attached hereto as Exhibit E. 807 KAR 5:120 Sections 2(1)(b),
16 (2)(b); 807 KAR 5:001 Section 15(2)(c).

17 14. The proposed construction is currently expected to be financed by Big Rivers through
18 the Rural Utilities Service of the United States Department of Agriculture (the “RUS”), although Big
19 Rivers may pay the cost of acquisition of the Kentucky Portion from its cash reserves. The total cost
20 of the Kentucky Portion from Coleman EHV Substation to the Indiana state line, including the
21 purchase price of the necessary easements in Kentucky, is estimated to be \$6 million. The estimated
22 cost of operation of the new construction, including the cost of taxes and operation and maintenance,
23 based on historical averages of 3.3 miles of transmission line, is approximately \$18,000 per year.

1 The acquisition by Big Rivers of the Kentucky Portion does not involve sufficient capital outlay to
2 materially affect the existing financial condition of Big Rivers. The proposed construction will not
3 result in any increased charges to the retail customers of a Big Rivers Member other than the
4 Century smelters, and Domtar for the backup power purchased for its cogeneration facility. 807
5 KAR 5:120 Sections 2(1)(b), (7); 807 KAR 5:001 Section 15(2)(e)-(f).

6 15. The point at which the proposed transmission line will cross the Ohio River is
7 immediately west of an existing 161 kV transmission line crossing point. Republic has submitted an
8 application to the US Army Corps of Engineers, Louisville District, for a river crossing permit. Any
9 additional permits from other public authorities required for the construction of the Kentucky
10 Portion will be obtained prior to commencing construction. 807 KAR 5:120 Section 2(1)(b); 807
11 KAR 5:001 Section 15(2)(b).

12 16. The proposed construction will not compete with any other public utilities,
13 corporations, or persons. 807 KAR 5:120 Section 2(1)(b); 807 KAR 5:001 Section 15(2)(c).
14 Big Rivers has sent by first-class mail to each property owner over whose property the transmission
15 line right-of-way is proposed to cross, addressed to the property owner at the owner's address as
16 indicated by the county property valuation administrator records, or has hand-delivered, notice of the
17 proposed construction stating:

- 18 (a) The Commission case number under which this Application will be processed and
19 a map showing the proposed route of the line;
- 20 (b) The address and telephone number of the Executive Director of the Commission;
- 21 (c) A description of his or her rights to request a local public hearing and to request to
22 intervene in the case; and
- 23 (d) A description of the project.

1 807 KAR 5:120 Section 2(3). A sample copy of the notice letter is attached hereto as Exhibit F. A
2 list of the names and addresses of the property owners to whom Big Rivers sent the notices is
3 attached hereto as Exhibit G. 807 KAR 5:120 Section 2(4).

4 17. A notice of intent to construct the Kentucky Portion was published in the *Hancock*
5 *County Clarion*, a newspaper of general circulation in Hancock County. The notice included:

- 6 (a) A map showing the proposed route;
- 7 (b) A statement of the right to request a local public hearing; and
- 8 (c) A statement that interested persons have the right to request to intervene.

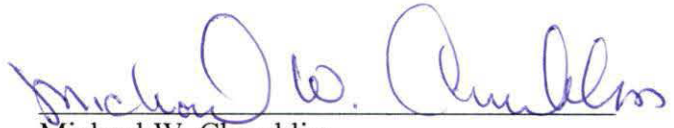
9 807 KAR 5:120 Section 2(5). A copy of the newspaper notice is attached hereto as Exhibit H. 807
10 KAR 5:120 Section 2(6).

11 **THE APA**

12 18. The APA, a copy of which is attached to this Application as Exhibit A, provides that
13 Republic will construct the Kentucky Portion on easements, acquired by Big Rivers for that purpose,
14 pursuant to certain rights Big Rivers grants to Republic. Upon completion of the construction,
15 energization of the MISO Project, and acceptance by MISO of the MISO Project, Big Rivers will
16 acquire the Kentucky Portion at Republic's cost, currently estimated to be \$6 million. Big Rivers is
17 entitled to recover its costs of the Kentucky Portion through the Transmission Revenue Requirement
18 for its MISO Attachment O tariff, subject to certain limitations imposed by the Selected Developer
19 Agreement between Republic and MISO, and the terms of the APA and the Project Ownership and
20 Operation Agreement, which is attached as Exhibit D to the APA. The APA and its exhibits are
21 described in more detail in the testimony of Michael W. Chambliss, which is attached as Exhibit I to
22 this Application.

Verification

I, Michael W. Chambliss, Vice President, System Operations for Big Rivers Electric Corporation, hereby state that I have read the foregoing Application and that the statements contained therein are true and correct to the best of my knowledge and belief, on this the ___ day of March, 2018.



Michael W. Chambliss
Vice President, System Operations
Big Rivers Electric Corporation

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

SUBSCRIBED AND SWORN to before me by Michael W. Chambliss, as Vice President, System Operations for Big Rivers Electric Corporation, on this the 15th day of March, 2018.



Notary Public, State at Large Kentucky
My commission expires: October 30, 2020
Notary ID: 566717



Filing
CONTAINS
LARGE OR OVERSIZED
DRAWINGS

Case No. 2018-00004

RECEIVED ON:
03/16/2018

Big Rivers Electric Corporation
Case No. 2018-00004
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B	Table of References for Compliance with Statutory and Regulatory Filing Requirements
C	2015 Midcontinent Independent System Operator Transmission Expansion Plan Executive Summary
D	Electric Transmission Line Route Selection Technical Report - Line 19-J 345 kV Transmission Line Connecting the Coleman EHV Substation and Proposed 345 kV Indiana Transmission Line
E	Sketches of Typical Project Structures
F	Form of Landowner Notice Letter
G	Names and Addresses of Landowners
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ASSET PURCHASE AGREEMENT

dated March 14, 2018

by and between

Big Rivers Electric Corporation

and

Republic Transmission, LLC

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Exhibit C.....	Description of License Area/Licensed Easement Area

ASSET PURCHASE AGREEMENT

This Asset Purchase Agreement made and entered into this 14th day of March, 2018 (this "Agreement") by and between Big Rivers Electric Corporation, a Kentucky corporation ("Purchaser"), and Republic Transmission, LLC, an Indiana limited liability company ("Seller"), each sometimes hereinafter referred to individually as "Party" or both referred to collectively as "Parties".

Recitals:

A. Seller is in the business of owning, designing, developing, procuring, constructing, permitting, operating, managing and maintaining a single-circuit 345-kV electric transmission line between the Coleman Extra High Voltage substation located in Hancock County, Kentucky (the "Coleman EHV Substation") and the Duff substation located in Dubois County, Indiana (the "Duff Substation"), as well as all ancillary facilities (collectively, the "Facility");

B. Seller desires to sell the portion of the Facility that is physically located in the Commonwealth of Kentucky, as more particularly depicted in Exhibit A hereto (the "Kentucky Portion") and certain assets and properties relating to the Kentucky Portion hereinafter collectively described as "Purchased Assets" and Purchaser desires to acquire the Purchased Assets, on the terms and subject to the conditions hereinafter set forth.

C. Purchaser has determined that the acquisition by it of the Kentucky Portion and Purchased Assets in accordance with the terms of this Agreement will benefit Purchaser and enhance Purchaser's ability to perform its obligations as an electric generating cooperative in the Commonwealth of Kentucky.

Now, therefore, in consideration of the covenants and agreements hereinafter set forth, the Parties hereto agree as follows:

ARTICLE I

Definitions

1.01 Definitions. The following terms shall have the meanings set forth below unless otherwise expressly provided or unless the context clearly requires otherwise:

"Affiliate" shall mean a Person which, directly or indirectly is controlled by, controls, or is under common control with another Person. As used in the preceding sentence, "control" shall mean (i) the ownership of more than 50% of the voting securities or other voting interest of any Person or (ii) the possession, directly or indirectly, of the power to direct or cause the direction of the management and policies of such Person, whether through the ownership of voting securities, by contract or otherwise.

“Agreement” has the meaning set forth in the first paragraph hereof.

“Agreement for Professional Services” means that certain Agreement for Professional Services, dated as of January 11, 2018, by and between Seller and Purchaser.

“Allocation” has the meaning set forth in Section 2.05.

“Assignment and Assumption Agreement” means a written agreement providing for the assignment and assumption of certain rights and obligations substantially in the form attached hereto as Exhibit B.

“Assumed Liabilities” has the meaning set forth in Section 2.03(a).

“Closing” has the meaning set forth in Section 3.01.

“Closing Date” has the meaning set forth in Section 3.01.

“Code” shall mean the Internal Revenue Code of 1986, as amended, and the rules and regulations promulgated thereunder.

“Date of the Notice of Claim” has the meaning set forth in Section 12.05(c).

“Disclosure Schedules” shall mean the disclosure schedules attached to this Agreement.

“Easements” shall mean those easement rights acquired by Purchaser for purposes of construction, operation and maintenance of the Kentucky Portion of the Facilities.

“Effective Time” shall mean 9:00 a.m. Central time on the Closing Date.

“Environmental Laws” shall mean any federal, state, local, or foreign law, statute, common law, ordinance, rule, regulation, code, treaty or international agreement having the force of law, license, Permits, authorization, approval, consent, judicial or administrative order, judgment, decree, directive, injunction, requirement, or agreement with any Governmental Authority pertaining to (a) the pollution, protection, preservation, or restoration of the environment (including air, surface water, groundwater, drinking water supply, surface land, subsurface land, structures, plant and animal life, or any other natural resource), (b) human health or safety, or (c) the exposure to, or the use, storage, recycling, treatment, generation, transportation, processing, handling, labeling, production, distribution, disposal, release, or threatened release, of Hazardous Substances (including releases to ambient air, surface water, groundwater, land, surface and subsurface strata), including, but not limited to: the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. § 9601 et seq.; the Resource Conservation and Recovery Act, 42 U.S.C. § 6901 et seq.; the Federal Water Pollution Control Act, 33 U.S.C. § 1251 et seq.; the Clean Air Act, 42 U.S.C. § 7401 et seq.; the Hazardous Materials Transportation Act, 49 U.S.C. § 1471 et seq.; the Toxic Substances Control Act, 15 U.S.C. §§ 2601 through 2629; the Oil Pollution Act, 33 U.S.C. § 2701 et seq.; the

Emergency Planning and Community Right-to-Know Act, 42 U.S.C. § 11001 et seq.; the Safe Drinking Water Act, 42 U.S.C. §§ 300f through 300j; the Occupational Safety and Health Act, 29 U.S.C. § 651 et seq.; the Surface Mining Control and Reclamation Act of 1977, 30 U.S.C. § 1201 et seq.; the Federal Insecticide, Fungicide, and Rodenticide Act, 7 U.S.C. § 136 et seq.; and any similar state or federal law.

“Existing ROW Price” means \$175,000.

“Facility” has the meaning set forth in the recitals hereto.

“FERC” means the Federal Energy Regulatory Commission.

“FIRPTA Affidavit” has the meaning set forth in Section 3.02(d).

“Governmental Authority” shall mean the government of the United States or any foreign country or any state or political subdivision thereof, any tribal authority and any department, commission, agency, bureau, entity, body or authority exercising executive, legislative, judicial, regulatory or administrative functions of or pertaining to government, including any quasi-governmental entities established to perform such functions.

“Hazardous Substances” shall mean any substance presently listed, defined, designated, or classified as a contaminant, hazardous substance, toxic substance, hazardous waste or special waste, or that is otherwise regulated under any Environmental Law, including petroleum products, asbestos, urea formaldehyde foam insulation, and lead-containing paints or coatings.

“Indemnified Party” has the meaning set forth in Section 12.04.

“Indemnifying Party” has the meaning set forth in Section 12.04.

“Independent Accountant” has the meaning set forth in Section 2.05.

“Information” has the meaning set forth in Section 13.01.

“Inspection Period” has the meaning set forth in Section 14.06.

“Joint Functional Control Agreement” shall mean an agreement lawfully required by the MISO tariff to be executed by the Purchaser and Seller addressing the functional control of jointly-owned facilities, but only to the extent said terms are legally enforceable.

“Kentucky Portion” has the meaning set forth in the recitals hereto.

“KPSC” shall mean the Kentucky Public Service Commission, or its successor in function.

“Law” shall mean any statute, law, ordinance, executive order, rule, or regulation (including a regulation that has been formally promulgated in a rule making proceeding but, pending final adoption, is in proposed or temporary form having force of law); notice having force of law; or judgment, order, decree, injunction, or writ of any Governmental Authority, as in effect from time to time.

“License” has the meaning set forth in Section 5.06.

“Lien” shall mean any mortgage, lien (except for any lien for Taxes not yet due and payable), charge, restriction, pledge, security interest, option, lease or sublease, collateral assignment, mineral interest, easement, encroachment or other similar encumbrance.

“Local Balancing Authority” shall have the meaning set forth in the MISO tariff.

“Material Adverse Effect” shall mean any change in, or effect on, the Purchased Assets or on the ownership or operation of the Purchased Assets that is materially adverse to the Purchased Assets, taken as a whole, other than changes or effects caused by or resulting from (i) conditions affecting the electric generation, transmission or distribution industries, whether national, regional or local, (ii) United States or global economic conditions or financial markets generally, (iii) changes in the national, regional, or state wholesale or retail markets for electric power or fuel supply or transportation or related products, including those due to actions by competitors, (iv) any change in general social or political conditions, including any acts of war, sabotage or terrorist activities, (v) strikes, work stoppages or other labor disturbances (except for the workforce at the Facility), (vi) increases in the costs of commodities or supplies, including fuel, or decreases in the price of electricity; (vii) effects of weather or meteorological events, (viii) any change in GAAP or change of Law, including changes in regulatory policy, including, without limitation, relating to climate change, renewables or the environment, (ix) changes or adverse conditions in the securities markets, including those relating to debt financing or in credit rating of Purchaser or its Affiliates, (x) the announcement of the transactions contemplated by this Agreement or the consummation of the transactions contemplated hereby or the announcement of any of the aforementioned, including but not limited to any decrease in customer demand, any reduction in revenues, any disruption in supplier or similar relationships, or any loss of employees, and (xi) any failure, in and of itself, to meet projections, forecasts, estimates or predictions in respect of revenues, earnings or other financial or operating metrics for any period.

“MISO” shall mean Midcontinent Independent System Operator, Inc., an independent, member based, non-profit organization.

“Non-Assumed Liabilities” means 1) the liabilities and obligations relating to the Purchased Assets to the extent arising from the gross negligence or willful misconduct of Seller prior to Closing, which liabilities and obligations are not assumed by Purchaser under this Agreement, 2) all liabilities and obligations relating to the Retained Assets, and 3) all Assumed Liabilities following Purchaser’s exercise of its Sell Back option as set forth in Section 14.06 (if applicable), or termination of this Agreement pursuant to Article XI (if applicable); provided, however, in the event of any conflict between the terms hereof and the terms of the Assignment

and Assumption Agreement, the terms of the Assignment and Assumption Agreement shall control.

“Notice of Claim” has the meaning set forth in Section 12.04.

“Permits” shall mean permits, consents, licenses, franchises, certificates, authorizations, registrations, or waivers, extensions, renewals, or variances relating thereto, in each case issued by any Governmental Authority concerning or related to the Kentucky Portion or the Purchased Assets.

“Permitted Exceptions” shall mean, to the extent exclusively and directly related to the Purchased Assets, the following:

- (a) Liens or encumbrances securing the Assumed Liabilities;
- (b) all Liens for Taxes, assessments, both general and special, and other governmental charges applicable to the Purchased Assets which are not due and payable as of the Closing Date or which are being contested in good faith;
- (c) mechanic’s, materialmen’s, workmen’s, repairmen’s and other Liens applicable to the Purchased Assets arising in the ordinary course with respect to any amounts not yet due and payable or which are being contested in good faith;
- (d) such imperfections of title, easements, encumbrances, restrictions or other liens in respect of real property or other assets that would not reasonably be expected to impair in any material respect the current use of such real property or the Purchased Assets; and
- (e) Liens and other matters disclosed on Schedule 1.01.

“Person” shall mean any natural person, corporation, limited liability company, partnership, joint venture, trust, association or unincorporated entity of any kind and any Governmental Authority or instrumentality.

“Planning Documents” has the meaning set forth in Section 14.06.

“Project Documents” has the meaning set forth in Section 5.01(b)(ii).

“Project Ownership and Operation Agreement” has the meaning set forth in Section 5.04.

“Properties” has the meaning set forth in the definition of Purchased Assets.

“Purchase Price” has the meaning set forth in Section 2.02.

“Purchased Assets” shall mean the Seller's rights, title and interest in and to the Kentucky Portion and the following described assets, rights and properties owned by Seller or in

which Seller has an interest as of the Closing Date, and used exclusively in connection with the Kentucky Portion, except for the Retained Assets, in each case, including and subject to any Permitted Exceptions:

(i) the Seller's rights, title and interest in and to real properties (including the License and the Easements and rights-of-way) associated with the Kentucky Portion ("Real Property") together with all buildings, other improvements, fixtures and appurtenances, and all other rights, privileges and entitlements thereunto belonging or appertaining (together with the Real Property, the "Properties");

(ii) the Seller's right, title and interest in and to the following intellectual property to the extent primarily related to the Purchased Assets and to the extent transferable: copyrights, copyright registrations, copyright applications; patent rights (including issued patents, applications, divisions, continuations and continuations-in-part, reissues, patents of addition, utility models and inventors' certificates); trade secrets, proprietary manufacturing information and inventions, drawings and designs; and the rights of Seller as licensee under licenses with respect to any of the foregoing;

(iii) unexpired warranties, if any, as of the Effective Time, from third Persons that relate specifically to any of the Purchased Assets and that are transferable to Purchaser;

(iv) the right of Seller to receive, to the extent transferable, Tax exemptions, Tax credits, Tax reductions, Tax rebates, or other amounts from a Governmental Authority with respect to the Purchased Assets, and all pending applications therefor, in each case, that are attributable to the ownership or operation of the Purchased Assets after Closing;

(v) any Permits of the Seller to the extent relating to the ownership, operation or maintenance of the Purchased Assets, and all pending applications for the issuance or renewal of any such Permits, to the extent any of such Permits are transferable or assignable to the Purchaser;

(vi) the Seller's rights, title and interest in and under the contracts or agreements set forth on Schedule 1.01 (if any) (including in and to the warranties and other performance guarantees therein), to the extent relating to the Purchased Assets and to the extent transferrable or assignable, and any claims thereunder; and

(vii) at least one copy (in its existing hard copy or electronic form) of each document that is reasonably required by Purchaser to evaluate, own, operate and maintain the Purchased Assets and enjoy the benefits of the Purchased Assets, including but not limited to each of the following: engineering design plans and specifications; documents evidencing, related to or concerning the Assumed Liabilities; all environmental and archaeological reports prepared by third parties; and construction records as to what was built and where it was built; all to the extent related to the Kentucky Portion or concerning the Purchased Assets, that are in Seller's possession (subject to the right of

Seller to redact information in such records that is not related to the Kentucky Portion and the Purchased Assets and to retain archival copies). This is not to include third party proprietary items for which consent to transfer cannot be obtained. The foregoing is not intended to require Seller to modify or reformat any of the information provided pursuant to this subparagraph or to search or produce database or email archives, routine correspondence, FERC filings, records relating to internal project approvals, negotiations with contractors or vendors, or any other materials that are not necessary to the future ownership, operation or maintenance of the Kentucky Portion or the Purchased Assets.

“Purchaser” has the meaning set forth in the first paragraph hereof.

“Real Estate Rights” has the meaning set forth in Section 5.06.

“Real Property” has the meaning set forth in clause (i) of the definition of “Purchased Assets.”

“Retained Assets” shall mean the following described assets, rights and properties of Seller:

(i) all insurance policies of Seller or acquired or assumed by Seller prior to the Closing Date pertaining to the Facility or the Kentucky Portion and all rights of Seller of every nature and description under or arising out of such insurance policies;

(ii) all rights to use the name “LSP”, “LS”, “LS Power”, “Republic”, “Republic Transmission”, and all derivatives thereof;

(iii) claims for refunds of Taxes paid by Seller (except for items described in clause (iv) of the definition of Purchased Assets and Taxes that are included in the Purchase Price);

(iv) all past, present and future claims, causes of action, rights of recovery and rights of set-off of any kind, except to the extent exclusively and directly related to the Kentucky Portion or included in the definition of Purchased Assets or to the extent, but only to the extent, such claims or causes of action offset the liabilities assumed by Purchaser pursuant to this Agreement;

(v) any rights, interest or assets not included in the Purchased Assets;

(vi) all rights of Seller under this Agreement and the agreements and instruments delivered to Seller by Purchaser pursuant to this Agreement;

(vii) all Tax returns and other Tax records, reports, data, files and documents;
and

(viii) all assets comprising the Facility other than the Kentucky Portion.

“RUS” shall mean the Rural Utilities Service of the United States Department of Agriculture, or its successor in function.

“Sales Tax” shall mean any sales, use, value added, excise, and other similar Tax, if any that may be imposed upon, or payable, collectible, or incurred in connection with or as a result of the transfer of the Purchased Assets to Purchaser.

“Secured Party” has the meaning set forth in Section 15.04.

“Selected Developer Agreement” shall mean that certain Selected Developer Agreement, dated as of February 7, 2017, by and between Seller and MISO.

“Seller” has the meaning set forth in the first paragraph hereof.

“Sell Back” has the meaning set forth in Section 14.06.

“Supplemental Disclosure Schedule” has the meaning set forth in Section 14.04.

“Tax Proceeding” or “Tax Proceedings” has the meaning set forth in Section 5.08(d).

“Taxes” shall mean all federal, state, local, or foreign taxes, charges, fees, duties (including custom duties), levies or other assessments, including income, alternative or add-on, gross receipts, net proceeds, capital gains, real or personal ad valorem, turnover, real and personal property (tangible and intangible), sales, use, franchise, excise, value added, stamp, leasing, lease, user, transfer, title, documentary, registration, fuel, excess profits, occupational, interest equalization, windfall profits, license, payroll, environmental (including Taxes under Code section 59A), capital stock, disability, severance, employee's income withholding, other withholding unemployment and Social Security taxes, which are imposed by any Governmental Authority.

“Taxing Authority” shall mean with respect to any Tax, the Governmental Authority or political subdivision thereof that imposes such Tax, and the agency (if any) charged with the collection of such Tax for such entity or subdivision, or any agency that grants or administers any exemption, abatement, rebate, or reduction of any Tax or any credit with respect thereto.

“Threshold” has the meaning set forth in Section 12.03(b).

“Transfer Taxes” shall mean any transfer, real property transfer, goods and services, recordation, documentary, stamp duty, and conveyance Tax and other similar Tax, duty, fee or charge (other than Sales Taxes), together with all recording or filing fees, notarial fees, and other similar costs, as levied by any Taxing Authority in connection with or as a result of the transfer of the Purchased Assets to Purchaser.

1.02 Interpretation. Unless the context of this Agreement otherwise requires, (a) words of any gender shall be deemed to include each other gender, (b) words using the singular or plural number shall also include the plural or singular number, respectively, (c) references to “hereof”, “herein”, “hereby” and similar terms shall refer to this entire Agreement; (d) the words “include” and “including” mean “including without limitation”, (e) all references in this Agreement to articles, sections, schedules and exhibits shall mean and refer to articles, sections, schedules and exhibits of this Agreement, (f) all references to statutes and related regulations shall include all amendments of the same and any successor or replacement statutes and regulations prior to the date hereof, (g) references to any Person shall be deemed to mean and include the successors and permitted assigns of such Person (or, in the case of a Governmental Authority, Persons succeeding to the relevant functions of such Person), and (h) references to any agreement shall include a reference to all schedules, exhibits and other attachments thereto as such agreement and schedules, exhibits, and other attachments may be amended or supplemented from time to time.

1.03 Knowledge. As used herein, the terms “knowledge,” “Knowledge” or “best knowledge” shall have the same meaning and shall mean the actual knowledge, after reasonable inquiry, of Paul Thessen, Doug Mulvey or Adam Gassaway as it relates to Seller and Michael Chambliss or Robert Warren as it relates to Purchaser.

ARTICLE II

Purchase and Sale, Purchase Price, Allocation and Other Related Matters

2.01 Purchase and Sale. Upon and subject to the terms and the conditions of this Agreement, at the Closing the Seller shall sell, assign, convey, transfer and deliver to Purchaser or its designees and Purchaser or such designees shall acquire from Seller, good and marketable title to all of Seller's right, title and interest in and to the Purchased Assets, free and clear of all Liens, other than Permitted Exceptions.

2.02 Purchase Price. The aggregate purchase price (the “Purchase Price”) payable by Purchaser for the Purchased Assets shall, subject to adjustment in accordance with Section 2.06, be the aggregate amount of any and all costs and expenses directly or indirectly incurred by Seller to effect the transactions contemplated by this Agreement and to develop, construct, acquire, complete, start-up and commission the Kentucky Portion and place the Kentucky Portion in service, including without limitation any costs and expenses incurred by Seller in connection with the following (i) any taxes, (ii) any financing costs, including any approved Allowance for Funds Used During Construction, or similar allowance or financing cost or charge earned or accrued in connection with the Kentucky Portion during the period of development and construction of the Kentucky Portion, (iii) obtaining permits and other governmental approvals for the Kentucky Portion, (iv) acquiring land and land rights for the Kentucky Portion, (v) performing any environmental assessments or environmental mitigation activities in connection with the Kentucky Portion, (vi) designing and engineering the Kentucky Portion, (vii) procuring any equipment, supplies and other materials required to complete construction of the Kentucky Portion and place the Kentucky Portion in service, and (viii)

otherwise performing or completing any and all development- and construction-related activities required in connection with the Kentucky Portion, including but not limited to all site clearing, site restoration, equipment assembly and erection, testing and commissioning activities, whether performed directly by Seller or by one or more third parties retained by Seller (without regard to whether such third parties are affiliated or non-affiliated), all as determined in accordance with the terms and conditions set forth in Schedule 2.02. For avoidance of doubt, the Purchase Price shall not be duplicative of any amounts that are also included in the Assumed Liabilities, such that Seller shall not receive duplicative compensation.

2.03 Assumed Liabilities.

(a) Purchaser hereby agrees to assume, as of the Effective Time on the Closing Date, and discharge in accordance with their terms or as otherwise provided by this Agreement all of, but only those, liabilities and obligations that are exclusively and directly related to the Purchased Assets, whether arising prior to or after the Effective Time, except for Non-Assumed Liabilities (such liabilities and obligations, together with Taxes covered by Sections 2.04 and 5.08, are hereinafter referred to as the “Assumed Liabilities”). Assumed Liabilities shall include any liabilities and obligations assumed by Purchaser in the Assignment and Assumption Agreement. Notwithstanding the foregoing, in the event Purchaser exercises its Sell Back option pursuant to Section 14.06 or this Agreement is terminated pursuant to Article XI, the Assumed Liabilities shall be treated as Non-Assumed Liabilities following the effective date of the Sell Back and shall be subject to all provisions of this Agreement related to Non-Assumed Liabilities, including but not limited to the provisions set forth in Sections 2.03(c) and 12.01(c).

(b) This Section 2.03 is not intended to and shall not benefit any Person other than Seller and Purchaser.

(c) All of the Non-Assumed Liabilities shall remain and be the obligations and liabilities of the Seller, and Purchaser shall have no liability or responsibility for the Non-Assumed Liabilities. Seller covenants and agrees with Purchaser that it shall perform and discharge the Non-Assumed Liabilities. All of the Assumed Liabilities shall become, remain and be the obligations and liabilities of the Purchaser, and Seller shall have no liability or responsibility for the Assumed Liabilities. Purchaser covenants and agrees with Seller that it shall perform and discharge the Assumed Liabilities.

2.04 Sales and Transfer Taxes.

(a) Purchaser shall be responsible for and shall pay the entire cost of any Transfer Taxes and Sales Taxes. Accordingly, if Seller is required at Law to pay any such Transfer Taxes or Sales Taxes, Purchaser shall promptly reimburse Seller for its portion of such amounts.

(b) In the event that Purchaser exercises its Sell Back option pursuant to Section 14.06, Seller shall be responsible for and shall pay the entire cost of any Transfer Taxes and Sales Taxes directly arising from such Sell Back. Accordingly, if Purchaser is required at Law to pay any such Transfer Taxes or Sales Taxes in connection with a Sell Back, Purchaser shall make such payments and Seller shall promptly reimburse Purchaser for its portion of such

amounts. Notwithstanding the foregoing, Purchaser shall be responsible for and pay the entire cost of any Transfer Taxes and Sales Taxes in the event that Purchaser has failed to deliver the letter of credit to Seller or deposit the estimated Purchase Price into escrow by the deadline for the same set forth in Section 3.01 in accordance with the terms of such Section 3.01.

(c) Seller and Purchaser shall timely file their own Tax returns for any Transfer Tax or Sales Tax as required by Law and shall notify the other Party when such filings have been made. Seller and Purchaser shall cooperate and consult with each other prior to filing returns for any Transfer Tax to ensure that all such returns are filed in a consistent manner. Seller shall not collect Sales Taxes from Purchaser upon the sale of the Purchased Assets. Purchaser has a direct pay permit under which it is authorized to pay any Sales Tax on purchases of tangible personal property directly to the Commonwealth of Kentucky under Account Number 108814.

2.05 Allocation of Purchase Price. Within thirty (30) days after the determination of the final Purchase Price pursuant to Sections 2.02 and 2.06, the Purchaser shall prepare and deliver to the Seller a draft of a statement setting forth a proposed allocation (the “Allocation”) of the Purchase Price among the Purchased Assets in a manner consistent with Section 1060 of the Code, together with reasonable supporting information and calculations. The Seller shall inform the Purchaser in writing within forty-five (45) days of the receipt of such draft of any objection by the Seller to the Allocation. To the extent that any such objection is received, the Purchaser and the Seller shall attempt in good faith to resolve any dispute within fifteen (15) days following the receipt of such objection. If the Purchaser and the Seller are unable to reach such agreement within fifteen (15) days after receipt by the Purchaser of such notice, the disputed items shall be resolved by an independent accounting firm (mutually agreed upon by the Purchaser and Seller, the “Independent Accountant”) and any determination by the Independent Accountant shall be final. The Independent Accountant shall resolve any disputed items within fifteen (15) days of having the item referred to it pursuant to such procedures as it may require. The costs, fees and expenses of the Independent Accountant shall be borne equally by the Purchaser and the Seller. The Allocation (as determined by agreement of the Parties or by the Independent Accountant, as the case may be) shall be binding on the Parties, who shall file all Tax Returns in a manner consistent with the Allocation unless otherwise required by a change in Law occurring after the date of the final determination of the Allocation, a closing agreement with an applicable Taxing Authority or a final non-appealable judgment of a court of competent jurisdiction.

2.06 Purchase Price Adjustments. The Purchase Price may be adjusted after Closing for work completed or invoiced after the Closing as determined in accordance with the terms and conditions in Schedule 2.02.

ARTICLE III

Closing and Closing Date Deliveries

3.01 Closing. The term “Closing” as used herein shall refer to the actual conveyance, transfer, assignment and delivery of Seller's right, title and interest in and to the Purchased Assets to Purchaser in exchange for the Purchase Price to the Seller pursuant to Section 2.02 of this Agreement. The Closing shall take place at the offices of Seller, at 9:00 a.m.

local time on the date upon which all of the conditions precedent set forth in Articles IX and X of this Agreement (other than those that are to be satisfied at Closing) are satisfied or waived by the appropriate Party hereto, subject to Article XI of this Agreement, or at such other place and time or on such other date as is mutually agreed to in writing by Seller and Purchaser (“Closing Date”). The Closing shall be effective as of the Effective Time. No fewer than one hundred eighty (180) days nor more than two hundred forty (240) days prior to Closing, Seller shall notify Purchaser in writing of Seller’s then-current estimate for the Purchase Price and provide a written request to Purchaser to tender the Purchase Price to Seller. Within thirty (30) Days after Purchaser receives such notification, Purchaser shall either (i) deposit the estimated Purchase Price into escrow with an escrow agent pursuant to an escrow agreement with terms and conditions reasonably acceptable to Seller, or (ii) deliver to Seller an irrevocable letter of credit in the amount of the estimated Purchase Price with terms and conditions reasonably acceptable to Seller, from a creditworthy U.S.-based financial institution reasonably acceptable to Seller. Time is of the essence for the obligations set forth in this Section 3.01.

3.02 Closing Deliveries by Seller. At the Closing, the Seller shall deliver to the Purchaser:

(a) an executed Assignment and Assumption Agreement and Bill of Sale in the forms attached hereto as Exhibit B and Exhibit C, respectively;

(b) certified copies of minutes or unanimous written consents of the members and/or managers of the Seller approving the execution, delivery and performance of this Agreement and the consummation of the transactions contemplated by this Agreement;

(c) a certificate, dated the Closing Date, executed by the appropriate officers of the Seller, required by Section 9.02 of this Agreement;

(d) a non-foreign affidavit dated as of the Closing Date, sworn under penalty of perjury and in form and substance required under the Treasury Regulations issued pursuant to Code §1445 stating that Seller (or the entity that is treated as the owner of its assets for federal income tax purposes) is not a "foreign person" as defined in Code §1445 (the “FIRPTA Affidavit”); and

(e) a certificate from the Secretary of State of the Seller’s state of formation certifying as to Seller’s existence and good standing certificates of Seller to the extent provided under the laws of its state of formation.

(f) a certificate, dated the Closing Date, executed by the appropriate officers of the Seller, representing that:

(i) Seller has good and marketable title to all the Purchased Assets, free and clear of all Liens except for Permitted Exceptions and Liens securing or relating to Assumed Liabilities;

(ii) Seller is not in material violation (and has not received any written notice or allegation of material violation) of any Law applicable to the Purchased Assets or by which any of the Purchased Assets are bound or subject, except as set forth in Schedule 3.02(f)(ii); provided, however, notwithstanding the foregoing, compliance with Environmental Laws is the subject of and exclusively and solely governed by Section 3.02(f)(iv) hereof;

(iii) Seller has duly and timely filed all federal, state and local Tax reports and returns required to be filed by it in respect of the Purchased Assets and paid all Taxes shown thereon to be due, except as set forth in Schedule 3.02(f)(iii). There are not pending or threatened in writing any Tax audits or examinations of, or with respect to, the Purchased Assets, and there are no written notices of deficiency, proposed deficiency, or assessment from any Tax authority with respect to Taxes of, or relating to, the Purchased Assets, except as set forth in Schedule 3.02(f)(iii). All material deficiencies asserted or assessments made for Taxes due with respect to the Purchased Assets as a result of any completed and settled examinations or any concluded litigation have been fully paid, except as set forth in Schedule 3.02(f)(iii). The representations made in this Section 3.02(f)(iii) refer only to the past activities of the Seller with respect to the Purchased Assets and are not intended to serve as representations to, or a guarantee of, nor can they be relied upon for with respect to, Taxes attributable to any Tax periods (or portions thereof) beginning on, or Tax positions taken on or after, the Closing Date;

(iv) Environmental Compliance. Except as set forth on Schedule 3.02(f)(iv), (A) the Purchased Assets and their operation and maintenance as presently conducted are in compliance with all applicable Environmental Laws in all material respects; (B) Seller has not received any written notice, demand, or request for information that remains unresolved from any Governmental Authority indicating that the Purchased Assets or their operation and maintenance may be in violation of any Environmental Law; (C) to Seller's knowledge, Seller has not disposed of, released, or transported, or arranged for the disposal, release, or transportation of, any Hazardous Substance from the Purchased Assets in violation of any Environmental Law, or in a manner giving rise to material liability under any Environmental Law; (D) Seller is not subject to material liabilities or expenditures (fixed or contingent) relating to any suit, settlement, court order, administrative order, regulatory requirement, judgment, or claim asserted or arising under any Environmental Law with respect to the Purchased Assets; and (E) Seller has made available to Purchaser copies of all environmental assessments in Seller's possession involving the Purchased Assets that have been prepared by third parties;

(v) Seller has no knowledge of any material defects in condition, design or workmanship respecting the Purchased Assets except as disclosed on the attached Schedule 3.02(f)(v);

(vi) Seller is not, to its knowledge, in breach or default under any agreement or instrument under which the Seller is a party and to which any of the Purchased Assets are subject that could reasonably be expected to have a Material Adverse Effect;

(vii) Seller has turned over functional control of the Facility to MISO pursuant to the Selected Development Agreement; and

(viii) to Seller's knowledge, each of Seller's Closing conditions in Article X has been satisfied or waived.

3.03 Closing Deliveries by Purchaser. At the Closing, the Purchaser shall deliver to the Seller:

(a) a wire transfer of immediately available funds to such account or accounts as Seller shall designate prior to the Closing in an amount equal to the Purchase Price, as adjusted pursuant to Section 2.06;

(b) the certificate, dated the Closing Date, executed by the appropriate officer of the Purchaser, required by Section 10.02 of this Agreement;

(c) an executed Assignment and Assumption Agreement and Bill of Sale in the forms attached hereto as Exhibit B and Exhibit C respectively;

(d) a certificate from the Secretary of State of the Purchaser's state of formation and that of each of Purchaser's designees certifying as to such entity's existence and good standing certificates of such entity to the extent provided under the laws of its state of formation and the states in which the Facility is located; and

(e) a copy of a valid Commonwealth of Kentucky Department of Revenue-issued Direct Pay Permit Letter; and

(f) a certificate, dated the Closing Date, executed by the appropriate officers of the Purchaser, representing that, to Purchaser's knowledge, each of Purchaser's Closing conditions in Article IX has been satisfied or waived.

3.04 Cooperation. Subject to the provisions of Section 4.04, the Seller and the Purchaser shall, on request, on and after the Closing Date, cooperate with one another by furnishing any additional information, executing and delivering any additional documents and/or instruments and doing any and all such other things as may be reasonably required by the Parties to consummate or otherwise implement the transactions contemplated by this Agreement.

ARTICLE IV

Pre-Closing Filings

4.01 Approvals of Governmental Authorities; Consents. Subject to the terms and conditions of this Agreement and applicable Law, prior to the Closing each Party shall, at its own expense, use its commercially reasonable efforts to take or cause to be taken all actions necessary, proper, or advisable, and assist and cooperate with the other Party, to obtain all approvals from Governmental Authorities and other approvals required for the consummation of the transactions contemplated herein in the most expeditious manner practicable.

4.02 Cooperation. Each Party shall consult and cooperate in obtaining approvals from Governmental Authorities. Notwithstanding anything in this Agreement to the contrary, each Party agrees not to oppose, obstruct, or otherwise interfere with, in any manner whatsoever, the efforts of the other Party to obtain such Party's clearance or approval required by any Governmental Authority or applicable Law with respect to the transactions contemplated hereby. Each Party shall act with diligence in efforts to obtain all approvals from Governmental Authorities.

4.03 Conditions or Limitations. Nothing in this Agreement will require the Purchaser or Seller (i) to enter into any consent decree, to make any divestiture, to accept any operational restriction, or take any other action that, in the judgment of the affected Party, would be reasonably expected to limit the right of the affected Party to own or operate all or any portion of the Facility and the assets and properties relating to the Facility or any other material asset owned by Purchaser or Seller, respectively, or (ii) to litigate or contest any court proceeding or administrative litigation brought under any applicable Law.

4.04 MISO Notification of Sale. Seller and Purchaser shall cooperate in the transfer of the Kentucky Portion from Seller's account with MISO to Purchaser's account with MISO which cooperation shall include the transfer of ownership of the Kentucky Portion on the Closing Date and the allocation of costs and revenues related to the Kentucky Portion for the Closing Date.

ARTICLE V

Covenants

5.01 Access.

(a) Pending Closing, the Seller shall, at scheduled times and upon reasonable prior notice, make the Kentucky Portion properties, assets, books and records, and involved personnel pertaining to the Purchased Assets available for examination, inspection and review by the Purchaser and its lenders, agents and representatives; provided, however, Purchaser's inspections and examinations shall not unreasonably disrupt the normal operations of the Facility and any interview by the Purchaser of such involved personnel shall require the prior written approval of the Seller.

(b) Purchaser's Right to Inspect and Participate; Third Person Contracts.

(i) Purchaser shall have the right, but not the obligation, at the Purchaser's expense, upon reasonable request to inspect the Kentucky Portion and the Purchased Assets during all stages of the development and construction of the Facilities and shall have reasonable access to all material plans, contracts, specifications, drawings, studies, and test results regarding the Kentucky Portion and the Purchased Assets. The Purchaser may exercise these rights from time-to-time, as it deems necessary or desirable. The Purchaser agrees to indemnify the Seller in accordance with Article 12 for any claims arising from actions of the Purchaser, including its employees and agents, in conducting such inspections.

(ii) Purchaser shall further have the right, but not the obligation, upon reasonable request to review and comment on any contract that both (i) is for the design, construction, operation or maintenance of the Kentucky Portion or involves expenditures that will be included in the General Costs, as defined in Schedule 2.02, and (ii) will have an expected value (at the time of execution) for the Kentucky Portion in excess of \$500,000 (each, a “Project Document”) in advance of the date on which the Project Document is fully executed. Seller shall not execute any amendment to a Project Document without considering the comments, if any, expressed by Purchaser, if such amendment could reasonably be expected to have a material impact on the Kentucky Portion or the Purchased Assets. For the avoidance of doubt, Seller shall have the ultimate authority to determine the terms and conditions of any Project Document (including any amendment, change order, supplement, or modification thereto).

(iii) Seller shall use commercially reasonable efforts to cause all Project Documents between Seller and any third Person to include a provision stating that Purchaser is a beneficiary of the goods and/or services provided by third Person, and that the third Person consents to the assignment by Seller to Purchaser of any warranties and other contractual or legal duties that the third Person owes Seller. Seller shall use commercially reasonable efforts to cause all such Project Documents to require the third Person to add Purchaser as an additional insured to all policies of insurance to which the third Person must add Seller as an additional insured; and any indemnity provision in favor of Seller in any such Project Documents to also include Purchaser as a beneficiary of the third Person’s indemnity obligation. Seller shall use commercially reasonable efforts to cause any payment or performance bond provided by any third Person for the benefit of Seller pursuant to a Project Document to include Purchaser as an obligee and beneficiary of the bond.

(iv) Seller shall also make available to Purchaser information that is in the possession of the Seller and that is reasonably necessary for Purchaser to: (i) verify the costs incurred by Seller for which Purchaser is responsible under this Agreement; and (ii) carry out its obligations and responsibilities under this Agreement.

(v) The exercise or non-exercise by Purchaser of any rights under subparagraphs (i), (ii) and (iii) of this Section 5.01(b) shall not be construed as an endorsement or approval by Purchaser of (1) any design, standards, construction practices, protective equipment or the operation thereof, used by the Seller, (2) the condition, fitness, safety, desirability, reliability, or warranty of the Kentucky Portion or the Purchased Assets, or (3) any expenditure by Seller.

(vi) If a material dispute arises under a Project Document, Seller shall provide Purchaser a reasonable opportunity for its representative to attend meetings at which the parties to the Project Document discuss the dispute or resolution of the dispute, and to provide Purchaser’s input to Seller regarding the dispute and resolution of the dispute.

5.02 Pending Closing. Pending Closing, and unless otherwise consented to by the Purchaser in writing, or for which Purchaser will not be assuming any liability from and after Closing, the Seller shall use commercially reasonable efforts to conduct and carry out activities and operations at the Kentucky Portion substantially in accordance with the Selected Developer

Agreement; provided, that Seller shall have no liability to Purchaser for any failure to complete construction of the Kentucky Portion, which may be cancelled or terminated by MISO pursuant to the terms of the Selected Developer Agreement. If the Kentucky Portion is cancelled or terminated by MISO prior to Closing, the Parties agree that Purchaser may seek a rate of return on any investment of Purchaser in the Kentucky Portion that is not ultimately reimbursed by Seller (or a third party that is selected or designated by MISO to construct the Kentucky Portion) and that is properly recorded on Purchaser's accounting books as a capital cost; provided, however, that any such action by Purchaser must be consistent with applicable Law and the terms and conditions set forth in the Project Ownership and Operations Agreement.

5.03 Consents. Pending the Closing Date, the Parties shall proceed with all reasonable diligence and use commercially reasonable efforts to obtain the written consents, authorizations or approvals required for the consummation of transactions contemplated by this Agreement (including the assignment and assumption of the Permits included in clause (v) of the definition of Purchased Assets); provided, however, neither Party shall have any obligation to pay any third Person (other than a Governmental Authority) a fee to obtain any such consent, authorization or approval not already provided for by the applicable agreement.

5.04 Project Ownership and Operation Agreement. Seller and Purchaser agree to execute and deliver the Project Ownership and Operation Agreement, substantially in the form attached to this Agreement as Exhibit D, within thirty days after Purchaser receives the latter of the approvals described in Section 5.10 of this Agreement.

5.05 Notice of Breach. Pending Closing, each Party shall provide notice to the other Party within ten (10) days of becoming aware of any material breach of (x) any representations or warranties of such notifying Party contained in this Agreement or (y) any of the covenants of such notifying Party contained in this Agreement.

5.06 Purchaser's Development Obligations. Purchaser hereby agrees to use commercially reasonable efforts to provide Seller with any and all real estate rights reasonably requested by Seller in connection with the surveying, development, permitting, design, construction, owning, energizing, maintaining, or operating the Kentucky Portion, all of which shall take place prior to the Closing Date ("collectively referred to as "Real Estate Rights"). In connection with the foregoing, Purchaser agrees to exercise its power of eminent domain, if necessary, to acquire such Real Estate Rights, subject, however, to its prior good faith determination that it is authorized to exercise such power by applicable law, and that the requisite public necessity exists to acquire such Real Estate Rights. As consideration for its work in acquiring any necessary real estate rights, Seller agrees to reimburse Purchaser for the actual costs reasonably incurred by Purchaser to acquire such real estate rights under the terms of the Agreement for Professional Services. In satisfaction of the foregoing, Purchaser will grant a license in the Real Estate Rights to Seller in a license agreement substantially in the form of Exhibit E to this Agreement (the "License"). The Parties agree that the Real Estate Use Agreement between them dated as of February 3, 2017, will terminate as of the date of receipt by Purchaser of the latter of the two approvals described in Section 5.10 of this Agreement.

5.07 Cooperation.

Each Party agrees that after the Closing Date it will use its commercially reasonable efforts to cooperate with and make available to the other Party, upon reasonable notice and during normal business hours, books and records and information of or relating to the Purchased Assets and other matters relevant to this Agreement which are necessary or useful in connection with Purchaser's operation, inspection or maintenance of the Purchased Assets, any proceeding by a Governmental Authority, preparation of Tax returns, or any claim by or against a third party involving the Purchased Assets (other than in connection with disputes between the Parties). The Party requesting any such books and records, information, or cooperation shall bear all of the out-of-pocket costs and expenses of the other Party reasonably incurred in connection therewith (including out-of-pocket expenses to third parties incurred by any Party).

5.08 Tax Matters.

(a) Except as provided in Section 2.04, in respect of Taxes on or with respect to the Purchased Assets, (i) with respect to a taxable period, or portion thereof, that ends before the Closing Date, Seller shall be liable and indemnify Purchaser for all Taxes arising out of or related to a breach of any of the representations and warranties set forth in Section 3.02(f)(iii) of this Agreement or the Covenants of Seller in this Section 5.08, and (ii) Purchaser shall be liable and indemnify Seller for all such Taxes with respect to a taxable period, or portion thereof, that begins on or after the Closing Date.

(b) Ad valorem property Taxes imposed on or with respect to the Purchased Assets for the Taxable Period that contains the Effective Time shall be prorated between Seller and Purchaser based on their relative number of days of ownership during the taxable period, with Seller being responsible for such prorated ad valorem property Taxes for the taxable period ending before the Closing Date and Purchaser being responsible for such prorated ad valorem property Taxes for the taxable period beginning on or after the Closing Date. For illustrative purposes, and for avoidance of doubt, all Kentucky state and local ad valorem real and personal property Tax bills for 2018 shall cover the calendar year beginning January 1, 2018 and ending December 31, 2018 and the Parties shall allocate the Taxes based upon their respective ownership periods during that calendar year. At the time of Closing, the above illustration shall be adjusted to reflect the actual year of the Closing calendar year Tax allocations and any change in Law that may be applicable at that time. All amounts receivable or payable between the Parties under this Section 5.08(b) will be an adjustment to the Purchase Price.

(c) Any Tax return to be prepared pursuant to the provisions of this Section 5.08 shall be prepared in a manner consistent with practices followed in prior years with respect to similar Tax returns and in compliance with the applicable Law of each respective jurisdiction, except for changes required by changes in applicable Law. Purchaser shall not file an amended Tax return relating to the Purchased Assets for any period or portion thereof ending prior to the Closing Date without the consent of Seller, which may be withheld in Seller's reasonable discretion, and Seller shall not file any Tax return relating to the Purchased Assets for any period ending on or after the Closing Date without the prior consent of Purchaser, which may be withheld in Purchaser's reasonable discretion.

(d) Purchaser and Seller shall cooperate fully, and shall cause their respective Affiliates to cooperate fully, as and to the extent reasonably requested by either Party, in connection with the filing of Tax returns and any audit, litigation, examination, or other proceeding (“Tax Proceeding”) with respect to Taxes of or relating to the Purchased Assets and in connection with the filing of any application with any Taxing authority for approval of the transfer or assignment of any item described in clause (iv) of the definition of Purchased Assets. Such cooperation shall include the retention and (upon a Party’s request) the provision of records and information which are reasonably relevant to any such Tax return, Tax Proceeding, or application and making employees available on a mutually convenient basis to provide additional information and explanation of any material provided hereunder.

(e) Seller shall notify Purchaser within thirty (30) days of Seller’s receipt of notice of a Tax Proceeding related to the Purchased Assets or to Seller but only if the Tax Proceeding could reasonably be expected to affect Purchaser’s ownership or operation of the Purchased Assets after the Closing or result in the imposition of any Tax for which Purchaser is responsible. Purchaser shall notify Seller within thirty (30) days of Purchaser’s receipt of notice of a Tax Proceeding related to the Purchased Assets or to Purchaser but only if the Tax Proceeding could reasonably be expected to result in the imposition of any Tax for which Seller is responsible. Seller, at its expense, shall have the right to control the defense and settlement of any Tax proceeding for which Seller is responsible for the Tax. Purchaser, at its expense, shall have the right to participate in the defense and settlement of any such Tax proceeding.

(f) Seller shall be entitled to any refunds or credits for any Taxes relating to the Purchased Assets for periods (or portions thereof) ending prior to or as of the Closing Date, and Purchaser shall be entitled to any refunds or credits for any Taxes relating to the Purchased Assets for periods (or portions thereof) on and after the Closing Date. Any Party receiving a refund or the right to a credit to which the other Party is entitled shall immediately notify the Party so entitled and remit the refund or the value of the credit, as the case may be, within thirty (30) days of receipt of such refund or entitlement to the credit.

5.09 Information to be Provided by Seller to Purchaser. Seller will promptly provide Purchaser with a copy of any material notice received by Seller or given by Seller pursuant to (a) Article 20 of the Selected Developer Agreement, and (b) the formal “notice” provision of any Project Document.

5.10 Effectiveness of Purchaser’s Obligations. Purchaser covenants and agrees that promptly after the date of this Agreement it will use commercially reasonable efforts to make the necessary filings and seek from the KPSC and the RUS the required approvals of (a) this Agreement and related documents and (b) construction of the Kentucky Portion and the Purchased Assets. Seller and Purchaser agree that the obligations of Purchaser under Articles II and III, and Section 4.04 of this Agreement shall not be enforceable against Purchaser unless and until it has received those approvals from the KPSC and the RUS.

5.11 Separate Contracts. Seller agrees that construction of the Kentucky Portion shall be performed under a contract or contracts that are separate from the contract for construction of the remainder of the Facilities, and apply only to the Kentucky Portion.

ARTICLE VI

[Intentionally Omitted]

ARTICLE VII

Warranties and Representations of the Seller

The Seller warrants and represents to the Purchaser as of the date hereof as follows:

7.01 Organization and Good Standing. The Seller is a limited liability company duly formed, validly existing and in good standing under the laws of the State of Indiana. Seller is duly qualified to transact business and is in good standing in the Commonwealth of Kentucky and in each other jurisdiction where such qualification is necessary, except where the failure to be so qualified or in good standing could not reasonably be expected to have a Material Adverse Effect or impair the Seller's ability to perform its obligations hereunder in any material respect.

7.02 Authority. The Seller has the right and power to enter into, and perform its obligations under this Agreement; and has taken all requisite action to authorize its execution and delivery of this Agreement and the performance of its obligations under this Agreement; and this Agreement has been duly authorized, executed and delivered by the Seller and is binding upon, and enforceable against, the Seller in accordance with its terms; except as such enforcement may be limited by bankruptcy, insolvency, reorganization, moratorium or other similar laws affecting enforcement of creditors' rights generally and by general principles of equity (whether applied in a proceeding at law or in equity).

7.03 No Violations.

(a) The execution, delivery and performance of this Agreement by the Seller does not and will not, after the giving of notice, or the lapse of time, or otherwise, (i) conflict with, result in a breach of, or constitute a default under, the Certificate of Formation or Operating Agreement of the Seller or any of its Affiliates or any Law; (ii) result in the creation of any Lien upon any of the Purchased Assets (other than any Lien created by the execution and delivery of this Agreement); or (iii) violate or result in a default (or give rise to any right of termination, suspension, modification, cancellation, or acceleration) in any material respect under any other indebtedness or obligation, lease, contract, other agreement, commitment, indenture, mortgage, deed of trust, or other instrument, document, or arrangement to which Seller or any of its Affiliates is a party and by which any of the Purchased Assets is bound.

(b) To Seller's knowledge, the execution and delivery by Seller of this Agreement does not, and the performance by Seller of its obligations hereunder will not, require Seller to obtain any consent, approval, authorization or other action of, or make any filing with or give any notice to, any Governmental Authority, except (i) as disclosed in Schedule 7.03(b),

(ii) where failure to obtain such consents, approvals, authorizations or actions, make such filings or give such notices would not impair the Seller's ability to perform its obligations hereunder in any material respect, or (iii) as may be necessary as a result of any facts or circumstances relating solely to Purchaser.

(c) Seller has no knowledge of any breach of (i) any representations or warranties of Seller contained in this Agreement or (ii) any of the covenants of Seller contained in this Agreement.

7.04 Brokers. Neither this Agreement nor the sale of the Purchased Assets or any other transaction contemplated by this Agreement was induced or procured through any Person acting on behalf of, or representing, the Seller or any of its Affiliates as broker, finder, investment banker, financial advisor or in any similar capacity.

7.05 Litigation. There are no pending legal, arbitration or governmental actions or proceedings to which the Seller is a party or to which any of its property is subject which, if adversely determined, are reasonably expected to have a Material Adverse Effect, and to the best of the Seller's knowledge, no such actions or proceedings are threatened or contemplated, except as disclosed on Schedule 7.05.

7.06 Insurance. All material properties and risks associated with the Properties and Facility are covered and shall remain covered through the Closing Date, by valid and currently effective insurance policies or binders of insurance or programs of self-insurance in such types and amounts as are consistent with customary practices and standards in the Seller's industry.

7.07 Disclaimer of Warranties. EXCEPT WITH RESPECT TO THE WARRANTIES AND REPRESENTATIONS SPECIFICALLY SET FORTH IN THIS AGREEMENT, SELLER MAKES NO WARRANTY, EXPRESS OR IMPLIED, WHETHER OF MERCHANTABILITY, SUITABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR QUALITY AS TO THE KENTUCKY PORTION OR THE PURCHASED ASSETS, OR ANY PART THEREOF, OR AS TO THE CONDITION OR WORKMANSHIP THEREOF, OR THE ABSENCE OF ANY DEFECTS THEREIN, WHETHER LATENT OR PATENT, IT BEING UNDERSTOOD THAT THE KENTUCKY PORTION AND THE PURCHASED ASSETS ARE TO BE CONVEYED HEREUNDER "AS IS" AND "WHERE IS" ON THE CLOSING DATE, AND IN THEIR THEN PRESENT CONDITION. THE PURCHASER SHALL RELY UPON ITS OWN EXAMINATION THEREOF.

ARTICLE VIII

Warranties and Representations of the Purchaser

The Purchaser warrants and represents to the Seller as of the date hereof and as of the Closing Date as follows:

8.01 Due Incorporation. The Purchaser is a Kentucky corporation duly incorporated, validly existing and in good standing under the laws of the State of its incorporation.

8.02 Authority. Subject to Section 5.10, the Purchaser has the corporate right and power to enter into, and perform its obligations under this Agreement, and has taken all requisite corporate action to authorize its execution and delivery of this Agreement and the performance of its obligations under this Agreement; and this Agreement has been duly executed and delivered by the Purchaser and each is binding upon, and enforceable against, the Purchaser in accordance with its terms; except as such enforcement may be limited by bankruptcy, insolvency, reorganization, moratorium or other similar laws affecting enforcement of creditors' rights generally and by general principles of equity (whether applied in a proceeding at law or in equity).

8.03 No Violations.

(a) Subject to Section 5.10, the execution, delivery or performance of this Agreement by the Purchaser does not and will not, after the giving of notice, or the lapse of time, or otherwise: conflict with, result in a breach of, or constitute a default under, the Certificate of Incorporation or By-laws of the Purchaser, any Law or any material contract, agreement, commitment or plan to which the Purchaser is a party.

(b) Subject to Section 5.10, the execution and delivery by Purchaser and its Affiliates of this Agreement does not, and the performance by Purchaser and its Affiliates of its obligations hereunder will not, require Purchaser to obtain any consent, approval, authorization or other action of, or make any filing with or give any notice to, any Governmental Authority, except (i) as disclosed in Schedule 9.04, (ii) where failure to obtain such consents, approvals, authorizations or actions, make such filings or give such notices would not impair the Purchaser's ability to perform its obligations hereunder in any material respect and (iii) as may be necessary as a result of any facts or circumstances relating solely to Seller.

(c) Purchaser has no knowledge of any breach of (i) any representations or warranties of Purchaser contained in this Agreement or (ii) any of the covenants of Purchaser contained in this Agreement.

8.04 Brokers. Neither this Agreement nor the purchase of the Purchased Assets or any other transaction contemplated by this Agreement was induced or procured through any Person, acting on behalf of, or representing, the Purchaser or any of its Affiliates as broker, finder, investment banker, financial advisor or in any similar capacity.

ARTICLE IX

Conditions to Closing Applicable to Purchaser

The obligations of Purchaser hereunder (including the obligation of Purchaser to close the transactions herein contemplated) are subject to the following conditions precedent:

9.01 No Termination. Neither Purchaser nor Seller shall have terminated this Agreement pursuant to Section 11.01 hereof.

9.02 Bring-Down of Seller Warranties. The warranties and representations made by the Seller herein to Purchaser shall have been true and correct in all material respects on the date hereof and shall be true and correct in all material respects (except that, in each such case, representations and warranties to the extent containing a materiality standard shall have been and shall be true and correct within the materiality standard set forth therein) on and as of the Closing Date with the same effect as if such warranties and representations had been made on and as of the Closing Date except with respect to representations and warranties which speak as to an earlier date, which representations and warranties shall be true and correct at and as of such date; and at the Closing, Purchaser shall have received a certificate executed by an authorized officer of Seller to the foregoing effect.

9.03 Pending Actions. No investigation, action, suit or proceeding by any Governmental Authority and no action, suit or proceeding by any other Person, shall be pending on the Closing Date which makes the transaction illegal or otherwise restrains or prohibits the consummation of the transactions contemplated by this Agreement.

9.04 Consents and Approvals. All approvals from Governmental Authorities and other consents, approvals, or authorizations of other Persons set forth in, and in accordance with, Schedule 9.04 shall have been obtained; provided, however, that if Purchaser's breach of its obligations hereunder caused the failure to obtain any such consent, approval, or authorization, Purchaser shall be deemed to have waived this condition to the extent of such failure.

9.05 All Necessary Documents. Purchaser shall have received copies of the documents to be delivered pursuant to Section 3.02(a)-(f) hereof.

9.06 Project Completion. Seller shall have turned over functional control of the Facility to MISO pursuant to the Selected Developer Agreement.

Purchaser shall have the right to waive any of the foregoing conditions precedent.

ARTICLE X

Conditions to Closing Applicable to Seller

The obligations of Seller hereunder (including the obligation of Seller to close the transactions herein contemplated) are subject to the following conditions precedent:

10.01 No Termination. Neither Purchaser nor Seller shall have terminated this Agreement pursuant to Section 11.01 hereof.

10.02 Bring-Down of Purchaser Warranties. All warranties and representations made by Purchaser herein to the Seller shall have been true and correct in all material respects on the date hereof and shall be true and correct in all material respects (except that, in each such case, representations and warranties to the extent containing a materiality standard shall have been and shall be true and correct within the materiality standard set forth therein) on and as of the Closing Date with the same effect as if such warranties and representations had been made on and as of the Closing Date except with respect to representations and warranties which speak as to an earlier date, which representations and warranties shall be true and correct at and as of such date, and Purchaser shall have performed and complied in all material respects (except for the payment of money which shall be absolute) with all agreements and covenants on its part required to be performed or complied with on or prior to the Closing Date, and at the Closing, Seller shall have received a certificate executed by the President or any Vice President of Purchaser to the foregoing effect.

10.03 Pending Actions. No investigation, action, suit or proceeding by any Governmental Authority shall be pending on the Closing Date which makes the transaction illegal or otherwise restrains or prohibits the consummation of the transactions contemplated by this Agreement.

10.04 Consents and Approvals. All approvals of Governmental Authorities and other consents, approvals, or authorizations of other Persons set forth in, and in accordance with, Schedule 10.04 shall have been obtained; provided, however, that if Seller's breach of its obligations hereunder caused the failure to obtain any such consent, approval, or authorization, Seller shall be deemed to have waived this condition to the extent of such failure.

10.05 All Necessary Documents. Seller shall have received the Purchase Price and copies of the documents to be delivered pursuant to Section 3.03(a)-(g) hereof.

10.06 Project Completion. Seller shall have turned over functional control of the Facility to MISO pursuant to the Selected Developer Agreement.

10.07 Project Ownership and Operation Agreement. Seller shall have received from Purchaser an executed copy of the Project Ownership and Operation Agreement as contemplated in Section 5.04.

Seller shall have the right to waive any of the foregoing conditions precedent.

ARTICLE XI

Termination

11.01 Termination. This Agreement may be terminated at any time prior to the Closing as follows, and in no other manner:

- (a) by mutual written consent of Purchaser and Seller;

(b) by Seller by written notice to Purchaser if Seller has not received a certified copy of the approval of the Board of Directors of Purchaser by the date that is ninety (90) days after the date of this Agreement;

(c) by Seller by written notice to Purchaser if Seller has not received an executed copy of the Project Ownership and Operation Agreement, as contemplated in Section 5.04, executed by an authorized officer of Purchaser, on or before the date that is the earlier of (i) thirty days after receipt by Purchaser of the latter of the two approvals described in Section 5.10 of this Agreement, and (ii) May 31, 2018;

(d) by either Party (a "Terminating Party") by written notice to the other Party (the "Defaulting Party") if all conditions precedent set forth in Articles IX and X of this Agreement (other than those that are to be satisfied at Closing) are satisfied or waived by the appropriate Party hereto, if the Defaulting Party fails to take any action that is necessary or appropriate to cause Closing to occur in accordance with Article III of this Agreement, and if such failure remains uncured for a period of ten (10) business days after receipt of written notice describing the same;

(e) by a Terminating Party if a Defaulting Party has breached a material term or condition of this Agreement and has not cured such breach within thirty (30) days following receipt of written notice of such breach; provided, that if the Defaulting Party commences and diligently pursues efforts to cure such breach within such 30-day period, and such breach is capable of being cured, the Defaulting Party may continue to effect such cure and such default will not be deemed to give the Terminating Party a right to terminate this Agreement for an additional ninety (90) days so long as the Defaulting Party is diligently pursuing such cure;

(f) by either Party on written notice to the other Party if the Selected Developer Agreement has been terminated without the completion of construction of the Kentucky Portion, or if, prior to completion of construction thereof, MISO has cancelled or re-assigned the Kentucky Portion to a third-party; or

(g) by Seller on written notice to Purchaser if Purchaser does not deliver the letter of credit to Seller or deposit the estimated Purchase Price into escrow by the deadline for the same set forth in Section 3.01 in accordance with the terms and conditions of such Section 3.01, time being of the essence in respect of such letter of credit or deposit; provided, that if Purchaser cures such default within ten (10) days after receiving written notice of such default, Seller shall not be permitted to terminate this Agreement pursuant to this paragraph (g).

11.02 Effect of Termination. (a) Except as otherwise set forth in this Section 11.02, if a Party terminates this Agreement in accordance with Section 11.01, such termination will be without liability to such Party or to any Affiliate, member, shareholder, partner, director, manager, officer, employee, agent, consultant, attorney, or other representative of such Party. Upon a termination of this Agreement, the obligations of the Parties hereunder shall be of no further force or effect, provided that:

(i) the obligations of the Parties under Section 5.04, Article XII, Article XIII, Section 14.07, Section 14.08, Section 14.09, Section 14.10, Section 14.11, Section 14.12, Section 14.13, Section 14.14, Section 14.15, Section 15.01, Section 15.02, Section 15.07, Section 15.08, Section 15.13, Section 15.14, Section 15.15, 15.16, 15.17 and this Section 11.02 shall survive such termination; and

(ii) such termination shall be without prejudice to the rights of the Parties to any remedies which either Party may have whether at law or in equity (including the remedy of specific performance) for a breach under this Agreement, and either Party's right to obtain specific performance of any breached obligations hereunder.

(b) The Parties acknowledge and agree that, in the event that this Agreement is terminated prior to Closing, Seller will remain the owner of the Kentucky Portion and shall have the right to continue or discontinue the development, construction, ownership, operation, and/or maintenance of the Kentucky Portion and the Purchased Assets in a manner determined by Seller in its sole discretion, and that, subject to Section 11.02(c), Purchaser shall have no right, title or interest in or to the Kentucky Portion or the Purchased Assets. In the event this Agreement is terminated prior to Closing, within fifteen (15) days of the date of termination, Seller shall deliver to Purchaser the Purchase Price, to the extent previously tendered by Purchaser, by taking the necessary steps required of Seller to release to Purchaser any funds held in escrow pursuant to Section 3.01, returning to Purchaser any letter of credit delivered by Purchaser to Seller pursuant to Section 3.01, and delivering the Existing ROW Price by wire transfer of immediately available funds to such account or accounts as Purchaser shall designate.

Notwithstanding the foregoing, to the extent that any approval from a Governmental Authority or third-party consent is required to lawfully transfer title of the Kentucky Portion, Purchased Assets, Assumed Liabilities, or Planning Documents back to Seller, such transfer of title shall not be effective until all such Governmental Authority approvals and third-party consents have been received or Seller has waived such conditions.

(c) If Seller receives final, non-appealable documentation from MISO cancelling or terminating the development or construction of the Kentucky Portion, and within one year following such cancellation or termination a third-party is not identified by MISO to develop and/or construct the Kentucky Portion, Purchaser shall have the right to terminate the License.

11.03 Seller's Pre-Closing Obligations. Notwithstanding anything herein to the contrary, in the event that Seller breaches any obligation hereunder and Closing has not occurred, (i) Purchaser's sole and exclusive remedy for any and all claims relating to such breach shall be to terminate this Agreement in accordance with this Section 11.01(e), or seek specific performance, and (ii) in no event shall Seller be liable to Purchaser for money damages if Closing does not occur, provided, however, that nothing in Section 11.02 or Section 11.03 shall prohibit Purchaser from recovering any amounts due Purchaser from Seller under the Agreement for Professional Services.

ARTICLE XII

Indemnification

12.01 Seller Indemnification. From and after the Closing, the Seller agrees to indemnify, defend and hold the Purchaser harmless against any loss, damage or expense (including reasonable attorneys' fees), which arises out of or is in respect of any breach of any of (a) the warranties and representations set forth in Article VII, (b) the covenants or agreements made by the Seller in this Agreement, (c) any and all Non-Assumed Liabilities, and (d) fraud or willful misconduct on the part of Seller or any of its Affiliates in connection with this Agreement or the transactions contemplated hereby.

12.02 Purchaser Indemnification. From and after the Closing, the Purchaser agrees to indemnify, defend and hold the Seller harmless against any loss, damage or expense (including reasonable attorneys' fees), which arises out of or is in respect of a breach of (a) any of the warranties and representations set forth in Article VIII, (b) the covenants or agreements made by the Purchaser in this Agreement, (c) any and all Assumed Liabilities and (d) fraud or willful misconduct on the part of Purchaser or any of its Affiliates in connection with this Agreement or the transactions contemplated hereby.

12.03 Limitation. The Parties' rights to indemnification pursuant to Article XII of this Agreement is subject to the following limitations:

(a) The Indemnified Party shall not be entitled to assert any right of indemnification pursuant to this Article XII for any loss, damage or expense suffered by such Party after the twelve (12) month anniversary date of the Closing Date, except that (i) indemnification claims (A) arising from Section 13.01 may be asserted at any time before the expiration of the statute of limitations applicable to the underlying claim, charge, or cause of action, (B) for breach of Seller's obligations with respect to Non-Assumed Liabilities may be asserted at any time before the expiration of the statute of limitations applicable to the underlying claim, charge, or cause of action, (C) for breach of Purchaser's obligations with respect to Assumed Liabilities may be asserted at any time before the expiration of the statute of limitations applicable to the underlying claim, charge, or cause of action, or (D) for fraud or willful misconduct shall not be limited by this Agreement and (ii) if notice of any claim shall have been given before the end of the applicable period under this paragraph (a), the Indemnified Party shall continue to have the right to be indemnified with respect to such claim so long as it is actively pursuing such claim.

(b) No indemnification claim (other than a claim for breach of Seller's obligations with respect to Non-Assumed Liabilities or fraud or intentional misconduct or Purchaser's obligations with respect to Assumed Liabilities or fraud or intentional misconduct) may be made against a Party for indemnification pursuant to this Article XII unless the aggregate of all indemnifiable losses, damages and expenses with respect to this Article XII shall exceed fifty thousand dollars (\$50,000) ("Threshold"), and then the Indemnifying Party shall only be required to pay or be liable for the excess over the Threshold; provided, that any breach of this Agreement or any certificate relating hereto in connection with any single item or group of

related items that results in losses of less than twenty thousand dollars (\$20,000) shall be deemed, for all purposes of this Agreement, not to be a breach of this Agreement or any certificate relating hereto.

(c) The Indemnifying Party's maximum liability to the other Party pursuant to this Agreement shall be ten percent (10%) of the Purchase Price; provided, however, that the foregoing limitation of liability shall not apply to (i) indemnification claims based on fraud or willful misconduct, or (ii) claims by Seller for the Purchase Price.

(d) Each Party hereby acknowledges and agrees that from and after Closing its sole and exclusive remedy with respect to any and all claims relating to the subject matter of this Agreement, the Assignment and Assumption Agreement, and any other certificate, document, instrument or affidavit furnished by the Purchaser or Seller in accordance with the provisions of this Agreement, including the Sell Back provisions contained in Section 14.06, shall be pursuant to the indemnification provisions set forth in this Article XII. In furtherance of the foregoing, each Party hereby waives, to the fullest extent permitted under applicable Law, any and all rights, claims and causes of action it may have against the other Party arising under or based upon any Law (including any such rights, claims or causes of action arising under or based upon common law or otherwise) or Environmental Laws, including the Resource Conservation and Recovery Act and the Comprehensive Environmental Response, Compensation and Liability Act.

(e) For the purposes of this Article XII, in computing such aggregate amounts of claims, the amount of each claim shall be deemed to be an amount net of any insurance proceeds and any indemnity, contribution or other similar payment recoverable by the Indemnified Party or any Affiliate from any third party with respect thereto.

(f) Notwithstanding anything in this Article XII, neither of the Parties shall be relieved of any separate indemnification obligations that may be set forth in a separate agreement between the Parties including but not limited to those indemnification obligations set forth in the Project Ownership and Operation Agreement, the License, or the Agreement for Professional Services.

(g) Anything herein to the contrary notwithstanding, no breach of any representation, warranty, covenant or agreement contained herein or any other certificate, document, instrument or affidavit furnished by a Party in accordance with the provisions of this Agreement shall give rise to any right on the part of the other Party, after the consummation of the purchase and sale of the Kentucky Portion and the Purchased Assets contemplated hereby, to rescind this Agreement or any of the transactions contemplated hereby.

(h) Seller shall have no liability under any provision of this Agreement for any liabilities and damages arising from or related to actions taken or not taken by Purchaser or its Affiliates after the Closing Date, except as contemplated in this Agreement or any other agreement between the Parties contemplated by this transaction. Seller shall have no liability for any breach by Seller of this Agreement (or any other certificate, document, instrument or affidavit furnished by Seller in accordance with the provisions of this Agreement) if Purchaser

had knowledge of such breach or the facts giving rise to such breach on or prior to the date hereof.

(i) Purchaser shall have no liability under any provision of this Agreement for any liabilities and damages arising from or related to actions taken or not taken by Seller or its Affiliates prior to the Closing Date, except as contemplated in this Agreement or any other agreement between the Parties contemplated by this transaction. Purchaser shall have no liability for any breach by Purchaser of this Agreement (or any other certificate, document, instrument or affidavit furnished by Purchaser in accordance with the provisions of this Agreement) if Seller had knowledge of such breach or the facts giving rise to such breach on or prior to the date hereof.

(j) Each Party shall take all reasonable steps to mitigate all such liabilities and damages upon and after becoming aware of any event which could reasonably be expected to give rise to such losses, damages and expenses.

12.04 Indemnification Notice. Promptly upon obtaining knowledge of any claim, event, facts or demand which gives rise to, or could reasonably be expected to give rise to, a claim for indemnification hereunder, any Party seeking indemnification under this Article XII (an "Indemnified Party") shall give written notice of such claim or demand ("Notice of Claim") to the Party from which indemnification is sought (an "Indemnifying Party"), setting forth the amount of the claim, if known. The Indemnified Party shall furnish to the Indemnifying Party, in reasonable detail, such information as it may have with respect to such indemnification claim (including copies of any summons, complaint or other pleading which may have been served on it and any written claim, demand, invoice, billing or other document evidencing or asserting the same). Subject to Section 12.03(a), no failure or delay by the Indemnified Party in the performance of the foregoing shall reduce or otherwise affect the obligation of any Indemnifying Party to indemnify, defend and hold the Indemnified Party harmless, except to the extent that such failure or delay shall have adversely affected the Indemnifying Party's ability to defend against, settle or satisfy any loss, damage or expense for which the Indemnified Party is entitled to indemnification hereunder.

12.05 Indemnification Procedure. (a) If the claim or demand set forth in the Notice of Claim given by the Indemnified Party pursuant to Section 12.04 of this Agreement is a claim or demand asserted by a third party, the Indemnifying Party shall have fifteen (15) days after the date of the Notice of Claim to notify the Indemnified Party in writing of its election to defend such third party claim or demand on behalf of the Indemnified Party. If the Indemnifying Party elects to defend such third party claim or demand, the Indemnified Party shall at the expense of the Indemnifying Party make available to the Indemnifying Party and its agents and representatives all records and other materials which are reasonably required in the defense of such third party claim or demand and shall otherwise cooperate with, and assist the Indemnifying Party in the defense of, such third party claim or demand, and so long as the Indemnifying Party is defending such third party claim or demand in good faith, the Indemnified Party shall not pay, settle or compromise such third party claim or demand. If the Indemnifying Party elects to defend such third party claim or demand, the Indemnified Party shall have the right to participate in the defense of such third party claim or demand, at its own expense. If the Indemnifying Party does not elect to defend such third party claim or demand, or does not defend such third party

claim in good faith, the Indemnified Party shall have the right, in addition to any other right or remedy it may have hereunder, at the Indemnifying Party's expense, to defend such third party claim or demand; provided, however, that (i) the Indemnified Party shall not have any obligation to participate in the defense of, or defend, any such third party claim or demand; and (ii) the Indemnified Party's defense of or its participation in the defense of any such third party claim or demand shall not in any way diminish or lessen the obligations of the Indemnifying Party under the agreements of indemnification set forth in this Article XII. Without the Indemnified Party's written consent, the Indemnifying Party shall not enter into any settlement of a third party claim unless (i) there is no finding or admission of any violation of legal requirements or any violation of the rights of any Person and no effect on any other claims that may be made against the Indemnified Party or its Affiliates; (ii) the settlement includes a complete and unconditional release of the Indemnified Party with respect to the third party claim; and (iii) the sole relief provided under the settlement is monetary damages that are paid in full by the Indemnifying Party.

(b) Except for disputed claims or third party claims being defended in good faith, the Indemnifying Party shall satisfy its obligations hereunder in cash within thirty (30) days after the Date of Notice of Claim.

(c) The term "Date of the Notice of Claim" as used in this Article XII shall mean the date the Notice of Claim is deemed delivered pursuant to Section 15.11(c) hereof.

12.06 Effect of Indemnity Payments. The Parties agree to treat all payments made under the indemnity provisions of Article XII of this Agreement as adjustments to the Purchase Price for Tax purposes, to the extent permitted under applicable Law, and that such agreed treatment shall govern for purposes hereof.

ARTICLE XIII

Confidentiality; Remedy

13.01 Confidentiality of Materials. The Parties hereto agree with respect to all technical, commercial and other information that is furnished or disclosed by another Party, including information regarding such Party's (and its affiliates') organization, personnel, business activities, customers, policies, assets, finances, costs, sales, revenues, technology, rights, obligations, liabilities and strategies (collectively, "Information"), that (a) such Information is confidential and/or proprietary to the furnishing/disclosing Party and entitled to and shall receive treatment as such by the receiving Party; (b) the receiving Party will hold in confidence and not disclose nor use (except in respect of the transactions contemplated by this Agreement) any such Information, treating such Information with the same degree of care and confidentiality as it accords its own confidential and proprietary Information; provided, however, that the receiving Party shall not have any restrictive obligation with respect to any Information which (i) was prior to the date of its disclosure available to the general public, (ii) is or becomes publicly known through no wrongful act or omission of the receiving Party, or (iii) is known by the receiving Party without any proprietary restrictions by the furnishing/disclosing Party at the time of receipt of such Information; and (c) all such Information furnished to either Party by the

other, unless otherwise specified in writing, shall remain the property of the furnishing/disclosing Party and, in the event this Agreement is terminated, shall be returned to it, together with any and all copies made thereof, upon request for such return by it (except for documents submitted to a governmental agency with the consent of the furnishing/disclosing Party or upon subpoena and which cannot be retrieved with reasonable effort) and in the case of (i) oral Information furnished to any Party by the other which shall have been reduced to writing by the receiving Party and (ii) all internal documents of any Party describing, analyzing or otherwise containing Information furnished by the other Party, all such writings and documents shall be destroyed, upon request, in the event this Agreement is terminated, and each Party shall confirm in writing to the other compliance with any such request. The foregoing notwithstanding, however, each receiving Party (x) may retain back-up copies of the confidential Information in its computer systems to the extent that routine computer back-up procedures create copies in the associated back-up or archival computer storage system; and (y) may retain one copy of any confidential Information required to ensure compliance with any applicable state or Federal statutes, laws or regulations or its internal compliance procedures, and any such confidential Information so retained shall remain subject to the provisions of this Agreement. Any confidential Information that may be found in drafts, notes, compilations, studies, synopses, or summaries thereof, or other documents prepared by or for receiving Party, oral and written confidential Information not so requested to be returned, will be held by receiving Party and kept subject to the terms of this Agreement, or destroyed. The recipient of confidential Information may disclose such confidential Information if required pursuant to a subpoena by a court of competent jurisdiction or by order of a governmental agency or other applicable Law, so long as the Party required to disclose the confidential Information provides the other Party prior notice (unless such notice is prohibited) of such requirement to permit such Party time to seek appropriate relief against such disclosure. Notwithstanding anything in this Section 13.01 to the contrary, the Parties may disclose any confidential Information (i) to the KPSC and the RUS, and their respective staffs to the extent necessary to discuss the transactions contemplated hereby with the KPSC and the RUS, and (ii) to FERC, to the extent required in connection with a regulatory filing at FERC related to or arising out of those transactions.

13.02 Remedy. Each Party hereto acknowledges that the remedy at law for any breach by either Party of its obligations under Section 13.01 of this Agreement is inadequate and that the other Party shall be entitled to seek equitable remedies, including an injunction or specific performance, in the event of breach by any other Party.

13.03 Termination of Confidentiality Obligations. The obligation of each Party to the other under this Agreement and any other confidentiality agreement between or among the Parties and their affiliates to protect the confidentiality of confidential Information shall expire and terminate three years after the earlier of the Closing Date and termination of this Agreement pursuant to Section 11.01.

ARTICLE XIV

Certain Other Understandings

14.01 Post-Closing Access to Records and Records Retention. The Seller and Purchaser agree for a period extending five (5) years after the Closing Date not to destroy or otherwise dispose of any records concerning the Kentucky Portion and the Purchased Assets relating to the period prior to Purchaser's acquisition of the Purchased Assets. After such five (5) year period, the Seller and Purchaser may destroy or otherwise dispose of such records if the Party desiring to dispose of such records shall offer in writing to surrender such records to the other Party and the other Party shall fail to agree in writing to take possession thereof during the thirty (30) day period after such offer is made.

14.02 Consents Not Obtained at Closing. Each of the Seller and the Purchaser agree to attempt diligently to obtain any necessary consents which may be required to effect the assignment to the Purchaser of the contract obligations transferred under this Agreement and each Party will diligently cooperate with the other in obtaining the same, and will take such steps as reasonably requested by such Party with respect thereto. In such cases where such consents have not been obtained by the Closing Date, this Agreement, to the extent permitted by law and if elected by Purchaser, shall constitute an equitable assignment by the Seller to the Purchaser of all of the Seller's rights, benefits, obligations, liabilities, title and interest in and to the assigned contracts and commitments, and the Purchaser shall be deemed to be the Seller's agent for the purpose of completing, fulfilling and discharging all of the Seller's rights and liabilities arising after the Closing Date under such assigned contracts and commitments, and the Seller shall, at Purchaser's sole cost and expense, take all commercially reasonable steps and actions requested by Purchaser to provide the Purchaser with the benefits and liabilities of such contracts and commitments. Notwithstanding anything to the contrary contained in this Agreement, to the extent consent is necessary under any of the contracts or agreements that would otherwise be assigned hereunder at Closing and such consent is not obtained prior to the Closing or such contract is otherwise not capable of assignment, such contract or agreement shall not be considered a Purchased Asset and the failure to so assign any such contract or agreement shall not affect the Closing. The Parties shall continue to use commercially reasonable efforts to effect the assignment of any such contract or agreement capable of assignment following the Closing.

14.03 Use/Removal of Trademarks, Etc.. Purchaser acknowledges and agrees that it has and, upon consummation of the transactions contemplated hereby shall have, no right, title, interest, license, or any other right whatsoever to use the trade names and trademarks of Seller or its Affiliates, including references to "Republic", "Republic Transmission", "LS", "LS Power" and "LSP" and derivatives thereof, including all logos ("Seller Marks"). Purchaser agrees never to challenge Seller's (or its Affiliates') ownership of the Seller Marks or any application for registration thereof or any registration thereof or any rights of Seller or its Affiliates therein as a result, directly or indirectly, of its ownership of the Purchased Assets. Purchaser will not conduct any business or offer any goods or services under any Seller Marks. Purchaser will not send, or cause to be sent, any correspondence or other materials to any Person on any stationery that contains any Seller Marks or otherwise operate the Facility in any manner

which would or might reasonably be expected to confuse any person into believing that Purchaser has any right, title, interest, or license to use any Seller Marks.

14.04 Supplemental Disclosure Schedule. Seller may supplement the Disclosure Schedules from time to time on or prior to the Closing Date (as so supplemented, the “Supplemental Disclosure Schedules”). Such Supplemental Disclosure Schedules shall not be considered in determining whether the condition set forth in Section 9.02 has been met; provided, however, that in determining whether there is a breach of any representation, warranty, covenant or agreement of Seller contained in this Agreement for purposes of the indemnification to be provided by Seller pursuant to Section 12.01 hereof, such representation, warranty, covenant or agreement shall be qualified by the Supplemental Disclosure Schedules; provided, further, however, that any actions permitted pursuant to Section 5.02 hereof shall automatically be deemed to update all relevant schedules for all purposes hereunder so long as Seller provides Purchaser at least 5 days’ written notice of such action.

14.05 Damages. Notwithstanding anything herein to the contrary, (a) no Party shall be liable for special, punitive, exemplary, consequential or indirect damages, or lost profits or losses calculated by reference to any multiple of earnings before interest, tax, depreciation or amortization (or any other valuation methodology) whether based on contract, tort, strict liability, other Law or otherwise and whether or not arising from the other Party’s sole, joint or concurrent negligence, strict liability or other fault for any matter relating to this Agreement and the transactions contemplated hereby, and (b) no representative or Affiliate of, or direct or indirect equity owner in, any Seller shall have any personal liability to Purchaser or any other Person as a result of this Agreement and no representative or Affiliate of, or direct or indirect equity owner in, Purchaser shall have any personal liability to any Seller or any other Person as a result of this Agreement.

14.06 Purchaser’s Period for Inspection and Sell Back. Upon Closing, Purchaser and its agents and representatives shall have sixty (60) days (“Inspection Period”) to examine, inspect and review the Kentucky Portion, Purchased Assets, Assumed Liabilities, and any other material plans, contracts, specifications, drawings, studies, and test results regarding the Kentucky Portion and Purchased Assets (the “Planning Documents”). At any time during the Inspection Period, if the Kentucky Portion, Purchased Assets, Assumed Liabilities, or Planning Documents fail to conform to Purchaser’s expectations or desires, Purchaser shall have the right, at its sole discretion, to sell back to the Seller the Purchased Assets (including the Planning Documents) and Assumed Liabilities in whole, but not in part, by delivering written notice to Seller as required in Section 15.11 (“Sell Back”). Purchaser’s exercise of its right of Sell Back shall result in the transfer of title to the Purchased Assets (including the Planning Documents) and Assumed Liabilities back to Seller pursuant to the following terms and conditions.

Within ten (10) days of the date of Sell Back, Purchaser shall deliver to Seller the following:

- (a) all documents received by Purchaser that were part of the Purchased Assets, and all documents in the nature of the documents that were part of the Purchased Assets that were created by Purchaser after the Closing and prior to the Sell Back, title to all of which shall then reside with Seller; provided, that Seller

shall not be required to take title to any documents or agreements that were created by Purchaser after Closing unless Seller agrees to do so in writing at the time of the Sell Back, which agreement shall not be unreasonably withheld;

(b) an executed Sell Back Assignment and Assumption Agreement and Sell Back Bill of Sale in substantially the same forms attached hereto as Exhibit F and Exhibit G, respectively; and

(c) an executed Sell Back License Agreement in substantially the same form as attached hereto as Exhibit H.

Seller shall, within ten (10) days of the date of Sell Back, deliver to Purchaser the following:

(i) a wire transfer of immediately available funds to such account or accounts as Purchaser shall designate in an amount equal to the Purchase Price, as previously adjusted pursuant to Section 2.06, plus the Existing ROW Price; and

(ii) an executed Sell Back Assignment and Assumption Agreement and Sell Back Bill of Sale in substantially the same forms attached hereto as Exhibit F and Exhibit G, respectively; and

(iii) an executed Sell Back License Agreement in substantially the same form as attached hereto as Exhibit H.

Notwithstanding the foregoing, to the extent that any approval from a Governmental Authority or third-party consent is required to lawfully transfer title of the Kentucky Portion, Purchased Assets, Assumed Liabilities, or Planning Documents back to Seller, such transfer of title shall not be effective until all such Governmental Authority approvals and third-party consents have been received or, as to approvals or consents not applicable to Purchaser, Seller has waived such conditions.

14.07 Project Commitments. As part of the Selected Developer Agreement between MISO and Seller, Seller committed to certain cost cap/cost containment and rate-recovery commitments for the development, construction, and placement into service of a new 345 kV electric transmission line and associated facilities between the Duff substation, located in southern Indiana, and the Coleman substation, located in northern Kentucky (such line and facilities, the "Project"). Purchaser acknowledges and agrees that it shall be obligated and bound by the same Project-related commitments contained in the Selected Developer Agreement.

As used herein, the following terms have the following meanings, and each capitalized term that is used in this Article XIV that is not otherwise defined herein shall have the meaning ascribed to such term in the Selected Developer Agreement:

(A) "Annual Transmission Revenue Requirement" means the rate determined by FERC following a filing by Seller under Section 205 of the Federal Power Act and

FERC's rules and regulations thereunder and submitted to MISO for recovery pursuant to MISO's Open Access Transmission Tariff.

(B) "Excluded Costs" means (i) any costs and expenses incurred as a result of an Uncontrollable Force (but, in each case, only if and to the extent such costs and expenses are in excess of the costs and expenses that would have been incurred but for such an Uncontrollable Force) and (ii) any costs and expenses associated with the operation and maintenance of the Project.

(C) "Project Costs" means any and all costs and expenses directly or indirectly incurred by Seller to develop, construct, complete, start-up and commission the Project and place the Project in service in accordance with the Scope of Work, including without limitation any costs and expenses incurred by Seller in connection with the following: (i) any taxes, (ii) any financing costs, including any approved Allowance for Funds Used During Construction, or similar allowance or financing cost or charge earned or accrued in connection with the Project during the period of development and construction of the Project, (iii) obtaining permits and other governmental approvals for the Project, (iv) acquiring land and land rights for the Project, (v) performing any environmental assessments or environmental mitigation activities in connection with the Project, (vi) designing and engineering the Project, (vii) procuring any equipment, supplies and other materials required to complete construction of the Project and place the Project in service, and (viii) otherwise performing or completing any and all development- and construction-related activities required in connection with the Project as part of the Scope of Work, including but not limited to all site clearing, equipment assembly and erection, testing and commissioning activities contemplated by the Scope of Work, whether performed directly by Seller or by one or more third parties retained by Seller (without regard to whether such third parties are affiliated or non-affiliated), but excluding in all cases Excluded Costs.

(D) "Scope of Work" means the approved scope of work for the Project, as more particularly described in Appendix A and Appendix F to the Selected Developer Agreement.

(E) "Total Rate Base Cap Amount" means \$58.1 million for the Scope of Work.

(F) "Uncontrollable Force" means (i) any destruction of or damage to any portion of the Project, or any interruption, suspension, or interference with Seller's (or any contractor's or subcontractor's) performance of activities required to complete the Project, which destruction, damage, interruption, suspension or interference is caused by landslides; lightning; earthquakes; hurricanes; tornadoes; typhoons; severe weather; fires or explosions; floods; epidemic; acts of a public enemy; acts or threats of terrorism; wars; blockades; riots; rebellions; sabotage; vandalism; insurrections; environmental contamination or damage not caused by Seller (or any contractor or subcontractor); strike or labor disruption or civil disturbances (or governmental actions arising from any of the foregoing), (ii) the issuance or enactment on or after the Effective Time of any statute, rule, regulation, order or other applicable law or any change in any statute, rule,

regulation, order or other applicable law existing as of the Effective Time, or (iii) any Breach or Default by MISO of its obligations under the Selected Developer Agreement.

14.08. Except in accordance with Section 9.2.1 of the Selected Developer Agreement, Purchaser shall not seek, through Annual Transmission Revenue Requirements or through any other means, recovery of or any return on any Project Costs in excess of an amount equal to the lesser of Purchaser's pro rata share of (i) the Total Rate Base Cap Amount or (ii) the aggregate amount of actual Project Costs associated with the Project (such lesser amount, the "Applicable Rate Base Amount"). For purposes of this Article XIV, Purchaser's pro rata share shall be a fraction, the numerator of which shall be the Purchase Price (after all adjustments) and the denominator of which shall be the sum of all Project Costs *plus* all Excluded Costs of the type described in clause (i) of the definition thereof (the sum of all Project Costs plus all Excluded Costs of the type described in clause (i) of the definition thereof is hereinafter referred to as the "Aggregate Cost"). For purposes of this Article XIV, Seller's pro rata share shall be a fraction, the numerator of which shall be the difference between the Aggregate Cost and the Purchase Price (after all adjustments) and the denominator of which shall be the Aggregate Cost. The Total Rate Base Cap Amount is not subject to adjustment for inflation.

14.09. Purchaser shall not seek, through respective Annual Transmission Revenue Requirements or through any other means, a return on equity in excess of the lesser of (i) 9.80% (inclusive of all ROE adders/incentives) or (ii) the MISO region-wide base ROE plus the RTO ROE adder ("ROE Cap"). The ROE Cap shall apply to the initial investment of the Project for the life of the Project. The return on equity as calculated in this Section 14.09 may be adjusted downward pursuant to Section 14.11.

14.10. With respect to actual or hypothetical capital structure, at all times Purchaser shall limit equity for the Kentucky Portion as a percentage of the overall capital structure for the Kentucky Portion to be no more than forty-five percent (45%) of the Applicable Base Rate Amount.

14.11. Consistent with Section 3.e. (Schedule Guarantee) of Appendix A of the Selected Developer Agreement, Purchaser agrees that, if the Project is not placed into service on or prior to the Guaranteed Completion Date, it will accept a reduction in its Project-specific ROE recovered in rates according to the following table (the "Schedule Guarantee"):

Months of Delay	Total Reduction in ROE
1	2.5 basis point
2	5 basis points
3	7.5 basis points
4	10 basis points
5	12.5 basis points
6	15 basis points
7	17.5 basis points
8	20 basis points
9	22.5 basis points
10	25 basis points
11	27.7 basis points
12 or more	30 basis points

The Schedule Guarantee is subject to a maximum reduction in the ROE of thirty (30) basis points.

14.12. Purchaser will deliver to Seller drafts of any formula rate filing package in respect of any portion of the Project, for Seller's review and comment, at least fourteen (14) days prior to filing such information with FERC. Seller's review is intended to ensure that Purchaser's formula rate filing in respect of any portion of the Project is consistent with Seller's obligations under the Selected Developer Agreement and Purchaser's obligations under this Agreement. Without limitation of the foregoing, Purchaser agrees not to take any action that would result in Seller's breach or violation of any provision of the Selected Developer Agreement (as amended, supplemented or otherwise modified from time to time), including any terms thereof that survive the termination of the Selected Developer Agreement.

14.13. Purchaser agrees that, with respect to operations and maintenance costs incurred in respect of its portion of the Project, Purchaser will seek compensation only for the incremental costs that were incurred by Purchaser directly associated with its portion of the Project, in a manner consistent with the methodology set forth in the Proposal.

14.14. Purchaser agrees that the Facility will be included within the boundaries of the Purchaser's Local Balancing Authority and will take the necessary actions prior to Closing such that Seller can certify to MISO that the Facility is incorporated into Purchaser's Local Balancing Authority. Purchaser shall complete Local Balancing Authority tasks related to the Facility being included into its Local Balancing Authority.

14.15 Prior to Closing, and if legally required by the MISO tariff, Purchaser and Seller will enter into a Joint Functional Control Agreement.

ARTICLE XV

Miscellaneous

15.01 Cost and Expenses. The Purchaser will pay its own costs and expenses (including attorneys' fees, accountants' fees and other professional fees and expenses) in connection with the negotiation, preparation, execution and delivery of this Agreement and the consummation of the purchase of the Purchased Assets and the other transactions contemplated by this Agreement (except as otherwise specifically provided for herein); and the Seller will pay its own costs and expenses (including attorneys' fees, accountants' fees and other professional fees and expenses) in connection with the negotiation, preparation, execution and delivery of this Agreement and the consummation of the sale of the Purchased Assets and the other transactions contemplated by this Agreement (except as otherwise specifically provided for herein).

15.02 Entire Agreement. The schedules (including Disclosure Schedules) and the exhibits referenced in this Agreement are incorporated into this Agreement and together contain the entire agreement between the Parties hereto with respect to the transactions contemplated hereunder, and supersede all negotiations, representations, warranties, commitments, offers, contracts and writings prior to the date hereof. No waiver and no modification or amendment of any provision of this Agreement shall be effective unless specifically made in writing and duly signed by the Party to be bound thereby.

15.03 Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which, together, shall constitute one and the same instrument.

15.04 Assignment, Successors and Assigns. The respective rights and obligations of the Parties hereto shall not be assignable without the prior written consent of the other Parties, provided, however, that notwithstanding any other provision of this Agreement to the contrary, Purchaser may, without the written consent of Seller and without relieving itself from liability hereunder, assign, transfer, mortgage or pledge this Agreement to create a security interest for the benefit of the United States of America, acting through RUS, or other secured party (directly or through an indenture trustee or other collateral agent; collectively, including such indenture trustee or other collateral agent, a "Secured Party"). Thereafter, a Secured Party, without the written consent of Seller, may (i) cause this Agreement (and all obligations hereunder) to be sold, assigned, transferred or otherwise disposed of to a third party pursuant to the terms governing such security interest, or (ii) if RUS first acquires this Agreement pursuant to 7 U.S.C. § 907 or if any other Secured Party otherwise first acquires this Agreement, sell, assign, transfer or otherwise dispose of this Agreement (and all obligations hereunder) to a third party; provided, however, that in either case (A) Purchaser is in default of its obligations that are secured by such security interest and that the applicable Secured Party has given Seller written notice of such default; and (B) the applicable Secured Party has given Seller not less than thirty (30) days' prior written notice of its intention to sell, assign, transfer or otherwise dispose of this Agreement (and all obligations hereunder) indicating the identity of the intended third-party assignee or Seller. This Agreement shall be binding upon and inure to the benefit of the Parties hereto and their successors and permitted assigns.

15.05 Savings Clause. If any provision hereof shall be held invalid or unenforceable by any court of competent jurisdiction or as a result of future legislative action, such holding or action shall be strictly construed and shall not affect the validity or effect of any other provision hereof.

15.06 Headings. The captions of the various Articles and Sections of this Agreement have been inserted only for convenience of reference and shall not be deemed to modify, explain, enlarge or restrict any of the provisions of this Agreement.

15.07 Governing Law. The validity, interpretation and effect of this Agreement shall be governed exclusively by the laws of the Commonwealth of Kentucky without regard to its principles of conflicts of law.

15.08 Press Releases. Pending Closing, all notices to third parties and all other publicity relating to the transactions contemplated by this Agreement shall be jointly planned, coordinated, and agreed to by the Purchaser and the Seller, except to the extent disclosures are required by Law or any listing agreement; provided, however, that Seller on the one hand and Purchaser on the other hand may confirm information previously made public in compliance with this Agreement.

15.09 U.S. Dollars. All amounts expressed in this Agreement and all payments required by this Agreement are in United States dollars.

15.10 Survival. All representations and warranties made by any Party in this Agreement shall be deemed made for the purpose of inducing the other Party to enter into this Agreement and shall survive the Closing, subject to Section 12.03 hereof. EXCEPT FOR THOSE EXPRESS REPRESENTATIONS AND WARRANTIES CONTAINED IN ARTICLE VII, THE PURCHASED ASSETS ARE BEING TRANSFERRED "AS IS, WHERE IS, WITH ALL FAULTS," AND SELLER EXPRESSLY DISCLAIM ANY OTHER REPRESENTATIONS OR WARRANTIES OF ANY KIND OR NATURE, EXPRESS OR IMPLIED, AS TO THE CONDITION, VALUE OR QUALITY OF THE PURCHASED ASSETS AND THE FACILITY OR THE PROSPECTS (FINANCIAL OR OTHERWISE), RISKS AND OTHER INCIDENTS RELATING TO THE PURCHASED ASSETS AND THE FACILITY.

15.11 Notices. (a) All notices, requests, demand and other communications under this Agreement shall be in writing and delivered in person or sent by certified mail, postage prepaid, and properly addressed as follows:

To The Seller:

Republic Transmission, LLC
c/o LS Power Development, LLC
16150 Main Circle Dr., Suite 310
Chesterfield, MO 63017
Attention: Project Manager

With Copy To:

Republic Transmission, LLC
c/o LS Power Development, LLC
16150 Main Circle Dr., Suite 310
Chesterfield, MO 63017
Attention: Managing Counsel

To The Purchaser:

Big Rivers Electric Corporation
201 Third Street
Henderson, KY 42420
Attention: President and CEO

With Copy To:

Big Rivers Electric Corporation
201 Third Street
Henderson, KY 42420
Attention: Vice President System Operations

(b) Any Party may from time to time change its address for the purpose of notices to that Party by a similar notice specifying a new address, but no such change shall be deemed to have been given until it is actually received by the Party sought to be charged with its contents.

(c) All notices and other communications required or permitted under this Agreement which are addressed as provided in this Section 15.11 if delivered personally or by air courier, shall be effective upon delivery and if delivered by mail, shall be effective upon deposit in the United States mail, postage prepaid.

15.12 No Third Party Beneficiaries. Except as expressly provided herein with respect to indemnification and Section 14.05, this Agreement is solely for the benefit of Seller and its successors and permitted assigns with respect to the obligations of Purchaser under this Agreement, and for the benefit of Purchaser and its successors and permitted assigns with respect to the obligations of Seller under this Agreement. Except as expressly provided herein with

respect to indemnification, this Agreement shall not be deemed to confer upon or give to any other third party any remedy, claim, liability, reimbursement, cause of action or other right.

15.13 Venue and Consent to Jurisdiction. Each of the Parties hereby irrevocably consents and agrees that any legal action or proceedings with respect to this Agreement shall be brought in the courts located in western Kentucky having subject matter jurisdiction, by execution and delivery of this Agreement and such other documents executed in connection herewith, each Party hereby irrevocably and unconditionally (a) accepts the exclusive jurisdiction of the aforesaid courts and agrees that it is and shall continue to be subject to the jurisdiction of such courts, (b) agrees to be bound by any final judgment (after any and all appeals) of any such court with respect to such documents, (c) waives, to the fullest extent permitted by Law, any objection which it may now or hereafter have to the laying of venue of any action or proceeding with respect to such documents brought in any such court, and further irrevocably waives, to the fullest extent permitted by law, any claim that any such action or proceeding brought in any such court has been brought in any inconvenient forum, (d) agrees that service of process in any such action or proceeding may be effected by mailing a copy thereof by registered or certified mail (or any substantially similar form of mail), postage prepaid, to such Party at its address in Section 15.11, or at such other address of which the other Parties shall have been notified, and (e) agrees that nothing herein shall affect the right to effect service of process in any other manner permitted by Law.

15.14 WAIVER OF A JURY TRIAL. EACH OF THE PARTIES HEREBY KNOWINGLY, VOLUNTARILY AND INTENTIONALLY WAIVE THE RIGHT ANY OF THEM MAY HAVE TO A TRIAL BY JURY IN RESPECT OF ANY LITIGATION BASED HEREON, OR ARISING OUT OF, UNDER OR IN CONNECTION WITH THIS AGREEMENT AND THE ASSIGNMENT AND ASSUMPTION AGREEMENT CONTEMPLATED TO BE EXECUTED IN CONNECTION HEREWITH, OR ANY COURSE OF CONDUCT, COURSE OF DEALING, STATEMENTS (WHETHER VERBAL OR WRITTEN) OR ACTIONS OF ANY PARTY. THIS PROVISION IS A MATERIAL INDUCEMENT FOR THE PARTIES ENTERING INTO THIS AGREEMENT.

15.15 No Presumption Against Drafter. Each of the Parties hereto has jointly participated in the negotiation and drafting of this Agreement. In the event of an ambiguity or a question of intent or interpretation arises, this Agreement shall be construed as if drafted jointly by each of the Parties hereto and no presumptions or burdens of proof shall arise favoring any Party by virtue of the authorship of any of the provisions of this Agreement.

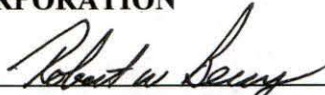
15.16 Specific Performance and Injunctive Relief. Because money damages may not be a sufficient remedy for a breach of this Agreement, the non-breaching Party shall be entitled to specific performance and injunctive relief as remedies for any such breach or threatened breach, unless an alternative remedy is stated herein to be the exclusive remedy for any particular breach. Specific performance and injunctive relief will not be deemed to be the exclusive remedies for a breach of this Agreement but will be in addition to all other remedies available to a Party at law or in equity, subject to Section 12.03. The provisions of this Section 15.16 will survive termination of this Agreement.

15.17 Prevailing Party Costs. In the event of any dispute arising out of or relating to this Agreement or the breach or performance of it, the prevailing Party shall be entitled to recover reasonable attorneys' fees and court costs incurred in connection therewith.

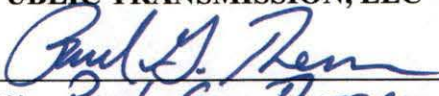
[SIGNATURE PAGE FOLLOWS NEXT]

IN WITNESS WHEREOF, the Parties hereto have executed this Asset Purchase Agreement the day and year first above written.

**BIG RIVERS ELECTRIC
CORPORATION**

By: 
Name: Robert W. Berry
Title: President and CEO

REPUBLIC TRANSMISSION, LLC

By: 
Name: Paul G. Thessen
Title: Pres.

Disclosure Schedule 1.01

[None]

SCHEDULE 2.02
Purchase Price Determination

The Purchase Price is defined in Section 2.02. The following methodology shall be utilized to track and apportion costs that feed in to the determination of the Purchase Price in accordance with Section 2.02.

1. Cost Tracking. Seller shall track costs related to the Facility and assign them to three subaccounts as described below:
 - a. Kentucky Costs: costs that are directly attributable to: (i) taxes imposed on or otherwise payable in respect of the Kentucky Portion, (ii) any financing costs, including an Allowance for Funds Used During Construction, or similar allowance or financing cost or charge, earned or accrued in connection with the Kentucky Portion, (iii) obtaining permits and other governmental approvals for the Kentucky Portion, (iv) acquiring land and land rights for the Kentucky Portion, (v) performing any environmental assessments or environmental mitigation activities in connection with the Kentucky Portion, (vi) designing and engineering the Kentucky Portion, (vii) procurement of material, supplies, and equipment that will be utilized on the Kentucky Portion, (viii) constructing the Kentucky Portion, (ix) testing and commissioning the Kentucky Portion, and (x) all site restoration of the Kentucky Portion.
 - b. Indiana Costs: costs that are directly attributable to the portion of the Facilities located within the State of Indiana.
 - c. General Costs: costs that are incurred to develop, construct, finance, commission, complete, and place the Facility in service, but that are not Kentucky Costs or Indiana Costs because they are not directly attributable to the Kentucky Portion or the Indiana Portion, including, for example, costs associated with overall project management, design and engineering.
2. Purchase Price. No fewer than one hundred eighty (180) days nor more than two hundred forty (240) days prior to Closing, Seller shall present to Purchaser its good faith determination of the Purchase Price based upon currently-available information (which may include reasonable estimates for work completed but not yet invoiced, and for work to be performed in the future). The Purchase Price shall be determined using the formula shown below:

$$Purchase\ Price = Kentucky\ Costs + (General\ Costs * \frac{KentuckyMiles}{TotalMiles})$$

Where: Kentucky Miles is the length of the Kentucky Portion to the nearest 1/100 of a mile; and
Total Miles is the length of the Facility to the nearest 1/100 of a mile

3. Purchase Price Dispute. The Purchaser shall notify Seller in writing within five (5) business days of receiving any Purchase Price determination from Seller whether it

objects to the determined Purchase Price. If Purchaser objects to the determined Purchase Price, Purchaser shall provide a detailed description of the reason(s) for such objection at the same time it notifies Seller of such objection. To the extent that any such objection is timely received, senior executives of the Purchaser and the Seller shall attempt in good faith to resolve any dispute within five (5) business days following the receipt of such objection. In the event that any such dispute is not resolved within such time period, Purchaser shall pay to Seller the Purchase Price as determined by the Seller and proceed with Closing while such dispute remains ongoing. Upon final resolution of such dispute, whether by court order or otherwise, if it is determined that the price paid by Purchaser was (a) greater than the Purchase Price as properly determined, Seller shall refund the difference to Purchaser (without interest), or (b) less than the Purchase Price as properly determined, Purchaser shall pay the difference to Seller (without interest), in each case, within thirty (30) days following such final resolution.

4. Purchase Price Adjustment. From time to time after Closing, as the Seller incurs any costs attributable to the development, construction, financing, commissioning, completion, and/or placing the Facility in service, including but not limited to costs invoiced to Seller by Purchaser under the Agreement for Professional Services, Seller shall have the right to deliver to Purchaser an updated determination of the Purchase Price, determined consistent with the process described in the foregoing numbered paragraphs 1 and 2 based upon currently available information. The updated determination of the Purchase Price shall account for: (i) costs incurred after any prior determination of the Purchase Price; (ii) a true-up to actual costs if any estimated costs were utilized in any prior determination of the Purchase Price; and (iii) any revenue received by Seller after Closing that is directly attributable to ownership of the Kentucky Portion (including but not limited to the Purchased Assets and the Assumed Liabilities) after Closing, which revenue Purchaser shall be entitled to receive. In the event that Purchaser wishes to object to any such determination of the Purchase Price, Purchaser shall proceed as described in the foregoing numbered paragraph 3. If the updated determination of the Purchase Price is greater than the aggregate amount previously paid by Purchaser for the Kentucky Portion, Purchaser shall pay the difference to Seller within thirty (30) days following Purchaser's receipt of an invoice for the same. If the updated determination of the Purchase Price is less than the aggregate amount previously paid by Purchaser for the Kentucky Portion, Seller shall pay the difference to Purchaser within thirty (30) days following Seller's receipt of an invoice for the same.

Disclosure Schedule 3.02(f)(ii)

[None]

Disclosure Schedule 3.02(f)(iii)

[None]

Disclosure Schedule 3.02(f)(iv)

[None]

Disclosure Schedule 3.02(f)(v)

[None]

Disclosure Schedule 7.03(b)

[None]

Disclosure Schedule 7.05

[None]

Disclosure Schedule 9.04

[None]

Disclosure Schedule 10.04

[None]

Exhibit A

Kentucky Portion

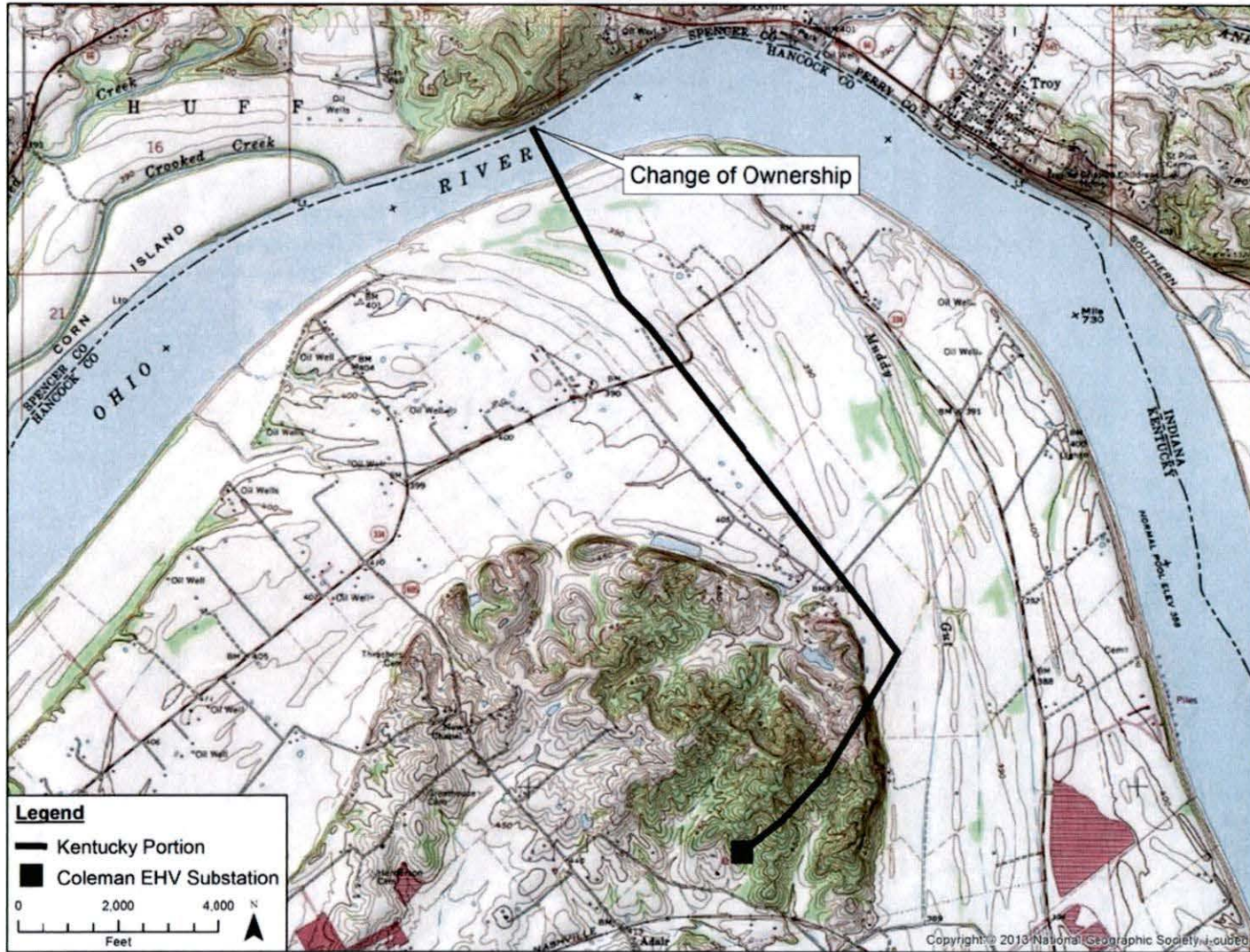


EXHIBIT B

ASSIGNMENT AND ASSUMPTION AGREEMENT

This Assignment and Assumption Agreement (“Assignment”) is dated as of _____, 20____, between Republic Transmission, LLC (“Republic”) and Big Rivers Electric Corporation (“Big Rivers”).

RECITALS

A. Republic and Big Rivers are parties to the Asset Purchase Agreement dated as of March 14, 2018 (as amended, supplemented or otherwise modified from time to time, the “APA”), pursuant to which, among other transactions, Republic agreed to convey to Big Rivers at the Closing all of Republic’s right, title and interest in and to certain contracts, agreements, licenses, permits and/or other instruments to which Republic is a party and Big Rivers agreed to assume certain obligations and liabilities of Republic under or pursuant to those contracts, agreements, licenses, permits and/or other instruments.

B. To provide Big Rivers an instrument in which title is vested to such contracts, agreements, licenses, permits and/or other instruments, and in order that Republic shall be in possession of an instrument evidencing Big Rivers’ assumption of certain of the obligations of Republic under or pursuant to such contracts, agreements, licenses, permits and/or other instruments, Republic and Big Rivers desire to execute and deliver this Assignment.

C. This is the “Assignment and Assumption Agreement” contemplated in Section 3.03(c) of the APA.

NOW, THEREFORE, in consideration of the mutual covenants and agreements set forth below and for other valuable consideration, the receipt of which is hereby acknowledged, Republic and Big Rivers agree as follows:

ARTICLE 1

DEFINITIONS

Capitalized terms used in this Assignment (including the Recitals) and not otherwise defined herein shall have the meanings set forth in the APA. The rules of interpretation set forth in Section 1.02 of the APA shall apply to this Assignment; provided, however, that any reference in this Assignment to sections, paragraphs and clauses are to sections, paragraphs and clauses in this Assignment unless otherwise indicated.

ARTICLE 2

ASSIGNMENT AND ASSUMPTION

SECTION 2.1 ASSIGNMENTS BY REPUBLIC.

Except as otherwise provided below, Republic hereby sells, grants, assigns, transfers and conveys to Big Rivers all of Republic's rights, title and interest in, to and under each of the contracts, agreements, leases, licenses, permits and other instruments set forth or identified on Exhibit A attached hereto and incorporated herein by reference (collectively, the "Assigned Instruments"), free and clear of all Liens created by, through or on behalf of Republic (other than Permitted Exceptions). The foregoing sales, grants, assignments, transfers and conveyances to Big Rivers shall include any performance bonds or other forms of guarantee or

surety that may have been posted by or for any contract counterparty to or in favor of Republic as support for the payment or performance by that contract counterparty of its debts or obligations to Republic under its Assigned Instrument. Notwithstanding the preceding two sentences, the foregoing sales, grants, assignments, transfers and conveyances to Big Rivers shall not include, and Republic hereby expressly reserves and retains: (a) all Retained Assets, (b) all Non-Assumed Liabilities, (c) any and all rights of defense, defenses and counterclaims that Republic may have in respect of any actual or alleged breach or default on the part of Republic, or its predecessors, under or pursuant to any Assigned Instrument occurring at any time through and including the date of this Assignment; and (d) any accounts receivable (including the associated rights of collection), cash on hand or any other current assets of Republic, and any proceeds of the Assigned Instruments received prior to Closing.

SECTION 2.2 ASSUMPTION BY BIG RIVERS.

Big Rivers hereby accepts such assignment, and assumes and agrees to perform, fulfill and timely discharge all of the obligations, duties and responsibilities of Republic pursuant to each of the Assigned Instruments in accordance with their respective terms, and agrees that, from and after the Closing Date, it is unconditionally bound to perform, fulfill and timely discharge all such obligations, duties and responsibilities of Republic under or pursuant to each Assigned Instrument in accordance with its terms; provided that, for the avoidance of doubt, consistent with Section 12.01(c) of the APA, the foregoing assumption by

Big Rivers shall not include any obligations of Republic for Non-Assumed Liabilities.

ARTICLE 3

NO EFFECT ON INDEMNITY

The assumption by Big Rivers of the obligations, duties and responsibility of Republic under the Assigned Instruments and in accordance with Section 2.2 of this Assignment shall not in any way affect any obligation of either party to indemnify the other party pursuant to Article XII of the APA.

ARTICLE 4

MISCELLANEOUS

SECTION 4.1 SUCCESSORS AND ASSIGNS.

This Assignment shall be binding upon and inure to the benefit of the parties named herein and their respective successors and permitted assigns.

SECTION 4.2 GOVERNING LAW.

This Assignment shall be governed by and construed in accordance with the laws of the Commonwealth of Kentucky.

SECTION 4.3 SEVERABILITY.

Any term or provision of this Assignment which is invalid or unenforceable in any jurisdiction shall, as to such jurisdiction, be ineffective to the extent of such invalidity or unenforceability without rendering invalid or unenforceable the remaining terms or provisions of this Assignment or affecting the validity or

enforceability of any of the terms or provisions of this Assignment in any other jurisdiction.

SECTION 4.4 HEADINGS.

The article and section headings contained in this Assignment are inserted for convenience only and shall not affect in any way the meaning or interpretation of this Assignment.

SECTION 4.5 COUNTERPARTS.

This Assignment may be executed in one or more counterparts, each of which shall be deemed an original but all of which together will constitute one and the same instrument.

SECTION 4.6 NO MODIFICATION TO APA.

This Assignment is delivered pursuant to the APA, is subject in all respects to the provisions thereof, and is not intended and shall not be construed to alter or otherwise modify the provisions of the APA.

SECTION 4.7 FURTHER ASSURANCES.

Each of Republic and Big Rivers covenants and agrees promptly to execute, deliver, file or record, or cause to be executed, delivered, filed or recorded such other agreements, instruments, certificates and other documents, and to do any and perform such other and further actions, as the other party may reasonably request or as may be otherwise be necessary or proper to effectuate the transactions contemplated in this Assignment in accordance with its terms, or otherwise to effect the purposes of this Assignment.

IN WITNESS WHEREOF, the parties hereto have caused this Assignment to be duly executed by the respective authorized officers as of the day and year first above written.

REPUBLIC TRANSMISSION, LLC

BY: _____
Name:
Title:

BIG RIVERS ELECTRIC CORPORATION

BY: _____
Robert W. Berry
President/CEO

EXHIBIT A
Assigned Instruments

EXHIBIT C
Form of

BILL OF SALE

THIS BILL OF SALE (this "Bill of Sale") is dated as of this ____ day of _____, 20__, by and between **BIG RIVERS ELECTRIC CORPORATION**, a Kentucky corporation, with an office at 201 3rd Street, Henderson, KY 42420 ("Purchaser"), and **REPUBLIC TRANSMISSION, LLC**, an Indiana limited liability company, having a business address at 16150 Main Circle Drive, Suite 310, Chesterfield, MO 63017 ("Seller"). The Purchaser and Seller are sometimes referred to herein collectively as the "Parties" and individually as a "Party". Capitalized terms used in this Bill of Sale (including the Recitals) and not otherwise defined herein shall have the meanings set forth in the Parties' Asset Purchase Agreement dated as of March 14, 2018 (as amended, supplemented or otherwise modified from time to time, the "APA").

RECITALS:

A. Seller is in the business of owning, designing, developing, procuring, constructing, permitting, operating, managing and maintaining a single-circuit 345-kV electric transmission line between the Coleman Extra High Voltage substation located in Hancock County, Kentucky (the "Coleman EHV Substation") and the Duff substation located in Dubois County, Indiana (the "Duff Substation"), as well as all ancillary facilities (collectively, the "Facility");

B. Seller desires to transfer and convey the portion of the Facility that is physically located in the Commonwealth of Kentucky and certain assets and properties relating to the Kentucky Portion hereinafter collectively described as "Purchased Assets" and more particularly defined in Exhibit A attached hereto and incorporated herein by reference.

C. Purchaser desires to acquire all of Seller's ownership interest in the Purchased Assets pursuant to the terms of this Bill of Sale.

NOW THEREFORE, for and in consideration of good and valuable consideration and the mutual covenants contained herein, the receipt and sufficiency of which are hereby acknowledged, the Parties hereto, intending to be legally bound hereby, agree as follows:

1. Conveyance of Purchased Assets.

Seller hereby grants, bargains, conveys, sells, assigns and transfers to Purchaser, and Purchaser hereby purchases, acquires and accepts from Seller, all of Seller's ownership interest in the Purchased Assets.

2. Authority; Title.

(a) Seller hereby covenants that it has the corporate right, power and authority and has been duly authorized by all necessary corporate action, to convey its ownership interest in the Purchased Assets as provided herein.

(b) Seller warrants that it has good and marketable title to the Purchased Assets and that Purchaser will acquire same pursuant to this Bill of Sale free and clear of any and all liens and encumbrances, except for Permitted Exceptions.

3. Purchase Price. The aggregate purchase price (the "Purchase Price") payable by Purchaser to Seller for the Purchased Assets shall be _____, subject to adjustment in accordance with Section 2.06 of the APA.

4. Taxes. Purchaser shall be responsible for and shall pay the entire cost of any Transfer Taxes and Sales Taxes. Accordingly, if Seller is required at Law to pay any such Transfer Taxes or Sales Taxes, Purchaser shall promptly reimburse Seller for its portion of such amounts. Seller and Purchaser shall timely file their own Tax returns for any Transfer Tax or Sales Tax as required by Law and shall notify the other Party when such filings have been made. Seller and Purchaser shall cooperate and consult with each other prior to filing returns for any Transfer Tax to ensure that all such returns are filed in a consistent manner. Seller shall not collect Sales Taxes from Purchaser upon the sale of the Purchased Assets. Purchaser has a direct pay permit under which it is authorized to pay any Sales Tax on purchases of tangible personal property directly to the Commonwealth of Kentucky under Account Number 108814.

5. Disclaimer of Warranties. (A) PURCHASER ACKNOWLEDGES AND AGREES THAT, EXCEPT AS EXPRESSLY SET FORTH IN THIS BILL OF SALE AND THE APA, SELLER HAS NOT MADE AND SHALL NOT BE DEEMED (BY REASON OF THE EXECUTION OF ANY BILL OF SALE OR OTHER INSTRUMENT REFERENCED HEREIN) TO HAVE MADE ANY WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, AS TO THE TITLE OR THE CONDITION OR STATE OF REPAIR OF ANY OR ALL OF THE PURCHASED ASSETS, THEIR VALUE, COMPLETENESS, QUALITY, MERCHANTABILITY, SUITABILITY OR FITNESS FOR ANY PARTICULAR USES OR PURPOSES, OR ANY ENVIRONMENTAL MATTERS; AND (B) PURCHASER ACCEPTS THE PURCHASED ASSETS ON AN "AS IS – WHERE IS, WITH ALL FAULTS" BASIS. THE PROVISIONS OF THIS SECTION 5 HAVE BEEN NEGOTIATED AT ARMS-LENGTH AND ARE INTENDED TO BE A COMPLETE EXCLUSION AND NEGATION OF ANY AND ALL WARRANTIES OR REPRESENTATIONS BY SELLER, EXPRESS OR IMPLIED, WITH RESPECT TO THE PURCHASED ASSETS, EXCEPT FOR SUCH REPRESENTATIONS AND WARRANTIES AS SELLER HAS MADE IN WRITING TO PURCHASER IN THIS BILL OF SALE AND THE APA.

6. Further Assurances. Each of Seller and Purchaser covenants and agrees promptly to execute, deliver, file or record, or cause to be executed, delivered, filed or recorded such other agreements, instruments, certificates and other documents, and to do any and perform such other and further actions, as the other Party may reasonably request or as may be otherwise be necessary or proper to effectuate the transactions contemplated in this Bill of Sale in accordance with its terms, or otherwise to effect the purposes of this Bill of Sale.

7. No Modification to APA. This Bill of Sale is delivered pursuant to the APA, is subject in all respects to the provisions thereof, and is not intended and shall not be construed to alter or otherwise modify the provisions of the APA. The transfer of the Purchased Assets pursuant to this Bill of Sale shall not in any way affect any obligation of either Party to indemnify the other Party pursuant to Article XII of the APA.

8. Modification and Waivers. This Bill of Sale may be modified, amended or changed only by an instrument in writing signed by both Parties hereto. No waiver of the performance of any term or provision hereof shall be valid or effective for any purpose unless such waiver shall be in writing and signed by the Party against whom enforcement of the same is sought.

9. Notices. All notices, requests, demands and other communications which are required or permitted hereunder shall be in writing and shall be deemed to have been duly given when delivered personally or when mailed first class, postage prepaid, addressed as follows:

If to Seller, to:

Republic Transmission, LLC
c/o LS Power Development, LLC
16150 Main Circle Drive, Suite 310
Chesterfield, MO 63017
Attn: Project Manager

With a copy to:

Republic Transmission, LLC
c/o LS Power Development, LLC
16150 Main Circle Drive, Suite 310
Chesterfield, MO 63017
Attn: Managing Counsel

If to Purchaser, to:

Big Rivers Electric Corporation
201 Third Street
Henderson, KY 42420
Attention: President and CEO

With a copy to:

Big Rivers Electric Corporation
201 Third Street
Henderson, KY 42420
Attention: Vice President System Operations

10. Headings. The headings of this Bill of Sale are inserted for convenience of reference only and shall not be part of or control or affect the meaning hereof.

11. Counterparts. This Bill of Sale may be executed in several counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

12. Governing Law. This Bill of Sale shall be governed by and construed in accordance with and governed by the laws of the Commonwealth of Kentucky.

13. Successors and Assigns. This Bill of Sale shall be binding upon and inure to the benefit of the Parties named herein and their respective successors and permitted assigns.

14. Severability. Any term or provision of this Bill of Sale which is invalid or unenforceable in any jurisdiction shall, as to such jurisdiction, be ineffective to the extent of such invalidity or unenforceability without rendering invalid or unenforceable the remaining terms or provisions of this Bill of Sale or affecting the validity or enforceability of any of the terms or provisions of this Bill of Sale in any other jurisdiction.

(Signatures on following page)

IN WITNESS WHEREOF, Seller and Purchaser have caused this Bill of Sale to be executed as of the day and year first written above.

SELLER:
REPUBLIC TRANSMISSION, LLC

By: _____
Name: _____
Title: _____

PURCHASER:
BIG RIVERS ELECTRIC CORPORATION

By: _____
Name: _____
Title: _____

EXHIBIT A

Purchased Assets

“Purchased Assets” shall mean the Seller’s rights, title and interest in and to the Kentucky Portion and the following described assets, rights and properties owned by Seller or in which Seller has an interest as of the Closing Date, and used exclusively in connection with the Kentucky Portion, except for the Retained Assets, in each case, including and subject to any Permitted Exceptions:

[list of assets to be inserted].

Notwithstanding the foregoing, for purposes of this Bill of Sale, the term “Purchased Assets” shall not include any “Assigned Instruments” as defined in that certain Assignment and Assumption Agreement executed by the Seller and Purchaser and dated of even date herewith, as title to such Assigned Instruments shall be assigned to Purchaser pursuant to the terms of such agreement.

EXHIBIT D

PROJECT OWNERSHIP AND OPERATION AGREEMENT

BETWEEN

BIG RIVERS ELECTRIC CORPORATION

AND

REPUBLIC TRANSMISSION, LLC

DATED: _____

**PROJECT OWNERSHIP AND OPERATION AGREEMENT
BETWEEN
BIG RIVERS ELECTRIC CORPORATION
AND
REPUBLIC TRANSMISSION, LLC**

This Project Ownership and Operation Agreement is made and entered into this day of _____, 20___, by and between Big Rivers Electric Corporation (“Big Rivers”) and Republic Transmission, LLC (“Republic”) each sometimes hereinafter referred to individually as “Party” or both referred to collectively as “Parties”.

WITNESSETH

WHEREAS, each Party is engaged in the business of developing, constructing, owning, and/or operating electric transmission facilities within the territory of the Midcontinent Independent System Operator, Inc. (“MISO”); and

WHEREAS, Republic intends to develop, construct, and place into service a new 345 kV electric transmission line and associated facilities between the Duff substation, located in southern Indiana, and the Coleman substation, located in northern Kentucky (such line and facilities, the “Project”);

WHEREAS, pursuant to that certain Asset Purchase Agreement, dated March 14, 2018 (the “Asset Purchase Agreement”), between Big Rivers and Republic, Big Rivers has agreed to purchase, and Republic has agreed to sell, the portion of the Project that is physically located in Kentucky, as more particularly described therein (the “Kentucky Portion”), pursuant to the terms and conditions set forth therein;

WHEREAS, pursuant to that certain Selected Developer Agreement, dated as of February 7, 2017 (the “Selected Developer Agreement”), between Republic and MISO, Republic made certain contractual commitments applicable to the Project, and Republic desires to ensure that, following Big Rivers’ purchase of the Kentucky Portion, Big Rivers acts at all times in a manner that is consistent with the applicable commitments made by Republic in the Selected Developer Agreement; and

WHEREAS, upon Big Rivers’ purchase of the Kentucky Portion from Republic, transmission facilities owned by each of the Parties will interconnect, and the Parties desire to set forth herein the terms and conditions applicable to each Party’s ownership of its respective portion of the Project.

NOW, THEREFORE, in consideration of the premises and of the mutual covenants and conditions herein set forth, the Parties agree as follows:

ARTICLE I – EFFECTIVE DATE AND TERM

This Agreement and any subsequent addendum to this Agreement shall become effective on the date of Closing (as defined in the Asset Purchase Agreement). Unless otherwise mutually agreed, this Agreement shall remain in effect unless and until terminated in accordance with the terms hereof.

ARTICLE II – OBJECTIVE AND SCOPE

2.1 It is the intent of the Parties, by this Agreement, to state the terms and conditions under which the Parties' transmission systems will be interconnected with each Party owning and operating a discrete segment of the Project. It is also the intent of the Parties, by this Agreement, to establish certain terms and conditions relating to a rate base cap, a return on equity cap, and an equity percentage cap, such that Republic and the Project remain in compliance with the terms and conditions of the Selected Developer Agreement.

2.2 This Agreement shall apply to the ownership, operation and maintenance of each Party's respective portion of the Project as more specifically identified in Exhibit A attached hereto and incorporated herein.

2.3 This Agreement constitutes the entire agreement and understanding between the Parties with regard to the ownership and operation of the Project. The Parties are not bound by or liable for any statement, representation, promise, inducement, understanding, or undertaking of any kind or nature (whether written or oral) with regard to the subject matter hereof if not set forth or provided for herein. This Agreement replaces all other agreements and undertakings, oral and written, between the Parties with regard to the subject matter hereof. It is expressly acknowledged that the Parties may have other written agreements covering other services not expressly provided for herein; such agreements are unaffected by this Agreement.

ARTICLE III – DEFINITIONS

For purposes of this Agreement, the following definitions shall apply:

3.1 Aggregate Cost shall have the meaning set forth in Section 8.2.

3.2 Agreement shall mean this Agreement with all exhibits, schedules and attachments applying hereto, including any schedules and attachments hereafter made and any amendments hereafter made.

3.3 Annual Transmission Revenue Requirement shall have the meaning set forth in Section 8.1.

3.4 Applicable Laws shall mean all laws, treaties, constitutions, statutes, rules, directives (to the extent having force of law), regulations, ordinances, judgments, orders, decrees, injunctions, settlements and writs (whether domestic or foreign) or any interpretation of any of the foregoing, as enacted, issued or promulgated by any governmental authority having jurisdiction over either Party or the Project (or a portion thereof).

3.5 Applicable Rate Base Amount shall have the meaning set forth in Section 8.2.

3.6 Asset Purchase Agreement shall have the meaning set forth in the Recitals.

3.7 Big Rivers shall have the meaning set forth in the Preamble.

3.8 Default shall have the meaning set forth in Section 15.1.

3.9 Equity Percentage Cap shall have the meaning set forth in Section 8.4.

3.10 Excluded Costs shall have the meaning set forth in Section 8.1.

3.11 Force Majeure shall have the meaning set forth in Article XIV.

3.12 Good Utility Practice shall mean any of the practices, methods or acts engaged in or approved by a significant portion of the electric utility industry during the relevant time period, or any of the practices, methods and acts which, in the exercise of reasonable judgment in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety and expedition. Good Utility Practice is not intended to be limited to the optimum practice, methods or act, to the exclusion of all others, but rather to be acceptable practices, methods or acts generally accepted in the region.

3.13 Indemnified Parties shall have the meaning set forth in Article X.

3.14 Kentucky Portion shall have the meaning set forth in the Recitals.

3.15 MISO shall have the meaning set forth for such term in the recitals above. MISO shall also mean a Successor RTO, if applicable.

3.16 MISO Business Practice Manuals shall have the meaning set forth in the MISO Tariff. MISO Business Practice Manuals shall also mean the similar requirements of a Successor RTO, if applicable.

3.17 MISO ISO Agreement shall mean that certain Agreement of Transmission Facilities Owners to Organize the Midcontinent Independent System Operator, Inc., A Delaware Non-Stock Corporation entered into by certain owners of electric transmission facilities. MISO ISO Agreement shall also mean the analogous requirements of a Successor RTO, if applicable.

3.18 MISO Requirements shall mean the MISO Tariff, MISO ISO Agreement, and MISO Business Practice Manuals, adopted by MISO from time to time, including any attachments or exhibits referenced in the MISO Tariff, as amended from time to time, that contain the scheduling, operating, planning, reliability, and settlement (including customer registration) policies, rules, guidelines, procedures, standards, and criteria of MISO. MISO Requirements shall also mean the analogous requirements of a Successor RTO, if applicable.

3.19 MISO Tariff shall mean the MISO Open Access Transmission, Energy and Operating Reserve Markets Tariff including all schedules or attachments thereto as approved by FERC.

3.20 NERC shall mean the North American Electric Reliability Corporation or its successor in function.

3.21 NERC Reliability Standards shall mean the mandatory electric reliability standards enforced by NERC.

3.22 Other Party Group shall have the meaning set forth in Section 16.1.

3.23 Party/Parties shall have the meaning set forth in the Preamble.

3.24 Point of Change in Ownership shall mean the point on the Project where ownership changes from one Party to the other Party as shown in Exhibit A.

3.25 Project shall have the meaning set forth in the Recitals.

3.26 Project Costs shall have the meaning set forth in Section 8.1.

3.27 Republic shall have the meaning set forth in the Preamble.

3.28 Requesting Party shall have the meaning set forth in Section 7.5.

3.29 Responsive Party shall have the meaning set forth in Section 7.5.

3.30 ROE Cap shall have the meaning set forth in Section 8.3.

3.31 RUS shall mean the Rural Utilities Service of the United States Department of Agriculture, or its successor in function.

3.32 Schedule Guarantee shall have the meaning set forth in Section 8.5.

3.33 Scope of Work shall have the meaning set forth in Section 8.1.

3.34 Secured Party shall have the meaning set forth in Section 12.3.

3.35 Selected Developer Agreement shall have the meaning set forth in the Recitals.

3.36 Successor RTO shall mean a regional transmission organization or similar entity, other than MISO, that has assumed functional control of a Party's portion of the Project.

3.37 Total Rate Base Cap Amount shall have the meaning set forth in Section 8.1.

3.38 Uncontrollable Force shall have the meaning set forth in Section 8.1.

ARTICLE IV –COORDINATION AND DISCRETE ASSET OWNERSHIP

4.1 The Parties agree to comply with the MISO Requirements and NERC Reliability Standards as they relate to their portion of the Project.

4.2 The Point of Change in Ownership shall be specified in Exhibit A.

4.3 Neither Party shall have the right to disconnect its portion of the Project from the other Party except:

(A) if mutually agreed, and subject to regulatory approval, if required;

(B) by reason of a material violation of the terms of this Agreement, for which opportunity to correct such violation was given under Section 15.1 of this Agreement and such violation was not corrected in accordance with said Section 15.1;

(C) if required by Applicable Laws; or

(D) if authorized by MISO.

4.4 If either Party makes equipment changes or additions to their transmission system that may affect the operation or performance of the other Party's portion of the Project, the Parties agree to notify the other Party, in writing, of such changes. Such changes shall be made in accordance with Good Utility Practice, MISO Requirements, the National Electrical Safety Code, and other applicable codes and standards in effect at the time of construction, and coordinated between the Parties.

4.5 The Parties agree to coordinate and cooperate on assessments of the reliability impacts to the interconnected transmission system for new facilities requesting connection to their transmission facilities, in accordance with the NERC Reliability Standards.

4.6 Each Party acknowledges that the continued operation of such Party's portion of the Project is critical to the value of the other Party's portion of the Project. Each Party is hereby obligated to ensure that its portion of the Project remains functional and used for providing transmission service pursuant to the MISO ISO Agreement, except (i) during times of repair and/or maintenance, (ii) during an emergency to ensure safety or prevent loss of life or property, (iii) as otherwise mutually agreed by the Parties, or (iv) as otherwise directed by MISO or a governmental authority having jurisdiction pursuant to a final, non-appealable order. Each Party is prohibited from taking its portion of the Project out of service, except on a temporary basis, without written consent and agreement from the other Party. Breach of any of the obligations or prohibitions contained in this Section 4.6 shall entitle the non-breaching Party to recover any and all damages arising therefrom, whether at law or in equity, and whether characterized as direct damages or indirect, incidental, or consequential damages, including without limitation costs, expenses, reasonable attorneys' fees and lost profits.

ARTICLE V - OTHER SERVICES; PARTS SHARING

5.1 This Agreement is applicable only to the Project and does not obligate either Party to provide, or entitle either Party to receive, any service not expressly provided for herein. Each Party is responsible for making the arrangements necessary to receive any other service that either Party may desire from the other Party or any third party.

5.2 All transmission, transformation, distribution, metering, operations, and maintenance, engineering, billing or other miscellaneous services (if any) provided by one Party to the other Party, or arranged by one Party for the other Party, will be provided and charged under agreements separate from this Agreement.

5.3 Republic plans to maintain certain spare parts for the Project. In the event that (i) Big Rivers needs a part to complete a repair to the Kentucky Portion of the Project, (ii) Republic has available the needed part in its spare parts inventory, and (iii) Republic does not have an imminent need for such part, then (1) Republic will make such part available to Big Rivers, (2) the parties will document such transaction with appropriate records, and (3) Big Rivers will promptly reimburse Republic for the replacement cost of such part (without markup for overhead or profit), including the cost of any sales or transfer taxes associated therewith.

ARTICLE VI - SYSTEM OPERATION AND MAINTENANCE

6.1 Each Party shall, at its own risk and expense, operate and maintain the facilities it owns or hereafter may own, so as to reasonably minimize the likelihood of voltage and frequency abnormalities, originating in its system from affecting or impairing the system of the other Party, or other systems to which the Party is interconnected. The Parties agree that the Project will be operated and maintained in conformance with the MISO Requirements, Good Utility Practice and all Applicable Laws.

6.2 During the term of this Agreement, the Parties will, consistent with maintaining Good Utility Practice, coordinate their operations to maintain continuity of service to the extent practicable on the Project. Planned facility maintenance by either Party that will cause an interruption of service on the Project or a deviation from the normal power and energy flow on the Project will be coordinated with MISO and scheduled among the Parties at a mutually agreeable time to the extent practicable.

6.3 Republic will determine the initial facility rating for the Project and Big Rivers will adopt the Project facility rating into its facility rating methodology and other documentation as necessary. The Project facility rating shall not be changed unless the Parties mutually agree or if such change is needed to comply with Good Utility Practice, Applicable Law, or the MISO Requirements.

6.4 The Parties agree to coordinate and cooperate on reporting unplanned outages on the Project to the NERC Transmission Availability Data System.

VII - RIGHTS OF ACCESS, EQUIPMENT INSTALLATION, AND REMOVAL

7.1 Each Party shall permit duly authorized representatives and employees of the other Party to enter upon its premises for the purpose of inspecting, testing, repairing, renewing, or exchanging any or all of the equipment owned by such other Party that is located on such premises or for the purpose of performing any work necessary in the performance of this Agreement.

7.2 Each Party grants to the other Party permission to install, maintain, and/or operate, or cause to be installed, maintained, and/or operated, on its premises that are part of the Project, the necessary equipment, apparatus, and devices required for the performance of this Agreement. Any such installation, maintenance, and operation to be performed, except in the case of emergencies, shall be performed only after a schedule of such activity has been submitted and agreed upon by the Parties.

7.3 Any and all equipment, apparatus, and devices placed or installed, or caused to be placed or installed by one Party on, or in, the premises of the other Party, shall be and remain the property of the Party owning and installing such equipment, apparatus, devices, or facilities, regardless of the mode and manner of annexation or attachment to real property.

7.4 Each Party shall clearly mark their respective equipment, apparatus, devices, or facilities with appropriate ownership identification.

7.5 Either Party (for purposes of this Section 7.5, a “Requesting Party”) may request the other Party (for purposes of this Section 7.5, a “Responsive Party”) to upgrade or modify its portion of the Project in accordance with the Responsive Party’s standard design criteria, and the Responsive Party shall accommodate such request in a reasonably timely manner; provided, that (i) the Responsive Party reasonably anticipates that the costs associated with such upgrade or modification will be capital costs eligible to be included in its rates, allowing the Responsive Party to earn a return of and on such capital investment, (ii) the upgrade or modification is consistent with Good Utility Practice, and (iii) if applicable, the upgrade or modification is approved by MISO and any regulatory body having jurisdiction over the upgrade or modification. The Requesting Party shall provide the Responsive Party a minimum of twenty-four (24) months’ notice of the planned and requested upgrade or modification of facilities, absent mutual acceptance of a shorter notice period. The Parties agree to use reasonable efforts to coordinate the upgrade or modification of facilities to minimize any disruption in service by either Party.

ARTICLE VIII – PROJECT COMMITMENTS

8.1 As part of the Selected Developer Agreement between MISO and Republic, Republic committed to certain cost cap/cost containment and rate-recovery commitments for the Project. Big Rivers acknowledges and agrees that it shall be obligated and bound by the same Project-related commitments contained in the Selected Developer Agreement.

As used herein, the following terms have the following meanings, and each capitalized term that is used in this Article VIII that is not otherwise defined herein shall have the meaning ascribed to such term in the Selected Developer Agreement:

(A) “Annual Transmission Revenue Requirement” means the rate determined by FERC following a filing by Republic under Section 205 of the Federal Power Act and FERC’s rules and regulations thereunder and submitted to MISO for recovery pursuant to MISO’s Open Access Transmission Tariff.

(B) “Excluded Costs” means (i) any costs and expenses incurred as a result of an Uncontrollable Force (but, in each case, only if and to the extent such costs and expenses are in excess of the costs and expenses that would have been incurred but for such an Uncontrollable Force) and (ii) any costs and expenses associated with the operation and maintenance of the Project.

(C) “Project Costs” means any and all costs and expenses directly or indirectly incurred by Republic to develop, construct, complete, start-up and commission the Project and place the Project in service in accordance with the Scope of Work, including without limitation any costs and expenses incurred by Republic in connection with the following: (i) any taxes, (ii) any financing costs, including any approved Allowance for Funds Used During Construction, or similar allowance or financing cost or charge earned or accrued in connection with the Project during the period of development and construction of the Project, (iii) obtaining permits and other governmental approvals for the Project, (iv) acquiring land and land rights for the Project, (v) performing any environmental assessments or environmental mitigation activities in connection with the Project, (vi) designing and engineering the Project, (vii) procuring any equipment, supplies and other materials required to complete construction of the Project and place the Project in service, and (viii) otherwise performing or completing any and all development- and construction-related activities required in connection with the Project as part of the Scope of Work, including but not limited to all site clearing, equipment assembly and erection, testing and commissioning activities contemplated by the Scope of Work, whether performed directly by Republic or by one or more third parties retained by Republic (without regard to whether such third parties are affiliated or non-affiliated), but excluding in all cases Excluded Costs.

(D) “Scope of Work” means the approved scope of work for the Project, as more particularly described in Appendix A and Appendix F to the Selected Developer Agreement.

(E) “Total Rate Base Cap Amount” means \$58.1 million for the Scope of Work.

(F) “Uncontrollable Force” means (i) any destruction of or damage to any portion of the Project, or any interruption, suspension, or interference with Republic’s (or any contractor’s or subcontractor’s) performance of activities required to complete the Project, which destruction, damage, interruption, suspension or interference is caused by landslides; lightning; earthquakes; hurricanes; tornadoes; typhoons; severe weather; fires

or explosions; floods; epidemic; acts of a public enemy; acts or threats of terrorism; wars; blockades; riots; rebellions; sabotage; vandalism; insurrections; environmental contamination or damage not caused by Republic (or any contractor or subcontractor); strike or labor disruption or civil disturbances (or governmental actions arising from any of the foregoing), (ii) the issuance or enactment on or after the Effective Date of any statute, rule, regulation, order or other applicable law or any change in any statute, rule, regulation, order or other applicable law existing as of the Effective Date, or (iii) any Breach or Default by MISO of its obligations under the Selected Developer Agreement.

8.2 Except in accordance with Section 9.2.1 of the Selected Developer Agreement, neither Party shall seek, through Annual Transmission Revenue Requirements or through any other means, recovery of or any return on any Project Costs in excess of an amount equal to the lesser of such Party's pro rata share of (i) the Total Rate Base Cap Amount or (ii) the aggregate amount of actual Project Costs associated with the Project (such lesser amount, the "Applicable Rate Base Amount"). For purposes of this Article VIII, Big Rivers' pro rata share shall be a fraction, the numerator of which shall be the Purchase Price (as defined in the Asset Purchase Agreement, after all adjustments contemplated therein) and the denominator of which shall be the sum of all Project Costs *plus* all Excluded Costs of the type described in clause (i) of the definition thereof (the sum of all Project Costs plus all Excluded Costs of the type described in clause (i) of the definition thereof is hereinafter referred to as the "Aggregate Cost"). For purposes of this Article VIII, Republic's pro rata share shall be a fraction, the numerator of which shall be the difference between the Aggregate Cost and the Purchase Price (as defined in the Asset Purchase Agreement, after all adjustments contemplated therein) and the denominator of which shall be the Aggregate Cost. The Total Rate Base Cap Amount is not subject to adjustment for inflation.

8.3 Neither Party shall seek, through respective Annual Transmission Revenue Requirements or through any other means, a return on equity in excess of the lesser of (i) 9.80% (inclusive of all ROE adders/incentives) or (ii) the MISO region-wide base ROE (resulting from the proceeding in FERC Docket (EL15-45) plus the RTO ROE adder ("ROE Cap"). The ROE Cap shall apply to the initial investment of the Project for the life of the Project. The return on equity as calculated in this Section 8.3 may be adjusted downward pursuant to Section 8.5.

8.4 With respect to actual or hypothetical capital structure, the Parties shall limit equity for the Project as a percentage of the overall capital structure for the Project to be no more than forty-five percent (45%) of the Applicable Base Rate Amount (the "Equity Percentage Cap"). At all times, Big Rivers shall cause its equity for the Kentucky Portion as a percentage of the overall capital structure for the Kentucky Portion to be no more than forty-five percent (45%).

8.5 Consistent with Section 3.e. (Schedule Guarantee) of Appendix A of the Selected Developer Agreement, each Party agrees that, if the Project is not placed into service on or prior to the Guaranteed Completion Date, it will accept a reduction in its Project-specific ROE recovered in rates according to the following table (the "Schedule Guarantee"):

Months of Delay	Total Reduction in ROE
1	2.5 basis point
2	5 basis points
3	7.5 basis points
4	10 basis points
5	12.5 basis points
6	15 basis points
7	17.5 basis points
8	20 basis points
9	22.5 basis points
10	25 basis points
11	27.7 basis points
12 or more	30 basis points

The Schedule Guarantee is subject to a maximum reduction in the ROE of thirty (30) basis points.

8.6 Big Rivers will deliver to Republic drafts of any formula rate filing package in respect of any portion of the Project, for Republic’s review and comment, at least fourteen (14) days prior to filing such information with FERC. Republic’s review is intended to ensure that Big Rivers’ formula rate filing in respect of any portion of the Project is consistent with Republic’s obligations under the Selected Developer Agreement and Big Rivers’ obligations under this Agreement. Without limitation of the foregoing, Big Rivers agrees not to take any action that would result in Republic’s breach or violation of any provision of the Selected Developer Agreement (as amended, supplemented or otherwise modified from time to time), including any terms thereof that survive the termination of the Selected Developer Agreement.

8.7 Big Rivers agrees that, with respect to operations and maintenance costs incurred in respect of its portion of the Project, Big Rivers will seek compensation only for the incremental costs that were incurred by Big Rivers directly associated with its portion of the Project, in a manner consistent with the methodology set forth in the Proposal.

8.8 Nothing in this Agreement shall be construed or applied to prohibit Big Rivers from terminating its membership and participation in MISO, so long as such termination is consistent with Applicable Laws and Good Utility Practice.

ARTICLE IX – COMMUNICATION AND TELEMETERING FACILITIES

9.1 Each Party shall provide, at its own expense, the necessary communication and telemetering facilities needed for the control and operation of its transmission system.

9.2 All communication and telemetering facilities required herein shall be selected, installed, tested, operated, and maintained by the Party owning such equipment in accordance with Good Utility Practice and the MISO Requirements.

ARTICLE X - INDEMNIFICATION

TO THE FULLEST EXTENT PERMITTED BY LAW, EACH PARTY SHALL INDEMNIFY, DEFEND, AND SAVE HARMLESS THE OTHER PARTY, ITS AFFILIATES, AND THEIR RESPECTIVE DIRECTORS, OFFICERS, AND EMPLOYEES (COLLECTIVELY, “INDEMNIFIED PARTIES”) FROM ANY AND ALL DAMAGES, LOSSES, CLAIMS, INCLUDING CLAIMS AND ACTIONS RELATING TO INJURY TO OR DEATH OF ANY PERSON (INCLUDING THE EMPLOYEES OF THE INDEMNIFIED PARTY) OR DAMAGE TO PROPERTY (INCLUDING PROPERTY OF THE INDEMNIFIED PARTY), DEMANDS, SUITS, RECOVERIES, COSTS AND EXPENSES, COURT COSTS, AND REASONABLE ATTORNEY FEES, TO THE EXTENT ARISING OUT OF OR RESULTING FROM SUCH PARTY’S NEGLIGENCE OR WILLFUL MISCONDUCT IN THE PERFORMANCE OF OBLIGATIONS UNDER THIS AGREEMENT, EXCEPT TO THE EXTENT ARISING OUT OF OR RESULTING FROM THE NEGLIGENCE OR WILLFUL MISCONDUCT BY ANY INDEMNIFIED PARTY.

ARTICLE XI –NOTICES

11.1 Notices of an administrative nature, including but not limited to a notice of termination, notice of default, or request for amendment, shall be forwarded to the designees listed below for each Party and shall be deemed properly given if delivered in writing to the following:

If to Big Rivers:

Big Rivers Electric Corporation
201 Third Street
Henderson, KY 42420
Attention: President and CEO

With copy to:

Big Rivers Electric Corporation
201 Third Street
Henderson, KY 42420
Attention: Vice President System Operations

If to Republic:

Republic Transmission, LLC
Adam Gassaway, Project Manager
16150 Main Circle Drive, Suite 310
Chesterfield, MO 63017

With copy to:

Republic Transmission, LLC
Casey Brandt, Managing Counsel
16150 Main Circle Drive, Suite 310
Chesterfield, MO 63017

11.2 The above listed names, titles, and addresses of either Party may be changed upon written notification to the other Party.

ARTICLE XII - SUCCESSORS AND ASSIGNS

12.1 Subject to the provisions of Section 12.2 below, this Agreement shall be binding upon and inure to the benefit of the permitted successors and assigns of the respective Parties.

12.2 Subject to Section 12.3, neither Party shall assign its interest in this Agreement in whole or in part without the prior written consent of the other Party. Such consent shall not be unreasonably withheld, provided that neither Party will be required to consent to any assignment which would, in its sole judgment and among other reasons, subject it to additional federal or state regulation, result in the imposition of additional costs of administration which the Party requesting consent to assignment does not agree to reimburse, or in any way diminish the reliability of its system, enlarge its obligations or otherwise create or maintain an unacceptable condition. The respective obligations of the Parties under this Agreement may not be changed, modified, amended, or enlarged, in whole or in part, by reason of the sale, merger, or other business combination of either Party with any other person or entity. Any entity acquiring ownership of any portion of the Project shall be bound by the obligations imposed upon the Parties by this Agreement and shall be required to adhere to the terms of this Agreement as if said acquiring entity was the initial Party to this Agreement. Notwithstanding the foregoing, a Party may assign, without the consent of the other Party, its interest in this Agreement, in whole or in part, to a successor to all or a substantial portion of the Party's transmission and distribution business; to any transmission service provider or transmission owner (including an affiliate of the assigning Party) with the legal authority and operational ability to satisfy the obligations of the assigning Party under this Agreement; or for collateral security purposes in connection with any financing or financial arrangements.

12.3 Assignment, Successors and Assigns. The respective rights and obligations of the Parties hereto shall not be assignable without the prior written consent of the other Parties, provided, however, that notwithstanding any other provision of this Agreement to the contrary, Big Rivers may, without the written consent of Republic and without relieving itself from liability hereunder, assign, transfer, mortgage or pledge this Agreement to create a security interest for the benefit of the United States of America, acting through Rural Utilities Service ("RUS"), or other secured party (directly or through an indenture trustee or other collateral agent; collectively, including such indenture trustee or other collateral agent, a "Secured Party"). Thereafter, a Secured Party, without the written consent of Republic, may (i) cause this Agreement (and all obligations hereunder) to be sold, assigned, transferred or otherwise disposed of to a third party pursuant to the terms governing such security interest, or (ii) if RUS first

acquires this Agreement pursuant to 7 U.S.C. § 907 or if any other Secured Party otherwise first acquires this Agreement, sell, assign, transfer or otherwise dispose of this Agreement (and all obligations hereunder) to a third party; provided, however, that in either case (A) Big Rivers is in default of its obligations that are secured by such security interest and that the applicable Secured Party has given Republic written notice of such default; and (B) the applicable Secured Party has given Republic not less than thirty (30) days' prior written notice of its intention to sell, assign, transfer or otherwise dispose of this Agreement (and all obligations hereunder) indicating the identity of the intended third-party assignee to Republic. This Agreement shall be binding upon and inure to the benefit of the Parties hereto and their successors and permitted assigns.

12.4 The several provisions of this Agreement are not intended to and shall not create rights of any character whatsoever in favor of any persons, corporations, or associations other than the Parties to this Agreement, and the obligations herein assumed are solely for the use and benefit of the Parties to this Agreement.

ARTICLE XIII – GOVERNING LAW AND REGULATION

13.1 This Agreement shall in all respects be governed by, interpreted, construed, and enforced in accordance with the laws of the Commonwealth of Kentucky except as to matters exclusively controlled by the Constitution and statutes of the United States of America. This Agreement is subject to all valid applicable federal, state, and local laws, ordinances, rules and regulations of duly constituted regulatory authorities having jurisdiction.

13.2 This Agreement and all obligations hereunder, are expressly conditioned upon obtaining approval or authorization or acceptance for filing by any regulatory authority whose approval, authorization or acceptance for filing is required by Applicable Law. Both Parties hereby agree to support the approval of this Agreement before such regulatory authority and to provide such documents, information and opinions as may be reasonably required or requested by either Party in the course of approval proceedings.

13.3 In the event that a regulatory authority having jurisdiction over the Parties orders a change in the terms of this Agreement, the Parties agree to negotiate in good faith a replacement term that will most nearly accomplish the purpose and intent of the original term consistent with the regulatory order.

13.4 In the event any part of this Agreement is declared invalid by a court of competent jurisdiction, the remainder of this Agreement shall remain in full force and effect and shall constitute a binding agreement between the Parties.

13.5 TO THE FULLEST EXTENT PERMITTED BY LAW, EACH PARTY HEREBY KNOWINGLY, VOLUNTARILY AND IRREVOCABLY WAIVES EACH AND EVERY RIGHT TO A TRIAL BY JURY IN ANY SUIT OR PROCEEDING ARISING FROM OR RELATING TO THIS AGREEMENT OR A PARTY'S PERFORMANCE HEREUNDER.

ARTICLE XIV – DEFAULT AND FORCE MAJEURE

Neither Party shall be considered in default with respect to any obligation hereunder, other than the payment of money, if prevented from fulfilling such obligations by reason of any cause beyond its reasonable control, including, but not limited to, outages or interruptions due to weather, accidents, equipment failures or threat of failure, strikes, civil unrest, injunctions or order of governmental or regulatory authority having jurisdiction (“Force Majeure”). If performance by either Party has been prevented by such event, the affected Party shall promptly and diligently attempt to remove the cause of its failure to perform, except that neither Party shall be obligated to agree to any quick settlement of any strike or labor disturbance, that, in the affected Party's opinion, may be inadvisable or detrimental, or to appeal from any administrative or judicial ruling.

ARTICLE XV - TERMINATION ON DEFAULT

15.1 The term “Default” shall mean the failure of either Party to perform any obligation in the time or manner provided in this Agreement. No Default shall exist where such failure to discharge an obligation (other than the payment of money) is the result of Force Majeure as defined in this Agreement or the result of an act or omission of the other Party. Upon a Default, the non-defaulting Party shall give written notice of such Default to the defaulting Party. Except as provided in Section 15.2, the defaulting Party shall have thirty (30) days from receipt of the Default notice within which to cure such Default; provided however, if such Default is not capable of cure within thirty (30) days, the defaulting Party shall commence such cure within thirty (30) days after notice and continuously and diligently complete such cure within ninety (90) days from receipt of the Default notice; and, if cured within such time, the Default specified in such notice shall cease to exist.

15.2 If a Default is not cured as provided in this Section, or if a Default is not capable of being cured within the period provided for herein, the non-defaulting Party shall have the right to terminate this Agreement by written notice at any time until cure occurs, and be relieved of any further obligation hereunder and, whether or not that Party terminates this Agreement, to recover from the defaulting Party all amounts due hereunder, plus all other damages and remedies to which it is entitled at law or in equity, subject to Section 17.2. The provisions of this Section 15.2 will survive termination of this Agreement.

15.3 Because money damages may not be a sufficient remedy for a breach of this Agreement, the other Party shall be entitled to specific performance and injunctive relief as remedies for any such breach or threatened breach. Such remedies will not be deemed to be the exclusive remedies for a breach of this Agreement but will be in addition to all other remedies available to a Party at law or in equity, subject to Section 17.2. The provisions of this Section 15.3 will survive termination of this Agreement.

15.4 The failure of a Party to this Agreement to insist, on any occasion, upon strict performance of this Agreement will not be considered to waive the obligations, rights, or duties imposed upon the Parties by this Agreement.

ARTICLE XVI – INSURANCE

16.1 Each Party shall, at its own expense, maintain in force throughout the period of this Agreement and until released by the other Party the following minimum insurance coverages, with insurers authorized to do business in Kentucky (in the case of Big Rivers) or Indiana (in the case of Republic):

A. Employers Liability and Worker’s Compensation Insurance providing statutory benefits in accordance with the laws and regulations of the Commonwealth of Kentucky (in the case of Big Rivers) or the State of Indiana (in the case of Republic). The minimum limits for the Employer’s Liability insurance shall be One Million Dollars (\$1,000,000) each accident bodily injury by accident, One Million Dollars (\$1,000,000) each employee bodily injury by disease, and One Million Dollars (\$1,000,000) policy limit bodily injury by disease.

B. Commercial General Liability Insurance including premises and operations, personal injury, broad form property damage, broad form blanket contractual liability coverage products and completed operations coverage, coverage for explosion, collapse and underground hazards, independent contractors coverage, coverage for sudden pollution to the extent normally available and punitive damages to the extent normally available and a cross liability endorsement, with minimum limits of One Million Dollars (\$1,000,000) per occurrence/One Million Dollars (\$1,000,000) aggregate combined single limit for personal injury, bodily injury, including death and property damage.

C. Comprehensive Automobile Liability Insurance for coverage of owned, non-owned and hired vehicles, trailers or semi-trailers designed for travel on public roads, with a minimum combined single limit of One Million Dollars (\$1,000,000) per occurrence for bodily injury, including death, and property damage.

D. Excess Liability Insurance over and above the Employer’s Liability, Commercial General Liability and Comprehensive Automobile Liability Insurance coverage, with a minimum combined single limit of Ten Million Dollars (\$10,000,000) per occurrence/Ten Million Dollars (\$10,000,000) aggregate.

E. The Commercial General Liability Insurance, Comprehensive Automobile Liability Insurance, and Excess Liability Insurance policies shall name the other Party, its affiliates and their respective directors, officers, agents, servants and employees (“Other Party Group”) as additional insured. All policies shall contain provisions whereby the insurers waive all rights of subrogation in accordance with the provisions of this Agreement against the Other Party Group.

F. The Commercial General Liability Insurance, Comprehensive Automobile Liability Insurance and Excess Liability Insurance policies shall contain provisions that specify that the policies are primary and shall apply to such extent without consideration for other policies separately carried and shall state that each insured is provided coverage as though a separate policy had been issued to each, except the insurer’s liability shall not be increased

beyond the amount for which the insurer would have been liable had only one insured been covered. Each Party shall be responsible for its respective deductibles or retentions.

G. The Commercial General Liability Insurance, Comprehensive Automobile Liability Insurance and Excess Liability Insurance policies, if written on a Claims First Made basis, shall be maintained in full force and effect for two (2) years after termination of this Agreement, which coverage may be in the form of tail coverage or extended reporting period coverage if agreed by the Parties.

H. The requirements contained herein as to the types and limits of all insurance to be maintained by the Parties are not intended to and shall not in any manner, limit or qualify the liabilities and obligations assumed by the Parties under this Agreement.

I. Within ten (10) days following execution of this Agreement, and as soon as practicable after the end of each fiscal year or at the renewal of the insurance policy and in any event within ninety (90) days thereafter, each Party shall provide certification of all insurance required in this Agreement, executed by each insurer or by an authorized representative of each insurer.

16.2 Notwithstanding the foregoing, each Party may self-insure to the extent it maintains a self-insurance program; provided that, such Party's senior secured debt is rated at investment grade, or better, by Standard & Poor's. For any period of time that a Party's senior secured debt is unrated by Standard & Poor's or is rated at less than investment grade by Standard & Poor's, such Party shall comply with the insurance requirements applicable to it under Sections 16.1.A through 16.1.I. In the event that a Party is permitted to self-insure pursuant to this Section 16.2, it shall not be required to comply with the insurance requirements applicable to it under Sections 16.1.A through 16.1.I.

16.3 The Parties agree to report to each other in writing as soon as practical all accidents or occurrences resulting in injuries to any person, including death, and any property damage arising out of this Agreement.

ARTICLE XVII - MISCELLANEOUS PROVISIONS

17.1 Any undertaking by a Party to the other Party under this Agreement shall not constitute the dedication of the electrical system or any portion thereof of that Party to the public or to the other Party, and it is understood and agreed that any such undertaking shall cease upon the termination of this Agreement.

17.2 IN NO EVENT, EXCEPT AS PROVIDED IN SECTION 4.6, SHALL EITHER PARTY BE LIABLE UNDER ANY PROVISION OF THIS AGREEMENT FOR ANY LOSSES, DAMAGES, COSTS OR EXPENSES FOR ANY SPECIAL, INDIRECT, INCIDENTAL, CONSEQUENTIAL, OR PUNITIVE DAMAGES, INCLUDING BUT NOT LIMITED TO LOSS OF PROFIT OR REVENUE, LOSS OF THE USE OF EQUIPMENT, COST OF CAPITAL, COST OF TEMPORARY EQUIPMENT OR SERVICES, WHETHER BASED IN WHOLE OR IN PART IN CONTRACT, IN TORT,

INCLUDING NEGLIGENCE, STRICT LIABILITY, OR ANY OTHER THEORY OF LIABILITY; PROVIDED, HOWEVER, THAT DAMAGES FOR WHICH A PARTY MAY BE LIABLE TO THE OTHER PARTY UNDER ANOTHER AGREEMENT WILL NOT BE CONSIDERED TO BE SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES HEREUNDER.

17.3 This Agreement shall not affect the obligations or rights of either Party with respect to other agreements. Both Parties to this Agreement represent that there is no agreement or other obligation binding upon it, which, as such Party is presently aware, would limit the effectiveness or frustrate the purpose of this Agreement.

17.4 This Agreement may be amended only upon mutual agreement of the Parties, which amendment will not be effective until reduced in writing and executed by the Parties.

17.5 The descriptive headings of the various sections of this Agreement have been inserted for convenience of reference only and are to be afforded no significance in the interpretation or construction of this Agreement.

17.6 This Agreement may be executed in two or more counterparts, each of which is deemed an original, but all constitute one and the same instrument.

17.7 In connection with this Agreement and the transactions contemplated hereby, each Party shall execute and deliver all such future instruments and take such other and further action as may be reasonably necessary or appropriate to carry out the provisions of this Agreement and the intention of the parties as expressed herein.

[signatures are on next page]

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed by the undersigned authorized representatives.

BIG RIVERS ELECTRIC CORPORATION

REPUBLIC TRANSMISSION, LLC

By: _____

Name:
Title:

By: _____

Name:
Title:

Date: _____

Date: _____

Exhibit A

POINT OF CHANGE IN OWNERSHIP

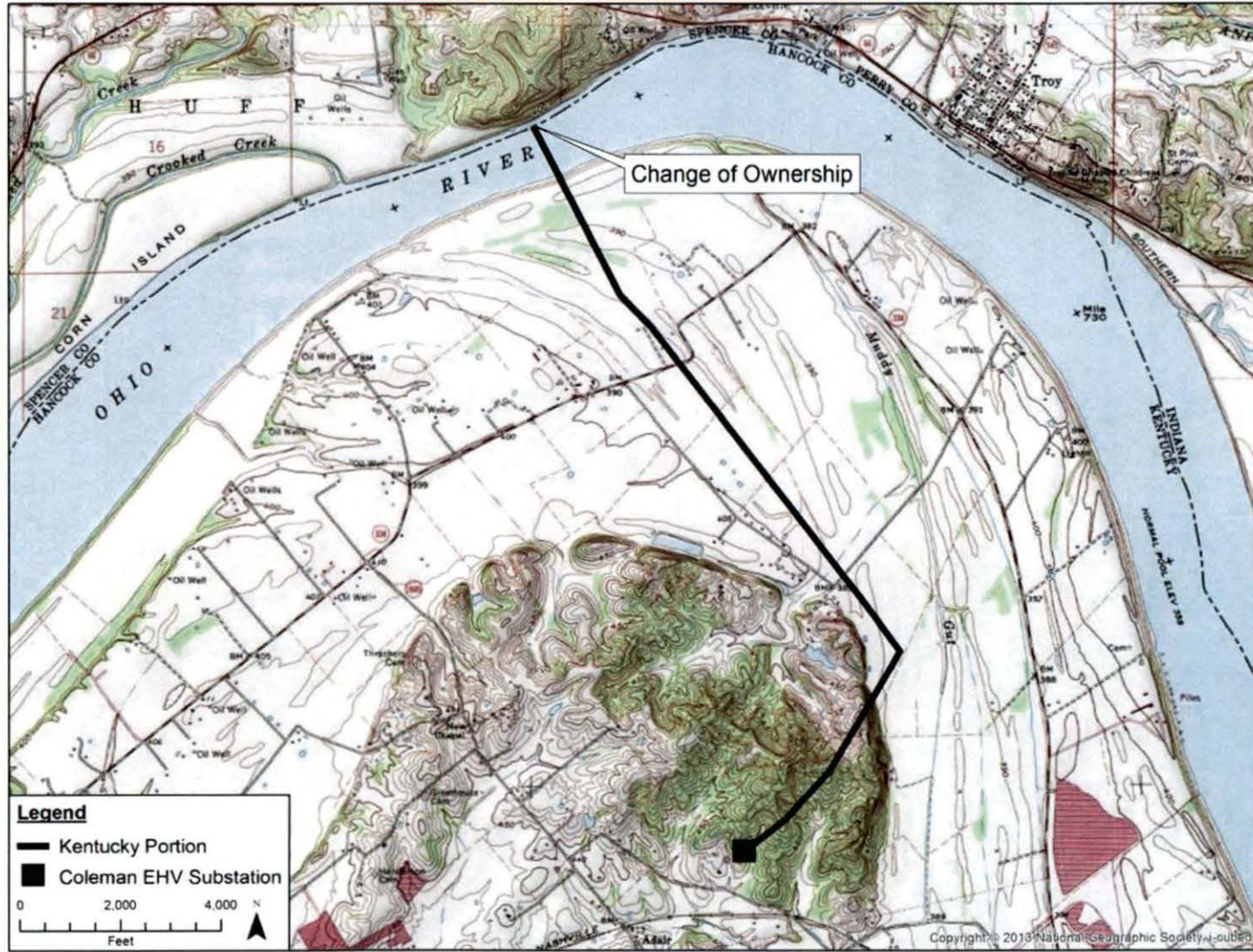


EXHIBIT E

GRANT OF LICENSE

This Grant of License ("License") is made and entered into as of the ____ day of _____, 201_, by and between **BIG RIVERS ELECTRIC CORPORATION**, a Kentucky corporation, 201 Third Street, Henderson, Kentucky 42420 ("Big Rivers") and **REPUBLIC TRANSMISSION, LLC**, an Indiana limited liability company, with an office at 16150 Main Circle Dr., Suite 310, Chesterfield, MO 63017 ("Republic").

RECITALS

1. Republic is in the business of owning, designing, developing, procuring, constructing, permitting, operating, managing and maintaining a high-voltage electric transmission line to be located in the State of Indiana and the Commonwealth of Kentucky (the "Facilities").

2. Big Rivers has determined that the acquisition by it of the portion of the Facilities located in the Commonwealth of Kentucky (the "Kentucky Portion") in accordance with the terms of an Asset Purchase Agreement between Big Rivers and Republic dated as of March 14, 2018 (as amended, supplemented, or otherwise modified from time to time, the "APA"), will benefit Big Rivers and enhance Big Rivers' ability to perform its obligations as an electric cooperative in the Commonwealth of Kentucky.

3. Pursuant to the APA, Big Rivers owns and has otherwise acquired easements and real estate rights that are necessary for the location, construction,

ownership, operation and maintenance of the Kentucky Portion of the Facilities, which easements and real estate rights are identified on Exhibit A, attached hereto and incorporated herein (collectively referred to as the "Easements").

4. Pursuant to Section 5.06 of the APA, Big Rivers agreed to provide Republic with rights in the Easements in the area described on Exhibit B, attached hereto and incorporated herein (the "License Area"), reasonably requested by Republic in connection with the surveying, development, permitting, design, construction, energizing, maintaining, or operating of the Kentucky Portion, subject to Big Rivers' termination of those rights upon the Closing of the transactions contemplated in the APA or as otherwise provided in this License.

5. In this License, the parties desire to provide for the use by Republic of certain of those rights in the Easements for the period stated herein.

SUBSTANTIVE PROVISIONS

NOW, THEREFORE, for a valuable consideration, including, but not limited to, the fulfillment by Big Rivers of its obligations under Section 5.06 of the APA and the obligations of Republic to Big Rivers under the APA, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1. **Definitions.** Capitalized terms used in this License (including the Recitals) and not otherwise defined herein shall have the meanings set forth in the APA. The rules of interpretation set forth in Section 1.02 of the APA shall apply to this License, provided, however, that any reference in this License to sections,

paragraphs and clauses are to sections, paragraphs and clauses in this License unless otherwise indicated.

2. **Grant of License.** Big Rivers grants to Republic a license to exercise the following rights within and appurtenant to the License Area, to the extent that Big Rivers possesses those rights by law or pursuant to the terms of the relevant Easement, for and during the “License Term,” as defined herein, subject to any limitations imposed by the terms of each of such Easements and the law of the Commonwealth of Kentucky:

- a. The right to go on the License Area for the purpose of surveying, inspecting, testing, constructing, reconstructing, owning, maintaining, replacing, removing, repairing, and operating the Kentucky Portion of the Facilities for the transmission of electric energy, as well as facilities for the transmission of information by fiber optic cables or similar, including, with respect to the License Area, all necessary wires, guys, anchors, and other accessories, appurtenances, or fixtures desirable in connection with the transmission of electric energy or information by fiber optic cables or similar across the License Area.
- b. The right to go on the License Area for the purpose of cutting, removing, trimming, and relocating any obstructions such as shrubbery, fences, trees, buildings, or other structures located within such License Area.
- c. The right to go outside the License Area to cut, remove, or trim any trees or other vegetation, which if they fell would endanger the installed electric facilities or create a threat of a service interruption.
- d. The right to keep the License Area clear of obstructions by the use of any reasonable means.
- e. The right of ingress and egress across the properties described in the Easements where reasonably necessary to facilitate performance of the rights herein granted, except that ingress and

gress shall be along then existing suitable public roads and, if none, then suitable existing farm roads, and if none, then where reasonably practicable subject to reimbursement to the landowner for damages caused by Republic in connection with the exercise of such rights.

3. **License Term.** The term of this License and the period during which Republic shall be entitled to exercise the rights granted by Big Rivers under this License shall commence on the date of this License, and end on the earlier to occur of (i) the Closing on the "Closing Date," as defined in the APA, and (ii) the date that Big Rivers delivers written notice to Republic terminating this License in accordance with this Section 3. Big Rivers shall have the right to terminate this License by written notice to Republic only upon the occurrence of either of the following events:

a. Big Rivers exercises its right under and in accordance with Section 11.02(c) of the APA to terminate this License; and

b. A court having jurisdiction over the License Area shall enter a decree or order for relief in an involuntary case in respect of Republic under any applicable bankruptcy, involvency or other similar law now or hereafter in effect, or appointing a receiver, liquidator, assignee, custodian, trustee, sequestrator or similar official, or ordering the winding up or liquidation of its affairs, and such decree or order shall remain unstayed and in effect for a period of ninety consecutive days or Republic shall commence a voluntary case under any such law, or consent to the appointment or taking possession by a receiver, liquidator, assignee, custodian or trustee, of a

substantial part of its property, or make any general assignment for the benefit of creditors.

Any notice of termination of this License delivered by Big Rivers to Republic in reliance upon the occurrence of an event listed in clauses a. or b., above, shall be accompanied by repayment to Republic by Big Rivers of any amounts Republic has previously paid Big Rivers to reimburse Big Rivers' costs incurred to acquire the Easements.

4. **Indemnification.** Under the terms of each of the Easements, Big Rivers remains responsible to the grantor thereof with respect to various matters, as more particularly described in each of the underlying Easements. In connection with its exercise of the License herein granted, Republic agrees to indemnify and save harmless Big Rivers, its officers, directors, employees, and representatives from any responsibility and liability for any and all third-party claims, demands, losses, legal actions for person injuries, including death, and property damage ("Claims") relating to (1) any acts or omissions by Republic, its respective employees, agents, representatives, contractors, or subcontractors, pursuant to the rights herein transferred; or (2) any failure of Republic, its respective employees, agents, representatives, contractors, or subcontractors, to comply with any laws, regulations, or ordinances, relative to the activities of Republic, its respective employees, agents, representatives, contractors, or subcontractors, pursuant to the rights herein granted or relative to any fees, fines, penalties, or assessments levied against Big Rivers by reason of any activities undertaken by Republic, its respective employees,

agents, representatives, contractors, or subcontractors pursuant to the rights herein granted. The obligations of Republic in this paragraph shall survive termination of this License unless such termination is a result of Closing under the APA.

5. **Damages.** Republic further agrees to pay all damages to buildings, growing crops, fences, and livestock caused by the construction, operation, maintenance, reconstruction, or removal of the Kentucky Portion of the Facilities and to compensate for or restore any damage to lands described in the Easements resulting from its activities on such lands or resulting from the actions of its respective employees, agents, representatives, contractors, or subcontractors on such lands. The obligations of Republic in this paragraph shall survive termination of this License unless such termination is a result of Closing under the APA.

6. **Representations by Republic.** Republic represents and warrants: (1) that it is familiar with the terms and conditions contained in the Easements; (2) that it will comply with the terms and conditions contained in each of the Easements; and (3) that it is familiar with the special provisions associated with certain of the Easements concerning advance notification to the grantor prior to entry and will comply with such notification requirements.

7. **Insurance Certificate.** Republic will cause Big Rivers to be identified as an additional insured under Republic's commercial general liability insurance policy in respect of any acts of Republic pursuant to this License. Republic shall deliver to Big Rivers a certificate of insurance evidencing the foregoing prior to entering upon the License Area.

8. **Governing Law.** This License shall be governed by and construed in accordance with and governed by the laws of the Commonwealth of Kentucky.

9. **Further Assurances.** Each party covenants and agrees promptly to execute, deliver, file or record, or cause to be executed, delivered, filed or recorded such other agreements, instruments, certificates and other documents, and to do any and perform such other and further actions, as the other party may reasonably request or as may be otherwise be necessary or proper to effectuate the rights and obligations contemplated in this License in accordance with its terms, or otherwise to effect the purposes of this License. Without limitation of the foregoing, if the APA is terminated for any reason other than pursuant to APA Section 11.02(c) and Closing has not occurred, Big Rivers agrees to provide Republic with the rights contained herein on a permanent basis, in form and substance reasonably suitable for Republic's ongoing ownership, operation and maintenance of the Kentucky Portion.

10. **Modification and Waivers.** This License may be modified, amended or changed only by an instrument in writing signed by both parties hereto. No waiver of the performance of any term or provision hereof shall be valid or effective for any purpose unless such waiver shall be in writing and signed by the party against whom enforcement of the same is sought.

11. **Notices.** All notices, requests, demands and other communications which are required or permitted hereunder shall be in writing and shall be deemed to have been duly given when delivered personally or when mailed first class, postage prepaid, addressed as follows:

If to Republic, to:

Republic Transmission, LLC
c/o LS Power Development, LLC
16150 Main Circle Drive, Suite 310
Chesterfield, MO 63017
Attn: Project Manager

With a copy to:

Republic Transmission, LLC
c/o LS Power Development, LLC
16150 Main Circle Drive, Suite 310
Chesterfield, MO 63017
Attn: Managing Counsel

If to Big Rivers, to:

Big Rivers Electric Corporation
201 Third Street
Henderson, KY 42420
Attention: President and CEO

With a copy to:

Big Rivers Electric Corporation
201 Third Street
Henderson, KY 42420
Attention: Vice President System Operations

12. **Counterparts**. This License may be executed in several counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

13. **Severability**. Any term or provision of this License which is invalid or unenforceable in any jurisdiction shall, as to such jurisdiction, be ineffective to the extent of such invalidity or unenforceability without rendering invalid or unenforceable the remaining terms or provisions of this License or affecting the

validity or enforceability of any of the terms or provisions of this License in any other jurisdiction.

14. **Successors and Assigns.** This License shall be binding upon and inure to the benefit of the parties named herein and their respective successors and permitted assigns.

[SIGNATURE PAGE FOLLOWS]

IN TESTIMONY WHEREOF, witness the signature of the parties effective as of the day and date first herein written.

BIG RIVERS ELECTRIC CORPORATION

By: _____
Name: _____
Title: _____

REPUBLIC TRANSMISSION, LLC

By: _____
Name: _____
Title: _____

EXHIBIT A

1. Easement dated March 3, 1966, to Big Rivers Rural Electric Cooperative Corporation from John F. Allard, Sr. and Ruth H. Allard, his wife, recorded in Deed Book 71, page 484, Office of the Hancock County Court Clerk.
2. Easement dated March 4, 1967, to Big Rivers Rural Electric Cooperative Corporation from Lloyd C. Taylor and Dorothy Taylor, his wife, recorded in Deed Book 71, page 488, Office of the Hancock County Court Clerk.
3. Easement dated March 9, 1967, to Big Rivers Rural Electric Cooperative Corporation from Joe Taylor and Catherine Taylor, his wife, recorded in Deed Book 71, page 502, Office of the Hancock County Court Clerk.
4. Easement dated June 2, 1967, to Big Rivers Rural Electric Cooperative Corporation from William Joe Emmick and Frances L. Emmick, his wife, recorded in Deed Book 72, page 142, Office of the Hancock County Court Clerk.
5. Easement dated the 1st day of November, 2016, to Big Rivers Electric Corporation from C. Waitman Taylor and Patricia W. Taylor, his wife, recorded in Deed Book 157, page 670, Office of the Hancock County Court Clerk.
6. Easement dated February 13, 2017, to Big Rivers Electric Corporation from William S. Emmick and Phyllis P. Emmick, his wife, recorded in Deed Book 158, page 523, Office of the Hancock County Court Clerk.
7. Easement dated July 20, 2017, to Big Rivers Electric Corporation from William F. Allard, DMD, recorded in Deed Book 159, page 679, Office of the Hancock County Court Clerk.
8. Easement dated July 20, 2017, to Big Rivers Electric Corporation from William F. Allard, DMD, recorded in Deed Book 159, page 682, Office of the Hancock County Court Clerk.

9. Easement dated August 25, 2017, to Big Rivers Electric Corporation from William S. Emmick and Mary I. Emmick, his wife, and Phyllis P. Emmick, a widow, recorded in Deed Book 160, page 281, Office of the Hancock County Court Clerk.
10. Easement dated September 27, 2017, to Big Rivers Electric Corporation from Shelby S. Emmick and Heather H. Emmick, his wife, and Jesse Emmick and Deana Emmick, his wife, recorded in Deed Book 160, page 278, Office of the Hancock County Court Clerk.
11. Easement dated _____, 2017, to Big Rivers Electric Corporation from _____, recorded in Deed Book _____, page _____, Office of the Hancock County Court Clerk.

EXHIBIT B

Description of License Area / Licensed Easement Area

The locations described below are to be read in conjunction with the maps on the immediately following pages.

1. Parcel 19-14 / 147.14 acres Current Owner: C. W. Taylor Jr.

Total Width of Republic R/W 150 feet

Centerline to edge of Republic R/W 75 feet

2. Parcel 19-13 / 70 acres Current Owner: William S. Emmick

Total Width of Republic R/W 225 feet

Centerline to edge of Republic R/W 112.5 feet

3. Parcel 18-13 / 293 acres Current Owner: William F. Allard

Total Width of Republic R/W 210 feet

Centerline 105 feet for a distance of 1,724 feet to angle structure.

Total Width of Republic R/W 175 from angle structure

Centerline to edge of Republic R/W 87.5 feet

Parcel 18-15 / 118.59 acres Current Owner: William F. Allard

Total Width of Republic R/W 175 feet

Centerline to edge of Republic R/W 87.5 feet

4. Parcel 18-16 / 30 acres Current Owner: Jesse & Shelby Emmick

Total Width of Republic R/W 175 feet

Centerline to edge of Republic R/W 87.5 feet

5. Parcel 18-08 Current Owner: William S. Emmick & Mary Emmick

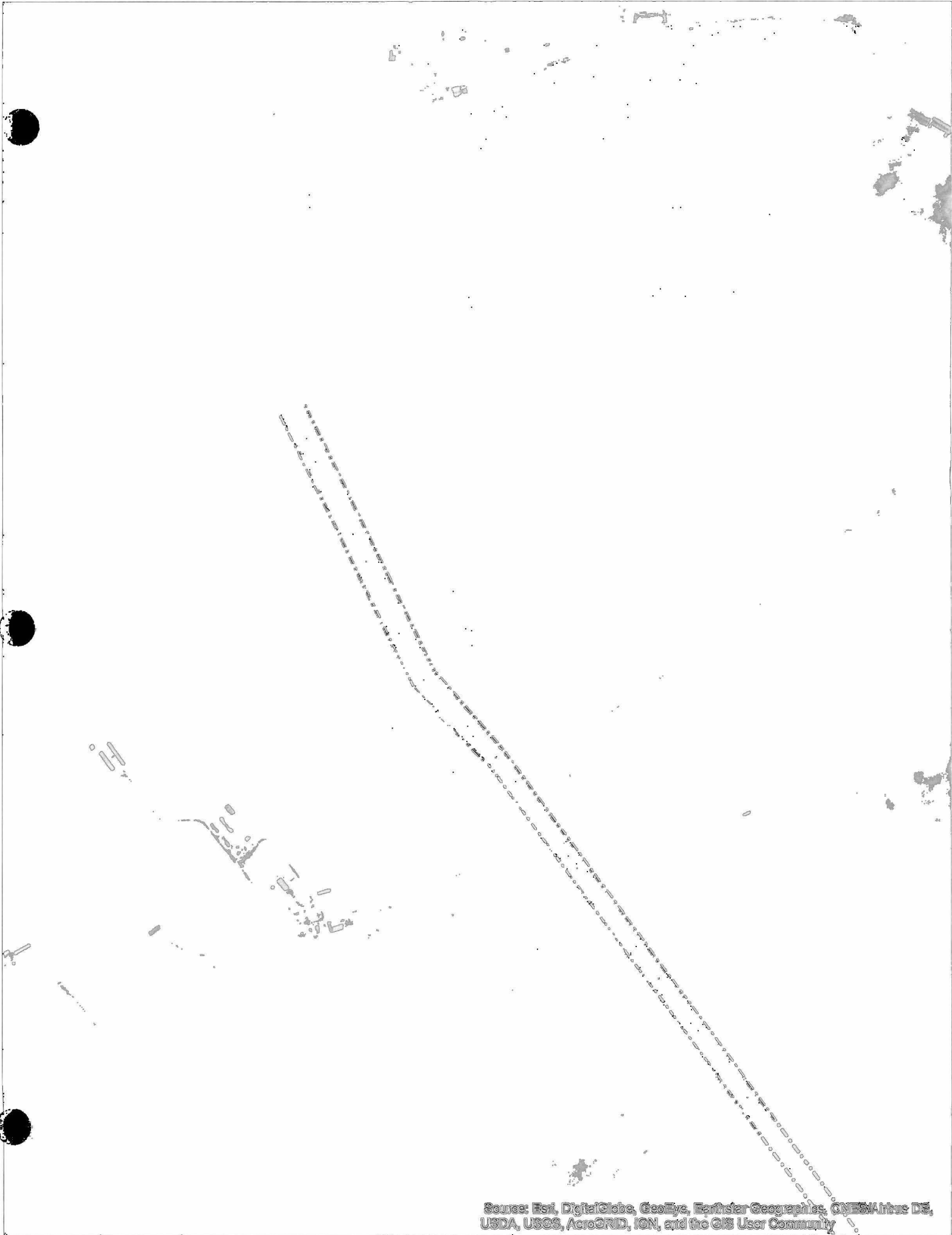
Total Width of Republic R/W 175 feet

Centerline to edge of Republic R/W 87.5 feet

6. Parcel 18-07 Current Owner: Pottinger-Amato Irrevocable Trust

Total Width of Republic R/W 175 feet

Centerline to edge of Republic R/W 87.5 feet



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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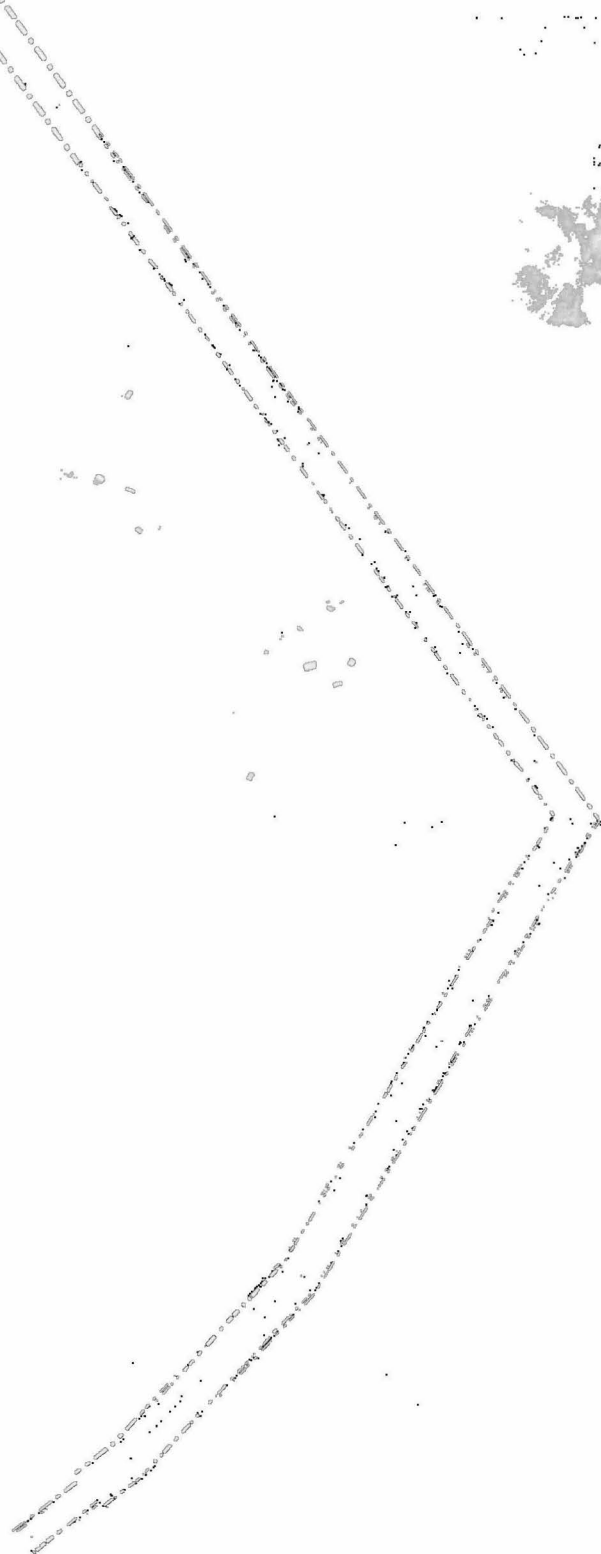


EXHIBIT F

SELL BACK ASSIGNMENT AND ASSUMPTION AGREEMENT

This Sell Back Assignment and Assumption Agreement (“Assignment”) is dated as of _____, 20____ (“Effective Date”), between Republic Transmission, LLC (“Republic”) and Big Rivers Electric Corporation (“Big Rivers”).

RECITALS

A. Republic and Big Rivers are parties to the Asset Purchase Agreement dated as of March 14, 2018 (as amended, supplemented or otherwise modified from time to time, the “APA”), pursuant to which, among other transactions, Republic conveyed to Big Rivers at the Closing all of Republic’s right, title and interest in and to the Purchased Assets, including but not limited to certain contracts, agreements, licenses, permits and/or other instruments to which Republic is a party, and Big Rivers assumed certain obligations and liabilities of Republic relating to the Purchased Assets, including but not limited to certain obligations of Republic pursuant to those contracts, agreements, licenses, permits and/or other instruments.

B. Pursuant to Section 14.06 of the APA, Big Rivers exercised its right to Sell Back the Purchased Assets and Assumed Liabilities to Republic by timely providing the requisite notice to Republic on _____.

C. To provide Republic an instrument vesting title in it to certain Purchased Assets, including but not limited to such contracts, agreements, licenses, permits and/or other instruments, and in order that Big Rivers shall be in

possession of an instrument evidencing Republic's assumption of the obligations of Big Rivers under or pursuant to such contracts, agreement, licenses, permits and/or other instruments (including the Assumed Liabilities), Republic and Big Rivers desire to execute and deliver this Assignment.

D. This is the "Sell Back Assignment and Assumption Agreement" contemplated in Section 14.06(b) of the APA.

NOW, THEREFORE, in consideration of the mutual covenants and agreements set forth below and for other valuable consideration, the receipt of which is hereby acknowledged, Republic and Big Rivers agree as follows:

ARTICLE 1

DEFINITIONS

Capitalized terms used in this Assignment (including the Recitals) and not otherwise defined herein shall have the meanings set forth in the APA. The rules of interpretation set forth in Section 1.02 of the APA shall apply to this Assignment, provided, however, that any reference in this Assignment to sections, paragraphs and clauses are to sections, paragraphs and clauses in this Assignment unless otherwise indicated.

ARTICLE 2

ASSIGNMENT AND ASSUMPTION

SECTION 2.1 ASSIGNMENTS BY BIG RIVERS.

Except as otherwise provided below, Big Rivers hereby sells, grants, assigns, transfers and conveys to Republic all of Big Rivers' rights, title and interest in, to

and under each of the contracts, agreements, leases, licenses, permits and other instruments set forth or identified on Exhibit A attached hereto and incorporated herein by reference (collectively, the “Assigned Instruments”)¹, free and clear of all Liens created by, through or on behalf of Big Rivers. The foregoing sales, grants, assignments, transfers and conveyances to Republic shall include any performance bonds or other forms of guarantee or surety that may have been posted by or for any contract counterparty to or in favor of Big Rivers as support for the payment or performance by that contract counterparty of its debts or obligations to Big Rivers under its Assigned Instrument. Notwithstanding the preceding two sentences, the foregoing sales, grants, assignments, transfers and conveyances to Republic shall not include, and Big Rivers hereby expressly reserves and retains: (a) any and all rights of defense, defenses and counterclaims that Big Rivers may have in respect of any actual or alleged breach or default on the part of Big Rivers, or its predecessors, under or pursuant to any Assigned Instrument occurring at any time following the Closing Date of the APA through and including the date of this Assignment; and (b) any accounts receivable (including the associated rights of collection), cash on hand or any other current assets of Big Rivers, and any proceeds of the Assigned Instruments received prior to the date of this Assignment.

SECTION 2.2 ASSUMPTION BY REPUBLIC.

Republic hereby accepts such assignment, and assumes and agrees to perform, fulfill and timely discharge all of the obligations, duties and

¹ To include, without limitation, any easement agreements that Big Rivers acquired for purposes of the Project.

responsibilities of Big Rivers which first arise or accrue after the Closing Date or pursuant to each of the Assigned Instruments in accordance with their respective terms, and agrees that, from and after the Effective Date, it is unconditionally bound to perform, fulfill and timely discharge all such obligations, duties and responsibilities of Big Rivers under or pursuant to each Assigned Instrument in accordance with its terms.

ARTICLE 3

MISCELLANEOUS

SECTION 3.1 SUCCESSORS AND ASSIGNS.

This Assignment shall be binding upon and inure to the benefit of the parties named herein and their respective successors and permitted assigns.

SECTION 3.2 GOVERNING LAW.

This Assignment shall be governed by and construed in accordance with the laws of the Commonwealth of Kentucky.

SECTION 3.3 SEVERABILITY.

Any term or provision of this Assignment which is invalid or unenforceable in any jurisdiction shall, as to such jurisdiction, be ineffective to the extent of such invalidity or unenforceability without rendering invalid or unenforceable the remaining terms or provisions of this Assignment or affecting the validity or enforceability of any of the terms or provisions of this Assignment in any other jurisdiction.

SECTION 3.4 HEADINGS.

The article and section headings contained in this Assignment are inserted for convenience only and shall not affect in any way the meaning or interpretation of this Assignment.

SECTION 3.5 COUNTERPARTS.

This Assignment may be executed in one or more counterparts, each of which shall be deemed an original but all of which together will constitute one and the same instrument.

SECTION 3.6 NO MODIFICATION TO APA; INDEMNITY.

This Assignment is delivered pursuant to the APA, is subject in all respects to the provisions thereof, and is not intended and shall not be construed to alter or otherwise modify the provisions of the APA. The assumption by Republic of the obligations, duties and responsibility of Big Rivers under the Assigned Instruments and in accordance with Section 2.2 of this Assignment shall not in any way affect any obligation of either party to indemnify the other party pursuant to Article XII of the APA.

SECTION 3.7 FURTHER ASSURANCES.

Each of Republic and Big Rivers covenants and agrees promptly to execute, deliver, file or record, or cause to be executed, delivered, filed or recorded such other agreements, instruments, certificates and other documents, and to do any and perform such other and further actions, as the other party may reasonably request or as may be otherwise be necessary or proper to effectuate the transactions

contemplated in this Assignment in accordance with its terms, or otherwise to effect the purposes of this Assignment.

IN WITNESS WHEREOF, the parties hereto have caused this Assignment to be duly executed by the respective authorized officers as of the day and year first above written.

REPUBLIC TRANSMISSION, LLC

BY: _____
Name:
Title:

BIG RIVERS ELECTRIC CORPORATION

BY: _____
Robert W. Berry
President/CEO

EXHIBIT G

SELL BACK BILL OF SALE

THIS SELL BACK BILL OF SALE (this “Bill of Sale”) is dated as of this ____ day of _____, 20__, by and between **BIG RIVERS ELECTRIC CORPORATION**, a Kentucky corporation, with an office at 201 3rd Street, Henderson, KY 42420 (“Seller”), and **REPUBLIC TRANSMISSION, LLC**, an Indiana limited liability company, having a business address at 16150 Main Circle Drive, Suite 310, Chesterfield, MO 63017 (“Purchaser”). The Purchaser and Seller are sometimes referred to herein collectively as the “Parties” and individually as a “Party”. Capitalized terms used in this Bill of Sale (including the Recitals) and not otherwise defined herein shall have the meanings set forth in the Parties’ Asset Purchase Agreement dated as of March 14, 2018 (as amended, supplemented or otherwise modified from time to time, the “APA”).

RECITALS:

A. Seller owns a portion of a single-circuit 345-kV electric transmission line between the Coleman Extra High Voltage substation located in Hancock County, Kentucky (the “Coleman EHV Substation”) and the Duff substation located in Dubois County, Indiana (the “Duff Substation”), as well as all ancillary facilities (collectively, the “Facility”);

B. Seller desires to transfer and convey the portion of the Facility that is physically located in the Commonwealth of Kentucky and certain assets and properties relating to the Kentucky Portion hereinafter collectively described as “Purchased Assets” and more particularly defined in Exhibit A attached hereto and incorporated herein by reference.

C. Purchaser desires to acquire all of Seller’s ownership interest in the Purchased Assets pursuant to the terms of this Bill of Sale.

NOW THEREFORE, for and in consideration of good and valuable consideration and the mutual covenants contained herein, the receipt and sufficiency of which are hereby acknowledged, the Parties hereto, intending to be legally bound hereby, agree as follows:

1. Conveyance of Purchased Assets.

Seller hereby grants, bargains, conveys, sells, assigns and transfers to Purchaser, and Purchaser hereby purchases, acquires and accepts from Seller, all of Seller’s ownership interest in the Purchased Assets.

2. Authority; Title.

(a) Seller hereby covenants that it has the corporate right, power and authority and has been duly authorized by all necessary corporate action, to convey its ownership interest in the Purchased Assets as provided herein.

(b) Seller warrants that it has good and marketable title to the Purchased Assets and that Purchaser will acquire same pursuant to this Bill of Sale free and clear of any and all liens and encumbrances, except for Permitted Exceptions.

3. Purchase Price. The aggregate purchase price (the "Purchase Price") payable by Purchaser to Seller for the Purchased Assets shall be _____, subject to adjustment in accordance with Section 2.06 of the APA.

4. Taxes. Purchaser shall be responsible for and shall pay the entire cost of any Transfer Taxes and Sales Taxes. Accordingly, if Seller is required at Law to pay any such Transfer Taxes or Sales Taxes, Purchaser shall promptly reimburse Seller for its portion of such amounts. Seller and Purchaser shall timely file their own Tax returns for any Transfer Tax or Sales Tax as required by Law and shall notify the other party when such filings have been made. Seller and Purchaser shall cooperate and consult with each other prior to filing returns for any Transfer Tax to ensure that all such returns are filed in a consistent manner. Seller shall not collect Sales Taxes from Purchaser upon the sale of the Purchased Assets.¹

5. Disclaimer of Warranties. (A) PURCHASER ACKNOWLEDGES AND AGREES THAT, EXCEPT AS EXPRESSLY SET FORTH IN THIS BILL OF SALE AND THE APA, SELLER HAS NOT MADE AND SHALL NOT BE DEEMED (BY REASON OF THE EXECUTION OF ANY BILL OF SALE OR OTHER INSTRUMENT REFERENCED HEREIN) TO HAVE MADE ANY WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, AS TO THE TITLE OR THE CONDITION OR STATE OF REPAIR OF ANY OR ALL OF THE PURCHASED ASSETS, THEIR VALUE, COMPLETENESS, QUALITY, MERCHANTABILITY, SUITABILITY OR FITNESS FOR ANY PARTICULAR USES OR PURPOSES, OR ANY ENVIRONMENTAL MATTERS; AND (B) PURCHASER ACCEPTS THE PURCHASED ASSETS ON AN "AS IS – WHERE IS, WITH ALL FAULTS" BASIS. THE PROVISIONS OF THIS SECTION 5 HAVE BEEN NEGOTIATED AT ARMS-LENGTH AND ARE INTENDED TO BE A COMPLETE EXCLUSION AND NEGATION OF ANY AND ALL WARRANTIES OR REPRESENTATIONS BY SELLER, EXPRESS OR IMPLIED, WITH RESPECT TO THE PURCHASED ASSETS, EXCEPT FOR SUCH REPRESENTATIONS AND WARRANTIES AS SELLER HAS MADE IN WRITING TO PURCHASER IN THIS BILL OF SALE AND THE APA.

6. Further Assurances. Each of Seller and Purchaser covenants and agrees promptly to execute, deliver, file or record, or cause to be executed, delivered, filed or recorded such other agreements, instruments, certificates and other documents, and to do any and perform such other and further actions, as the other party may reasonably request or as may be otherwise be necessary or proper to effectuate the transactions contemplated in this Bill of Sale in accordance with its terms, or otherwise to effect the purposes of this Bill of Sale.

7. No Modification to APA. This Bill of Sale is delivered pursuant to the APA, is subject in all respects to the provisions thereof, and is not intended and shall not be construed to alter or otherwise modify the provisions of the APA. The transfer of the Purchased Assets pursuant to

¹ Modify as necessary pursuant to the last sentence of Section 2.04(b) of the APA, if applicable.

this Bill of Sale shall not in any way affect any obligation of either party to indemnify the other party pursuant to Article XII of the APA.

8. Modification and Waivers. This Bill of Sale may be modified, amended or changed only by an instrument in writing signed by both parties hereto. No waiver of the performance of any term or provision hereof shall be valid or effective for any purpose unless such waiver shall be in writing and signed by the party against whom enforcement of the same is sought.

9. Notices. All notices, requests, demands and other communications which are required or permitted hereunder shall be in writing and shall be deemed to have been duly given when delivered personally or when mailed first class, postage prepaid, addressed as follows:

If to Purchaser, to:

Republic Transmission, LLC
c/o LS Power Development, LLC
16150 Main Circle Drive, Suite 310
Chesterfield, MO 63017
Attn: Project Manager

With a copy to:

Republic Transmission, LLC
c/o LS Power Development, LLC
16150 Main Circle Drive, Suite 310
Chesterfield, MO 63017
Attn: Managing Counsel

If to Seller, to:

Big Rivers Electric Corporation
201 Third Street
Henderson, KY 42420
Attention: President and CEO

With a copy to:

Big Rivers Electric Corporation
201 Third Street
Henderson, KY 42420
Attention: Vice President System Operations

10. Headings. The headings of this Bill of Sale are inserted for convenience of reference only and shall not be part of or control or affect the meaning hereof.

11. Counterparts. This Bill of Sale may be executed in several counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

12. Governing Law. This Bill of Sale shall be governed by and construed in accordance with and governed by the laws of the Commonwealth of Kentucky.

13. Successors and Assigns. This Bill of Sale shall be binding upon and inure to the benefit of the parties named herein and their respective successors and permitted assigns.

14. Severability. Any term or provision of this Bill of Sale which is invalid or unenforceable in any jurisdiction shall, as to such jurisdiction, be ineffective to the extent of such invalidity or unenforceability without rendering invalid or unenforceable the remaining terms or provisions of this Bill of Sale or affecting the validity or enforceability of any of the terms or provisions of this Bill of Sale in any other jurisdiction.

(Signatures on following page)

IN WITNESS WHEREOF, Seller and Purchaser have caused this Bill of Sale to be executed as of the day and year first written above.

PURCHASER:
REPUBLIC TRANSMISSION, LLC

By: _____

Name: _____

Title: _____

SELLER:
BIG RIVERS ELECTRIC CORPORATION

By: _____

Name: _____

Title: _____

EXHIBIT A

Purchased Assets

“Purchased Assets” shall mean the Seller’s rights, title and interest in and to the Kentucky Portion and the following described assets, rights and properties owned by Seller or in which Seller has an interest as of the Closing Date, and used exclusively in connection with the Kentucky Portion, except for the Retained Assets, in each case, including and subject to any Permitted Exceptions:

[list of assets to be inserted].

Notwithstanding the foregoing, for purposes of this Bill of Sale, the term “Purchased Assets” shall not include any “Assigned Instruments” as defined in that certain Assignment and Assumption Agreement executed by the Seller and Purchaser and dated of even date herewith, as title to such Assigned Instruments shall be assigned to Purchaser pursuant to the terms of such agreement.

EXHIBIT H

SELL BACK LICENSE AGREEMENT

This Sell Back License Agreement ("License") is made and entered into as of the ____ day of _____, 20__, by and between **BIG RIVERS ELECTRIC CORPORATION**, a Kentucky corporation, with an office at 201 Third Street, Henderson, Kentucky 42420 ("Big Rivers") and **REPUBLIC TRANSMISSION, LLC**, an Indiana limited liability company, with an office at 16150 Main Circle Drive, Suite 310, Chesterfield, MO 63017 ("Republic").

RECITALS

1. Republic and Big Rivers are parties to the Asset Purchase Agreement dated as of March 14, 2018 (as amended, supplemented, or otherwise modified from time to time, the "APA"), pursuant to which, among other transactions, Republic conveyed to Big Rivers at the Closing all of Republic's right, title and interest in and to the Purchased Assets, including but not limited to certain contracts, agreements, licenses, permits and/or other instruments to which Republic is a party, and Big Rivers assumed certain liabilities of Republic relating to the Purchased Assets, including but not limited to certain obligations of Republic pursuant to those contracts, agreements, licenses, permits and/or other instruments.

2. Pursuant to Section 14.06 of the APA, Big Rivers exercised its right to sell back the Purchased Assets and Assumed Liabilities to Republic by timely providing the requisite notice to Republic on _____ (a "Sell Back").

3. Pursuant to the APA, Big Rivers owns and has otherwise acquired easements and real estate rights that are necessary for the location, construction, ownership, operation and maintenance of the Kentucky Portion of the Facilities, which easements and real estate rights are identified on Exhibit A, attached hereto and incorporated herein (collectively referred to as the "Easements").

4. Pursuant to a Sell Back Assignment and Assumption Agreement dated on or about the date hereof, Big Rivers assigned to Republic all of Big Rivers' right, title and interest in and to those Easements that were acquired by Big Rivers specifically for the Facility.

5. Pursuant to Section 14.06(iii) of the APA, Big Rivers agreed to provide Republic, upon a Sell Back, rights in those Easements previously-owned by Big Rivers for electric transmission lines other than the Facilities, which are identified on Exhibit B, attached hereto and incorporated herein (the "Licensed Easements").

6. In this License, the parties desire to provide for the use by Republic of certain of those rights in the Licensed Easements for the period stated herein.

7. The real property that is the subject of this License is the area covered by the Licensed Easements that also lies within the transmission right-of-way described in Exhibit C, attached hereto and incorporated herein (the "Licensed Easement Area").

SUBSTANTIVE PROVISIONS

NOW, THEREFORE, for a valuable consideration, including, but not limited to, the fulfillment by Big Rivers of its obligations under Section 14.06(iii) of the APA and the obligations of Republic to Big Rivers under the APA, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1. **Definitions.** Capitalized terms used in this License (including the Recitals) and not otherwise defined herein shall have the meanings set forth in the APA. The rules of interpretation set forth in Section 1.02 of the APA shall apply to this License, provided, however, that any reference in this License to sections, paragraphs and clauses are to sections, paragraphs and clauses in this License unless otherwise indicated.

2. **Grant of License.** Big Rivers grants to Republic a license to exercise the following rights within and appurtenant to the Licensed Easement Area, to the extent that Big Rivers possesses those rights by law or pursuant to the terms of the relevant Licensed Easement, for and during the "License Term," as defined herein, subject to any limitations imposed by the terms of each of such Licensed Easement and the law of the Commonwealth of Kentucky:

- a. The right to go on the Licensed Easement Area for the purpose of surveying, inspecting, testing, constructing, reconstructing, owning, maintaining, replacing, removing, repairing, and operating facilities for the transmission of electric energy, as well as facilities for the transmission of information by fiber optic cables, including, with respect to the Licensed Easement Area, all necessary wires, guys, anchors, and other accessories, appurtenances, or fixtures desirable in connection with the

transmission of electric energy or information by fiber optic cables across the Licensed Easement Area.

- b. The right to go on the Licensed Easement Area for the purpose of cutting, removing, trimming, and relocating any obstructions such as shrubbery, fences, trees, buildings, or other structures located within such Licensed Easement Area.
- c. The right to go outside the Licensed Easement Area to cut, remove, or trim any trees or other vegetation, which if they fell would endanger the installed electric facilities or create a threat of a service interruption.
- d. The right to keep the Licensed Easement Area clear of obstructions by the use of any reasonable means.
- e. The right of ingress and egress across the properties described in the Licensed Easements where reasonably necessary to facilitate performance of the rights herein granted, except that ingress and egress shall be along then existing suitable public roads and, if none, then existing suitable farm roads, and if none, then where reasonably practicable subject to reimbursement to the landowner for damages caused by Republic in connection with the exercise of such rights.

3. **License Term.** The term of this License and the period during which Republic shall be entitled to exercise the rights granted by Big Rivers under this License shall commence on the date of this License, and end only upon the abandonment by Republic, its successors or assigns, of the Licensed Easement Area for use for the purposes contemplated in this License.

4. **Indemnification.** Under the terms of each of the Licensed Easements, Big Rivers remains responsible to the grantor thereof with respect to various matters, as more particularly described in each of the underlying Licensed Easements. In connection with its exercise of the License herein granted, Republic

agrees to indemnify and save harmless Big Rivers, its officers, directors, employees, and representatives from any responsibility and liability for any and all third-party claims, demands, losses, legal actions for person injuries, including death, and property damage ("Claims") relating to (1) any acts or omissions by Republic, its respective employees, agents, representatives, contractors, or subcontractors, pursuant to the rights herein transferred; or (2) any failure of Republic, its respective employees, agents, representatives, contractors, or subcontractors, to comply with any laws, regulations, or ordinances, relative to the activities of Republic, its respective employees, agents, representatives, contractors, or subcontractors, pursuant to the rights herein granted or relative to any fees, fines, penalties, or assessments levied against Big Rivers by reason of any activities undertaken by Republic, its respective employees, agents, representatives, contractors, or subcontractors pursuant to the rights herein granted. The obligations of Republic in this paragraph shall survive termination of this License.

5. Damages. Republic further agrees to pay all damages to buildings, growing crops, fences, and livestock caused by the construction, operation, maintenance, reconstruction, or removal of the Kentucky Portion of the Facilities contained within the Licensed Easement Area and to compensate for or restore any damage to lands in the Licensed Easement Area resulting from its activities on such lands or resulting from the actions of its respective employees, agents, representatives, contractors, or subcontractors on such lands. The obligations of Republic in this paragraph shall survive termination of this License.

6. **Representations by Republic.** Republic represents and warrants: (1) that it is familiar with the terms and conditions contained in the Licensed Easements; (2) that it will comply with the terms and conditions contained in each of the Licensed Easements; and (3) that it is familiar with the special provisions associated with certain of the Licensed Easements concerning advance notification to the grantor prior to entry and will comply with such notification requirements.

7. **Insurance Certificate.** Republic will cause Big Rivers to be identified as an additional insured under Republic's commercial general liability insurance policy in respect of any acts of Republic pursuant to this License. Republic shall deliver to Big Rivers a certificate of insurance evidencing the foregoing prior to entering upon the Licensed Easement Area.

8. **Governing Law.** This License shall be governed by and construed in accordance with and governed by the laws of the Commonwealth of Kentucky.

9. **Further Assurances.** Each party covenants and agrees promptly to execute, deliver, file or record, or cause to be executed, delivered, filed or recorded such other agreements, instruments, certificates and other documents, and to do any and perform such other and further actions, as the other party may reasonably request or as may be otherwise be necessary or proper to effectuate the rights and obligations contemplated in this License in accordance with its terms, or otherwise to effect the purposes of this License.

10. **Modification and Waivers.** This License may be modified, amended or changed only by an instrument in writing signed by both parties hereto. No waiver

of the performance of any term or provision hereof shall be valid or effective for any purpose unless such waiver shall be in writing and signed by the party against whom enforcement of the same is sought.

11. Notices. All notices, requests, demands and other communications which are required or permitted hereunder shall be in writing and shall be deemed to have been duly given when delivered personally or when mailed first class, postage prepaid, addressed as follows:

If to Republic, to:

Republic Transmission, LLC
c/o LS Power Development, LLC
16150 Main Circle Drive, Suite 310
Chesterfield, MO 63017
Attn: Project Manager

With a copy to:

Republic Transmission, LLC
c/o LS Power Development, LLC
16150 Main Circle Drive, Suite 310
Chesterfield, MO 63017
Attn: Managing Counsel

If to Big Rivers, to:

Big Rivers Electric Corporation
201 Third Street
Henderson, KY 42420
Attention: President and CEO

With a copy to:

Big Rivers Electric Corporation
201 Third Street
Henderson, KY 42420
Attention: Vice President System Operations

12. **Counterparts.** This License may be executed in several counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

13. **Severability.** Any term or provision of this License which is invalid or unenforceable in any jurisdiction shall, as to such jurisdiction, be ineffective to the extent of such invalidity or unenforceability without rendering invalid or unenforceable the remaining terms or provisions of this License or affecting the validity or enforceability of any of the terms or provisions of this License in any other jurisdiction.

14. **Successors and Assigns.** This License shall be binding upon and inure to the benefit of the parties named herein and their respective successors and permitted assigns.

IN TESTIMONY WHEREOF, witness the signature of the parties effective as of the day and date first herein written.

BIG RIVERS ELECTRIC CORPORATION

By: _____
Name: _____
Title: _____

REPUBLIC TRANSMISSION, LLC

By: _____
Name: _____
Title: _____

EXHIBIT A

1. Easement dated March 3, 1966, to Big Rivers Rural Electric Cooperative Corporation from John F. Allard, Sr. and Ruth H. Allard, his wife, recorded in Deed Book 71, page 484, Office of the Hancock County Court Clerk.
2. Easement dated March 4, 1967, to Big Rivers Rural Electric Cooperative Corporation from Lloyd C. Taylor and Dorothy Taylor, his wife, recorded in Deed Book 71, page 488, Office of the Hancock County Court Clerk.
3. Easement dated March 9, 1967, to Big Rivers Rural Electric Cooperative Corporation from Joe Taylor and Catherine Taylor, his wife, recorded in Deed Book 71, page 502, Office of the Hancock County Court Clerk.
4. Easement dated June 2, 1967, to Big Rivers Rural Electric Cooperative Corporation from William Joe Emmick and Frances L. Emmick, his wife, recorded in Deed Book 72, page 142, Office of the Hancock County Court Clerk.
5. Easement dated the 1st day of November, 2016, to Big Rivers Electric Corporation from C. Waitman Taylor and Patricia W. Taylor, his wife, recorded in Deed Book 157, page 670, Office of the Hancock County Court Clerk.
6. Easement dated February 13, 2017, to Big Rivers Electric Corporation from William S. Emmick and Phyllis P. Emmick, his wife, recorded in Deed Book 158, page 523, Office of the Hancock County Court Clerk.
7. Easement dated July 20, 2017, to Big Rivers Electric Corporation from William F. Allard, DMD, recorded in Deed Book 159, page 679, Office of the Hancock County Court Clerk.
8. Easement dated July 20, 2017, to Big Rivers Electric Corporation from William F. Allard, DMD, recorded in Deed Book 159, page 682, Office of the Hancock County Court Clerk.

9. Easement dated August 25, 2017, to Big Rivers Electric Corporation from William S. Emmick and Mary I. Emmick, his wife, and Phyllis P. Emmick, a widow, recorded in Deed Book 160, page 281, Office of the Hancock County Court Clerk.
10. Easement dated September 27, 2017, to Big Rivers Electric Corporation from Shelby S. Emmick and Heather H. Emmick, his wife, and Jesse Emmick and Deana Emmick, his wife, recorded in Deed Book 160, page 278, Office of the Hancock County Court Clerk.
11. Easement dated _____, 2017, to Big Rivers Electric Corporation from _____, recorded in Deed Book _____, page _____, Office of the Hancock County Court Clerk.

EXHIBIT B

1. Easement dated March 3, 1966, to Big Rivers Rural Electric Cooperative Corporation from John F. Allard, Sr. and Ruth H. Allard, his wife, recorded in Deed Book 71, page 484, Office of the Hancock County Court Clerk.
2. Easement dated March 4, 1967, to Big Rivers Rural Electric Cooperative Corporation from Lloyd C. Taylor and Dorothy Taylor, his wife, recorded in Deed Book 71, page 488, Office of the Hancock County Court Clerk.
3. Easement dated March 9, 1967, to Big Rivers Rural Electric Cooperative Corporation from Joe Taylor and Catherine Taylor, his wife, recorded in Deed Book 71, page 502, Office of the Hancock County Court Clerk.
4. Easement dated June 2, 1967, to Big Rivers Rural Electric Cooperative Corporation from William Joe Emmick and Frances L. Emmick, his wife, recorded in Deed Book 72, page 142, Office of the Hancock County Court Clerk.

EXHIBIT C

Description of License Area / Licensed Easement Area

The locations described below are to be read in conjunction with the maps on the immediately following pages.

1. Parcel 19-14 / 147.14 acres Current Owner: C. W. Taylor Jr.

Total Width of Republic R/W 150 feet

Centerline to edge of Republic R/W 75 feet

2. Parcel 19-13 / 70 acres Current Owner: William S. Emmick

Total Width of Republic R/W 225 feet

Centerline to edge of Republic R/W 112.5 feet

3. Parcel 18-13 / 293 acres Current Owner: William F. Allard

Total Width of Republic R/W 210 feet

Centerline 105 feet for a distance of 1,724 feet to angle structure.

Total Width of Republic R/W 175 from angle structure

Centerline to edge of Republic R/W 87.5 feet

Parcel 18-15 / 118.59 acres Current Owner: William F. Allard

Total Width of Republic R/W 175 feet

Centerline to edge of Republic R/W 87.5 feet

4. Parcel 18-16 / 30 acres Current Owner: Jesse & Shelby Emmick

Total Width of Republic R/W 175 feet

Centerline to edge of Republic R/W 87.5 feet

5. Parcel 18-08 Current Owner: William S. Emmick & Mary Emmick

Total Width of Republic R/W 175 feet

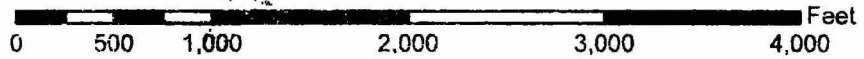
Centerline to edge of Republic R/W 87.5 feet

6. Parcel 18-07 Current Owner: Pottinger-Amato Irrevocable Trust

Total Width of Republic R/W 175 feet

Centerline to edge of Republic R/W 87.5 feet

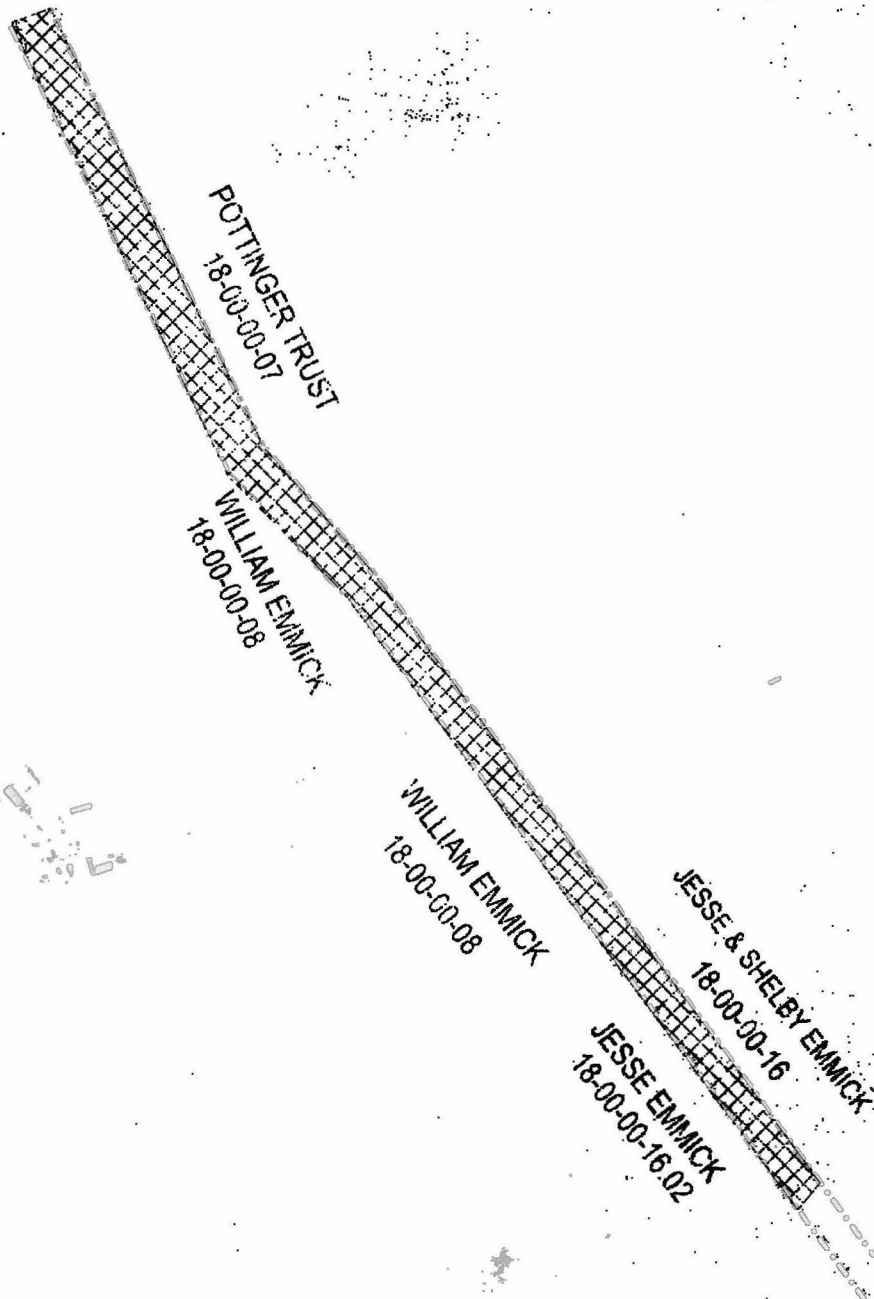
BIG RIVERS COLEMAN EHV SUBSTATION TO RIVER CROSSING PROPOSED 345 kV TRANSMISSION LINE ROUTE



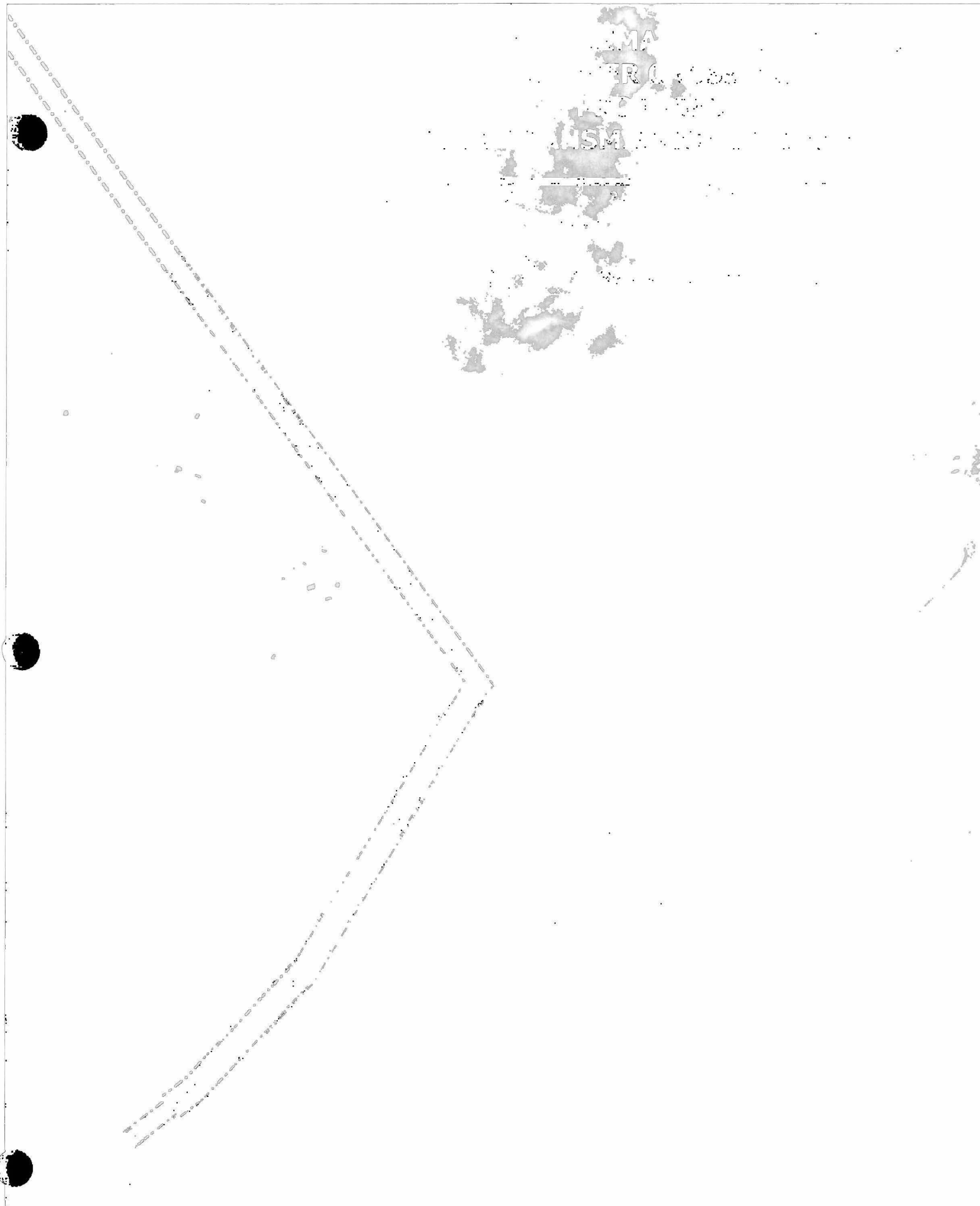
LEGEND



Republic Transmission Right-of-Way



Sources: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community. Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

BIG RIVERS ELECTRIC CORPORATION
REFERENCES FOR COMPLIANCE WITH REGULATORY REQUIREMENTS
Case No. 2018-00004

<u>Regulation</u>	<u>Filing Requirement</u>	<u>Location in Application</u>
807 KAR 5:120 Section 1	Notice of intent to file application.	Big Rivers filed its notice of intent on January 3, 2018.
807 KAR 5:120 Section 2(1)	All documents and information required by: (a) 807 KAR 5:001 Section 14, except the applicant shall file an original and six copies of the application; and (b) 807 KAR 5:001 Section 15(2)(a) through (c) and (e) through (f).	See below; original and six copies of Application filed
807 KAR 5:120 Section 2(2)	Three (3) maps of suitable scale, but no less than one (1) inch equals 1,000 feet for the project proposed.	Filed with the Application
807 KAR 5:120 Section 2(2)(b)	Sketches of proposed typical transmission line support structures shall also be provided.	Exhibit E
807 KAR 5:120 Section 2(2)(c)	A separate map of the same scale shall show any alternative routes that were considered.	Filed with the Application
807 KAR 5:120 Section 2(3)	A verified statement that each property owner properly notified.	Application ¶ 16
807 KAR 5:120 Section 2(4)	A sample copy of the property owner notice.	Exhibit F
807 KAR 5:120 Section 2(4)	A list of the names and addresses of the property owners to whom the notice has been sent.	Exhibit G
807 KAR 5:120 Section 2(5)	A statement that a notice was properly published.	Application ¶ 17
807 KAR 5:120 Section 2(6)	A copy of the newspaper notice.	Exhibit H
807 KAR 5:120 Section 2(7)	A statement as to whether the project involves sufficient capital outlay to materially affect the existing financial condition of the utility involved.	Application ¶ 14
807 KAR 5:001 Section 14(1)	The full name, mailing address, and electronic mail address of the applicant,	Application Introductory Paragraph and ¶ 1
807 KAR 5:001 Section 14(1)	Fully the facts on which the application is based, with a request for the order, authorization, permission, or certificate desired and a reference to the particular law requiring or providing for the information.	Application ¶¶ 4-6, 10, 18-19
807 KAR 5:001 Section 14(2)	If a corporation, the applicant shall identify in the application the state in which it is incorporated and the date of its incorporation, attest that it is currently in good standing in the state in which it is incorporated.	Application ¶ 3
807 KAR 5:001 Section 15(2)(a)	The facts relied upon to show that the proposed construction or extension is or will be required by public convenience or necessity.	Application ¶¶ 4-6, 10; Exhibits C, I
807 KAR 5:001 Section 15(2)(b)	Copies of franchises or permits, if any, from the proper public authority for the proposed construction or extension, if not previously filed with the commission.	See Application ¶ 15

BIG RIVERS ELECTRIC CORPORATION
REFERENCES FOR COMPLIANCE WITH REGULATORY REQUIREMENTS
Case No. 2018-00004

<u>Regulation</u>	<u>Filing Requirement</u>	<u>Location in Application</u>
807 KAR 5:001 Section 15(2)(c)	A full description of the proposed location, route, or routes of the proposed construction or extension, including a description of the manner of the construction and the names of all public utilities, corporations, or persons with whom the proposed construction or extension is likely to compete.	Application ¶¶ 4, 8, 13, 16; <i>see also</i> the maps of the proposed route filed with the Application
807 KAR 5:001 Section 15(2)(e)	The manner in detail in which the applicant proposes to finance the proposed construction or extension.	Application ¶ 14
807 KAR 5:001 Section 15(2)(f)	An estimated annual cost of operation after the proposed facilities are placed into service.	Application ¶ 14

MTEP15 Executive Summary

MTEP15 At-a-Glance

Each year, the Midcontinent Independent System Operator (MISO) develops the MISO Transmission Expansion Plan (MTEP). The MTEP is a comprehensive process that involves analyzing the myriad regulatory policy and reliability issues impacting our energy sector and developing a portfolio of transmission projects designed to maintain a reliable electric grid and deliver the lowest-cost energy to customers in the MISO region.

MTEP15, the 12th edition of this publication, is the culmination of more than 18 months of collaboration on a diverse geographic and regulatory landscape covering 900,000 square miles. The projects in MTEP15 support both reliability needs and congestion relief of the transmission system.

In MTEP15, MISO staff recommends the MISO Board of Directors approve \$2.75 billion of new transmission expansion projects through 2024. Of particular note is the \$1.4 billion in new project investment recommendations just within the 24 months since integration of MISO South members. \$1 billion of this investment in MTEP15 represents 78 new projects.

The MTEP process seeks to identify projects that:

- Ensure the reliability of the transmission system
- Provide economic benefits, such as increased market efficiency
- Facilitate public policy objectives, such as meeting Renewable Portfolio Standards
- Address other issues or goals identified through the stakeholder process

The projects in MTEP15 achieve these goals in a way that ultimately benefits consumers across the region by ensuring a reliable grid that provides power where it is needed, when it is needed.


As the MISO region experiences changes and growth, MTEP also looks at specific issues to ensure the region is well-positioned to meet future demand and regulatory mandates. Notable work efforts performed during this planning cycle includes:

- Increased efforts to evaluate transmission needs and identify solutions through Market Congestion Planning studies (Chapter 5.3)
- Voltage and Local Reliability Study (Chapter 7.1)
- Transparency around Resource Adequacy in the MISO Region (Book 2)
- Greater interregional study emphasis along MISO's seams (Chapter 8)
- Design and implementation of Transmission Developer Qualification and Selection (Chapter 2.6)
- MISO Clean Power Plan Analysis (Chapter 7.4)

MTEP15 Highlights:

- **345 new projects** for inclusion in Appendix A provide an incremental **\$2.75 billion** in transmission infrastructure investment (Chapter 2.1)
- **\$13 billion in projects** constructed in the MISO region since 2003 (Chapter 3.2)
- **First** competitively bid Market Efficiency Project (Chapter 5.3)
- Voltage and Reliability Study yields projects (Chapter 7.1)
- **Projection of sufficient, albeit declining**, capacity to meet MISO Region requirement through 2020 (Chapter 6.1)
- Improved **Interregional Planning** pursuant to Order 1000 (Chapters 8.1, 8.2)
- The Multi-Value Project (MVP) Limited Review **confirms MVP Portfolio benefits** (Chapter 7.5)

In MTEP15, the 12th edition of this publication, MISO staff recommends \$2.75 billion of new transmission expansion projects for Board of Director approval



MTEP15 is organized into four books and a series of detailed appendices.

- Book 1 summarizes this cycle's projects and the analyses behind them
- Book 2 describes annual and targeted analyses for Resource Adequacy
- Book 3 presents policy studies. It summarizes regional and interregional studies
- Book 4 presents additional regional energy information
- Appendices A through F provide detailed assumptions, results, project information and stakeholder feedback.

Book 1: Transmission Studies

Chapter 2 – MTEP Overview

The 345 MTEP15 new Appendix A projects represent an incremental \$2.75 billion in transmission infrastructure investment and fall into the following four categories:

- **90 Baseline Reliability Projects (BRP) totaling \$1.2 billion** – BRPs are required to meet North American Electric Reliability Corp. (NERC) reliability standards
- **12 Generator Interconnection Projects (GIP) totaling \$73.6 million** – GIPs are required to reliably connect new generation to the transmission grid
- **242 Other Projects totaling \$1.38 billion** - Other projects include a wide range of projects, such as those that support lower-voltage transmission systems and/or provide economic benefit, but do not meet the threshold to qualify as Market Efficiency Projects
- **1 Market Efficiency Project totaling \$67.4 million**

The MTEP15 cycle contains four cost-shared projects, three GIPs network upgrades and one market efficiency project.

The new projects recommended for approval in MTEP15 Appendix A are broken down by region and project type (Table 1.1-1). New projects in MTEP15 Appendix A contain two cost-shared Generator Interconnection Projects. Cost sharing information is provided in Chapter 2.2.

Region	Baseline Reliability Project (BaseRel)	Generator Interconnection Project (GIP)	Market Efficiency Project (MEP)	Other	Total
Central	\$89,481,000	\$0	\$67,443,000	\$194,551,000	\$351,475,000
East	\$86,935,000	\$1,330,000	\$0	\$406,235,000	\$494,500,000
West	\$385,206,000	\$72,318,000	\$0	\$465,125,000	\$922,649,000
South	\$665,593,000	\$0	\$0	\$314,611,000	\$980,204,000
Grand Total	\$1,227,215,000	\$73,648,000	\$67,443,000	\$1,380,522,000	\$2,748,828,000

Table 1.1-1: MTEP15 New Appendix A projects by region and type

The active project investment for Appendix A, with the addition of MTEP15 new projects, increases to 863 projects totaling approximately \$12.9 billion (Table 1.1-2) since MTEP03.

MISO Region	Number of Appendix A Projects	Appendix A Estimated Cost
Central	170	\$3,095,150,000
East	196	\$1,603,368,000
West	368	\$6,931,160,000
South	129	\$1,228,188,000
Total	863	\$12,857,866,000

Table 1.1-2: Cumulative Active MTEP Projects

Chapter 3 – MTEP History

Since the first MTEP report in 2003, \$10.5 billion in projects have been constructed in the MISO region. MISO expects an additional \$3.2 billion of MTEP projects to go into service in 2015. Not including withdrawn projects, there are currently \$20.56 billion of approved and pending projects in various stages of design, construction, or already in-service through the MTEP15 cycle (Figure 1.1-1). MISO surveys all Transmission Owners on a quarterly basis to determine the progress of each project.

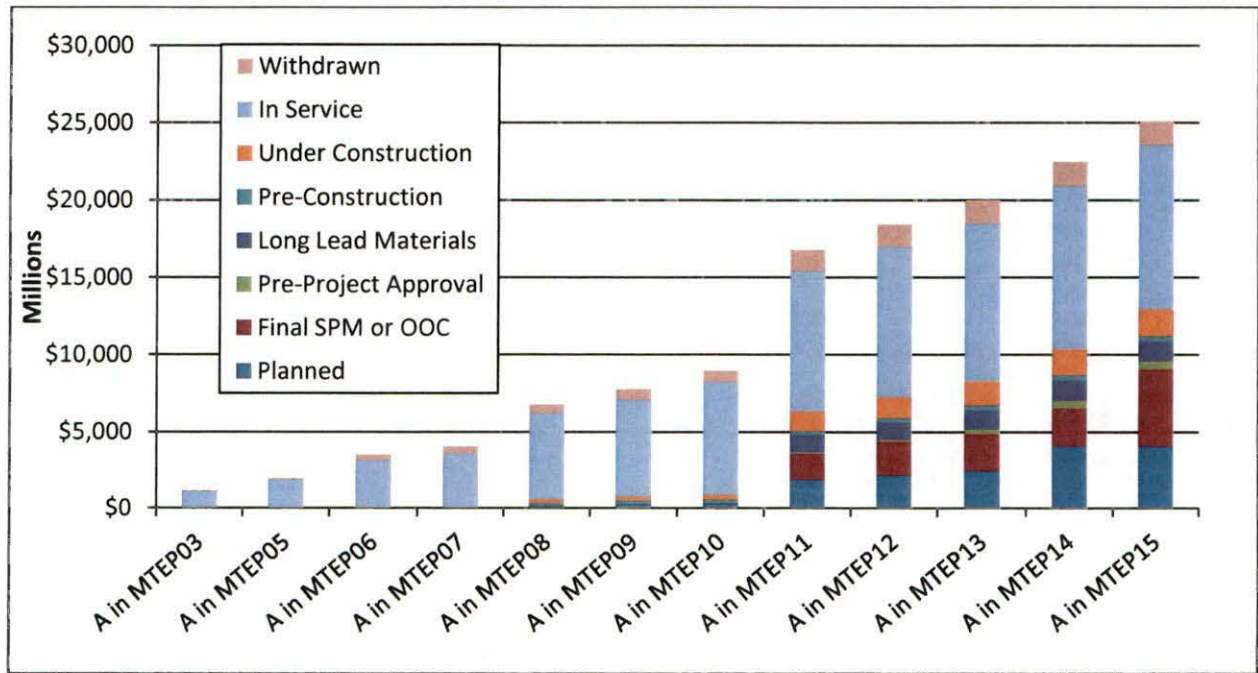


Figure 1.1-1: Cumulative approved investment by facility status

Chapter 4 – Reliability Analysis

Maintaining system reliability is the primary driver of most MTEP projects. In support of this goal, MISO conducts Baseline Reliability studies to ensure the transmission system is in compliance with two sets of standards:

- Applicable NERC reliability standards
- Reliability standards adopted by Regional Entities (RE) applicable within the transmission provider region

These mandatory standards define acceptable power flows, voltage levels and system stability limits. MISO is required, as a registered Planning Authority/Planning Coordinator, to identify a solution for each identified violation that could otherwise lead to overloads, equipment failures or blackouts.

MISO's studies include simulations to assess transmission reliability in the near and long term, using analytical models representing various system conditions two, five and 10 years out. MISO planners study reliability from a thermal perspective to ensure the transmission facilities do not overheat; and from voltage and dynamic perspectives to ensure the frequency remains stable. The results of these analyses, detailed in Appendix D, create a comprehensive assessment of long-term system reliability, as well as evidence for NERC compliance

Chapter 5 – Economic Analysis

In addition to identifying projects that maintain or enhance system reliability, MISO looks for economically justified projects by using the Value-Based Planning Process to identify solutions that minimize total system costs (Figure 1.1-2).

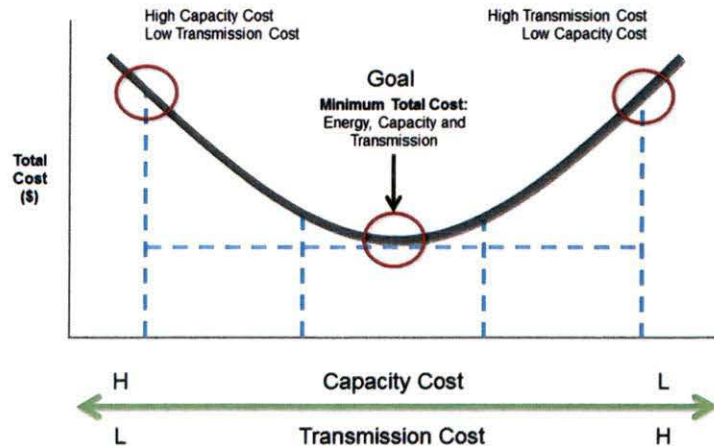


Figure 1.1-2: Capacity versus Transmission costs

The Market Congestion Planning Study (MCPS) identifies transmission needs and solutions to promote market efficiency from a regional view. By identifying and addressing both near-term transmission issues and long-term economic opportunities, this study seeks to develop transmission plans that provide customers access to the lowest-cost electricity.

Possible solutions to congestion were developed by both MISO staff and stakeholders. The solutions were tested for their robustness to meet system needs under a variety of expected scenarios, embodied by the MTEP15 futures.

Similar to the previous planning cycle, parallel economic planning efforts have been undertaken for the MISO North/Central and South regions to better engage the various stakeholders across the entire MISO footprint in the MTEP15.

Market Congestion Planning Study (MCPS) North/Central

The 2015 MCPS North/Central built on the progress made during the MTEP14 cycle, which identified several congested flowgates and evaluated the appropriate transmission solutions. By building on the MCPS 2014 analysis, the 2015 cycle focused on four specific areas that showed the highest congestion: Southern Indiana, Southern Illinois, Iowa/Minnesota and, Northern Indiana. Similar to the previous study cycle, the area with the greatest need, and therefore highest potential benefit, was on the border of Indiana and Kentucky.

Several solutions were designed in a collaborative effort between MISO and stakeholders. The solutions were tested for their robustness to address system needs under a variety of scenarios, embodied by the MTEP15 futures. Ultimately, working in concert with PJM and stakeholders, Duff - Rockport - Coleman 345 kV project, which offers both regional and interregional benefit to MISO and PJM, was found to offer the best value. This project completely mitigates the congestion on the MISO system around the Newtonville and Coleman areas and strengthens the 345 kV backbone in the region. In addition, the project fully addresses long-standing reliability issues around PJM's Rockport station and obviates the need for the Rockport Special Protect Scheme and Operation Guide that protects the stability of the grid.

The project consists of two portions:

- MISO portion being Duff-Coleman 345kV
- PJM portion being the tie-in from Rockport to Duff-Coleman 345kV line.

MISO staff recommends that the MISO portion – Duff - Coleman 345 kV project to be approved as a MISO Market Efficiency Project (MEP).

Market Congestion Planning Study (MCPS) South

The 2015 MCPS South built on the progress made during the VLR Planning Study and the MTEP15 MCPS South, which identified several congested flowgates and evaluated the applicable transmission solutions. By building on the previous analysis, the 2015 cycle focused on four specific areas of MISO South: Amite South/DSG, WOTAB/Western, Local Resource Zone (LRZ) 8 (Arkansas), and Remainder of LRZ9. Similar to previous studies the areas with the greatest need, and therefore the highest potential, were in the Amite South/DSG and WOTAB/Western load pockets.

Several solutions were developed by both MISO staff and stakeholders. The solutions were tested for their robustness to meet system needs under a variety of expected scenarios, embodied by the MTEP15 futures.

In the 2015 MCPS South, a total of 82 unique transmission solution ideas were proposed and studied. MISO evaluated these solution ideas and formulated 11 project candidates for further robustness testing, in conjunction with south region stakeholders. Of the 11 project candidates, two were selected by MISO, pending stakeholder feedback, as potential best-fit solutions. Both projects produced a weighted present value (PV) benefit-to-cost ratio greater than 1.25, but due to voltage levels do not meet Market Efficiency Project criteria.

- East Texas economic project with an estimated cost of \$122.5 million in 2015 dollars
 - A new 230 kV transmission line from Lewis Creek to a new 345/230 kV substation (NSUB2) by cutting into the existing Grimes to Crocket 345 kV line.
 - Note that MISO agrees Grimes alternative provides similar reliability and economic benefits
 - Rebuilding the existing Newton Bulk – Leach 115 kV line
- Rebuilding the existing Mabelvale – Bryant – Bryant South 115 kV line with an estimated cost of \$6.1 million in 2015 dollars.

MISO staff recommends that two projects may be approved as Other economic projects.

Book 2: Resource Adequacy

In conjunction with transmission studies, MISO assesses the adequacy of capacity for the current planning year and future planning horizons.

MISO's ongoing goal is to support the achievement of resource adequacy: to assess if there is enough capacity available to meet the needs of all consumers in the MISO footprint during peak times at just and reasonable rates. This support recognizes that the responsibility for resource adequacy does not lie with MISO, but rather rests with Load Serving Entities and the states that oversee them (as applicable by jurisdiction). Additional resource adequacy goals include maintaining confidence in the attainability of resource adequacy in all time horizons, building confidence in MISO's resource adequacy assessments and providing sufficient transparency and market mechanisms to mitigate potential shortfalls.

To date, the Resource Adequacy Requirements process has been a successful tool for facilitating and demonstrating Resource Adequacy in the near term, through such tools as the Loss of Load Expectation (LOLE) analysis, the Planning Resource Auction (PRA), and the Organization of MISO States (OMS) MISO Survey. With the resource portfolio now evolving due to coal retirements and the increase in gas-fired generation, MISO is evaluating the Resource Adequacy Requirements and related resource assessment and adequacy processes to ensure they serve as a successful platform to facilitate demonstration of Resource Adequacy going forward in accordance with applicable statutes and regulations.

The MISO region has sufficient capacity for the planning year 2015-2016 and is projected to be resource adequate through 2020

Book 3: Policy Landscape Studies

MISO strives to provide meaningful analyses to help inform policy discussions and decisions amidst evolving state and federal policies, fuel prices, load patterns and transmission configurations.

Chapter 7 – Regional Studies

Voltage and Local Reliability Study

Under the MTEP14 planning cycle, MISO, in collaboration with stakeholders, performed a study of the South Region load pockets. The study was to determine whether or not there are transmission alternatives that may lower overall cost-to-load by reducing Voltage and Local Reliability (VLR) resource commitments necessary to maintain system reliability. MISO identified such transmission upgrades necessary to maintain reliability that are cost effective by providing production cost savings in excess of their cost. More specifically, MISO recommends network upgrades with an estimated cost of \$300 million that provide production cost savings of about \$498 million on a 20-year present value basis (Figure 1.1-3). This analysis was an outcome of the study of reliability issues driven by new firm load additions, existing and planned future generation with signed interconnection agreements and confirmed generation retirements via Attachment Y process.

<p>Lake Charles Trms Project \$187 M 2018</p> <ul style="list-style-type: none"> • Sulphur Lane 500kV Switching Station • New 500/230 kV Bulk Substation • 1200MVA, 500/230 kV New Sub transformer • Sulphur Lane - New Sub New 500 kV line • Bulk Station - Carlyss 230 kV line • Carlyss –Graywood 230 kV line • Carlyss Reconfigure existing substation 	<p>MTEP15 Reliability \$113 M</p> <p>Texas \$56 M</p> <ul style="list-style-type: none"> • S. Beaumont New 3rd Trf 138/69 kV 2016 • Egypt - Panorama 138 kV Upgrade 2017 • Sabine - Port Neches 1 138 kV Upgrade 2017 • S. Beaumont- Carrol St-1 138kV Upgrade 2017 • S. Beaumont- Carrol St-2 138kV Upgrade 2017 • Sabine - Port Neches 2 138 kV Upgrade 2018 • Cleveland - Tarkington 138kV Upgrade 2018 • Cypress New 500/138kV Transformer 2020 <p>Louisiana \$57 M</p> <ul style="list-style-type: none"> • Carlyss - Boudoin 230 kV Line upgrade 2016 • Fancy Point 2nd 500-230kV Trf 2017 • Goosport Substation 138 kV Project 2017 • Bayou Verret–Capacitor Bank 2017 • Vacherie - Waterford 230kV Upgrade 2018
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*On a 20 year net present value basis

Figure 1.1-3: List of cost-effective Reliability Network Upgrades recommended in MTEP15

The VLR study additionally looked at mitigating all transmission issues resulting from potential shutdown of approximately 7,200 MWs of VLR units. Transmission costs for mitigating all such issues are estimated to be more than \$1.8 billion. When compared against the 2014 year cumulative make whole payments for these VLR units of approximately \$70 million, it was concluded that the network upgrades are not cost effective.

The VLR study further investigated potential scenarios involving the shutdown of subsets of VLR units rather than the entirety of the load pocket VLR units. This analysis assumed no new VLR commitments would occur as a result of eliminating dependence on select existing VLR commitments. Various scenarios studied resulted in different transmission issues. Transmission costs for mitigating these issues in the various scenarios are estimated to be in the range of \$23.5 million to \$1.8 billion. Once again, it was concluded that these network upgrades are not cost effective compared to the avoided costs associated with mitigating the VLR commitments.

During the study process, MISO received an overwhelming stakeholder feedback that production cost savings was the most appropriate metric to evaluate benefits of eliminating VLR costs, which aligns with the benefit metric of MISO Market Congestion Planning Study (MCPS). Further, recognizing the uncertainties in the region on potential size and locations of future generation additions, retirements and new load growth, stakeholders provided extensive feedback that led to formulation of four futures. These are:

- Business as Usual (known out-year load growth, fuel prices, generation additions and retirements)
- South Industrial Renaissance (modeling increase in projected load growth)
- Generation Shift (modeling future age related generation retirements despite lack of firm notifications)
- Public Policy (modeling future RPS goals and standards in addition to age related generation retirements)

Given the breadth of uncertainties successfully captured within the futures used in economic studies, the analysis of understanding the benefits of eliminating or reducing VLR generation commitments was appropriately carried into the MTEP15 MCPS. Please refer to MTEP report Chapter 5.3, for further information on the MCPS.

Clean Power Plan Study

The U.S. Environmental Protection Agency (EPA) proposed a rule on June 2, 2014, designed to reduce carbon dioxide (CO₂) emissions from existing fossil-fired generation units. MISO developed a three-phase study to analyze the impacts of the draft rule and provided comments to the EPA based on this analysis, which indicated reliability risks, increased costs from states choosing separate solutions and risks from differing rate and mass compliance approaches. The EPA's revised final rule, issued on August 3, 2015, incorporated many stakeholder suggestions and comments as well as mitigated several risks identified by MISO and other interested parties. MISO's three-phase study approach also increased understanding of many of the potential impacts of the final rule and acted as a dry run for how the final rule would be analyzed. Additionally, it provided information to impacted stakeholders to help formulate cost-effective compliance approaches.

Key takeaways from the study results include:

- Regional compliance produces \$4 billion to \$11 billion in 20-year net present value production cost savings versus state approaches, while sub-regional compliance respectively produces \$2.5 billion to \$11.5 billion in savings. These figures do not include the cost of CO₂ allowances.
- Regardless of siting assumptions, electric and gas infrastructure costs for interconnection of new or converted gas units are comparable
- Clean Power Plan constraints significantly increase congestion regardless of compliance approach, and transmission congestion is higher under a state approach than a regional approach
- Multi-billion dollar transmission build-out would be necessary for compliance in the scenarios studied, driven by the level of retirements and the location and type of replacement capacity
- Transmission expansion would be needed to mitigate reliability impacts of compliance, largely driven by coal retirements
- Generation dispatch would change dramatically from current practices, requiring additional study to fully understand the ramifications

While the results offer valuable insights into how the energy landscape may change under compliance, the process of draft rule analysis also yielded valuable lessons that will shape MISO's study of the final rule. In particular, it highlighted the value of a phased approach to analysis, which produced useful information prior to completion of the entire study. Additional lessons learned on study process and design include:

- Stakeholder feedback throughout was essential to producing relevant outputs
- The PLEXOS model was a good fit for analysis of the Clean Power Plan, allowing for explicit modeling of constraints on CO₂ emissions, as well as state-by-state compliance
- Studying one or two compliance actions (e.g. coal retirements, renewables build-out, re-dispatch) at a time allowed for developing a better understanding of the impacts of pulling these individual compliance levers.

The draft rule analysis was a significant undertaking, based on a complex and sometimes ambiguous regulation. Though the study of the final rule will necessitate similar efforts of rule interpretation and

technical analysis, MISO is well-positioned to address these challenges. Over the course of the next year, MISO will continue to work closely with stakeholders, state regulators and neighboring ISOs to understand how this regulation will change the energy landscape and to plan for its implementation.

MTEP15 Multi-Value Project Limited Review

The MTEP15 Multi-Value Project (MVP) Limited Review provides an updated view into the projected congestion and fuel savings of the MVP Portfolio. The MTEP15 MVP Limited Review's result is on par with the review of the original business case in MTEP11.

The MTEP15 Limited Review provides evidence that the MVP criteria and methodology works as expected. The MTEP15 analysis shows that projected MISO

North/Central Region benefits provided by the MVP Portfolio are comparable to MTEP11, the analysis from which the Portfolio's business case was approved.

The review found that the MVP Portfolio shows decreased benefits compared to previous reviews. This lower level of benefits is related to the congestion and fuel savings that are largely driven by natural gas price assumptions. The results show that the Portfolio:

- Provides benefits in excess of its costs, with its benefit-to-cost ratio ranging from 1.9 to 2.8; a decrease from the 2.6 to 3.9 range calculated in MTEP14
- Creates \$8.4 to \$34.7 billion in net benefits (using MTEP14 benefits for all categories besides congestion and fuel savings) over the next 20 to 40 years, a decrease of up to 38 percent from MTEP14

The MTEP15 analysis shows that projected MISO North and Central Region benefits provided by the MVP Portfolio are comparable to MTEP11

Chapter 8 – Interregional Studies

FERC Order 1000 requires coordination with neighboring regions to identify and evaluate possible interregional transmission facilities that could address transmission needs more efficiently or cost-effectively than separate regional transmission facilities. While regional planning appears to address the majority of transmission issues, interregional planning and coordination offers the opportunity to improve the overall transmission expansion plan. MISO is committed to continued collaboration with our stakeholders and neighbors to improve the interregional planning processes.

MISO-PJM Interregional Study

MISO and PJM Interconnection, a Pennsylvania-based regional transmission organization (RTO), concluded an 18-month MISO-PJM Joint Coordinated Planning Study in 2014 that looked at multiple futures and 80-plus major project proposals. While the joint study did not produce any actionable results, it identified additional areas for coordination.

For 2015, MISO and PJM agreed to focus their joint study on FERC Order 1000 compliance, a Quick Hits study, targeted coordinated studies and continuation of the interregional process enhancement review.

Quick Hits

The Quick Hit Study analyzed 39 market-to-market flowgates with \$408 million of historical congestion between January 2013 and October 2014. The majority of the flowgates (22), accounting for \$295 million of congestion, have planned or in-service upgrades from MISO's MTEP or PJM's Regional Transmission Expansion Plan (RTEP). The remaining flowgates had either no recent congestion or no recommended

projects. The MISO-PJM Interregional Planning Stakeholder Advisory Committee (IPSAC) identified two potential Quick Hit projects for MISO and PJM to jointly evaluate.

- Beaver Channel – Sub 49 161 kV SCADA Upgrade
- Michigan City – LaPorte 138 kV Sag Remediation and CT Replacement

The two potential projects addressing historical congestion were evaluated for approval and funding. The Beaver Channel – Sub 49 flowgate SCADA upgrade was placed in service mid-year by the Transmission Owner. The current level of congestion seen in production cost models does not support incremental upgrades beyond the SCADA work, so no additional Quick Hit is recommended. MISO and PJM will continue to monitor the historical congestion on this flowgate.

The Michigan City – LaPorte Quick Hit project is not recommended at this time. Future congestion patterns in this area are uncertain due to a new 138 kV substation recently placed in service. The new station, a tap on the Michigan City – LaPorte 138 kV line, has an additional 138 kV connectivity and changes the historical congestion flows, especially on Michigan City – LaPorte, during high west-to-east transfers.

Continuing on the Quick Hits work, MISO and PJM agreed to focus on smaller, targeted study areas to address seams issues. MISO and PJM aim to complete all targeted study analyses by the end of 2015. Potential projects identified will be recommended for further study in 2016 in the appropriate MTEP or RTEP process(es).

MISO-SPP Interregional Study

The MISO-Southwest Power Pool (SPP) Coordinated System Plan (CSP) Study jointly evaluated seams transmission issues and identified transmission solutions to those issues. This study incorporated two parallel efforts:


- Economic evaluation of seams transmission issues
- Assessment of potential reliability violations

Interregional Projects Recommended for Regional Review

Based on the results of the economic assessment, MISO and SPP identified three projects for consideration as potential Interregional Projects. The following projects were evaluated in both the MISO and SPP regional planning processes:

- Elm Creek to NSUB 345 kV
- Alto Series reactor
- South Shreveport – Wallace Lake 138 kV rebuild

MISO's goal in interregional planning is to identify more cost effective and efficient projects that would not be found in traditional regional planning. Ensuring that the benefits of proposed projects outweigh the costs is a guiding principle for MISO transmission planning. After continued work with stakeholders and SPP staff, MISO determined through the regional review process that none of the proposed Interregional Projects demonstrated a clear and compelling benefit to the customers in the MISO region as an interregional project. However, the Alto-Series Reactor will continue to be evaluated within the MISO regional plan. The scope of the regional review conducted by MISO staff can be found toward the end of Chapter 8.2. The other two projects are viewed as beneficial by SPP or SPP's members and as such may proceed to their board for approval. Note that the MISO-SPP Joint Operating Agreement (JOA) stipulates that both the MISO and SPP Board of Directors must both approve an Interregional Project for the project to receive interregional cost allocation.



Although the first coordinated study did not identify any cost shared interregional projects, MISO and SPP were able to advance our joint planning processes. This first joint study between MISO and SPP is a significant milestone in the evolution of our coordination efforts. MISO remains committed to taking lessons learned from this process and continuing to improve both the planning approach and associated cost allocation methods as appropriate.

The MISO Planning Approach

A defined set of principles, established by MISO's Board of Directors, guides the organization's planning efforts. These principles, last reconfirmed April 2015¹, were created to improve and guide transmission investment in the region and to furnish strategic direction to the MISO transmission planning process.

Guiding Principles for Expansion Plans


The system expansion plans, produced through the MISO planning process, must ensure the reliable operation of the transmission system, support achievement of state and federal energy policy requirements, and enable a competitive electricity market to benefit all customers. The planning process, in conjunction with an inclusive, transparent stakeholder process, must identify and support development of transmission infrastructure that is sufficiently robust to meet local and regional reliability standards, and enable competition among wholesale capacity and energy suppliers.

In support of these goals, the MISO regional expansion planning process should meet each of the following Guiding Principles:

Guiding Principle	MTEP15 Highlight
Make the benefits of an economically efficient electricity market available to customers by identifying transmission projects which provide access to electricity at the lowest total electric system cost.	<ul style="list-style-type: none"> • Chapter 5 - Economic Analysis • Chapter 7.1 - Voltage and Local Reliability Planning
Develop a transmission plan that meets all applicable NERC and Transmission Owner planning criteria and safeguards local and regional reliability through identification of transmission projects to meet those needs.	<ul style="list-style-type: none"> • Chapter 4 - Reliability Analysis
Support state and federal energy policy requirements by planning for access to a changing resource mix.	<ul style="list-style-type: none"> • Chapter 6 - Resource Adequacy • Chapter 7.3 - Independent Load Forecasting • Chapter 7.4 - EPA Regulations
Provide an appropriate cost allocation mechanism that ensures that costs of transmission projects are allocated in a manner roughly commensurate with the projected benefits of those projects.	<ul style="list-style-type: none"> • Chapter 2.2 - Cost Sharing Summary • Chapter 2.4 - MTEP Project Types • Chapter 5.1 - Economic Analysis Introduction
Analyze system scenarios and make the results available to state and federal energy policy makers and other stakeholders to provide context and to inform choices.	<ul style="list-style-type: none"> • Chapter 5 - Economic Analysis • Chapter 7.4 - EPA Regulations
Coordinate planning processes with neighbors and work to eliminate barriers to reliable and efficient operations	<ul style="list-style-type: none"> • Chapter 8 - Interregional Studies

To support these principles, MISO's transmission planning process reflects its commitment to reliability, market efficiency, public policy and other value drivers across all planning horizons studied. A number of conditions must be met through this process to build long-term transmission that can support future

¹ These Guiding Principles were initially adopted by the Board of Directors, pursuant to the recommendation of the System Planning Committee, on August 18, 2005, and reaffirmed by the System Planning Committee in February 2007, August 2009, May 2011, March 2013, August 2014, and April 2015.



generation growth and accommodate documented energy policy mandates or laws. These conditions are intertwined with the MISO Board of Directors' planning principles and include:

- A robust business case for the plan
- Increased consensus around regional energy policies
- A regional tariff matching who benefits with who pays over time
- Cost recovery mechanisms to reduce financial risk

Conclusion

MISO is proud of its independent, transparent and inclusive planning process — and grateful for the input and support from our stakeholder community. This support is essential to creating well-vetted, cost-effective and innovative solutions to provide reliable delivered energy at the least cost to consumers. MISO welcomes feedback and comments from stakeholders, regulators and interested parties on the evolving electric transmission system. For detailed information about MISO, MTEP15, Resource Adequacy and other planning efforts, visit www.misoenergy.org.

Electric Transmission Line Route Selection

Technical Report

Line 19-J 345 kV Transmission Line
Connecting the Coleman EHV Substation
And Proposed 345 kV Indiana Transmission Line

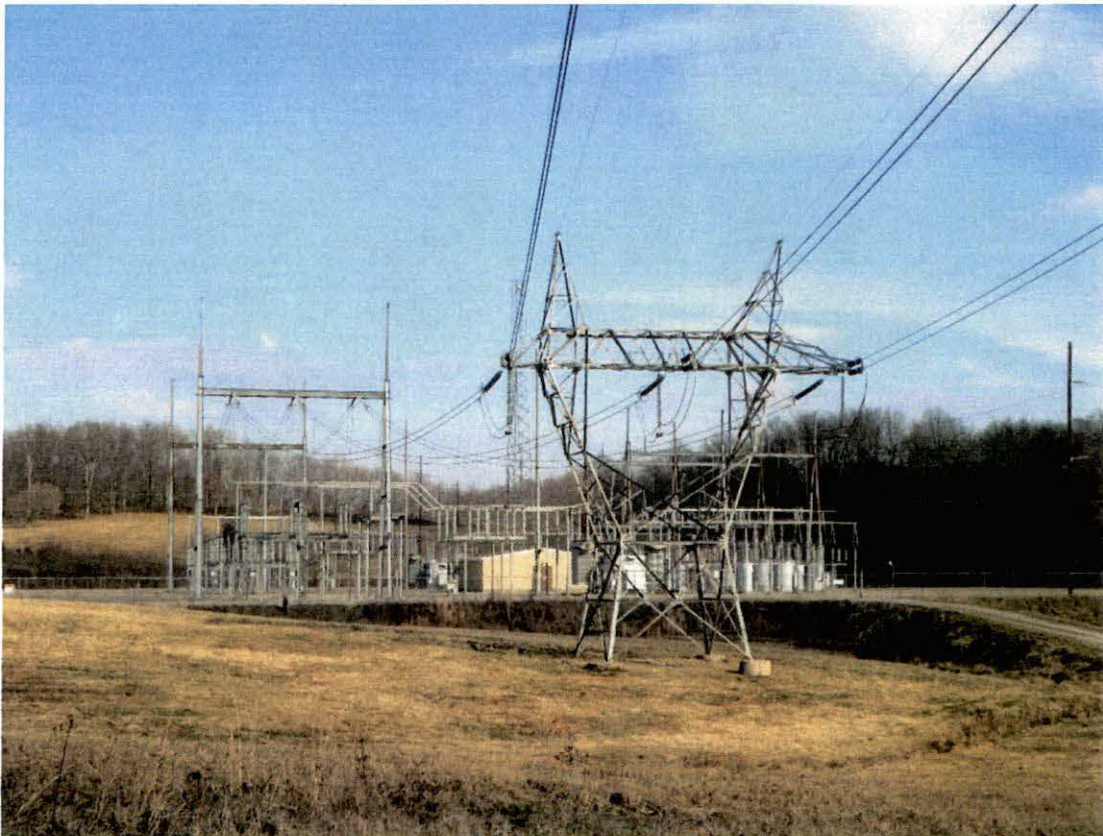


PHOTO: Coleman EHV Substation, Henderson, KY

Study by Quantum Spatial on behalf of
Big Rivers Electric Corporation
April 21, 2016

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Part I: Introduction

Big Rivers Electric Corporation (BREC) is a member-owned, not-for-profit generation and transmission cooperative headquartered in Henderson, Kentucky. BREC provides wholesale electric power and services to three distribution cooperative members across 22 counties in western Kentucky.

Incorporated in June of 1961, the member cooperatives are Jackson Purchase Energy Corporation, Kenergy Corp, and Meade County Rural Electric Cooperative Corporation. Together, they distribute retail electric power and provide other services to more than 114,000 homes, farms, businesses, and industries. BREC operates and maintains 1,295 miles of transmission line.

BREC has elected to conduct a study to determine the preferred route for a single 345 kilovolt (kV) transmission line. One end point will be the Coleman EHV Substation. The other endpoint is the River Crossing North Structure where the proposed BREC-owned line will connect to a proposed 345 kV transmission line across the Ohio River just inside the state of Indiana. BREC commissioned this Route Selection study to identify a preferred route for the proposed transmission line that considers many diverse factors, including land uses, habitats, special land use classifications (e.g., National or State Parks, Military Reservations, floodplains, and wetlands), previously-confirmed cultural resources, and threatened or endangered species.

Please note that the figures contained in this report show that the endpoint for Coleman EHV Substation was changed to be located on the northwest corner of the substation pad as opposed to the center of the pad. This change was made based on considerations for which direction the proposed transmission line would have to enter the substation from.

The first step in this methodology was the development of Macro Corridors, which define an area for more detailed study between the proposed endpoints. For this stage of the process, the best available land cover dataset, based on 30 meter (m) LandSat imagery, was used to develop the Macro Corridors. In the case of the proposed project area, the best available dataset was from 2011.

The Macro Corridors were used to develop a study area of approximately 5.37 square miles centered on the area in between the Coleman EHV Substation and the proposed connection point just inside the Indiana border. The northern and southeastern parts of the study area are mostly agricultural interspersed with a few forested areas. The southwestern part of the study area is mostly forested land with a few homes spread around the rest of the area.

Once the study area was identified, more detailed dataset layers were collected or created to generate Alternate Corridors. For the purposes of this study, the study area represents a larger land area between the end points of the project through which Alternate Corridors might be logically and practically identified. "Alternate Corridors" are defined as the most suitable areas for routing a transmission line within the study area. Alternate Corridors may vary in width depending upon the resources encountered in the study area. "Route" is a term that describes the potential centerline path of a transmission line, whereas a "corridor" is a more general area of sufficient width to contain the eventual right-of-way.

The EPRI-GTC Overhead Electric Transmission Line Siting Methodology (EPRI-GTC Methodology), described in Part III of this report, was used to produce four Alternate Corridors (Engineering Considerations, Natural, Built, and Simple Average) that represent different perspectives - or emphases - for routing transmission lines. The Engineering Considerations Corridor seeks to maximize infrastructure co-location opportunities and avoid areas in which it would be difficult to construct a new transmission line. The Built Corridor seeks to minimize impacts to human development and historical / cultural resources. The Natural Corridor emphasizes protection of natural resources and avoiding impacts to natural plant communities and animal species. Finally, the Simple Average Corridor weighs all three perspectives equally, with no emphasis on any one group of criteria.

Using the corridors developed through the methodology, BREC developed three Alternate Routes. The Alternate Routes were evaluated and ranked according to the criteria and weights developed by Kentucky stakeholders, and then a preferred route was selected. The Preferred Route and the processes used to generate it are detailed in this report.

Part II: Project Description

BREC is utilizing the EPRI-GTC Methodology to identify a Preferred Route for construction of one new 345 kV transmission line. This line is proposed to connect the Coleman EHV Substation to a proposed 345 kV transmission line just inside the Indiana Border. The project would require the construction of approximately 3.5 miles of new transmission line. The new transmission line is a MISO market efficiency project that will mitigate transmission congestion in Southern Indiana and Western Kentucky.

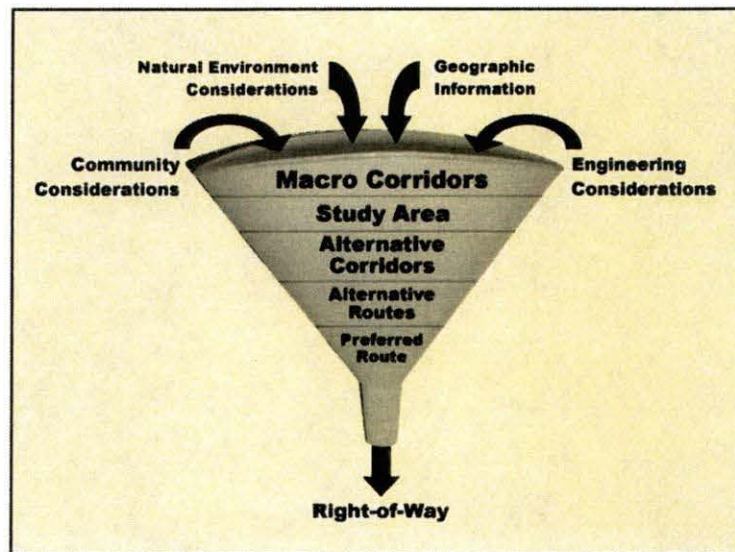
Part III: Overview of Suitability Analysis

1. EPRI-GTC Methodology

The EPRI-GTC Overhead Electric Transmission Line Siting Methodology (EPRI-GTC Methodology) is a quantitative, computer-based methodology developed by the Electric Power Research Institute (EPRI) and Georgia Transmission Corporation (GTC) for use as a tool in evaluating the suitability of individual 15 feet x 15 feet grid cells for locating new overhead transmission lines. Based on this suitability analysis, Macro Corridors are created which define the study area. Using more detailed information for the grid cells within the study area, Alternate Corridors are developed. Within these Alternate Corridors, Alternate Routes are developed and analyzed. The analysis results in the selection of a Preferred Route.

Among its advantages, the EPRI-GTC Methodology is an objective, comprehensive, and consistent approach for routing transmission lines. Employing increasingly detailed data, the Methodology allows the utility to take into consideration vast amounts of information and to quantitatively consider stakeholder input during project development. Figure 1 represents the components and process of the EPRI-GTC Methodology.

FIGURE 1: EPRI-GTC METHODOLOGY



The EPRI-GTC Methodology approaches corridor development by considering three broadly conceived perspectives, plus a fourth perspective which considers the other three equally:

- **Engineering Considerations Perspective**, which is concerned with maximizing co-location and considering physical restraints; and
- **Built Environment Perspective**, which is concerned with minimizing the impact on people, places and cultural resources;
- **Natural Environment Perspective**, which is concerned with protecting water resources, plants and animals;
- **Simple Average**, which weighs the first three perspectives as equally important.

Features are identified and evaluated in order to map the suitability of areas within a project area for locating a transmission line. These suitable areas are assembled into Alternate Corridors. These processes are discussed in detail in the following sections.

2. The Siting Model

The siting model was developed using data collected from stakeholders during workshops conducted in June, 2003, in Atlanta, GA, and in February, 2006, in Lexington, KY. Stakeholders represented a broad range of interests including environmental concerns, historic preservation, homeowners associations, agricultural groups, government agencies, and utilities. A model based on the stakeholders' preferences was developed and tested by a project team of independent experts. The resulting model (Figure 2) includes data layers, features, layer weights, and suitability values used for siting transmission lines. More information concerning these workshops is available in the EPRI-GTC Overhead Electric Transmission Line Siting Methodology (hereafter, EPRI/GTC Methodology) (published by EPRI in 2006) and in the Kentucky Transmission Line Siting Methodology (hereafter, Kentucky Model) (published by EPRI in 2007). Some minor alterations are made to the model for site-specific and data availability reasons. These alterations are discussed in the following chapters.

Based on each stakeholder's interests, each was assigned to a breakout group for one of three perspectives – Engineering Considerations, Natural Environment, or Built Environment. Guided by an independent expert from the project team, each of these groups developed a set of data layers (shown in green in Figure 2) with component features (shown in yellow), as well as areas Areas of Least Preference (shown in red). For example, one of the data layers in the Natural Environment

perspective is floodplains, which has two component features: background and 100-year floodplain.

For each feature, the stakeholders then used consensus-building techniques to develop a relative suitability value. Numbers between 1 and 9 were used to represent degrees of suitability, with 1 being most suitable for locating a transmission line and 9 being least suitable for locating a line. These values are described in the Kentucky Model (2006) as follows:

Areas that have High Suitability for an Overhead Electric Transmission Line (1, 2, 3) -

These areas do not contain known sensitive resources or physical constraints, and therefore should be considered as suitable areas for the development of corridors.

Moderate Suitability for an Overhead Electric Transmission Line (4, 5, 6) -

These areas contain resources or land uses that are moderately sensitive to disturbance or that present a moderate physical constraint to overhead electric transmission line construction and operation. Resource conflicts or physical constraints in these areas can generally be reduced or avoided using standard mitigation measures.

Low Suitability for an Overhead Electric Transmission Line (7, 8, 9) -

These areas contain resources or land uses that present a potential for significant impacts that may not be readily mitigated. Locating a transmission line in these areas would require careful siting or special design measures. While these areas can be crossed, it is not desirable to do so if other, more suitable alternatives are available.

After assigning suitability values to features, stakeholders then assigned weights to each data layer based on their opinion of its relative importance in the siting process. This was accomplished by conducting pair-wise comparisons. The result was a percentage weighting for each data layer within each perspective, with all data layers within the perspective totaling 100 percent.

The EPRI-GTC Methodology and the Kentucky Model recognize that it can be difficult to locate overhead transmission lines on or around some features because they may involve physical constraints or permitting delays. Such areas are termed "Areas of Least Preference" because the model prefers to avoid entering them, if possible. Features that constitute areas of least preference were determined by the stakeholder groups and are listed in red in Figure 2. One of the first steps in implementing the EPRI-GTC Methodology is identifying areas of least preference within the study area where, if possible, the Methodology would avoid locating facilities.

FIGURE 2: KENTUCKY MODEL

Kentucky Transmission Line Siting Model					
Co-location / Engineering		Natural Environment		Built Environment	
Linear Infrastructure	86.2%	Floodplain	4.6%	Proximity to Buildings	16.8%
Parallel Existing Transmission Lines	1	Background	1	Background	1
Rebuild Existing Transmission Lines (good)	2.2	100 Year Floodplain	9	900-1200	3.4
Background	4.4	Streams/Wetlands	29.2%	600-900	5.7
Parallel Interstates ROW	4.7	Background	1	300-600	8
Parallel Roads ROW	5.4	Streams < 5cfs+ Regulatory Buffer	6.2	0-300	9
Parallel Pipelines	5.6	Rivers/Streams > 5cfs+ Regulatory Buffer	7.1	Building Density	8.4%
Future DOT Plans	5.6	Wetlands + 30' Buffer	8.7	0 - 0.05 Buildings/Acre	1
Parallel Railway ROW	6.1	Outstanding State Resource Waters	9	0.05 - 0.2 Buildings/Acre	3
Road ROW	7.2	Public Lands	17.7%	0.2 - 1 Buildings/Acre	5.6
Rebuild Existing Transmission Lines (bad)	8.6	Background	1	1 - 4 Buildings/Acre	8.5
Scenic Highways ROW	9	WMA - Not State Owned	5.1	> 4 Buildings/Acre	9
Slope	13.8%	USFS (proclamation area)	6.2	Proposed Development	3.9%
Slope 0-15%	1	Other Conservation Land	7.8	Background	1
Slope 15-30%	4	USFS (actually owned)	9	Proposed Development	9
Slope 30-40%	6.7	State Owned Conservation Land	9	Spannable Lakes and Ponds	4.0%
Slope >40%	9	Land Cover	19.8%	Background	1
Areas of Least Preference		Developed Land	1	Spannable Lakes and Ponds	9
Non-Spannable Waterbodies		Agriculture	4.6	Land Use	35.9%
Mines and Quarries (Active)		Forests	9	Commercial/Industrial	1
Buildings		Wildlife Habitat	28.7%	Agriculture (crops)	3.5
Airports		Background	1	Agriculture (other livestock)	4.6
Military Facilities		Species of Concern Habitat	9	Silviculture	6
Center Pivot Irrigation		Areas of Least Preference		Other (forest)	6.7
		EPA Superfund Sites		Equine Agri - Tourism	8
		State and National Parks		Residential	9
		USFS Wilderness Area		Proximity to Eligible Historic and Archeological Sites	31.0%
		Wild/Scenic Rivers		Background	1
		Wildlife Refuge		900-1200	4.6
		State Nature Preserves		600-900	7.9
		Designated Critical Habitat		0-300	8.6
				300-600	9
				Areas of Least Preference	
				Listed Archaeology Sites & Dist.	
				Listed NRHP Districts and Buildings	
				City and County Parks	
				Day Care Parcels	
				Cemetery Parcels	
				School Parcels (K-12)	
				Church Parcels	

Data layers (green cells): Percentages represent relative importance, or weighting, of each layer in the siting process, as determined by stakeholders.

Features (yellow cells): Numbers between 1 and 9 represent degrees of suitability, as determined by stakeholders, with 1 being most suitable for locating a transmission line and 9 being least suitable for locating a line.

Areas of Least Preference (red cells): Features to avoid when siting a transmission line, if possible, as determined by stakeholders.

For more detailed information on datasets used in the model, including data sources, please see Appendix C of the EPRI-GTC Methodology (2006). This report was used as a guideline for this project.

3. Suitability Mapping

The methodology begins with two endpoints (Coleman EHV Substation, and the River Crossing North Structure) as the basis for creating transmission line corridors. A large area between and near the endpoints is divided into grid cells 15 feet by 15 feet in size.

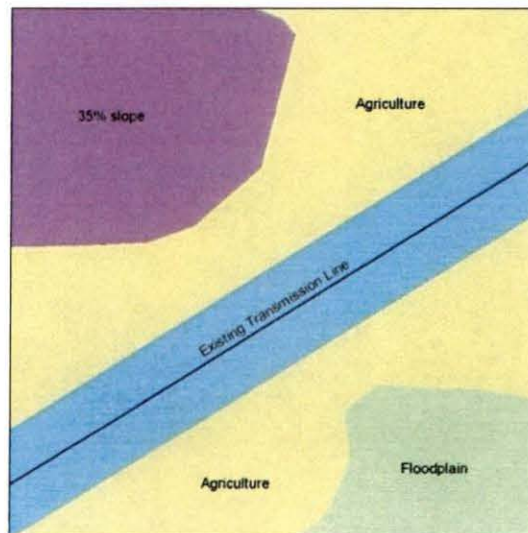
Data from aerial photography, geographic information systems, publicly available datasets, and other sources are used to identify features within each grid cell. Based on these features and the values and data layer weights determined in the Kentucky Siting Model, the methodology then assigns a suitability value to each cell. More detailed data are employed by the methodology as corridor locations are refined.

Because cells deemed to have lower suitability for locating a transmission line are assigned higher values, the methodology employs an algorithm that seeks to connect the endpoints, minimizing the sum of values as it works its way from one endpoint to the other. The resulting corridor is referred to as the “optimal path”.

Figures 3, 4, and 5 demonstrate the development of a sample “optimal path” using information from a hypothetical situation.

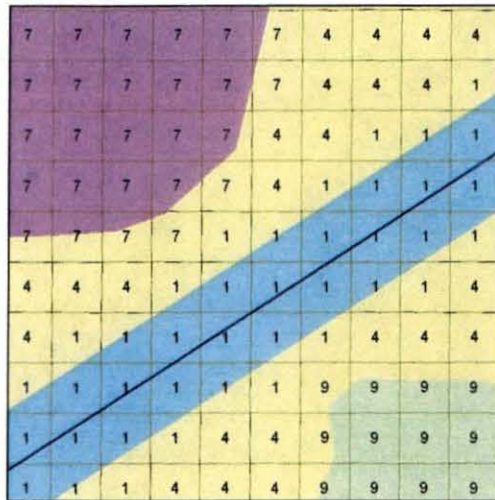
Figure 3 displays an example area that has four features: an existing transmission line through the center of the area, surrounded by agricultural land with an area of steep slopes to the northwest and a floodplain to the southeast.

FIGURE 3: FEATURE MAP OF EXAMPLE AREA



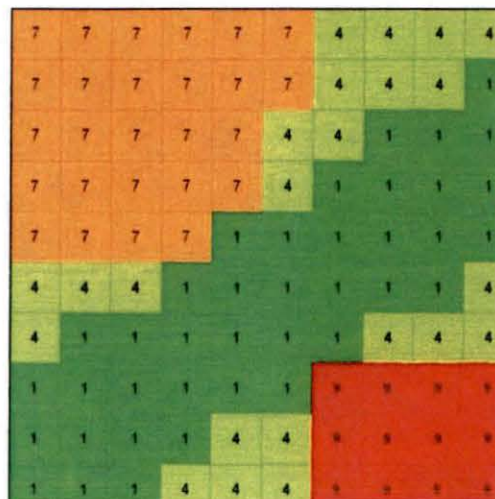
In Figure 4, grid cells are overlaid and assigned suitability values based on the features. The suitability values used in this example do not necessarily correspond to the Siting Model. The area of the existing line is considered highly suitable, the agricultural land is moderately suitable, and the steep slopes and floodplains have lower suitability values.

FIGURE 4: GRID CELL MAP OF EXAMPLE AREA WITH SUITABILITY VALUES



Finally, Figure 5 shows the most suitable corridor through the area for locating a transmission line in green. Light green areas are moderately suitable. The orange area has a low suitability value, and the red area is highly unsuitable. The most suitable corridor from east to west in this example is the one that follows the existing transmission line.

FIGURE 5: SUITABILITY MAP OF EXAMPLE AREA



4. Developing Alternate Corridors

As described above, the EPRI-GTC Methodology analyzes the suitability of grid cells within a project area to develop Alternate Corridors. This analysis is based on satellite and GIS information that is readily available from public sources as well as data extracted from aerial photo interpretation. The data is then used to develop the suitability grid. The numbers that are applied to the grid cells are taken from the Methodology. The corridors developed from the model are the top three percent - that is, the most suitable three percent - of possible routes within the study area, where each route is a string of 15 foot square grid cells connecting the two endpoints to the project.

Alternate Corridors are generated for each of the three perspectives (Built Environment, Natural Environment, and Engineering Considerations). It should be noted that when generating Alternate Corridors for each perspective, data layers from the other two perspectives are taken into account. Although the target perspective is weighted much more heavily (five times), values and weights from the other perspectives affect the Alternate Corridors generated for the emphasized perspective. The final step in generating Alternate Corridors is to equally weigh the three perspectives and generate a Simple Average Alternate Corridor.

The Composite of Alternate Corridors (Figure 39) depict the areas of greatest preference for construction of a transmission line while minimizing adverse impacts to people, environmentally sensitive areas, and cultural resources. The Composite Corridor also provides a reasonable balance among co-location of the proposed line, minimization of the overall project impacts, and construction and maintenance of the line in a cost effective manner.

The following sections of this report provide information about features that were found within the study area, the Alternate Corridors generated, the Alternate Routes developed, and the selection of Preferred Routes for construction of the proposed lines.

Part IV: Study Area Description

1. Study Area Location

The transmission line study area (Figure 6) is located in northern Hancock County, Kentucky, and a very small part of southern Spencer County, Indiana. The study area is located

The transmission line study area (Figure 6) is located in northern Hancock County, Kentucky, and a very small part of southern Spencer County, Indiana. The study area is located approximately 3.5 miles northeast of Lewisport, Kentucky; 1.5 miles northwest of Tell City, Indiana; and 21 miles northeast of Owensboro, Kentucky. The Ohio River is in the northern half of the study area. The study area encompasses approximately 3,435 total acres (5.37 square miles). Residential areas are in the southwestern portion of the study area. The study area has relatively flat topography, except around the banks of the Ohio River and around the Coleman EHV Substation.



PHOTO: Existing Transmission Line in Hancock County

FIGURE 6: LOCATION MAP

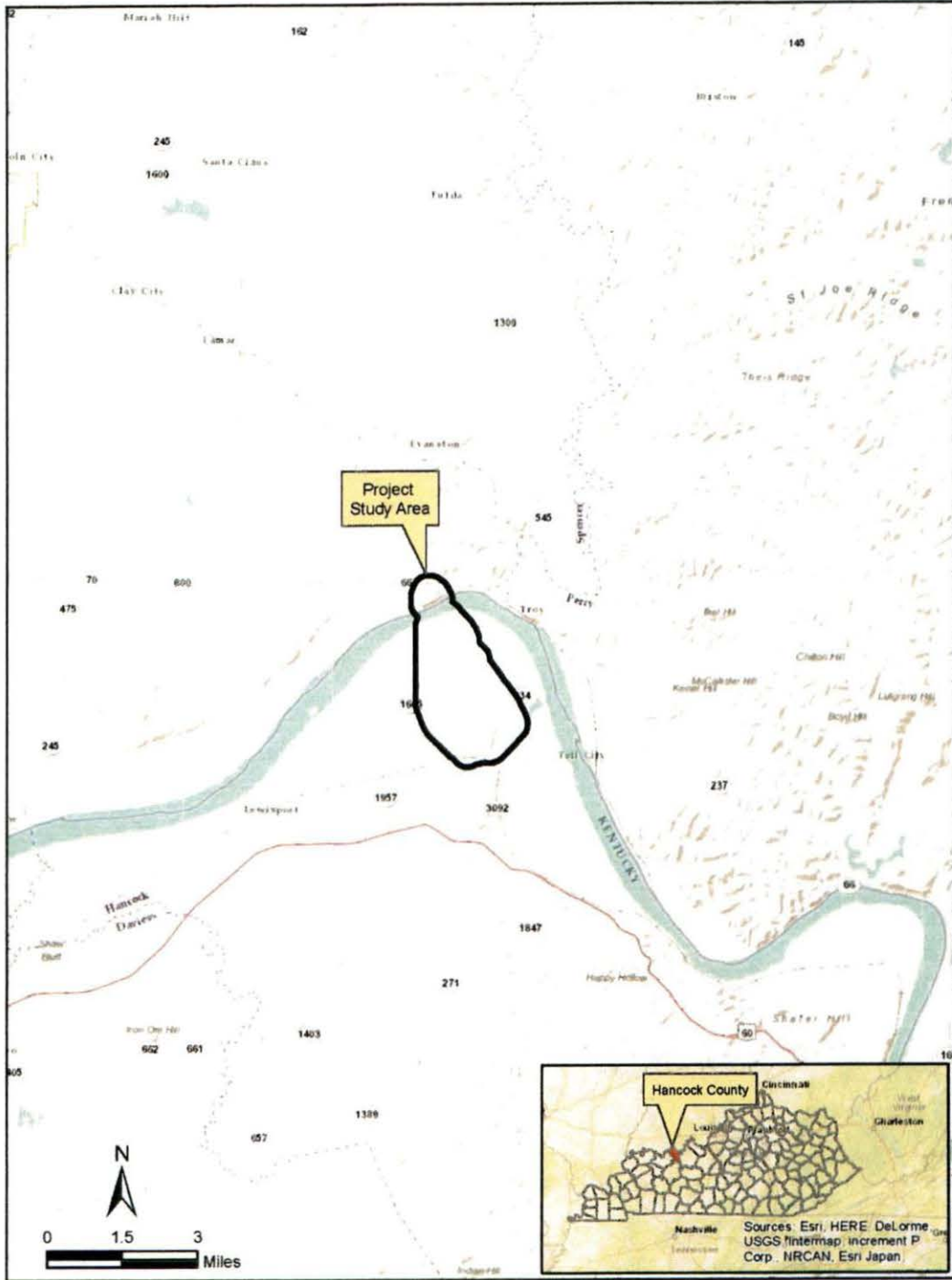
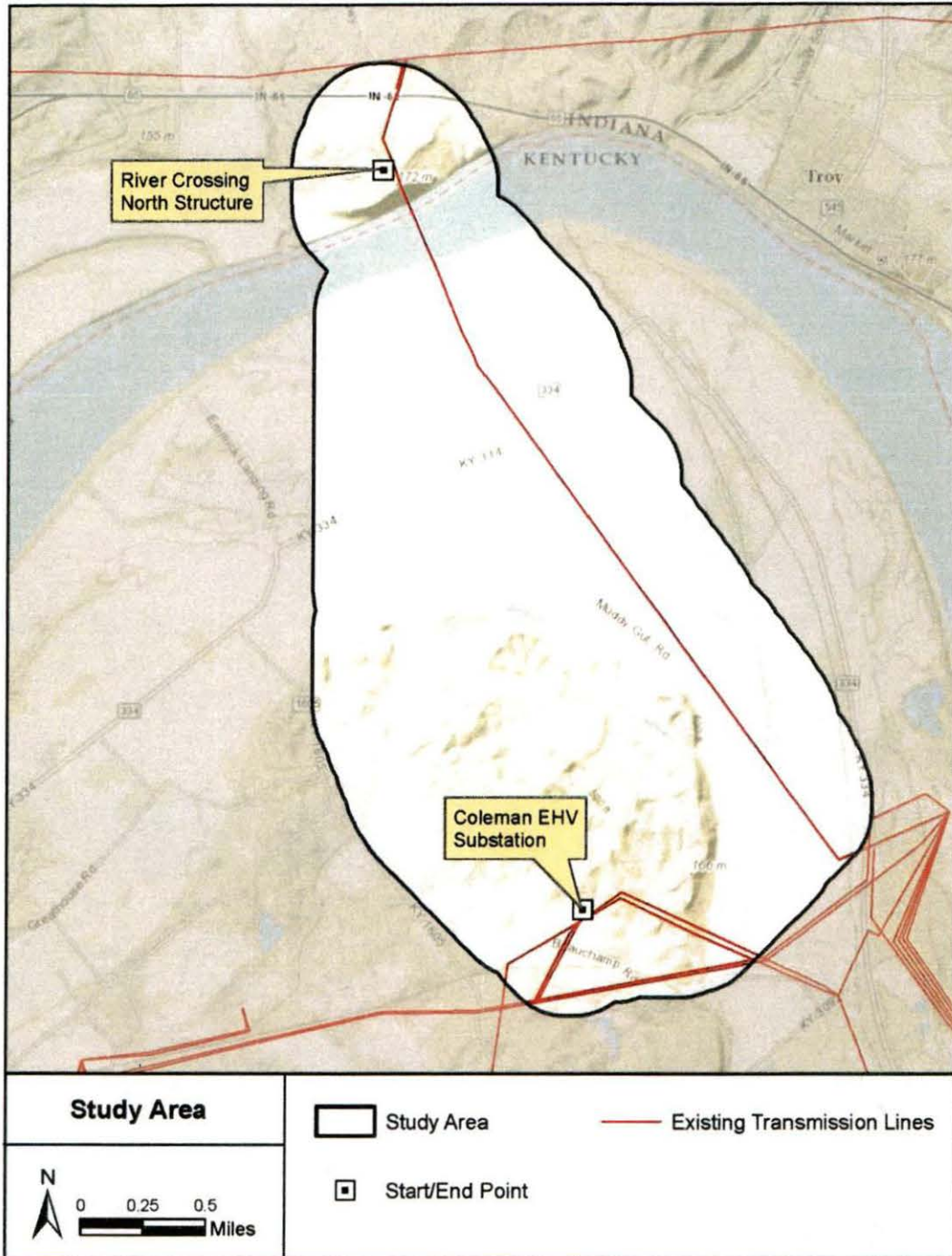


FIGURE 7: STUDY AREA MAP



2. Study Area Characteristics

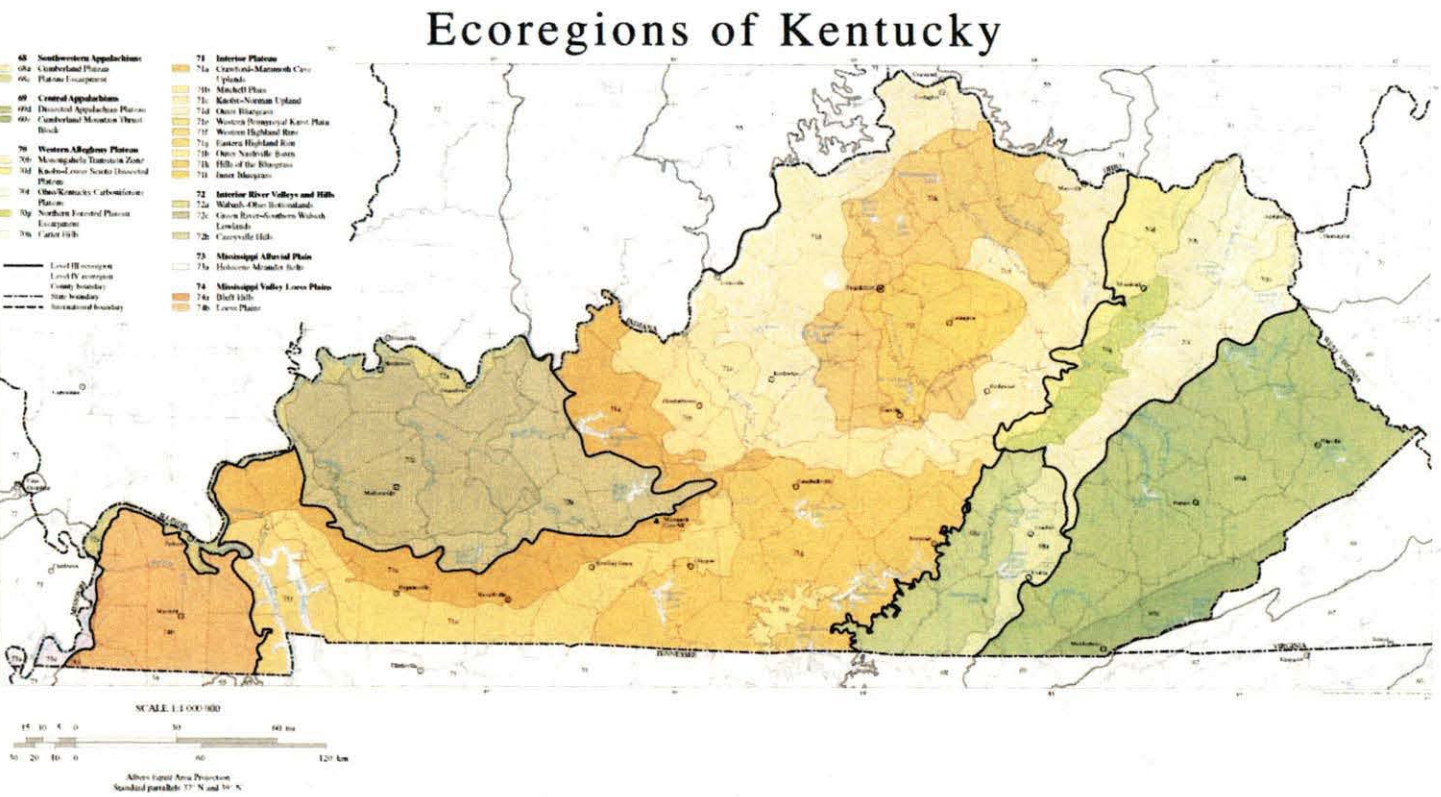
Ecological Region

The study area lies along two specific ecoregions. The easternmost portion lies within the Wabash-Ohio Bottomlands ecoregion. While the rest of the study area, is in the Green River-Southern Wabash Lowlands. There is also a small portion on the western side of the study area that is also within the Wabash-Ohio Bottomlands ecoregion (Figures 8 & 9).

The Green River–Southern Wabash Lowlands is dominated by agriculture and coal mining. Wide, poorly-drained, low gradient valleys filled with alluvial and lacustrine deposits are extensive and low hills mantled with loess occur. The Green River–Southern Wabash Lowlands is largely underlain by Pennsylvanian carboniferous sedimentary rocks of the Sturgis and Carbondale formations that are not exposed in the higher, more rugged, and more wooded than the Caseyville Hills ecoregion. Bottomland forests were once common and oak–hickory forests grew on the better-drained upland sites. Today, some forests and wetlands remain but cropland, pastureland, and both underground and surface coal mining are now extensive. Siltation from mining and agriculture has increased flooding and prompted remedial channelization projects. Channelized streams lack riparian forests and have very warm water, high turbidity, and limited concentrations of dissolved oxygen. Acid coal mine runoff has decreased biological productivity in streams; many tributaries have low numbers of fish and fish species while others are entirely devoid of fish. Macroinvertebrate and fish communities are similar to those in the Wabash-Ohio Bottomlands ecoregion but are less diverse than in the upland streams of Caseyville Hills ecoregion (*McMahon & Omernik, et al*).

The Wabash–Ohio Bottomlands ecoregion is composed of nearly level, poorly-drained floodplains and undulating terraces. Wetlands, ponds, abandoned channels, oxbow lakes, and low ridges occur. Potential natural vegetation is mapped as southern floodplain forest. The Wabash–Ohio Bottomlands is lower, more poorly-drained, and has different natural vegetation than other parts of surrounding ecosystems. Today, some woodlands remain but livestock, alfalfa, corn, soybean, and wheat farming is extensive. Land use is affected by seasonally high water tables and localized flooding. Low gradient streams with silt or sand bottoms occur and are inhabited by Ohio River-type fish fauna. Channelization and drainage ditches are common (*McMahon & Omernik, et al*).

FIGURE 8: ECOREGIONS OF KENTUCKY



Source: United States Environmental Protection Agency
 (ftp://ftp.epa.gov/wed/ecoregions/ky/ky_eco_lb.pdf)

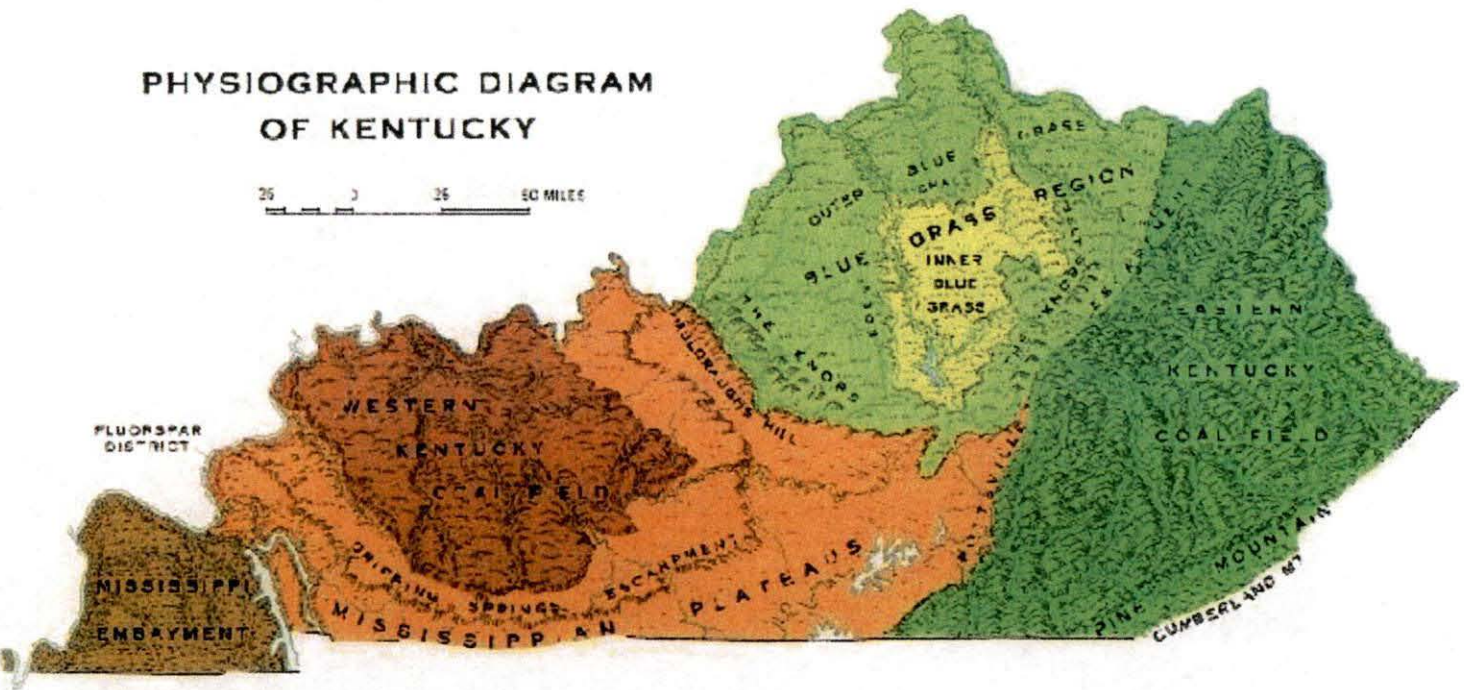


FIGURE 9: PHYSIOGRAPHIC MAP OF KENTUCKY
 (<http://www.uky.edu/KGS/geoky/physiographic.htm>)

Land Use/Land Cover

The study area consists primarily of row crops and forested areas, which occupy approximately 52.29% and 25.57% respectively of the total area. Open land comprises the third highest percentage at 10.44%. Other notable areas are Utility ROW and Hydrography, which occupy about 4.65% and 4.52% respectively. The final four categories of Land Use/Land Cover in the study area are Residential with 1.5%, Transportation with 0.88%, Commercial/Industrial with 0.09%, and Institutional with 0.06%. The land cover types are detailed in Table 1 (page 18) and Figure 10 (page 19).

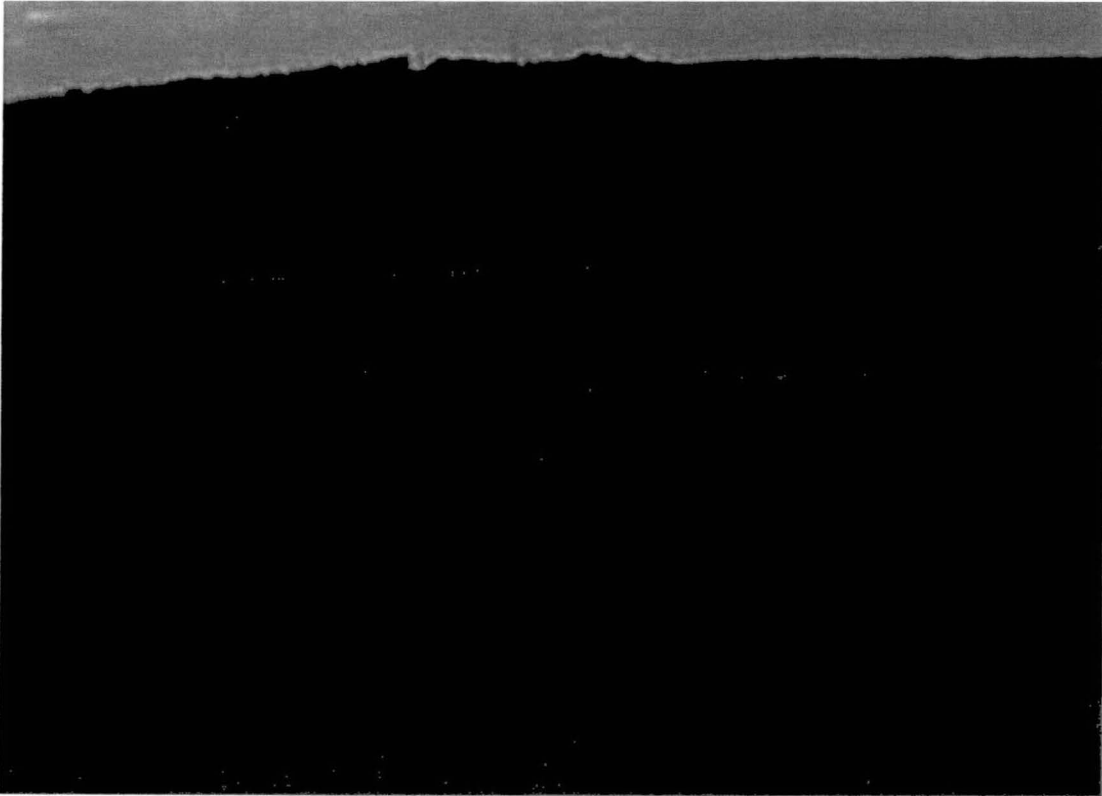


PHOTO: Agricultural land usage along KY 334

TABLE 1: LAND USE/LAND COVER OF STUDY AREA

LULC Type	Acres in Study Area	% of Study Area
Commercial/Industrial	3.16	0.09%
Forested	878.29	25.57%
Hydrography	155.11	4.52%
Institutional	2.11	0.06%
Open Land	358.54	10.44%
Residential	51.45	1.50%
Row Crops	1796.38	52.29%
Transportation	30.39	0.88%
Utility ROW	159.89	4.65%
Total:	3435.32	100.00%

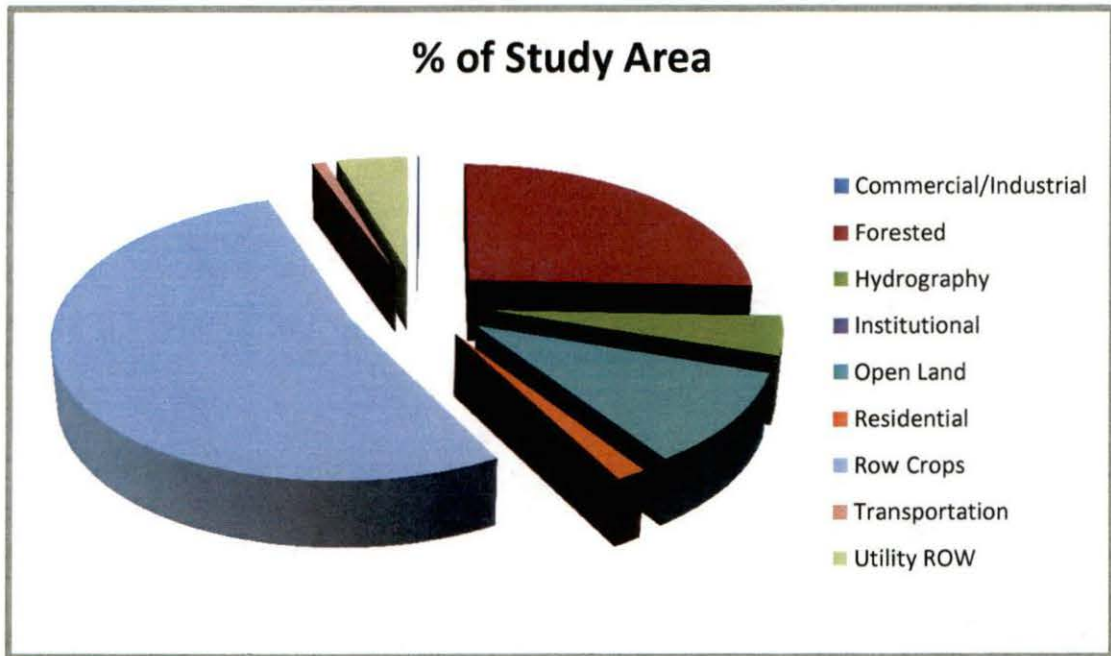
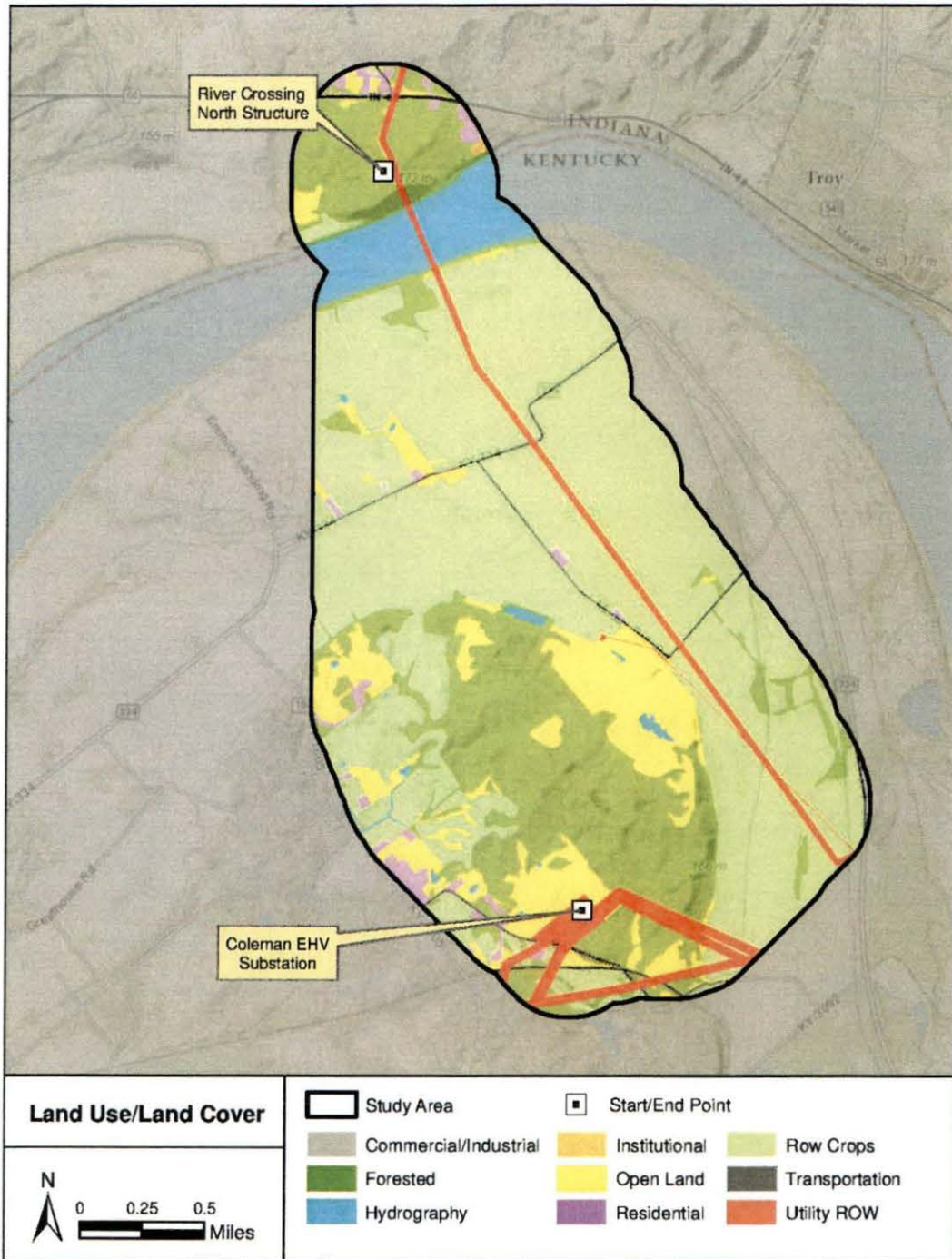


FIGURE 10: LAND USE / LAND COVER CLASSIFICATION



Socioeconomics

The Commonwealth of Kentucky's population growth from 2010 to 2015 was 2.0%, while the national average during the same period was 4.1%. Hancock County, Kentucky experienced an estimated population increase of 1.5% between 2010 and 2015. According to the U.S. Census 2010, 8,565 people were living in Hancock County. (*U.S. Census Bureau State and County Quick Facts*).

As of 2014, there were 3,367 households in Hancock County. The median income for a household in Hancock County was \$50,311 (2014). The per capita income was \$22,637. 13.8% of the counties' families were below the poverty line (*U.S. Census Bureau State and County Quick Facts*).

Transportation

Three significant transportation features are found within the study area. One is a Kentucky highway, a second is an Indiana scenic highway while the third is a railway.

Kentucky Highway 334 – This highway, locally known as Lee Henderson Road, runs roughly in a southwesterly direction across the central portion of the study area. For the approximately 1.6 miles it is within the study area, KY 344 is a two lane, undivided highway with no turn lanes. KY 334 enters the study area from the western border and travels northeast before leading through the eastern border. It is also in the southeastern corner of the study area.

Ohio River Scenic Byway – This highway, also known as IN-66, run in an west-to-east direction across the northernmost part of the study area. For the approximately 0.6 miles that it is in the study area, the Ohio River Scenic Byway is a two lane, undivided highway with no turn lanes. This highway enters the study area from the northwestern boundary, and leaves the study area through the northeastern boundary.

Seaboard System Railroad –The Seaboard System Railroad is aligned in an east to west direction for approximately 0.8 miles across the southeastern portion of the study area. The railway enters the study area from the east, passing south of the Coleman EHV Substation, and then exiting the western edge of the study area.



PHOTO: Ohio River Scenic Byway

Water Resources

The study area includes approximately 160 acres of open water, which account for 4.52% of the total study area. The largest hydrologic feature is the Ohio River in the northern part of the study area. In general the remaining water bodies in the study area are smaller ponds used in conjunction with agriculture. Within the study area, there are approximately 1625.07 acres of mapped floodplain areas identified by the Federal Emergency Management Agency (FEMA). Most of the eastern part of the study area is a floodplain, along with areas surrounding the Ohio River.

Part V: Engineering Considerations

Below is the Engineering Considerations Perspective from the Kentucky Siting Model. The sub-model incorporates those features whose presence or absence is considered important from the perspective of constructing a transmission line. Other considerations that could be included in this perspective might be more appropriate in another sub-model.

TABLE 2: ENGINEERING ENVIRONMENT LAYERS AND WEIGHTS (MODEL VALUES)

Co-location / Engineering	
Linear Infrastructure	86.2%
Parallel Existing Transmission Lines	1
Rebuild Existing Transmission Lines (good)	2.2
Background	4.4
Parallel Interstates ROW	4.7
Parallel Road ROW	5.4
Parallel Pipelines	5.6
Future DOT Plans	5.6
Parallel Railway ROW	6.1
Transportation ROW	7.2
Rebuild Existing Transmission Lines (bad)	8.6
Scenic Highways ROW	9
Slope	13.8%
Slope 0-15%	1
Slope 15-30%	4
Slope 30-40%	6.7
Slope >40%	9
AREAS OF LEAST PREFERENCE	
Non-Spannable Waterbodies	
Mines and Quarries (Active)	
Buildings	
Airports	
Military Facilities	
Center Pivot Irrigation	

1. Linear Infrastructure Features

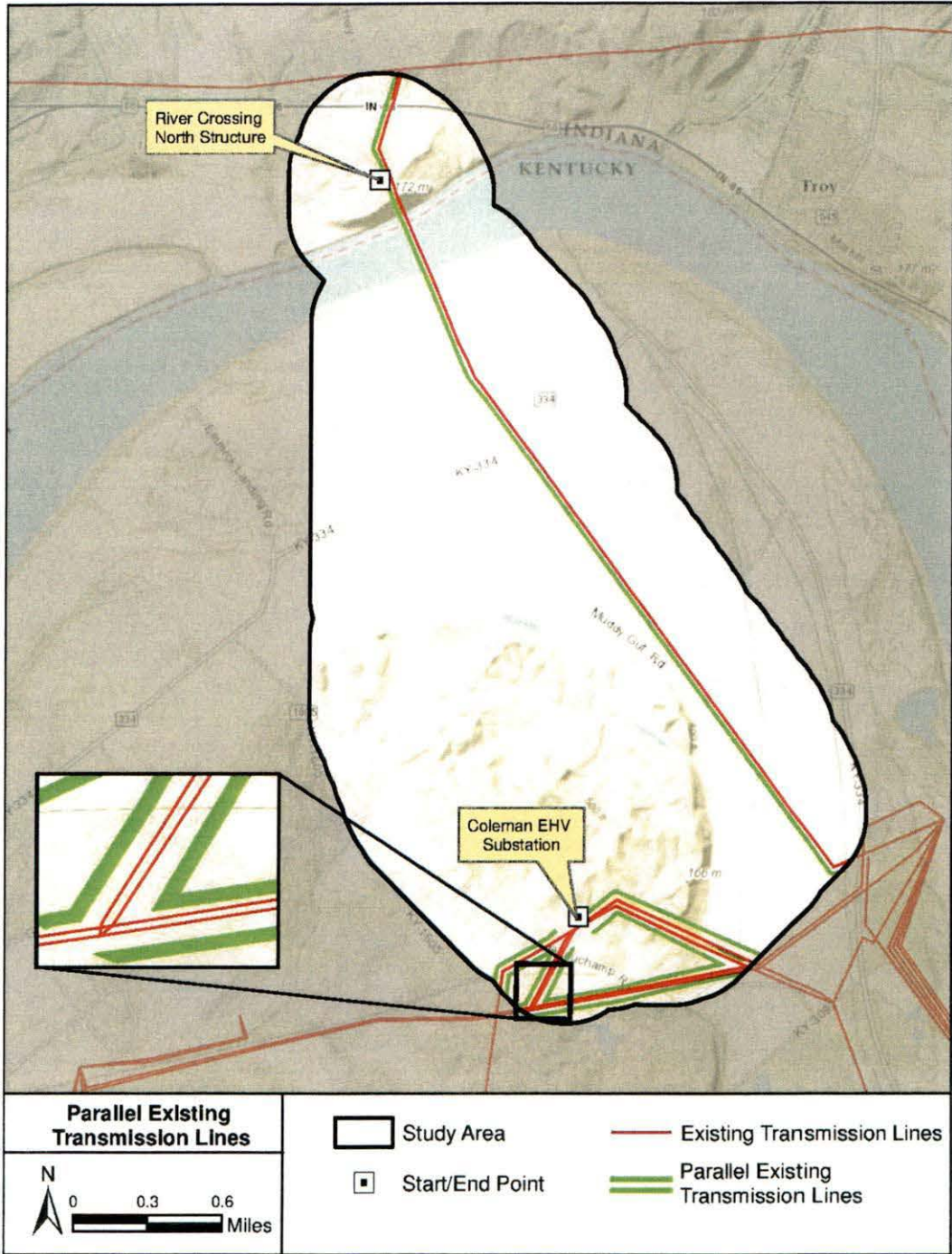
High Suitability: Parallel Existing Transmission Lines

In the Engineering Considerations Perspective, the model considers paralleling existing transmission lines to be highly suitable. Two existing transmission lines are present within the southern portion of the study area and run in an east-west direction across the entire span of the project area, one of which is Line 7-C. Two transmission lines exit the Coleman EHV Substation and go in a southwesterly direction; these are the 3-H and 3-G lines. Figure 11 shows the limits of the study area, and the parallel opportunities contained therein. Only transmission lines suitable for paralleling were considered during this portion of the study.

Existing transmission line data was obtained from the Kentucky Public Service Commission, and updated by East Kentucky Power Cooperative in 2011. Quantum Spatial verified all relevant transmission line features within the study area through 2014 Natural Agricultural Inventory Program (NAIP) aerial photography, as well as 2011 Bing imagery. The transmission line right-of-way was modeled by buffering the transmission lines created per the width requested by BREC. One-half of the proposed right-of-way width of 150 feet (75 feet) was used to buffer the existing transmission lines to create the parallel opportunity.

One thing to note is that Big Rivers identified that paralleling the existing 7-D transmission line on the eastern side was not a feasible option, so that side was not modelled as a parallel opportunity.

FIGURE 11: PARALLEL EXISTING TRANSMISSION LINE ROW

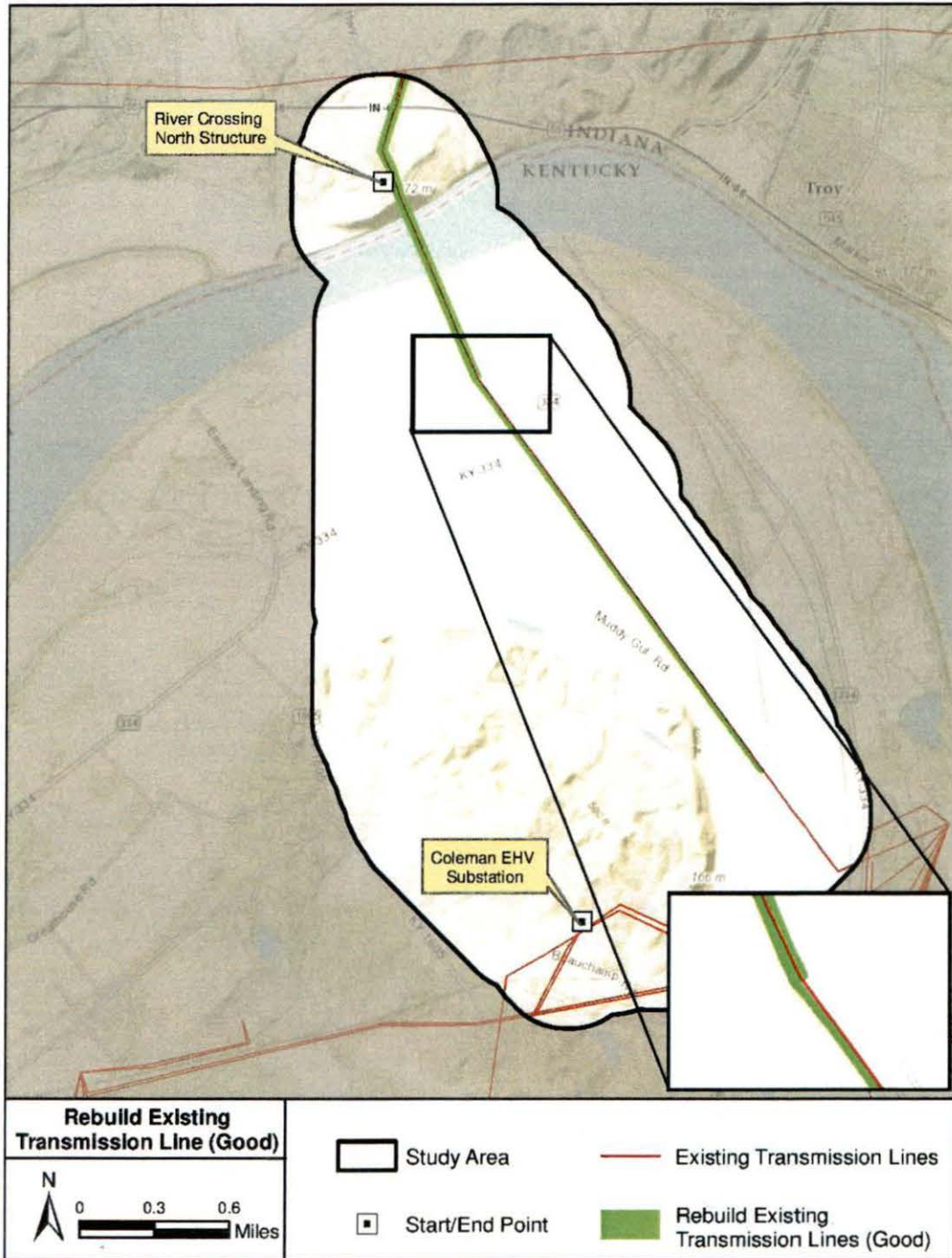


High Suitability: Rebuild Existing Transmission Lines (Good)

BREC distinguishes between “good” and “bad” opportunities to rebuild existing transmission lines. “Good” rebuild opportunities represent transmission line easements that are not constrained; that is, they are with existing infrastructure that makes the easement suitable for rebuilding as a double-circuited transmission line. The existing utility rights-of-way that were modeled as “good” (areas of high suitability) are shown in Figure 12. BREC identified rebuild opportunities that were appropriate for this project.

Existing transmission line data was obtained from the Kentucky Public Service Commission, and updated by EKPC in 2011. Quantum Spatial verified all relevant transmission line features within the study area through 2014 NAIP aerial photography, and 2011 Bing imagery.

FIGURE 12: REBUILD EXISTING TRANSMISSION LINES (GOOD)

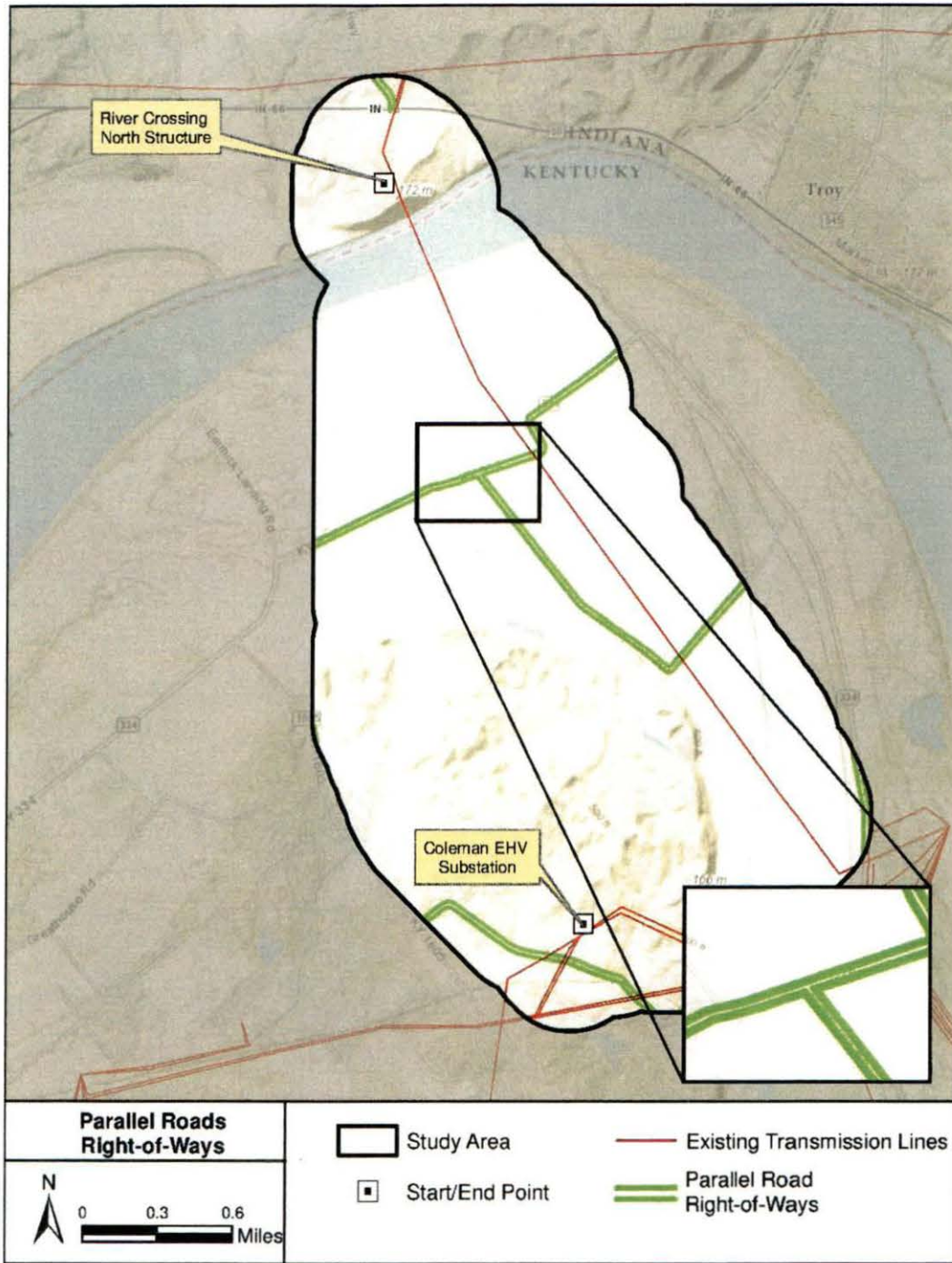


Moderate Suitability: Parallel Road Right-of-Ways

Paralleling road right-of-ways (ROWs) is given a moderate suitability in the Engineering Considerations Perspective. Within the study area, several roads provide co-location opportunities. Roads which do not provide connectivity and / or are residential in nature were not considered. Figure 13 shows the suitable road ROW co-location opportunities within the study area.

The road right-of-way data used in this analysis was extracted from land use data, which was derived from parcel data received from the PVA office in Hancock County.

FIGURE 13: PARALLEL ROAD RIGHT-OF-WAYS

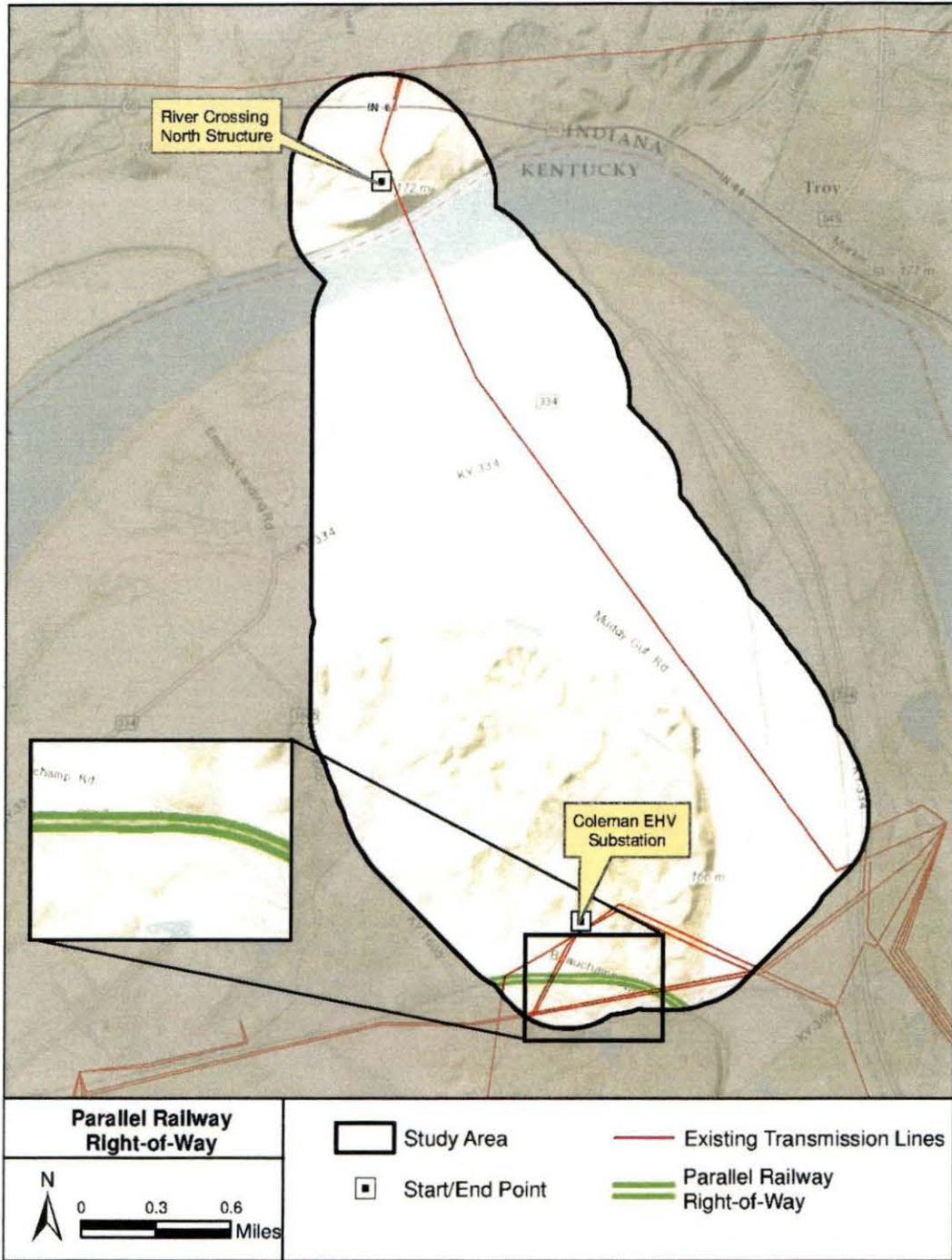


Moderate Suitability: Parallel Railway ROW

Paralleling a railroad right-of-way (ROW) is given a moderate suitability in the Engineering Considerations Perspective. The Seaboard System Railroad, located in the southern portion of the study area, is the only railroad within the study area. This railroad travels in an east to west direction. Figure 14 displays the railroad ROW collocation opportunities within the study area.

The railway right-of-way data used in this analysis was extracted from parcel data received from the PVA office of Hancock County.

FIGURE 14: PARALLEL RAILWAY ROW

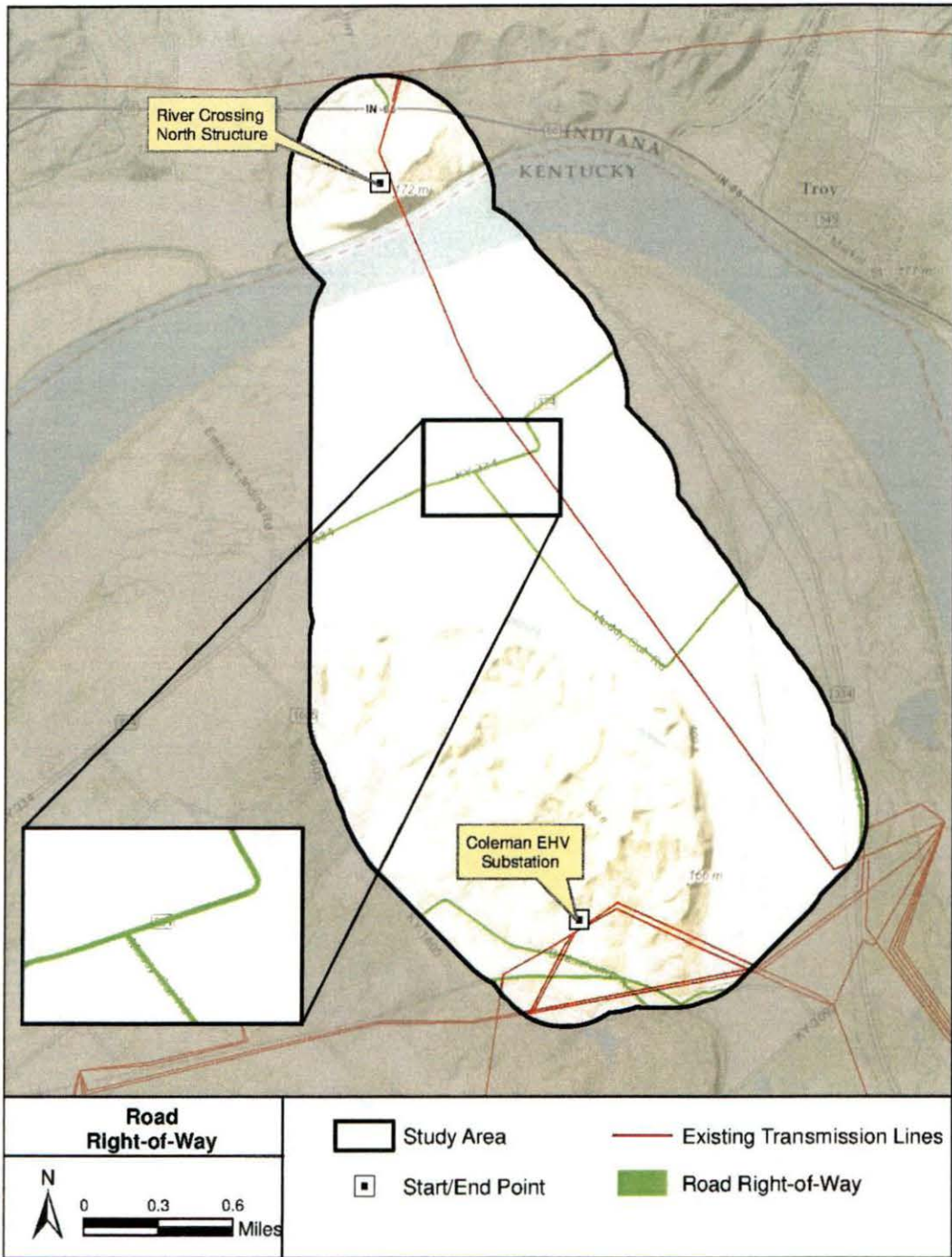


Lower Suitability: Road Right-of-Way

The Engineering Considerations Perspective assigns a low suitability value to locating a new transmission line within an existing road right-of-way. Although it is often necessary to cross existing roads, a transmission line centerline should not travel directly down the center of an existing roadway or other transportation corridor. Figure 15 shows the road ROW locations.

The transportation right-of-way data used in this analysis was extracted from parcel data received from the PVA office of Hancock County.

FIGURE 15: ROAD RIGHT-OF-WAY

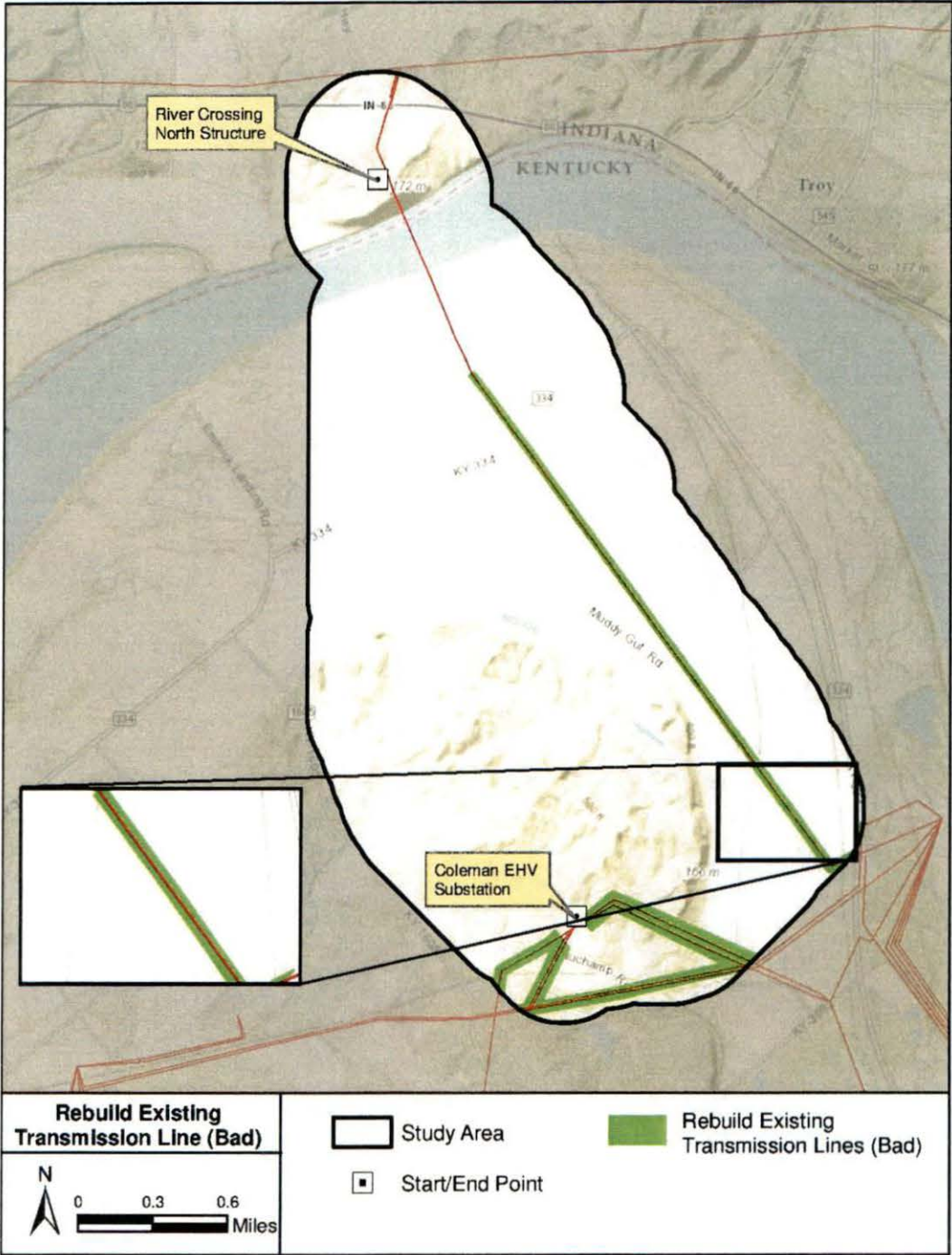


Lower Suitability: Rebuild Existing Transmission Lines (Bad)

BREC distinguishes between “good” and “bad” opportunities to rebuild existing transmission lines. “Bad” rebuild opportunities represent transmission line easements which are constrained; that is, they are encumbered with existing infrastructure that makes the easement unsuitable for rebuilding as a double-circuited transmission line. It is sometimes feasible to rebuild an existing transmission line, using the existing easement and purchasing only a minimal amount of additional right-of-way. The existing utility rights-of-way that were modeled as constraints (areas of low suitability) are shown in Figure 16. BREC identified rebuild opportunities that were appropriate for the project.

Existing transmission line data was obtained from the Kentucky Public Service Commission, and updated by EKPC in 2011. Quantum Spatial verified all relevant transmission line features within the study area through 2014 NAIP aerial photography.

FIGURE 16: REBUILD EXISTING TRANSMISSION LINES (BAD)

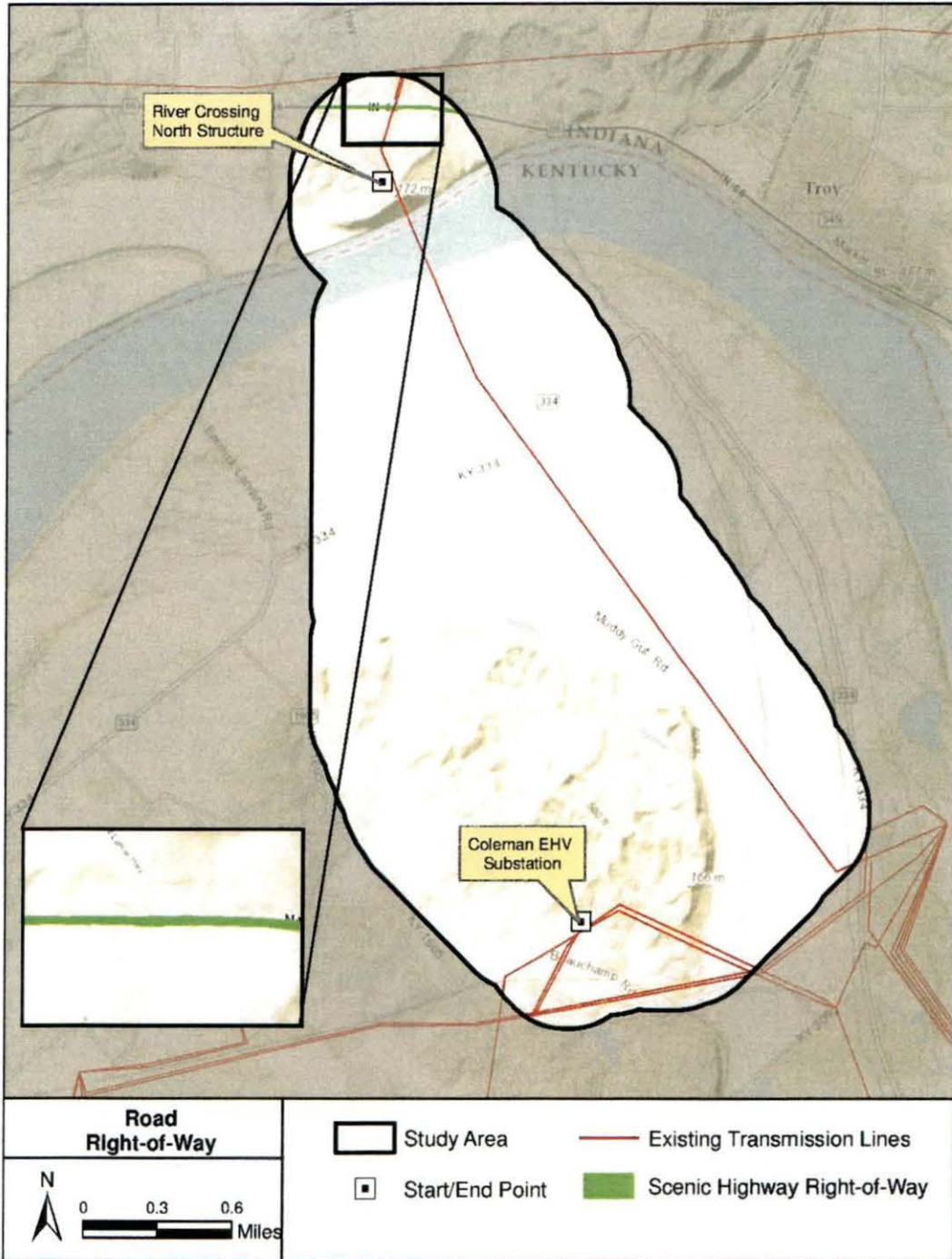


Low Suitability: Scenic Highway Right-of-Way

The Engineering Considerations Perspective assigns a low suitability value to locating a new transmission line within an existing scenic highway right-of-way. Although it may be necessary to cross a scenic highway right-of-way, a transmission line centerline should not travel directly down the center of an existing roadway or other transportation corridor. Figure 17 shows the scenic highway right-of-way locations.

The transportation right-of-way data used in this analysis was extracted from parcel data received from the PVA office of Spencer County via WTH Technology.

FIGURE 17: SCENIC HIGHWAYS ROW

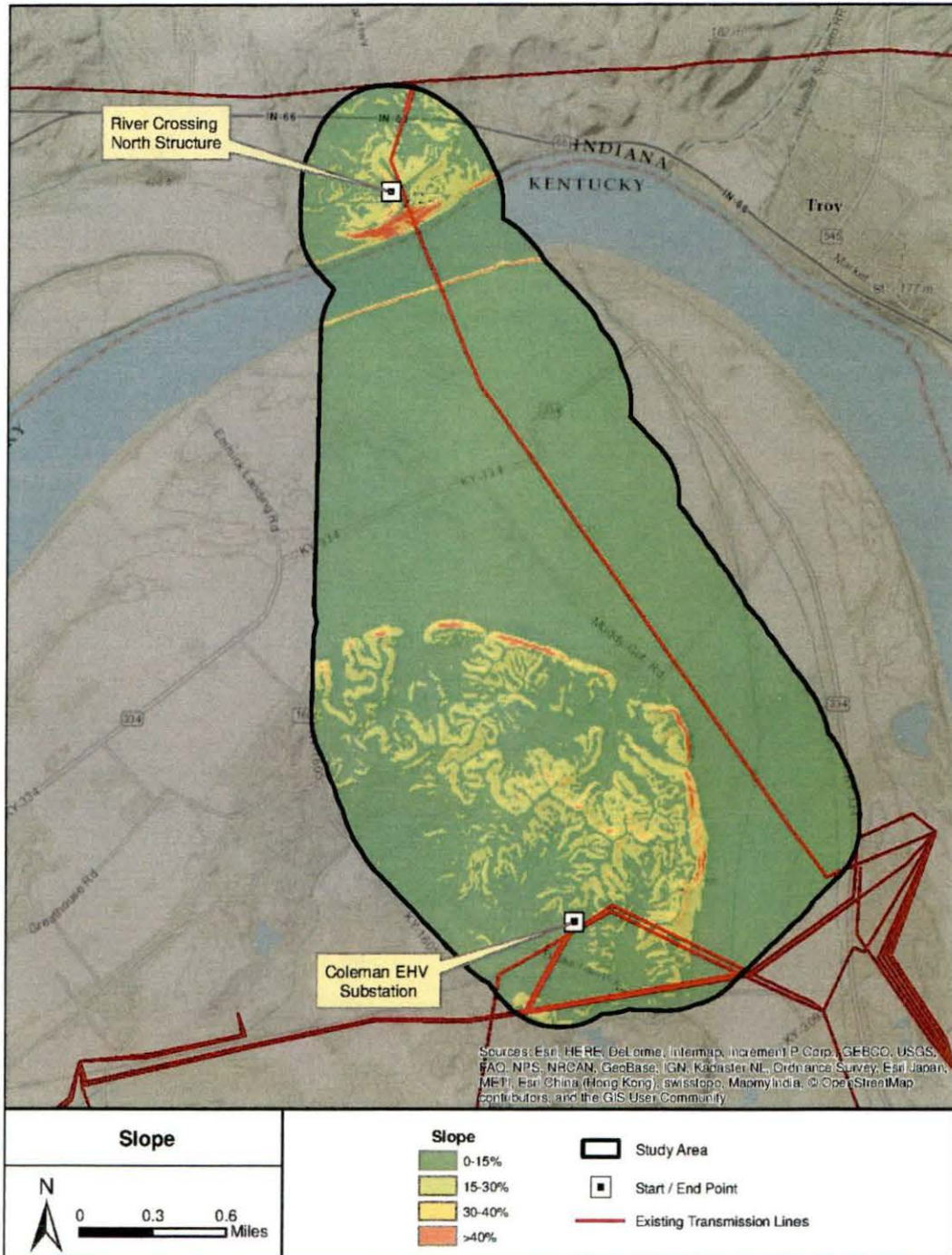


2. Slope

The slope of the terrain can play a significant role in routing and constructing a transmission line. Using Digital Elevation Model (DEM) data for the commonwealth of Kentucky, percent slope is extracted and used in the model. Figure 18 details the locations and percentages of the slopes found within the study area.

Slope information was extracted from DEM data obtained from United States Geological Survey (USGS) raster data (1/3 arc-second (approx. 10 meters) pixel size) for the commonwealth of Kentucky.

FIGURE 18: SLOPE



3. Areas of Least Preference

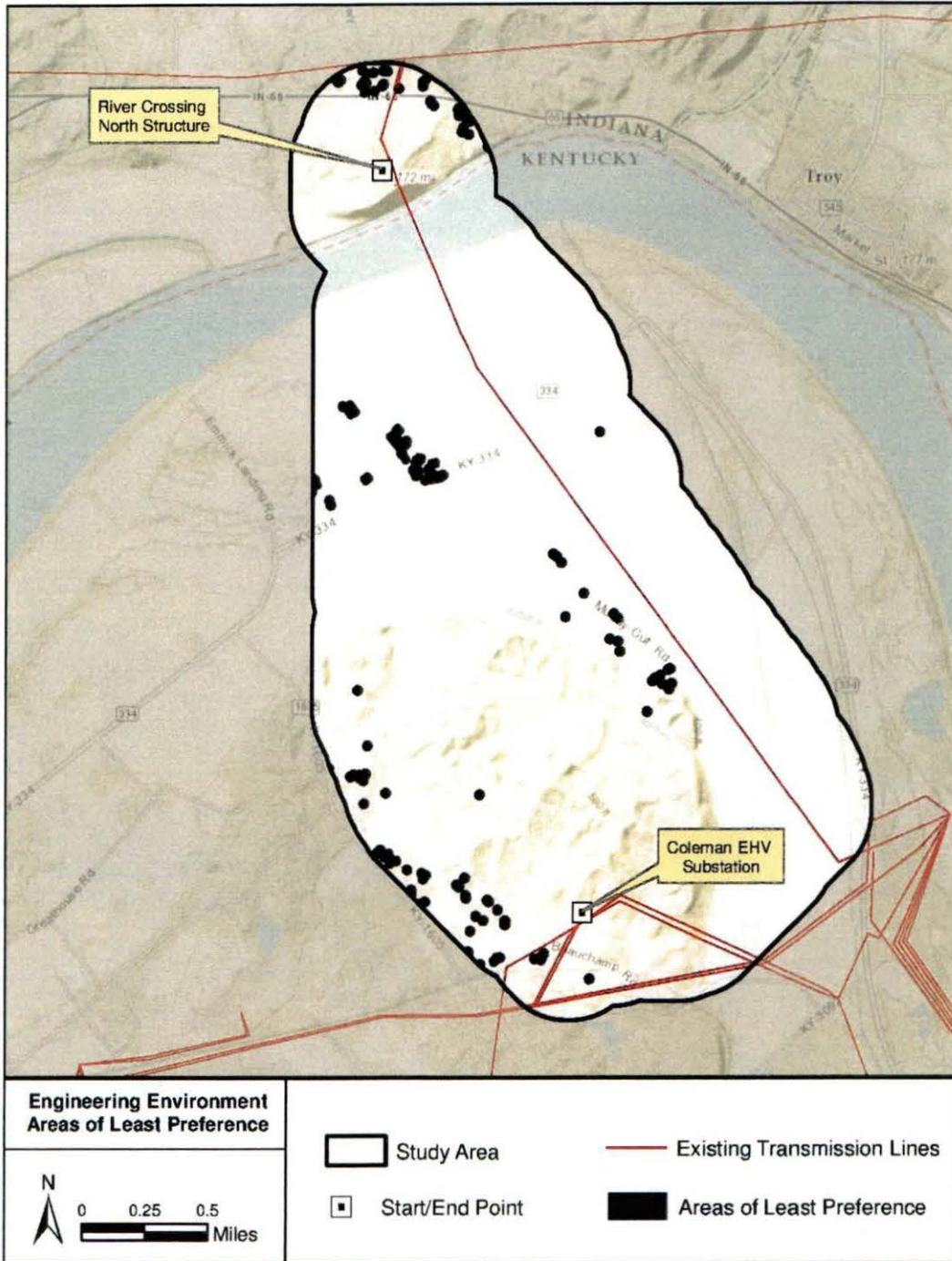
Buildings, mines & quarries, airports, military facilities and non-spannable water bodies are designated as Areas of Least Preference in the Engineering Considerations Perspective of the Kentucky Model. Within and around the study area, buildings are the only features from this list that are present. No non-spannable water bodies, mines, quarries, airports, military facilities or center-pivot irrigation features were identified within the study area.

Buildings

Buildings are designated as Areas of Least Preference within the Engineering Considerations Perspective. The main concentration of buildings is in the north-central area of the study area, where several residential buildings can be found.

Quantum Spatial used 2014 NAIP one (1) meter true-color photography as well as 2011 Bing Imagery to extract the centroids of buildings. Additionally, the footprints of larger buildings were digitized and added to the dataset. Figure 19 shows the locations of buildings identified during the analysis.

FIGURE 19: AREAS OF LEAST PREFERENCE (CO-LOCATION/ENGINEERING)



4. Engineering Perspective Data Layer Weights (Project-Adjusted Values)

Not all features are present within every study area. Each model and sub-model will be adjusted based on the contents of the study area for a particular project. When a feature or layer is absent, the weights are adjusted proportionally across the remaining features or layers. The Engineering Considerations data layers and their relative weights for the 19-J 345 kV project are summarized in Table 3. Items highlighted in gray in Table 3 are not present within the study area unless otherwise discussed below.

TABLE 3: ENGINEERING CONSIDERATIONS PERSPECTIVE ADJUSTED LAYERS AND WEIGHTS

<i>Co-location / Engineering</i>		<i>AREAS OF LEAST PREFERENCE</i>
<i>Linear Infrastructure</i>	<i>100.0%</i>	
Parallel Existing Transmission Lines	1	<i>Non-Spannable Waterbodies</i>
Rebuild Existing Transmission Lines (good)	2.3	<i>Mines and Quarries (Active)</i>
Background	4.4	<i>Buildings</i>
Parallel Interstates ROW	-	<i>Airports</i>
Parallel Roads ROW	5.4	<i>Military Facilities</i>
Parallel Pipelines	5.6	<i>Center Pivot Irrigation</i>
Future DOT Plans	-	
Parallel Railway ROW	6.1	
Transportation ROW	7.2	
Rebuild Existing Transmission Lines (bad)	8.6	
Scenic Highways ROW	9	
Slope	<i>0.0%</i>	
Slope 0-15%	1	
Slope 15-30%	4	
Slope 30-40%	6.7	
Slope >40%	9	

- Parallel Interstates – A Kentucky highway map verified that no interstate highways are present within the study area.
- Future DOT Plans – Areas in which the DOT intends to carry out certain types of work may affect project planning and/or construction. The Kentucky DOT hosts an online map showing future plans. The map was accessed in December 2014 by Quantum Spatial analysts to confirm that no future plans existed in the project. The map can be accessed at the following site:
<http://maps.kytc.ky.gov/photolog/?config=ActiveHighwayPlan>
- Non-Spannable Water Bodies – BREC identified no features that were non-spannable within the study area.
- Mines and Quarries (Active) – After consulting mine maps from the Kentucky government in December 2014, it was determined that no mines or quarries were located within the study area. The map can be accessed at the following site:
<http://minemaps.ky.gov/>
- Airports – the Hancock County Airport is to the southwest of the study area, and did not impact the study area.
- Military Facilities – The Department of Defense (2016) lists no military facilities or installations in the study area.
- Center Pivot Irrigation – 2014 NAIP and 2011 Bing aerial photography interpretation was used to determine that there are no center pivots used for agriculture within the study area.

Part VI: Natural Environment

Table 4 shows the Natural Environment Perspective of the Kentucky Siting Model. The Natural Environment sub-model incorporates those features which should be considered from the perspective of protecting the natural environment when constructing a transmission line.

TABLE 4: NATURAL ENVIRONMENT PERSPECTIVE LAYERS AND WEIGHTS (MODEL VALUES)

Natural Environment		AREAS OF LEAST PREFERENCE
Floodplain	4.6%	
Background	1	EPA Superfund Sites
100 Year Floodplain	9	State and National Parks
Streams/Wetlands	29.2%	USFS Wilderness Area
Background	1	Wild/Scenic Rivers
Streams < 5cfs+ Regulatory Buffer	6.2	Wildlife Refuge
Rivers/Streams > 5cfs+ Regulatory Buffer	7.1	State Nature Preserves
Wetlands + 30' Buffer	8.7	Designated Critical Habitat
Outstanding State Resource Waters	9	
Public Lands	17.7%	
Background	1	
WMA - Not State Owned	5.1	
USFS (proclamation area)	6.2	
Other Conservation Land	7.8	
USFS (actually owned)	9	
State Owned Conservation Land	9	
Land Cover	19.8%	
Developed Land	1	
Agriculture	4.6	
Forests	9	
Wildlife Habitat	28.7%	
Background	1	
Species of Concern Habitat	9	

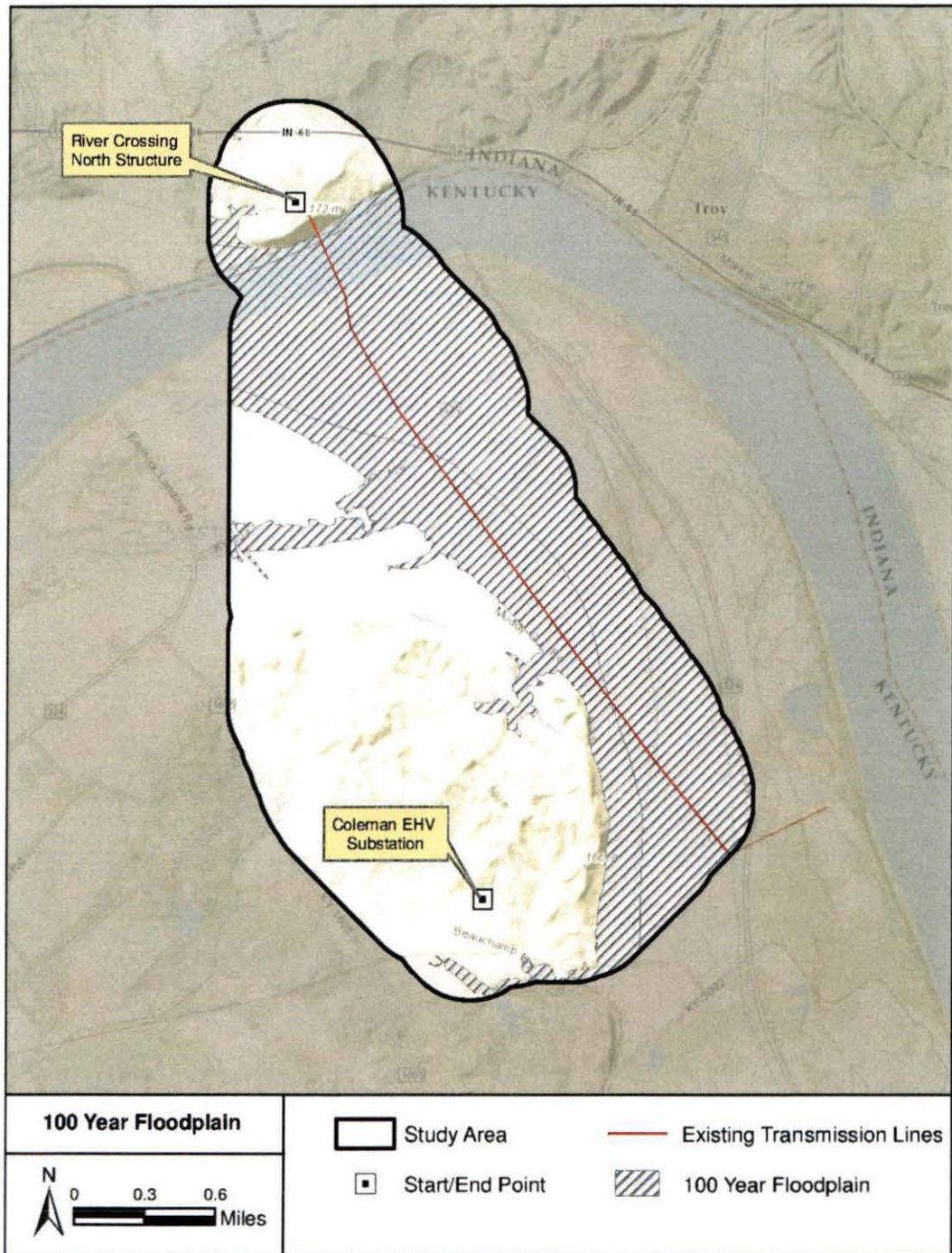
1. Floodplains

Low Suitability: Floodplains

The Natural Environment Perspective gives a low suitability value to locating a transmission line within a Federal Emergency Management Agency (FEMA) designated 100-year floodplain. Floodplain areas within the study area are located at the southwest and southeast corners of the study area. The percentage of the study area that is within FEMA's 100-year floodplain is approximately 47%, comprising about 1625.07 of the 3435.25 total acres in the study area.

Hancock County Q3 Flood Data was retrieved from Kentucky Geography Network (<http://kygeonet.ky.gov/>). The dataset was derived from the Flood Insurance Rate Maps published by the Federal Emergency Management Agency. The 100-year floodplain for Hancock County is shown in Figure 20.

FIGURE 20: FLOODPLAIN



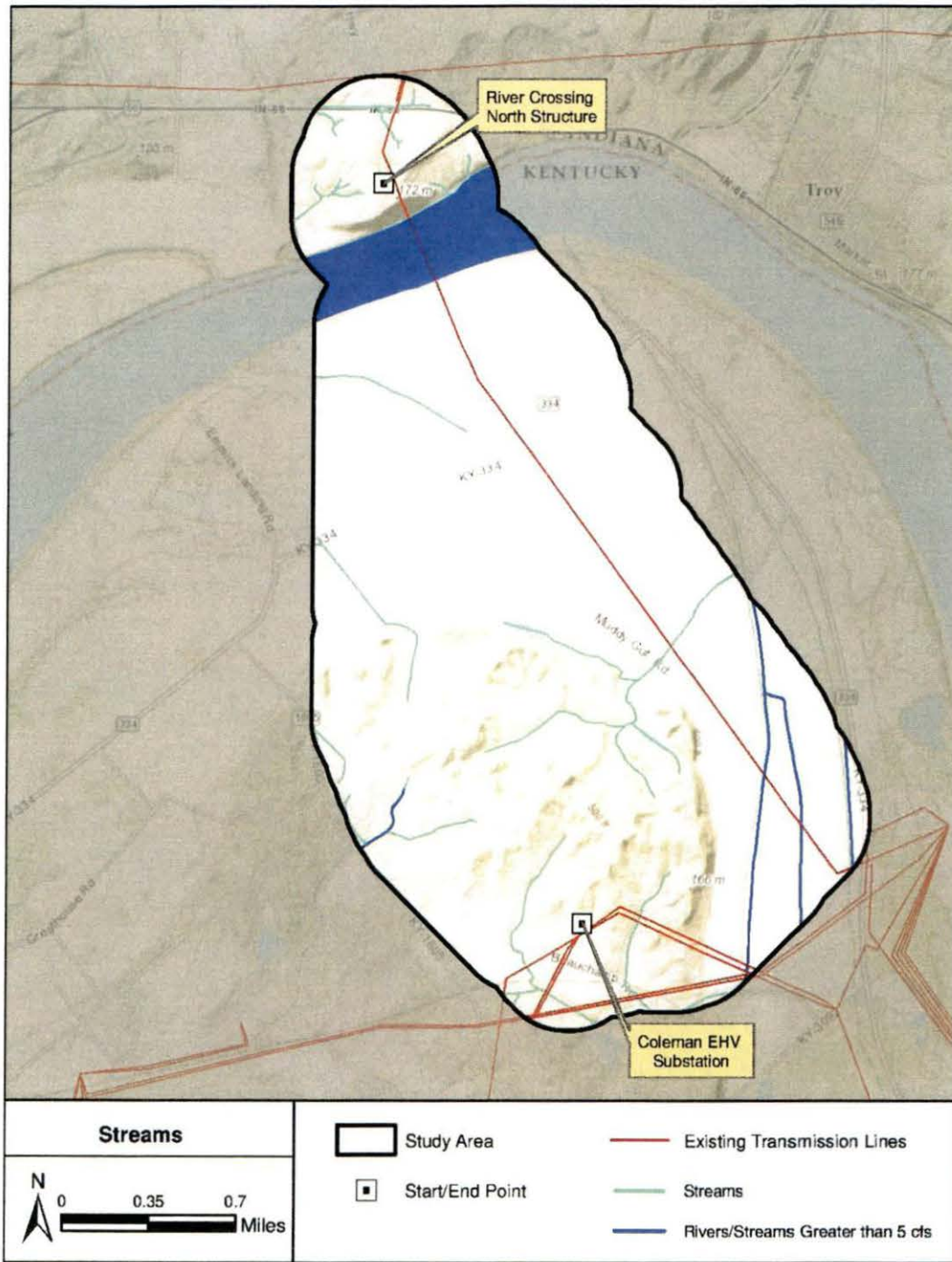
2. Streams/Wetlands

Moderate Suitability: Streams

The Natural Environment Perspective divides streams into two categories; those with a flow greater than 5 cubic feet per second (cfs) and those with a flow of less than 5 cfs. It is moderately suitable to cross a stream with a flow that is less than 5 cfs. Information gathered from the USGS shows the location of streams throughout the study area. The streams are categorized as having a flow regime greater or lesser than 5 cfs, as shown in Figure 21.

Location data for streams was obtained from the U.S. Geological Survey (USGS) website in February 2016. Flow rates were determined by Quantum Spatial analysts utilizing average storm water runoff rates for the area and stream basin size. The average storm water runoff rates were calculated; with the minimum watershed size of 3.33 miles squared required to classify a stream segment as > 5 cfs.

FIGURE 21: STREAMS

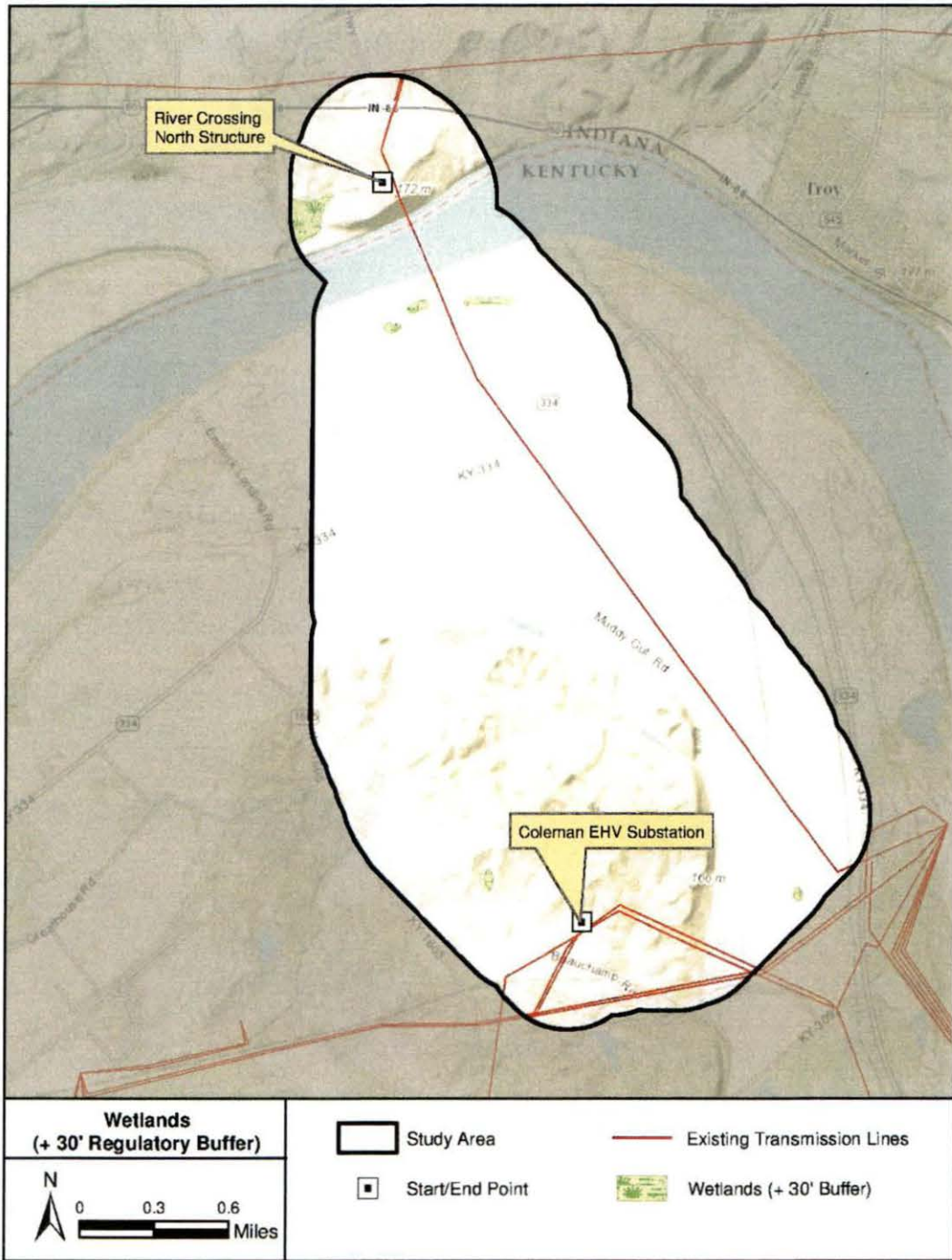


Low Suitability: Wetlands

Wetlands have a low suitability value for locating transmission lines according to the Natural Environment Perspective. There are several mapped wetland areas throughout the study area, mainly in within the Ohio River floodplain.

The source of the wetland information is the U.S. Fish and Wildlife Service's National Wetland Inventory (NWI) data. Mapped NWI Wetlands are shown in Figure 22.

FIGURE 22: NATIONAL WETLANDS INVENTORY

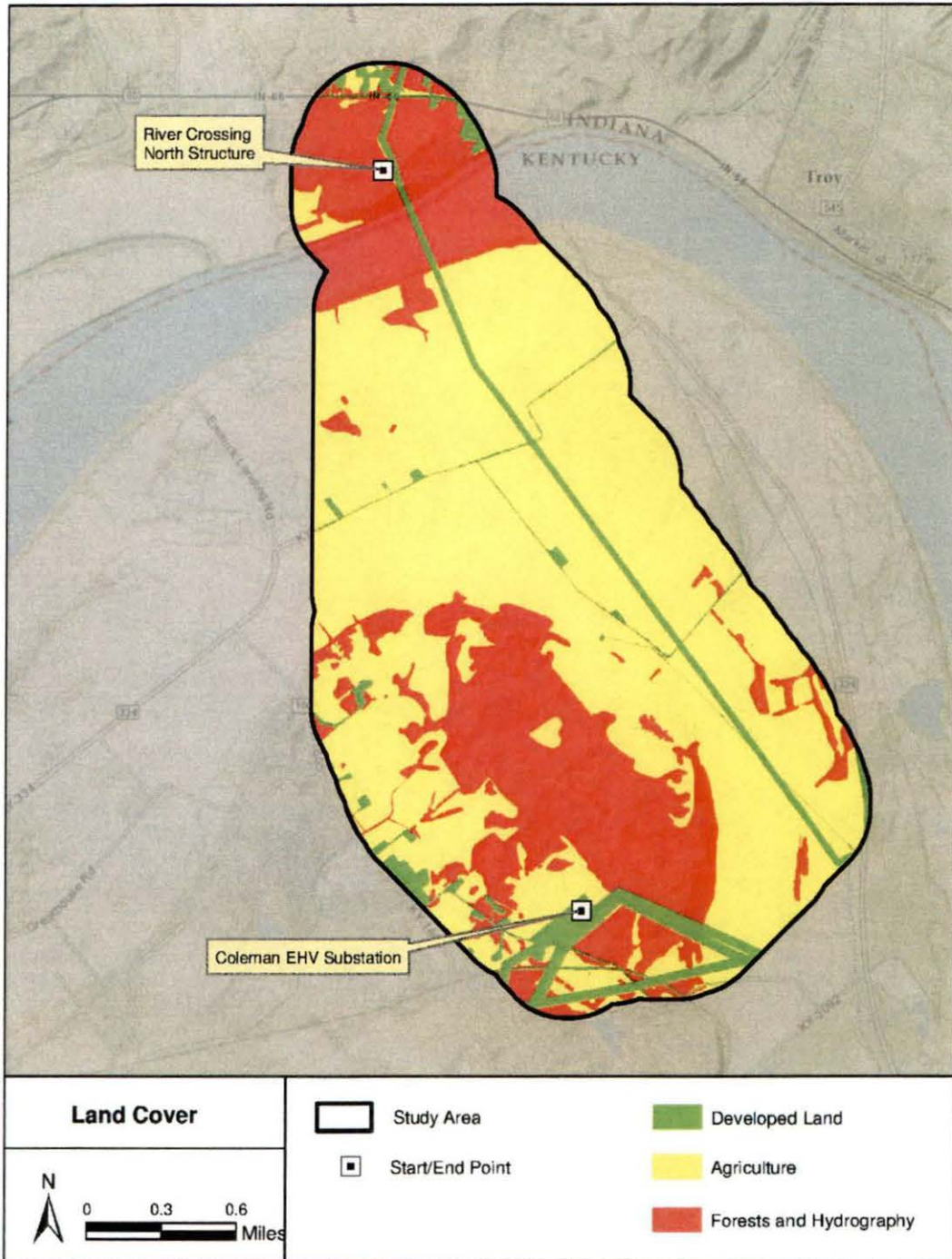


3. Land Cover

In the Natural Environment Perspective, the sub-model identifies developed lands as most suitable for transmission lines. Open and agricultural lands have moderate suitability for the construction of transmission lines. Naturally forested lands and hydrologic features have the lowest suitability with respect to the Natural Environment. The land cover data is displayed in Figure 23.

This layer was created by Quantum Spatial through photo interpretation of 2014 one-meter resolution NAIP (National Agricultural Imagery Program) photography and 2011 Bing Aerial Imagery.

FIGURE 23: LAND COVER



4. Wildlife Habitat

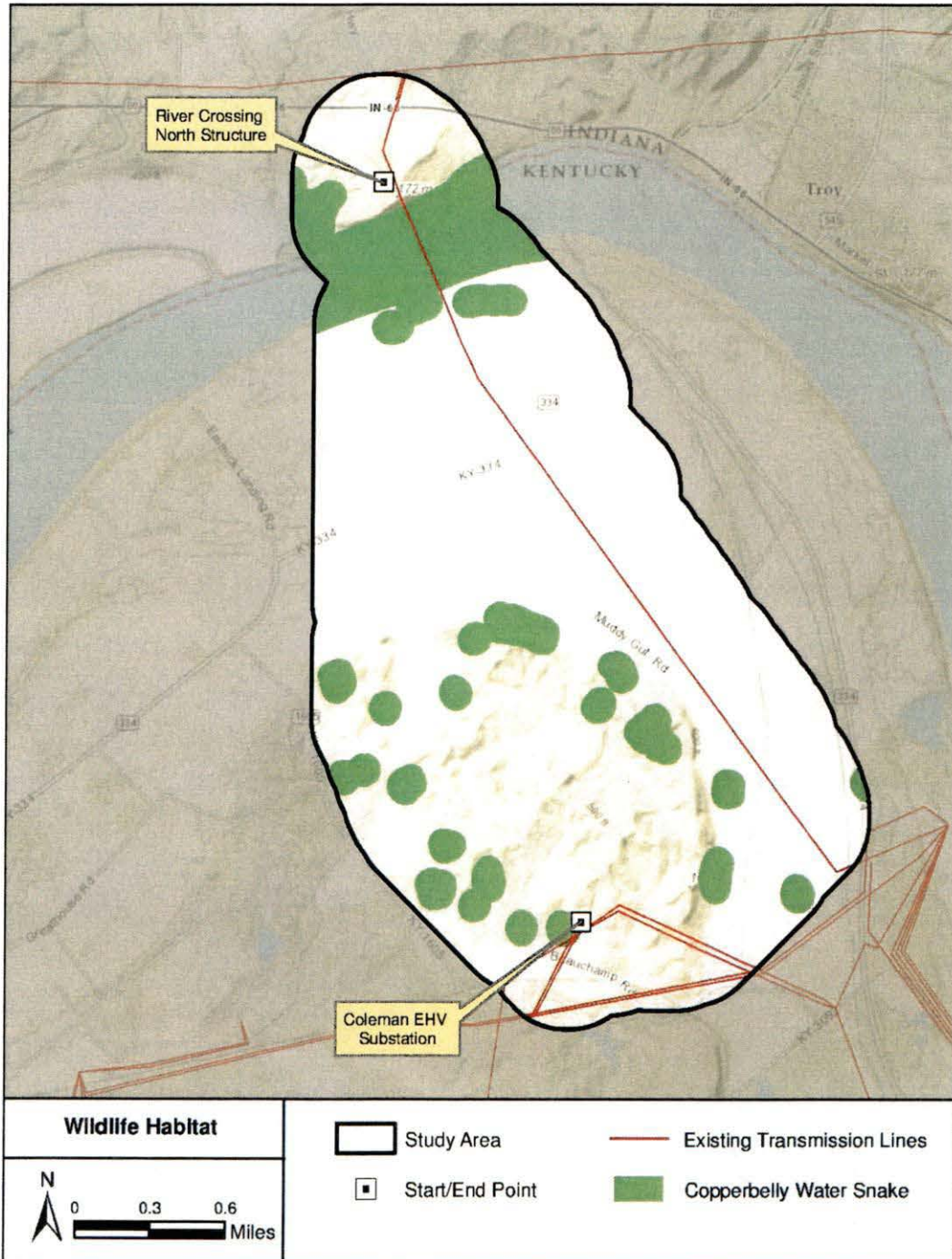
The Natural Environment Perspective gives low suitability to locating a transmission line where habitat for a species of concern has been identified. United States Fish & Wildlife Service (USFWS) indicates the known habitat of the Copperbelly Water Snake (*Nerodia erthrogaster neglecta*) exists throughout the study area. The data was confirmed through the Kentucky Threatened and Endangered Species Handbook (2001) created by the Kentucky Department of Fish and Wildlife Resources.

The Copperbelly Water Snake is described as a distinct subspecies of the Plainbelly Water Snake. Adults reach a length of between 20 and 48 inches. The Copperbelly Water Snake has a dark (usually black) back with a bright orange-red belly. Blotches of dark pigment extend onto the belly scales. The habitat of the Copperbelly Water Snake is found in swamps, sloughs, and bottomland hardwood forests. Upland areas adjacent to these habitat types are also utilized as travel corridors (Hermes, et al.).

Quantum Spatial modeled the habitat of the Copperbelly Water Snake by buffering the NWI wetland features by a distance of 300 feet, as shown in Figure 24. At that distance, distinct wetlands began to coalesce and appear as a single feature. This approximates the description of the habitat of the Copperbelly Water Snake.

There were no other features or species identified within the study area according to the Kentucky Threatened and Endangered Species Handbook created by the Kentucky Department of Fish and Wildlife Resources, or the Indiana Natural Heritage Data Center.

FIGURE 24: WILDLIFE HABITAT



5. Natural Environment Perspective Data Layer Weights (Project-Adjusted Values)

Not all features are present within every study area. Each perspective is adjusted based on the contents of the study area for a particular project. When a feature or layer is absent, the weights are adjusted proportionally across the remaining features or layers. The Natural Environment data layers and their relative weights for the 19-J 345 kV Transmission Line project are summarized in Table 5 below. Items highlighted in grey are not present in the study area unless otherwise discussed below.

TABLE 5: NATURAL ENVIRONMENT PERSPECTIVE ADJUSTED DATA LAYERS AND WEIGHTS

Natural Environment		
Floodplain	5.6%	AREAS OF LEAST PREFERENCE
Background	1	EPA Superfund Sites
100 Year Floodplain	9	State and National Parks
Streams/Wetlands	35.4%	USFS Wilderness Area
Background	1	Wild/Scenic Rivers
Streams < 5cfs+ Regulatory Buffer	6.4	Wildlife Refuge
Rivers/Streams > 5cfs+ Regulatory Buffer	7.3	State Nature Preserves
Wetlands + 30' Buffer	9	Designated Critical Habitat
Outstanding State Resource Waters	-	
Public Lands	0.0%	
Background	-	
WMA - Not State Owned	-	
USFS (proclamation area)	-	
Other Conservation Land	-	
USFS (actually owned)	-	
State Owned Conservation Land	-	
Land Cover	24.1%	
Developed Land	1	
Agriculture	4.6	
Forests	9	
Wildlife Habitat	34.9%	
Background	1	
Species of Concern Habitat	9	

- Outstanding State Resource Waters (OSRW) – OSRW waters are designated by the Kentucky Environmental and Public Protection Cabinet and require pollution management measures. The designation also includes certain unique waters of the Commonwealth. Quantum Spatial found no OSRW in the study area in accordance with the Kentucky Legislature. The map where this data can be found can be accessed at the following link:

<http://water.ky.gov/waterquality/Pages/SpecialUseWaters.aspx>.

- Public Lands – Data from the Kentucky State Nature Preserve Commission indicates that there are no Wildlife Management Areas (WMA), USFS lands (proclaimed or owned), or conservation land (public or privately owned) within the study area (2016). This information was supported by examination of PVA tax records.
- EPA Superfund Sites – Referencing the EPA Superfund map hosted by the Environmental Protection Agency's website, there are no Superfund sites present in the study area. The closest Superfund site is approximately 0.86 miles southeast of the study area. This site is named the National Southwire Aluminum Superfund Site.
- State & National Parks – Analysis of the PVA tax parcel information obtained from Hancock County reveal that there are no parcels owned by the federal or state governments within the study area (2016).
- USFS Wilderness Area – The USFWS lists no USFS wilderness areas in the study area (2016).
- Wild and Scenic Rivers – The National Wild & Scenic Rivers System lists no registered wild or scenic rivers within a large area around the study area (2016).
- Wildlife Refuge – The Kentucky State Nature Preserve lists no wildlife refuges or State Natural Preserves in the study area (2016).
- State Nature Preserves – After referencing the Kentucky Government map of State Nature Preserves, none were identified in the study area.
- Designated Critical Habitat – The USFWS lists no critical habitat areas in the study area (2016).

Part VII: Built Environment

Below is the Built Environment Perspective of the Kentucky Model. The Built Environment Perspective incorporates those features which should be considered from the perspective of protecting human development and activities, including viewshed, when constructing a transmission line.

TABLE 6: BUILT ENVIRONMENT PERSPECTIVE LAYERS AND WEIGHTS (MODEL VALUES)

Built Environment			
Proximity to Buildings	16.8%	Proximity to Eligible Historic and Archeological Sites	31.0%
Background	1	Background	1
900-1200'	3.4	900-1200'	4.6
600-900'	5.7	600-900'	7.9
300-600'	8	0-300'	8.6
0-300'	9	300-600'	9
Building Density	8.4%	AREAS OF LEAST PREFERENCE	
0 - 0.05 Buildings/Acre	1	Listed Archaeology Sites & Dist.	
0.05 - 0.2 Buildings/Acre	3	Listed NRHP Districts and Buildings	
0.2 - 1 Buildings/Acre	5.6	City and County Parks	
1 - 4 Buildings/Acre	8.5	Day Care Parcels	
> 4 Buildings/Acre	9	Cemetery Parcel s	
Proposed Development	3.9%	School Parcels (K-12)	
Background	1	Church Parcels	
Proposed Development	9		
Spannable Lakes and Ponds	4.0%		
Background	1		
Spannable Lakes and Ponds	9		
Land Use	35.9%		
Commercial/Industrial	1		
Agriculture (crops)	3.5		
Agriculture (other livestock)	4.6		
Silviculture	6		
Other (forest)	6.7		
Equine Agri - Tourism	8		
Residential	9		

1. Proximity to Buildings

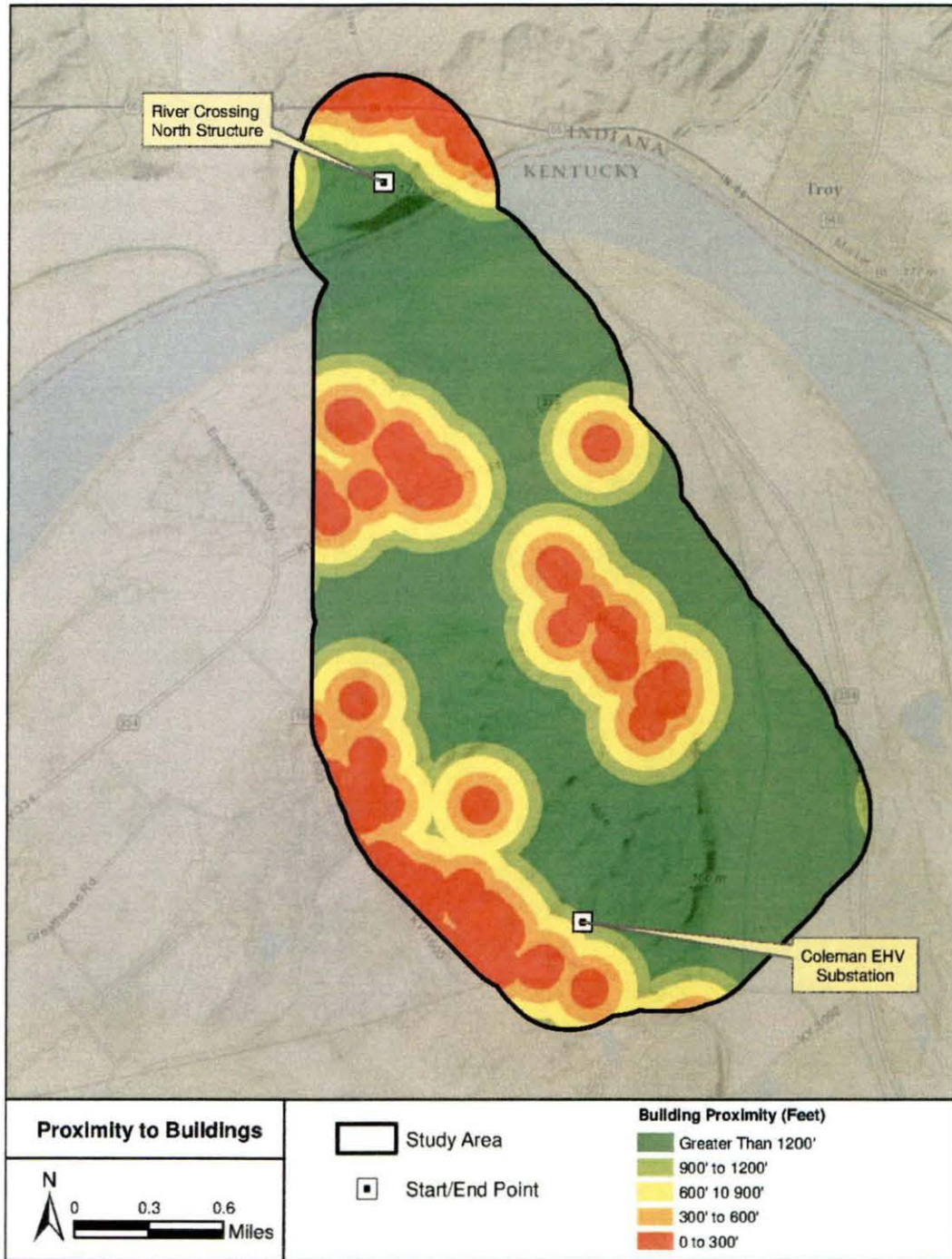
In the Built Environment, it is more suitable to locate a transmission line away from buildings. The model has five categories to rank the Proximity to Buildings layer for suitability. The "Background" category constitutes all areas that are farther than 1,200 feet from any building. This information was developed by Quantum Spatial from analysis of aerial photography and is displayed in Figure 25. Table 7 displays the siting model's suitability values associated with proximity to buildings.

Building proximity was determined by measuring linear distance from building centroids and footprints. These centroids and footprints were extracted from 2014 NAIP aerial photography and 2011 Bing imagery by Quantum Spatial aerial photo interpreters.

TABLE 7: PROXIMITY TO BUILDING SUITABILITY

Distance	Model Value	Suitability
< 300 Feet	9.0	Low
300 - 600 Feet	8.0	Moderate
600 - 900 Feet	5.7	Moderate
900 - 1,200 Feet	3.4	Moderate
> 1,200 Feet	1.0	High

FIGURE 25: PROXIMITY TO BUILDINGS



2. Building Density

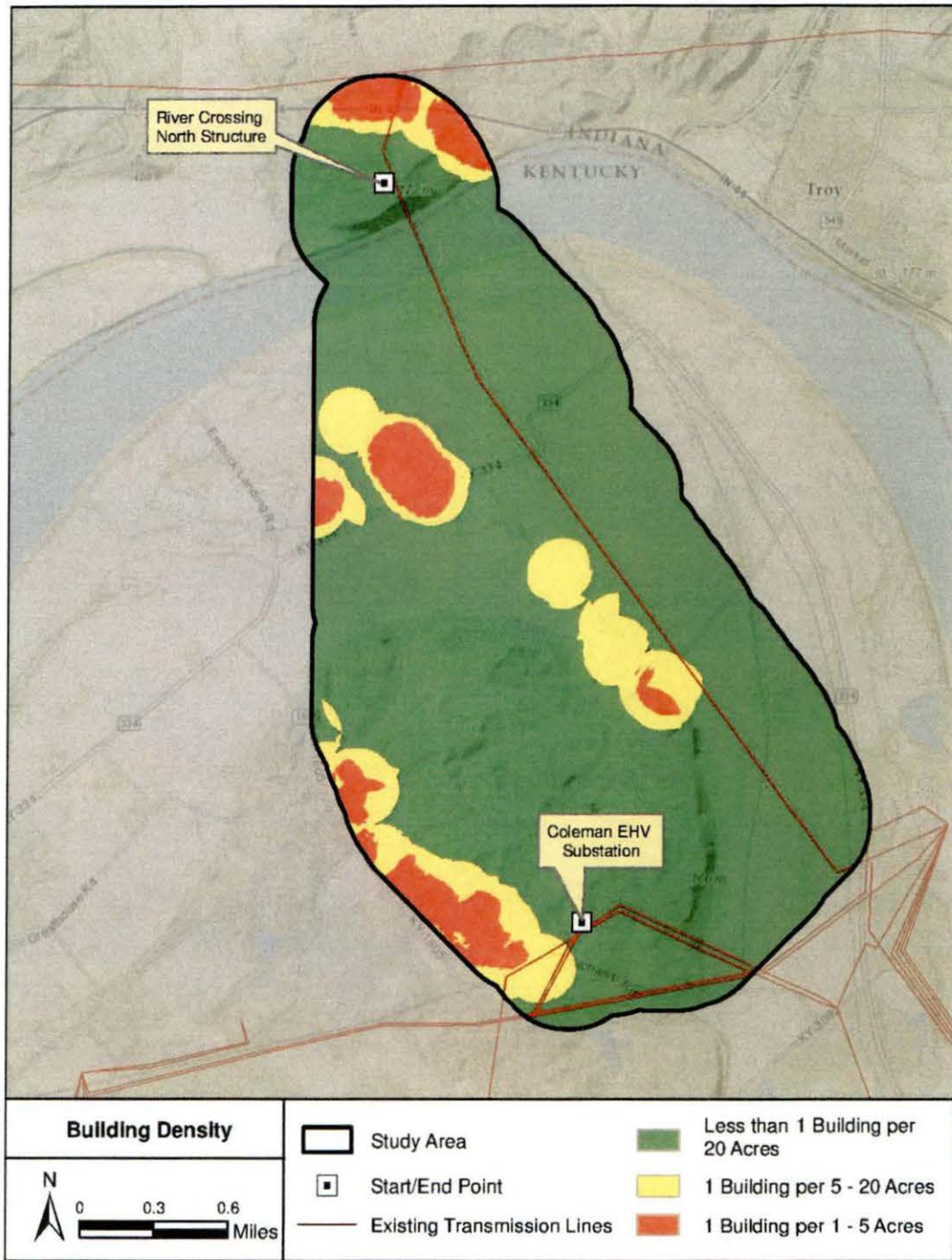
Areas of lower building density are considered more suitable to locate a transmission line. Areas of relatively higher density occur in the central portion of the study area. Building density suitability values are shown in Table 8.

Figure 26 displays the density of buildings in the study area. Building centroid information was derived by Quantum Spatial from analysis of the same building centroids and footprints as developed for the building proximity layer. This data was derived from 2014 NAIP photography.

TABLE 8: BUILDING DENSITY SUITABILITY

Density	Model Value	Suitability
1 Building / 0.2 – 1 Acres	9.0	Low
1 Building / 0.05 – 0.2 Acres	4.5	Moderate
1 Building / 0 – 0.05 Acres	1.0	High

FIGURE 26: BUILDING DENSITY SUITABILITY

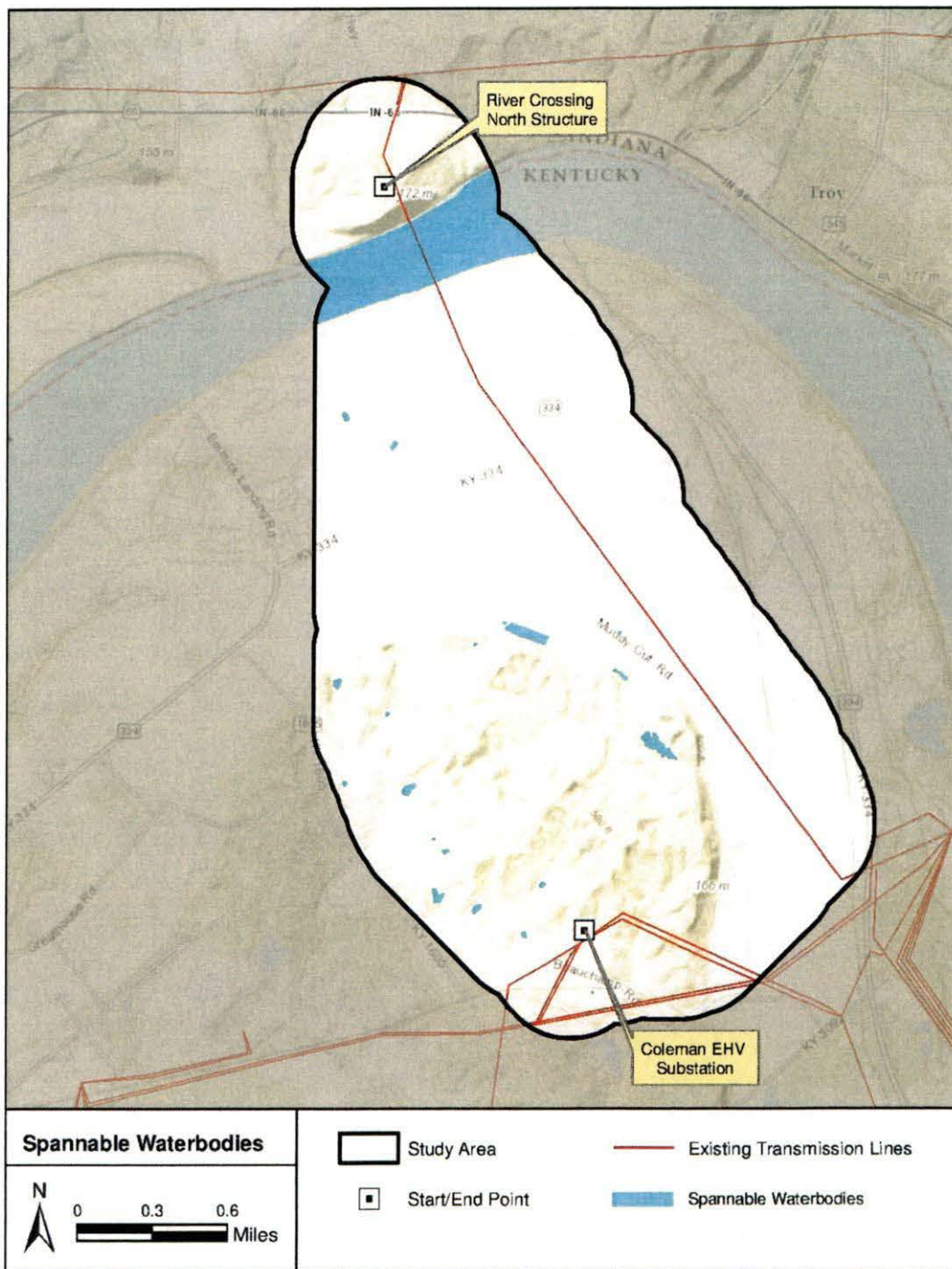


3. Spannable Lakes and Ponds

Spannable open waters, such as lakes, ponds, and rivers, are designated as less suitable for locating transmission lines. All water bodies found within the study area are relatively small or narrow. They still present challenges to the routing process and are considered to have a low suitability value.

Figure 27 depicts the location of spannable waterbodies within the study area. The hydrologic features were extracted from aerial photography interpretation (NAIP 2014), 2011 Bing imagery, and from the USGS blue line streams dataset for the study area (2015).

FIGURE 27: WATERBODIES



4. Land Use

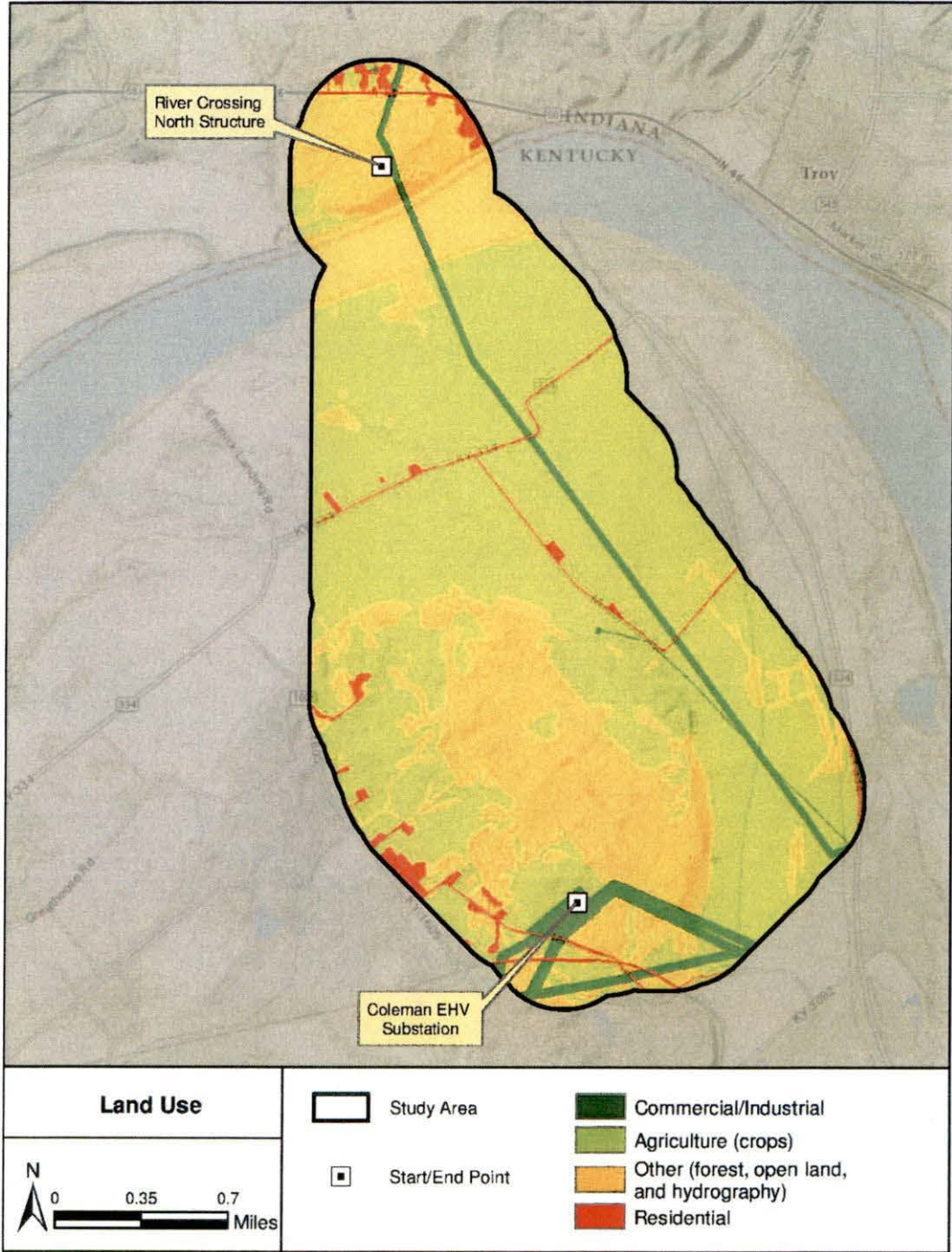
In the Built Environment Perspective, which seeks to minimize impacts to people, the Siting Model considers undeveloped land to be the most suitable for locating transmission lines, whereas residential lands are least suitable. Agricultural lands have a moderate suitability. It is these agricultural land uses that make up the majority of the study area. Figure 28 shows the Land Use patterns within the study area.

Table 9 documents the land use classifications that are present within the study area, their model weights, and relative suitability values. While other classifications exist with respect to the model, these are the only classes present in the study area. The land use data was extracted by Quantum Spatial using 2014 NAIP aerial photography and 2011 Bing imagery.

TABLE 9: LAND USE SUITABILITY

Land Use	Model Value	Suitability
Commercial / Industrial	1	High
Agriculture (crops)	3.5	Moderate
Other (forest)	6.7	Low
Residential	9	Low

FIGURE 28: LAND USE



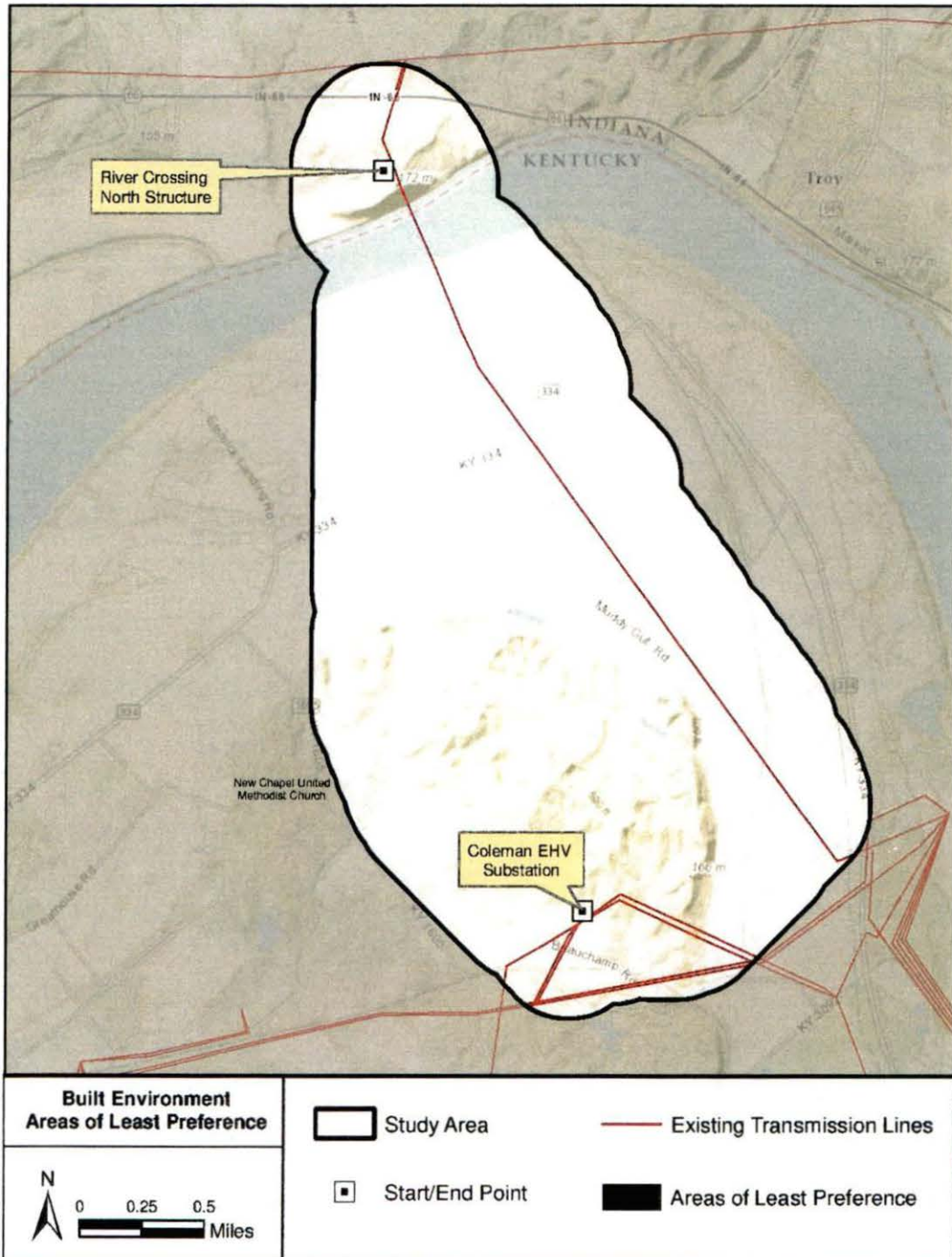
5. Areas of Least Preference

Listed archaeology sites & districts, listed NRHP districts & buildings, city & county parks, day care parcels, cemetery parcels, school parcels (K-12), and church parcels are designated as Areas of Least Preference in the Built Considerations Perspective of the Kentucky Model. Within and around the study area, church parcels are the only features from this list of areas of least preference that are present. No listed archaeology sites & districts, listed NRHP districts & buildings, city & county parks, day care parcels, cemetery parcels, or school parcels were identified within the study area.

Religious Sites

Two church parcels were identified within the study area using PVA data and confirmed by the NAIP Photography (2014) and 2011 Bing imagery. The religious parcel in the Kentucky portion of the study area belongs to the New Chapel United Methodist Church. The corner of this parcel is at the intersection of Great House Road and Adair Road, in the southwestern area of the study area. Another parcel belonging to a church was identified in the very northeastern part of the study area within Indiana along the Ohio River Scenic Byway. Please note that the area of these parcels is very small, and therefore difficult to see on the map below.

FIGURE 29: AREAS OF LEAST PREFERENCE (BUILT ENVIRONMENT)



6. Built Environment Perspective Data Layer Weights (Project-Adjusted Values)

Not all features are present within every study area. Each perspective must be adjusted based on the contents of the study area for a particular project. When a feature or layer is absent, the weights are adjusted proportionally across the remaining features or layers. The Built Environment data layers and their relative weights for the Line 19-J 345 kV Transmission Line project are summarized in Table 10. Items highlighted in grey are not present in the study area unless otherwise discussed below.

TABLE 10: BUILT ENVIRONMENT PERSPECTIVE ADJUSTED DATA LAYERS AND WEIGHTS

Built Environment			
Proximity to Buildings	17.5%	Proximity to Eligible Historic and Archeological Sites	32.2%
Background	1	Background	-
900-1200	3.4	900-1200	-
600-900	5.7	600-900	-
300-600	8	0-300	-
0-300	9	300-600	-
Building Density	8.7%	AREAS OF LEAST PREFERENCE	
0 - 0.05 Buildings/Acre	1	Listed Archaeology Sites & Dist.	
0.05 - 0.2 Buildings/Acre	4.5	Listed NRHP Districts and Buildings	
0.2 - 1 Buildings/Acre	9	City and County Parks	
1 - 4 Buildings/Acre	-	Day Care Parcels	
> 4 Buildings/Acre	-	Cemetery Parcels	
Proposed Development	0.0%	School Parcels (K-12)	
Background	-	Church Parcels	
Proposed Development	-		
Spannable Lakes and Ponds	4.2%		
Background	1		
Spannable Lakes and Ponds	9		
Land Use	37.4%		
Commercial/Industrial	1		
Agriculture (crops)	3.5		
Agriculture (other livestock)	-		
Silviculture	-		
Other (forest)	6.7		
Equine Agri - Tourism	-		
Residential	9		

- 1 - 4 Buildings per Acre – Building densities were calculated by Quantum Spatial using building locations extracted from 2014 NAIP photography and 2011 Bing imagery. There were no building densities that met the criteria of having 1 -4 buildings per acre.
- > 4 Buildings per Acre – Building densities were calculated by Quantum Spatial using building locations extracted from 2014 NAIP photography and 2011 Bing imagery. There were no building densities that met the criteria of having > 4 buildings per acre.
- Proposed Development – Representatives from the Hancock County PVA, the Urban Planning & Zoning offices, and the development authorities were aware of no proposed developments within the study area (November 2014). Quantum Spatial contacted Don Cox, a manager in the Hancock Urban Planning and Zoning Office, for all proposed developments. Quantum Spatial spoke with Peyton Jackson at the Hancock County PVA office in March, 2016 to obtain the parcel data.
- Agriculture (other livestock) – Interpretation of 2014 NAIP photography and 2011 Bing imagery did not indicate any livestock within the study area.
- Silviculture – Interpretation of 2014 NAIP photography and 2011 Bing imagery did not indicate any silviculture within the study area (2014).
- Equine Agri–Tourism – The Kentucky Model places a high value on the protection of commercial horse farms. Interpretation of 2014 NAIP photography did not indicate any commercial horse farms within the study area (2014).
- Proximity to Eligible Historic and Archeological Sites – An examination of the NRHP (downloaded in February 2016) and data procured from the Kentucky Office of State Archeology did not reveal any eligible Historic or Archeological sites within the study area. While the examination did reveal an archeological site in the east-central part of the study area, this site did not meet the criteria for being considered as an eligible site and was therefore not considered in the model.
- Listed Archeological Sites and Districts – An inventory of listed Archeological sites and districts was obtained from the Kentucky Office of State Archaeology. This inventory identified an archeological site in the east-central part of the study area, but this site does not meet the criteria for being a listed site.

- Listed NRHP Districts and Buildings – An inventory of NRHP-listed buildings and districts was obtained from the Kentucky Heritage Council. This inventory did not include any listed features within the study area.
- City and County Parks – In the study area, there were no city and county parks identified according to the 2014 NAIP photography, 2011 Bing Imagery, and PVA records.
- Day Care Parcels – Review of ownership information (PVA data) tax parcels identified no commercial child care facilities in the study area. This information was confirmed by photo interpretation of the 2014 NAIP photography and 2011 Bing imagery.
- Cemetery Parcels – A review of ownership information (PVA data) tax parcels and USGS Topo maps did not identify any cemeteries in the study area.
- School Parcels (K-12) – Review of ownership information (PVA data) tax parcels identified no school parcels in the study area. This information was confirmed by photo interpretation of the 2014 NAIP photography and 2011 Bing imagery.

Part VIII: Suitability Surfaces

Suitability Surfaces were created by combining the three perspectives (Engineering Considerations, Natural Environment, and Built Environment) described in the preceding sections. Each Suitability Surface represents a weighted combination of the three perspectives. Four scenarios were created by distributing the weight of each environment. The Suitability Surfaces are used in performing the “optimal path” analysis, described in Part IX of this report. This algorithm is applied to each surface to develop the four Alternate Corridors.

Engineering Concerns Surface: The data layers from the Engineering Considerations Perspective are given five times (72%) the emphasis of the Built Environment (14%) and Natural Environment (14%) perspectives.

Natural Environment Surface: The data layers from the Natural Environment Perspective are given five times (72%) the emphasis of the Built Environment (14%) and Engineering Considerations (14%) perspectives.

Built Environment Surface: The data layers from the Built Environment Perspective are given five times (72%) the emphasis of the Natural Environment (14%) and Engineering Considerations (14%) perspectives.

Simple Average Surface: For the Simple Average suitability surface, an equal emphasis (33.3%) is applied to all three Perspectives.

FIGURE 30: SUITABILITY SURFACE – ENGINEERING CONSIDERATIONS EMPHASIS

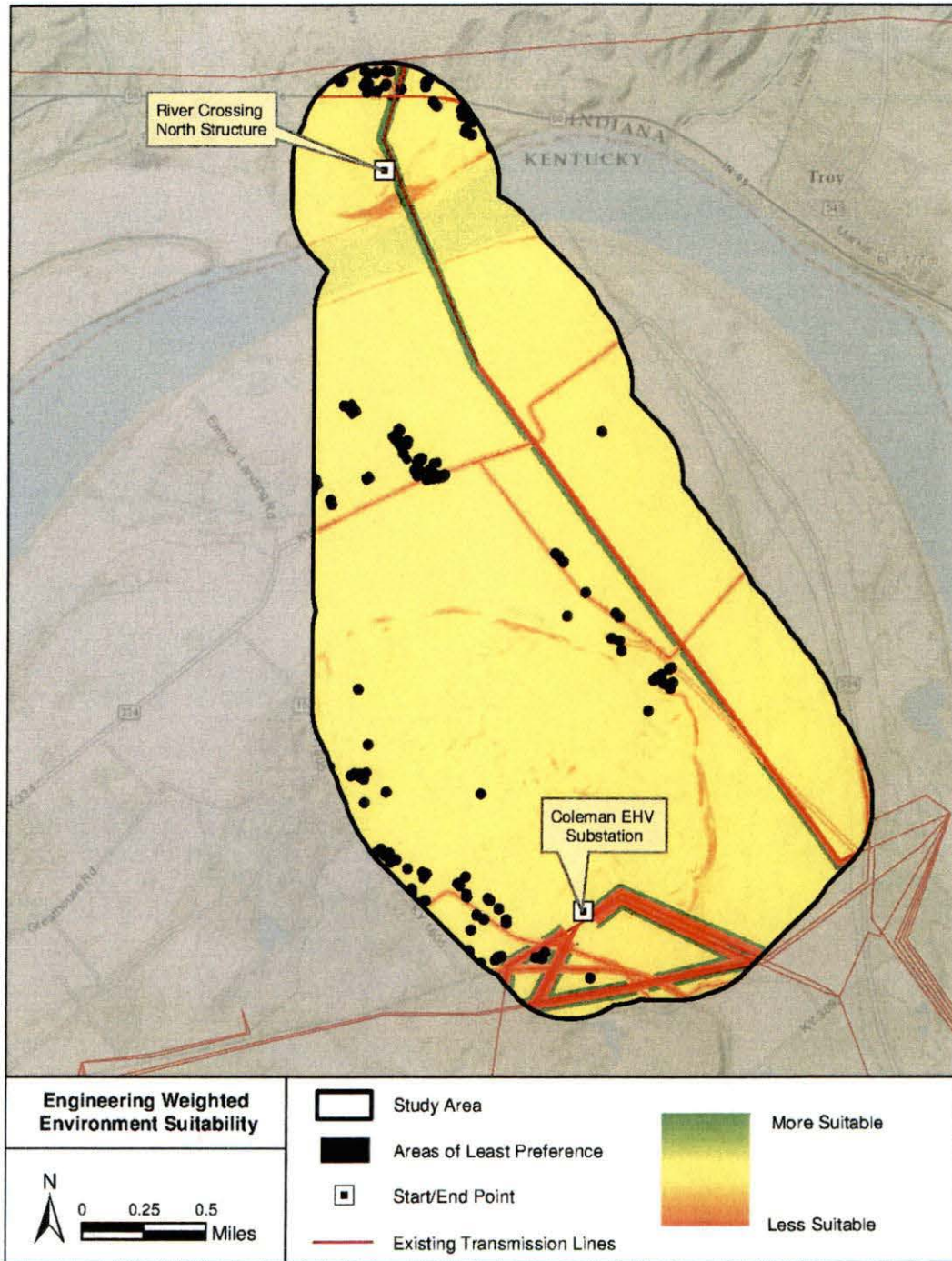


FIGURE 31: SUITABILITY SURFACE - NATURAL ENVIRONMENT EMPHASIS

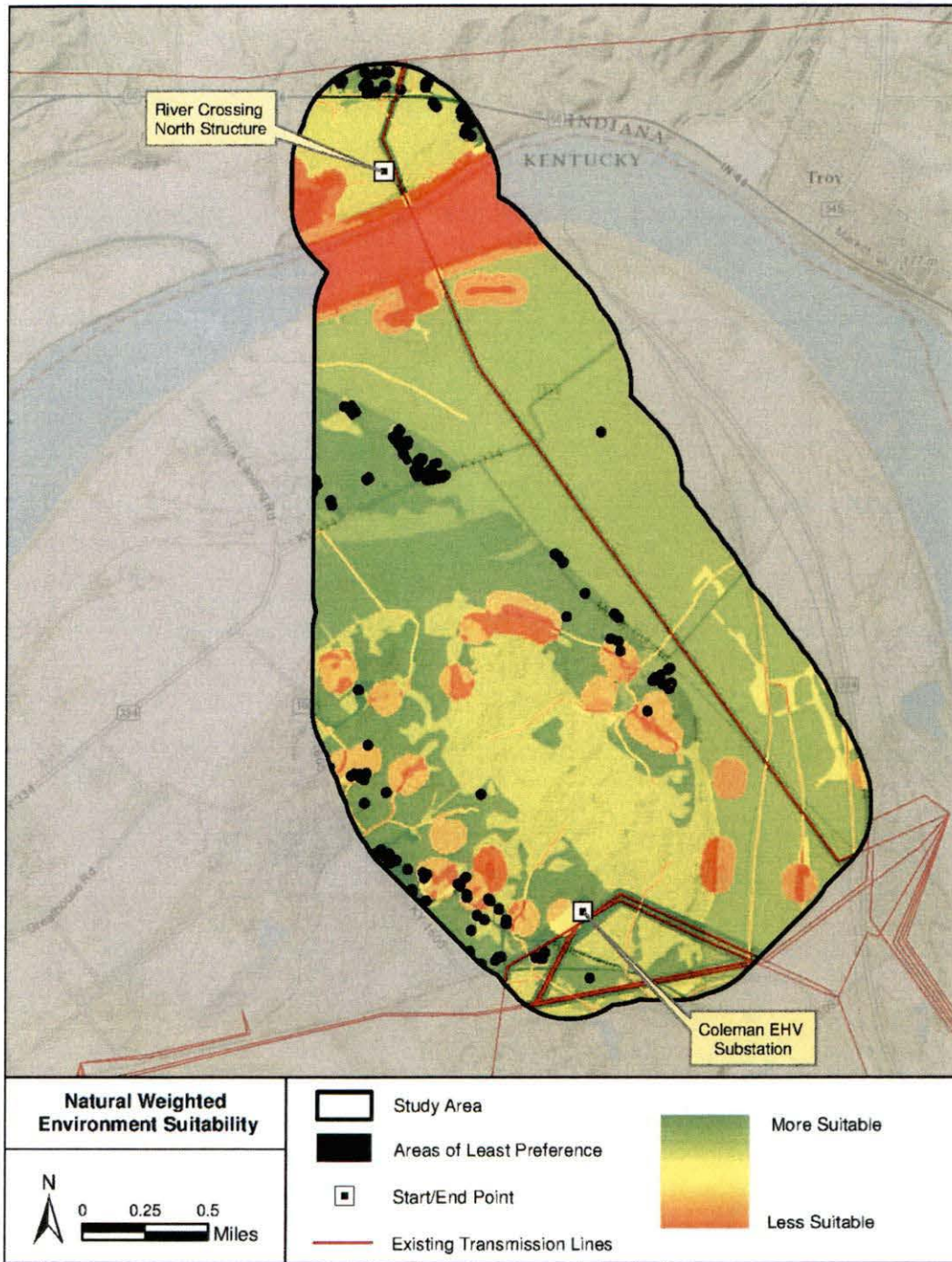


FIGURE 32: SUITABILITY SURFACE – BUILT ENVIRONMENT EMPHASIS

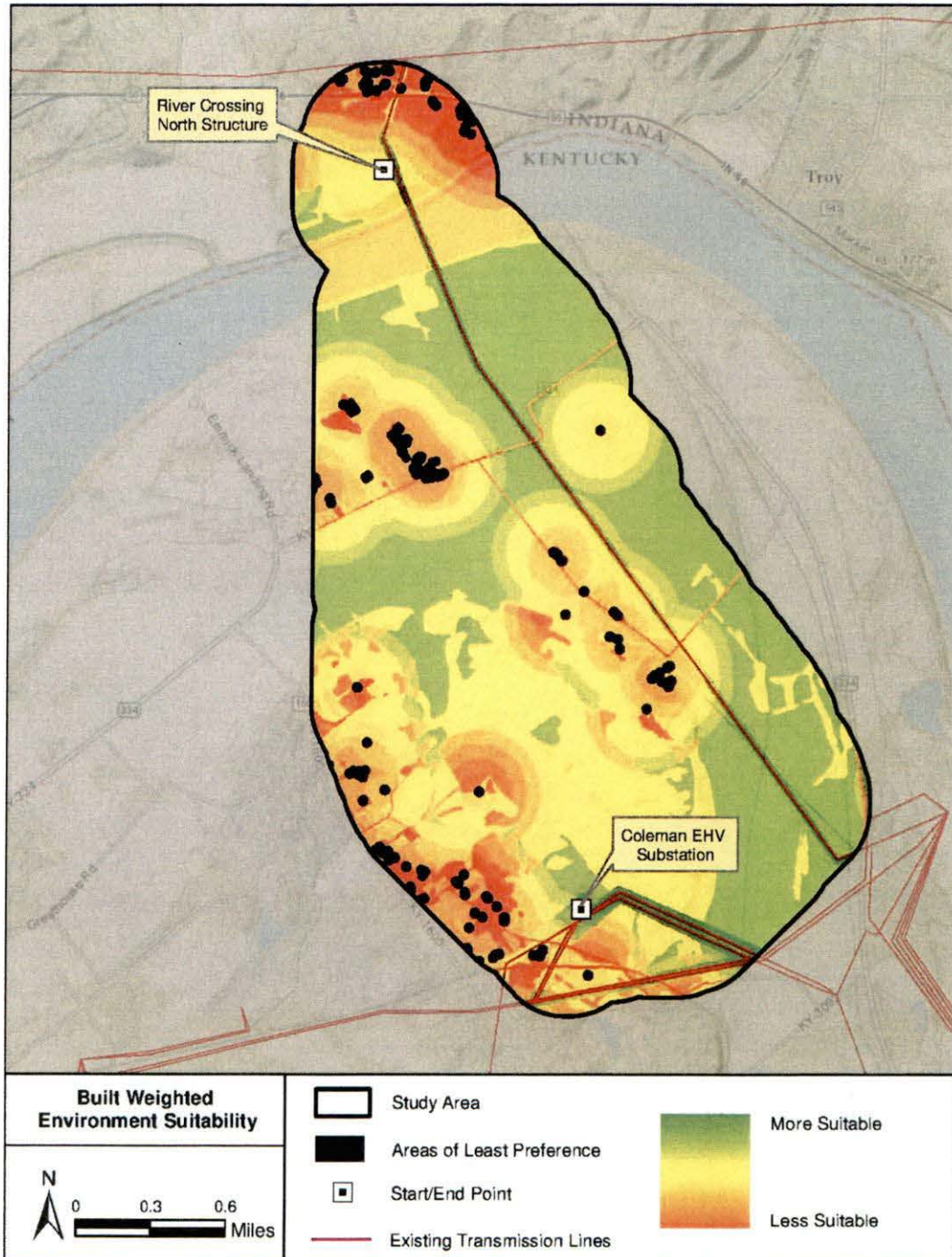
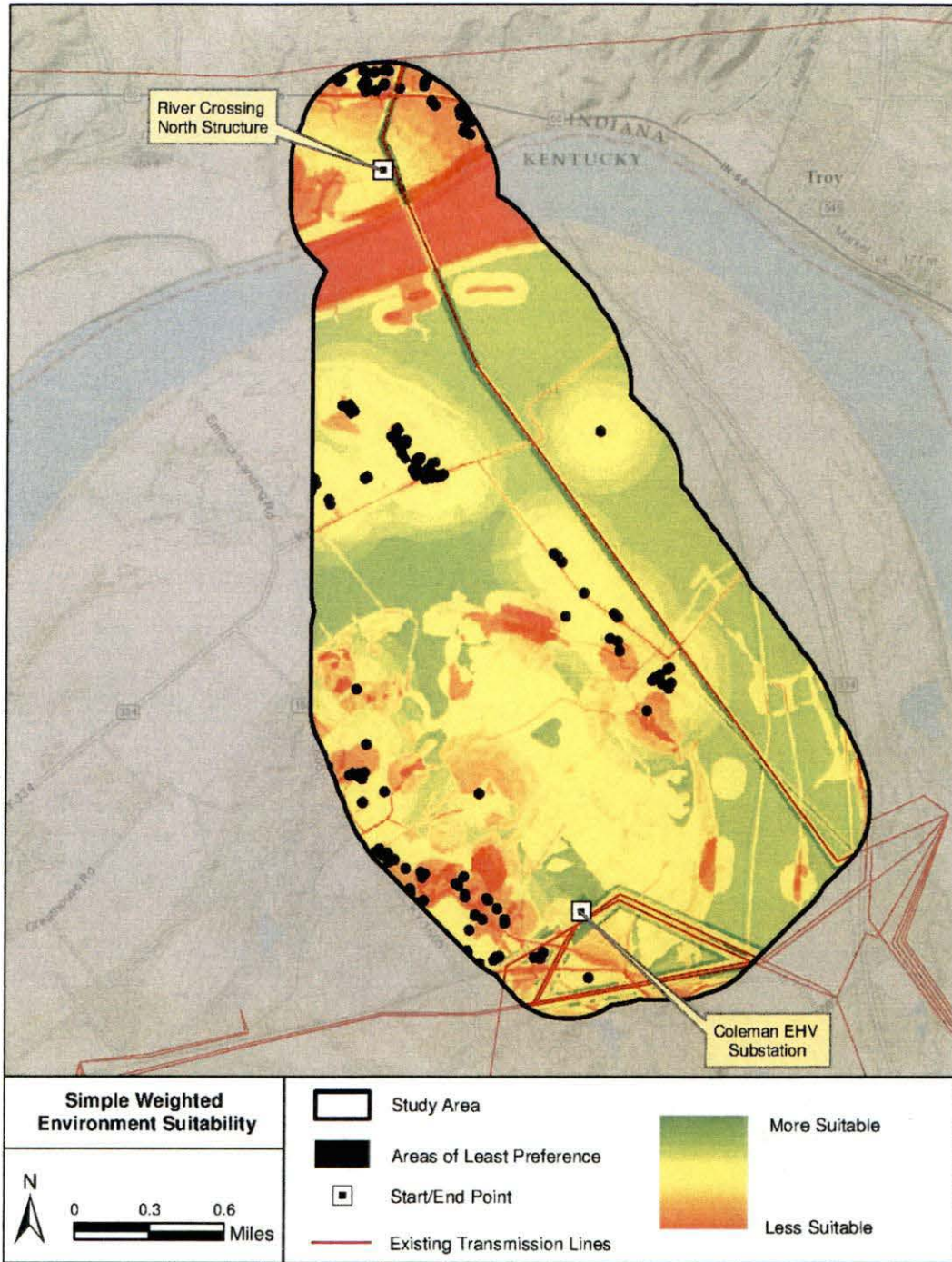


FIGURE 33: SUITABILITY SURFACE – SIMPLE AVERAGE



Part IX: Alternate Corridor Generation

Each Suitability Surface was used in the next phase of the analysis. This phase is called Alternate Route Analysis, and involves the creation of “least cost paths.” An algorithm is used to find the cost of every possible path (route) between the two end points. A path is any continuous string of grid cells, 15 by 15 feet in size, connecting the Coleman EHV Substation site and the River Crossing North Structure.

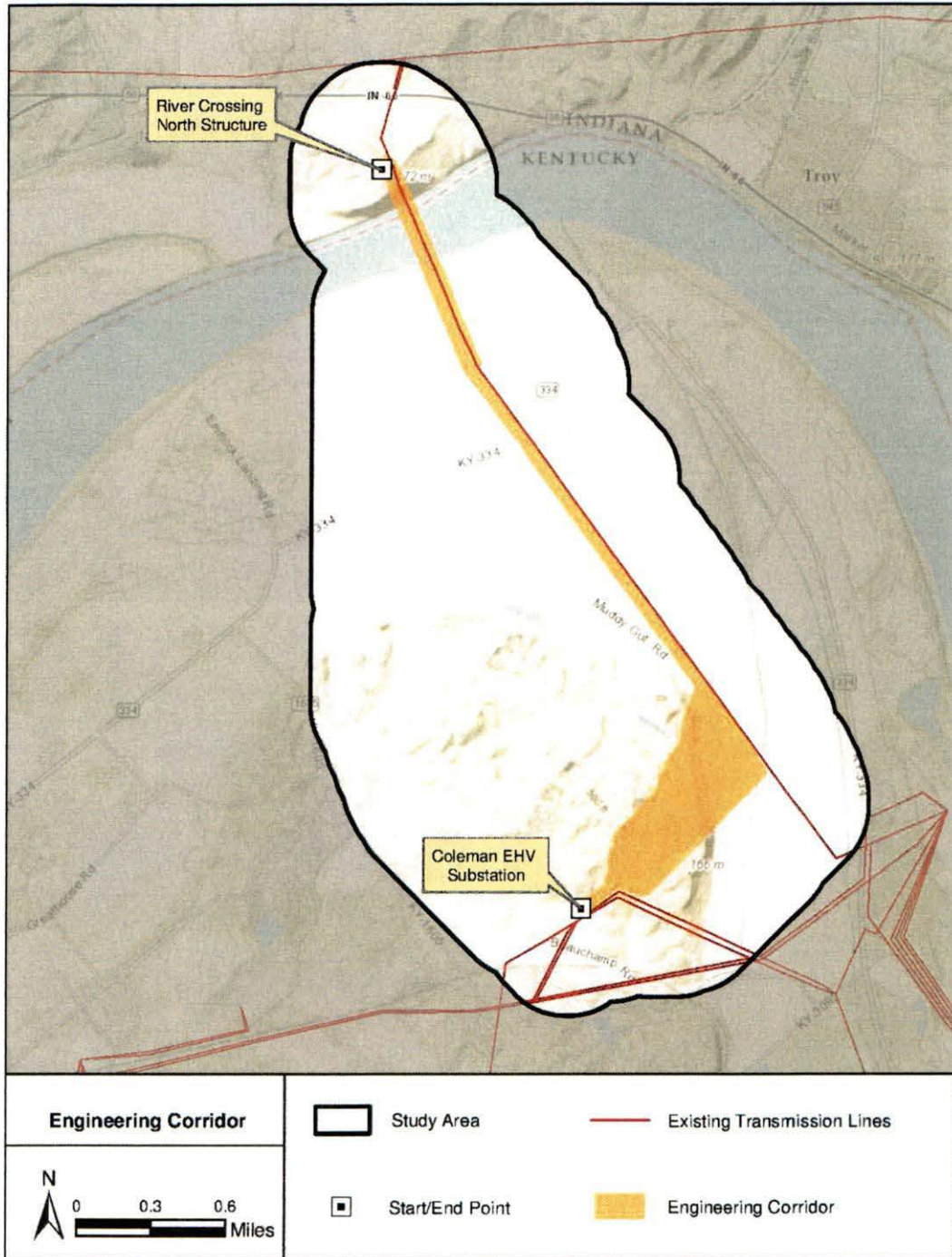
The cost is the accrual of values of those grid cells, and the value of each cell varies depending on the features that the cell represents and the weight associated by virtue of the weighted suitability environment. Lower summed values indicate relatively more suitable paths, whereas higher summed values indicate relatively less suitable paths. The Alternate Corridor for each perspective (Engineering Considerations, Built Environment, Natural Environment, and Simple Average) is the total area representing the top 3% (lowest summed values equaling most suitable areas) of all potential routes.

1. Engineering Considerations Alternate Corridor

When the Alternate Route Analysis was performed on the Engineering Considerations Weighted Suitability Surface, the results were the Engineering Considerations Alternate Corridors displayed in Figure 34. The Engineering Considerations Perspective is heavily weighted toward co-location with existing transmission lines. The next highest suitability type is "Background." This causes the corridor to broaden in areas where no co-location opportunities exist.

The Engineering Considerations Corridor leaves the Coleman EHV Substation site in a northeastern direction. The corridor seeks out the existing transmission line corridor, and then co-locates with that line's corridor all the way up to the River Crossing North Structure on the northern bank of the Ohio River.

FIGURE 34: ENGINEERING CONSIDERATIONS ALTERNATE CORRIDOR

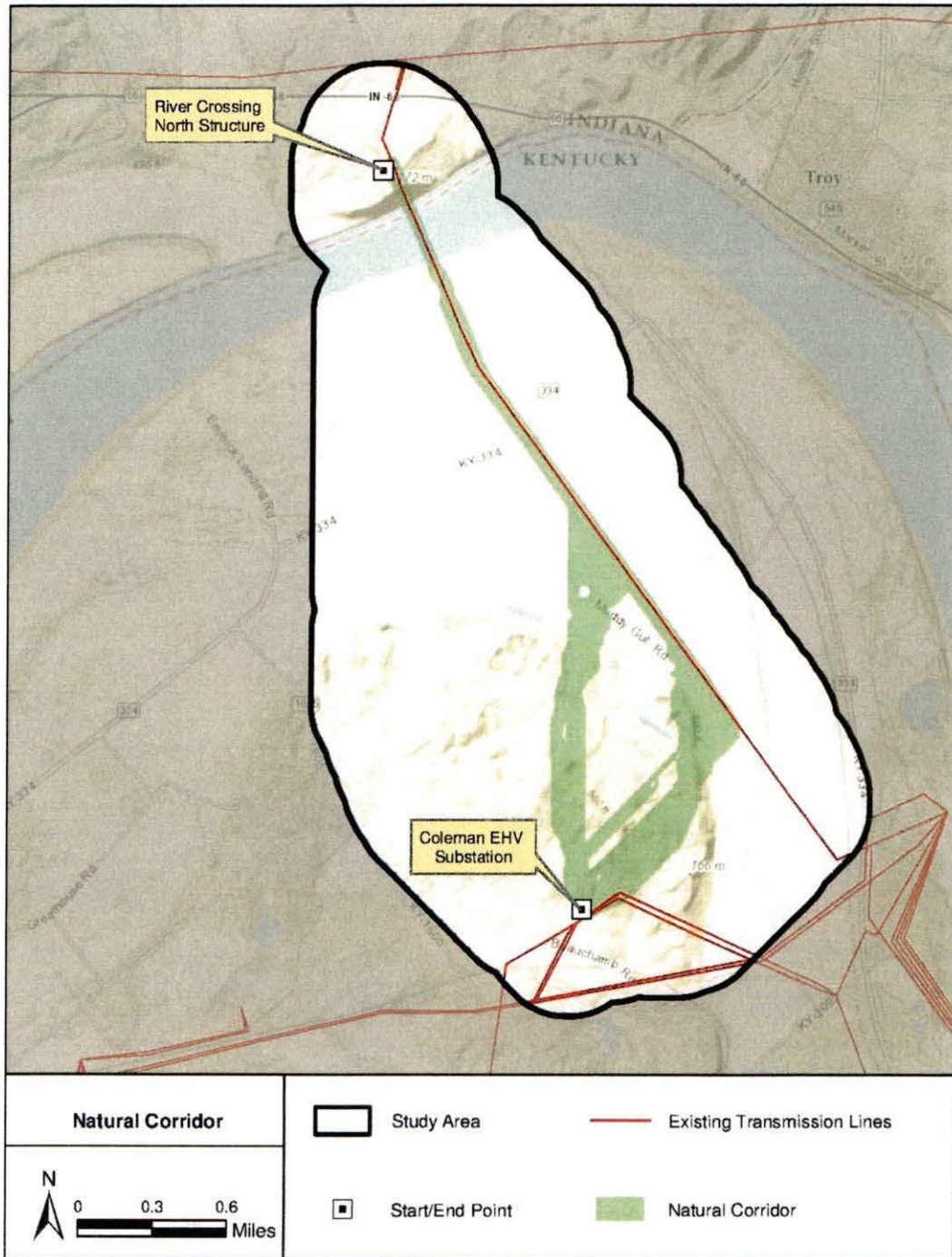


2. Natural Environment Alternate Corridor

When the Alternate Route Analysis was performed on the Natural Environment Weighted Suitability Surface, the result was the Natural Environment Alternate Corridors shown in Figure 35. The Natural Environment Corridor seeks to limit impacts to naturally occurring areas. Avoiding wildlife habitat and streams / wetland areas are the most important criteria to this portion of the analysis. As a result, upland and developed areas will be the most preferred avenue for the Natural Environment Corridors.

The Natural Environment Corridor leaves the Coleman EHV Substation in two ways: one heading immediately north seeking the shortest route to the existing transmission line corridor, and another heading northeast seeking to minimize impacts to naturally occurring features to the north-northeast of the substation. Both options then follow the existing transmission line corridor co-location opportunity all the way up to the River Crossing North Structure on the northern bank of the Ohio River.

FIGURE 35: NATURAL ENVIRONMENT ALTERNATE CORRIDOR

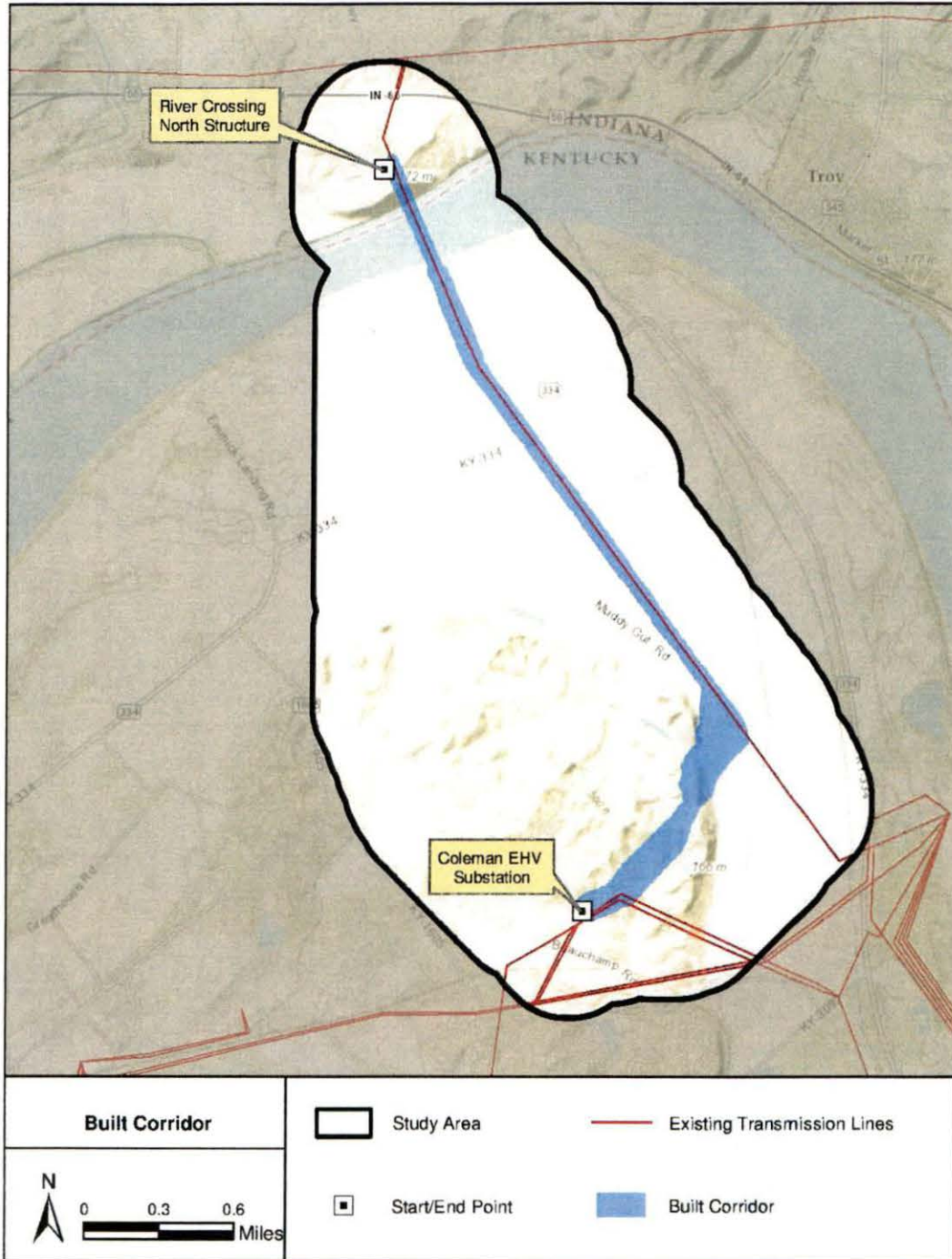


3. Built Environment Alternate Corridor

When the Alternate Route Analysis was performed on the Built Environment Weighted Suitability Surface, the results were the Built Environment Alternate Corridors shown in Figure 36.

Beginning at the Coleman EHV Substation the Built Environment Alternate Corridor moves northeast following the terrain while attempting to minimize impacts to the developed areas to the north-northeast of the substation. Once the corridor reaches the existing transmission line corridor it follows the co-location opportunity up to the River Crossing North Structure on the northern bank of the Ohio River.

FIGURE 36: BUILT ENVIRONMENT ALTERNATE CORRIDOR

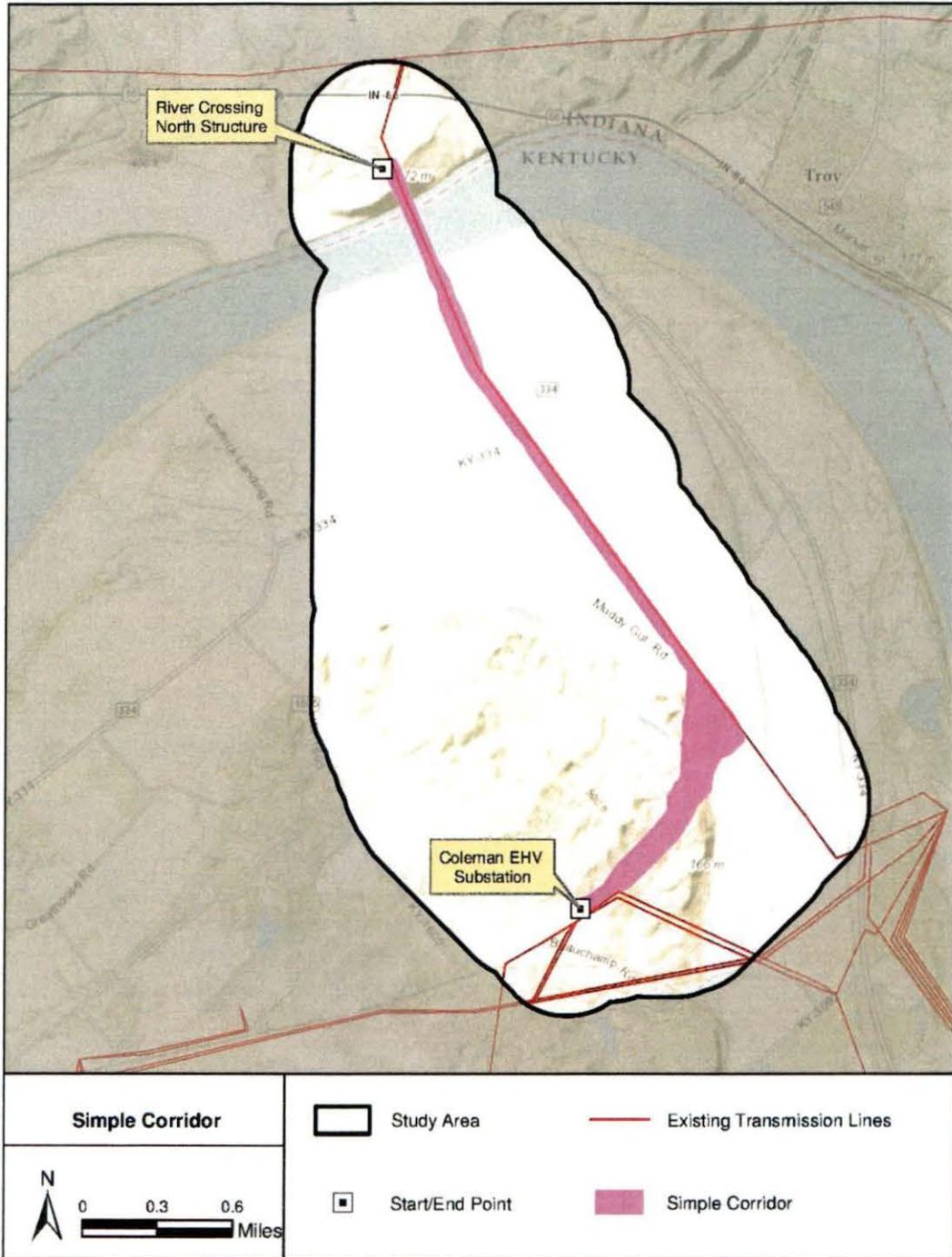


4. Simple Average Alternate Corridor

When the Alternate Route Analysis was performed on the Simple Average Suitability Surfaces, the results were the Simple Average Alternate Corridors shown in Figure 37. Since the Simple Average Suitability weighs the other three perspectives of the model equally, the Simple Average Corridor usually resembles elements of the other corridors.

Beginning at the Coleman EHV Substation, the Simple Average Corridor follows a northeastern path very similar to the built corridor. Once the corridor reaches the existing transmission line corridor, it follows the co-location opportunity all the way up to the River Crossing North Structure on the northern bank of the Ohio River.

FIGURE 37: SIMPLE AVERAGE ALTERNATE CORRIDOR

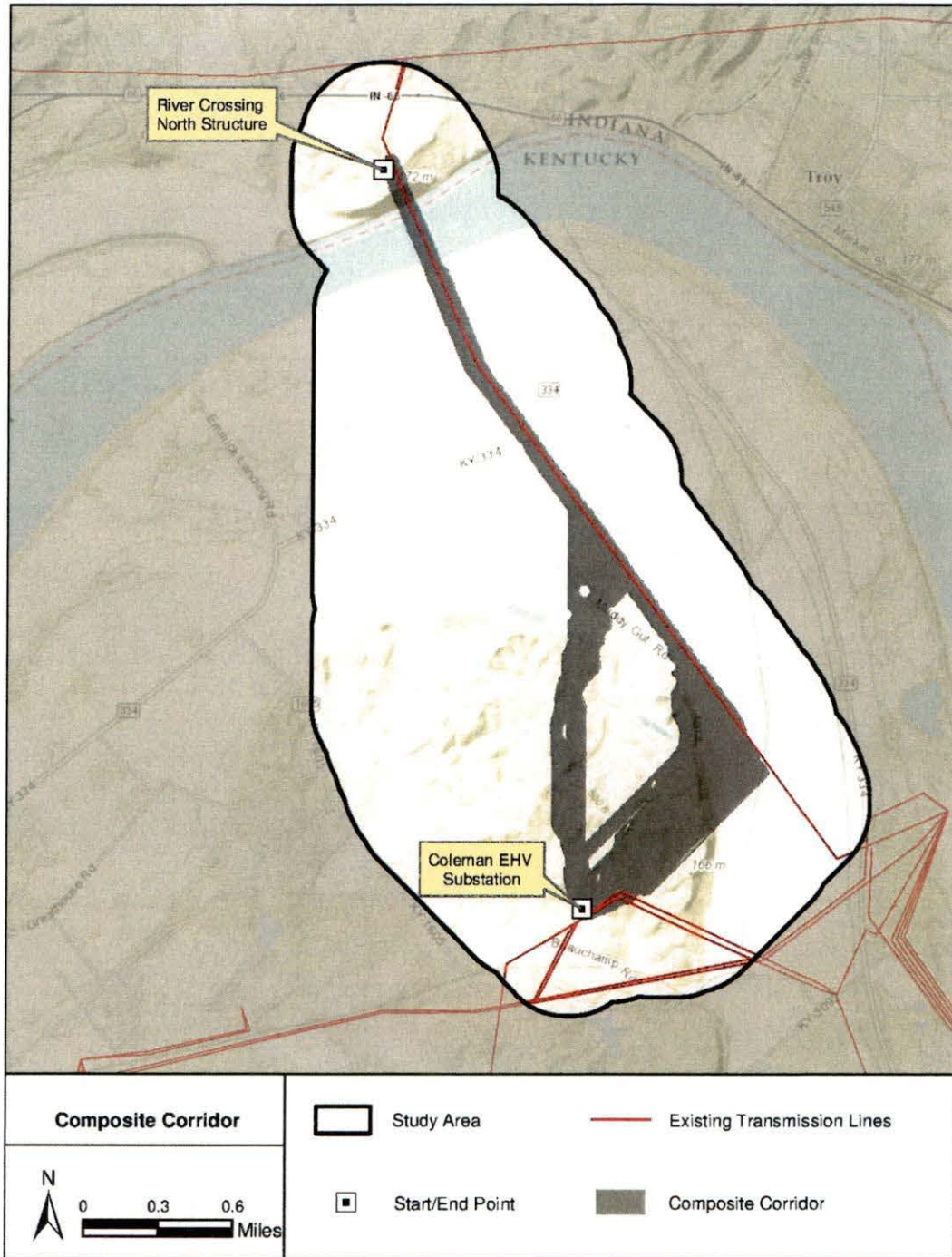


5. Composite and Comparison of Alternate Corridors

A composite of all four Alternate Corridors is shown in Figure 38. The Composite Corridor is simply the combination of the four Alternate Corridors. The area represented by the Composite Corridor serves as the base for the Phase II data collection study area.

Whereas the Phase I study area was examined almost exclusively through aerial photography and commercially available off of the shelf GIS data, the features in the Phase II study area were verified by Big Rivers' staff members in the field. This level of verification provides the project team with the most accurate data needed to develop alternate routes.

FIGURE 38: COMPOSITE OF ALTERNATE CORRIDORS



Part X: Alternate Routes

Together with Quantum Spatial, the BREC project team reviewed and analyzed the Alternate Corridors and developed Alternate Routes. This report will examine and discuss the data associated with the Alternate Routes.

1. Alternate Routes

After reviewing the Alternate Corridors, the BREC project team identified three Alternate Routes. These Alternate Routes are shown with the Alternate Corridors in Figure 39 and without the Alternate Corridors in Figure 40.

FIGURE 39: ALTERNATE ROUTES WITH COMPOSITE CORRIDOR

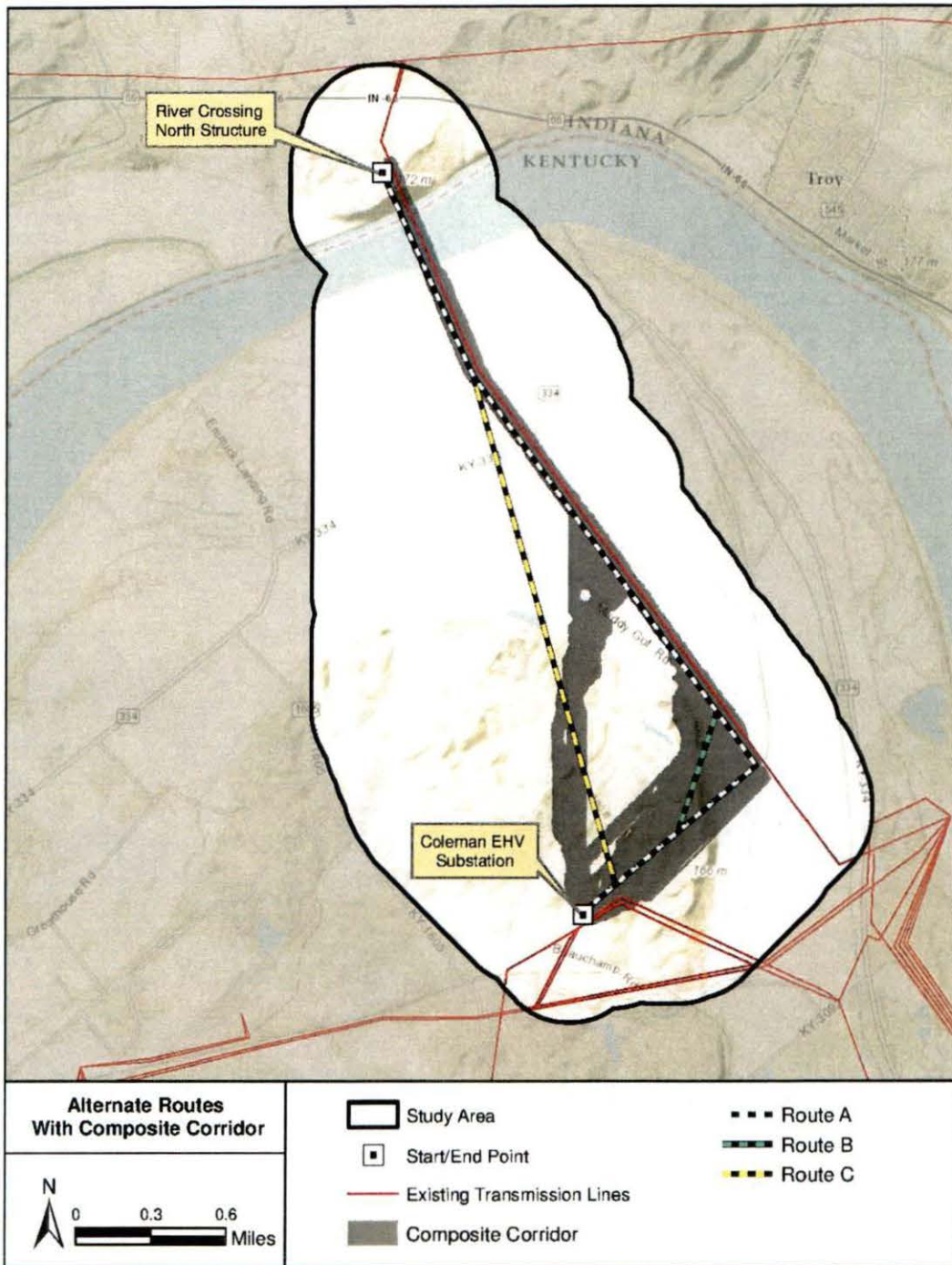
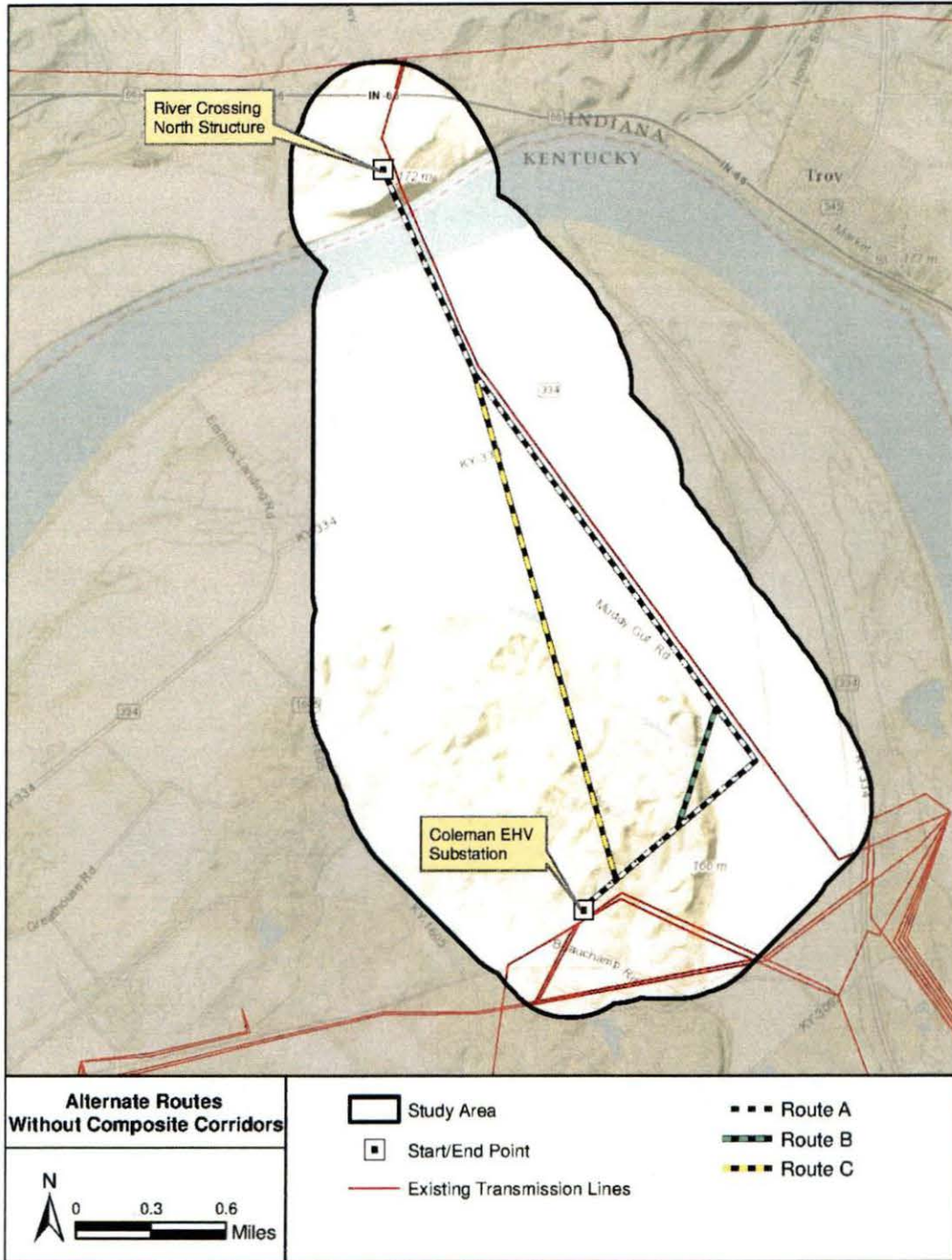


FIGURE 40: ALTERNATE ROUTES WITHOUT COMPOSITE CORRIDOR



2. Alternate Route Evaluation

Statistics were collected for the three Alternate Routes, according to the criteria in the Alternate Route Evaluation Model. The criteria were divided into three categories: Built Environment, Natural Environment, and Engineering Considerations perspectives. These perspectives are similar to those used to create the Alternate Corridors; however, while the Alternate Corridor phase utilized general datasets, the Alternate Route Evaluation phase uses more refined data. This allows for a better idea of the specific features associated with each route. The statistics were then normalized and weights assigned based on the Alternate Route Evaluation Model. Those criteria not found within the study area were removed from consideration, and their weight distributed proportionally among the remaining features/layers. Finally, any feature or layer that has the same value for all routes is removed because, with respect to that particular criterion, there will be no relatively more suitable alternate route. These feature or layer weights are also redistributed.

Table 11 shows the model weights and values assuming all features and layers are present within the study area. Table 12 shows the project-adjusted values that reflect only the actual features and layers that are actually present within the study area.

TABLE 11: ALTERNATE ROUTE CRITERIA & WEIGHTS (MODEL VALUES)

FOR ALL ROUTES	Weights
RANK	
Built	
Segments	
Feature	
Relocated Residences	54.0%
<i>Weighted</i>	
Proximity to Residences (300')	15.9%
<i>Weighted</i>	
Proposed Developments	3.8%
<i>Weighted</i>	
Proximity to Commercial Buildings (300')	2.6%
<i>Weighted</i>	
Proximity to Industrial Buildings (300')	1.5%
<i>Weighted</i>	
School, DayCare, Church, Cemetery, Park Parcels (#)	7.7%
<i>Weighted</i>	
NRHP Listed/Eligible Strucs./Districts (1500' from edge of R/W)	14.5%
<i>Weighted</i>	
TOTAL	100.0%
WEIGHTED TOTAL	
Natural	
Natural Forests (Acres)	42.6%
<i>Weighted</i>	
Stream/River Crossings	12.0%
<i>Weighted</i>	
Wetland Areas (Acres)	41.9%
<i>Weighted</i>	
Floodplain Areas (Acres)	3.5%
<i>Weighted</i>	
TOTAL	100.0%
WEIGHTED TOTAL	
Engineering	
Percent of Rebuild with Existing T/L*	33.3%
<i>Weighted</i>	
Percent of Co-location with Existing TL*	52.7%
<i>Weighted</i>	
Total Project Costs	14.0%
<i>Weighted</i>	
TOTAL	100.0%
WEIGHTED TOTAL	
SUM OF WEIGHTED TOTALS	
RANK	

* Inverted for calculations

Lowest Number is Best

TABLE 12: ALTERNATE ROUTE ADJUSTED CRITERIA & WEIGHTS

For All Routes Rank	Weights
Built	
Feature	
Relocated Residences	0.0%
<i>Weighted</i>	
Proximity to Residences (300')	0.0%
<i>Weighted</i>	
Proposed Developments	0.0%
<i>Weighted</i>	
Proximity to Commercial Buildings (300')	0.0%
<i>Weighted</i>	
Proximity to Industrial Buildings (300')	0.0%
<i>Weighted</i>	
School, DayCare, Church, Cemetery, Park Parcels (#)	0.0%
<i>Weighted</i>	
NRHP Listed/Eligible Strucs /Districts (1500' from edge of R/W)	0.0%
<i>Weighted</i>	
<i>Total</i>	
Weighted Total	
Natural	
Natural Forests (Acres)	73.3%
<i>Weighted</i>	
Stream/River Crossings	20.7%
<i>Weighted</i>	
Wetland Areas (Acres)	0.0%
<i>Weighted</i>	
Floodplain Areas (Acres)	6.0%
<i>Weighted</i>	
<i>Total</i>	
Weighted Total	
Engineering	
Percent of Rebuild with Existing T/L*	0.0%
<i>Weighted</i>	
Percent of Co-location with Existing Utility*	79.0%
<i>Weighted</i>	
Total Project Costs	21.0%
<i>Weighted</i>	
<i>Total</i>	
Weighted Total	
Sum of Weighted Totals	
Rank	

3. Raw Statistics and Normalized Statistics

The next step of the analysis is to normalize the raw statistics to the routes. Tables 13.1 and 13.2 show the raw and normalized statistics respectively for the Alternate Routes. The statistics were normalized (that is, distributed along a scale from zero to one) in order to allow comparison between each of the layers. Routes with a value closer to zero represent more suitable routes, while routes with a value closer to one represent less suitable routes. The values associated with “Miles of Co-location with Existing Transmission Line” and “Miles of Co-location with Roads” were inverted since a higher value in this category is seen as desirable, not as a detriment.

TABLE 13.1: RAW STATISTICS

ROUTE DATA	Route A	Route B	Route C
Feature			
Built			
Relocated Residences	0	0	0
Proximity to Residences (300' from edge of ROW)	0	0	0
Proposed Residential Developments	0	0	0
Proximity to Commercial Buildings (300' from edge of ROW)	0	0	0
Proximity to Industrial Buildings (300' from edge of ROW)	0	0	0
School, DayCare, Church, Cemetery, Park Parcels (#)	0	0	0
NRHP Listed/Eligible Strucs /Districts (1500' from edge of R/W)	0	0	0
Natural			
Natural Forests (Acres)	12.44	13.21	22.25
Stream/River Crossings	2	2	3
Wetland Areas (Acres)	0.00	0.00	0.00
Floodplain Areas (Acres)	52.20	47.02	24.47
Engineering			
Length (Miles)	3.69	3.52	3.14
Miles of Rebuild with Existing T/L	0.00	0.00	0.00
% Rebuild with Existing T/L	0.00%	0.00%	0.00%
Miles of Co-location w/ Existing T/L or other major utilities	2.80	2.54	0.89
% Co-location w/ Existing T/L or other major utilities	75.88%	72.16%	28.34%
Number of Parcels	4	4	9
Construction	\$5,904,000	\$5,632,000	\$5,024,000
Land	\$2,695	\$3,054	\$10,113
Clearing (\$4,500 per acre)	\$174,160	\$184,940	\$311,500
Ohio River Crossing	\$3,000,000	\$3,000,000	\$3,000,000
High Angle Structure Costs (Total)	\$198,000	\$316,000	\$198,000
Angle is > 30 degrees	\$118,000	\$236,000	\$118,000
Angle is <= 30 degrees	\$80,000	\$80,000	\$80,000
Total Project Costs	\$9,278,855	\$9,135,994	\$8,543,613

TABLE 13.2: NORMALIZED STATISTICS

NORMALIZED DATA FOR ALL ROUTES			
	Route A	Route B	Route C
Built			
Feature	Unit	Unit	Unit
Relocated Residences	0.00	0.00	0.00
<i>Normalized</i>	0.00	0.00	0.00
Proximity to Residences (300')	0.00	0.00	0.00
<i>Normalized</i>	0.00	0.00	0.00
Proposed Developments	0.00	0.00	0.00
<i>Normalized</i>	0.00	0.00	0.00
Proximity to Commercial Building	0.00	0.00	0.00
<i>Normalized</i>	0.00	0.00	0.00
Proximity to Industrial Buildings (0.00	0.00	0.00
<i>Normalized</i>	0.00	0.00	0.00
School, DayCare, Church, Cemet	0.00	0.00	0.00
<i>Normalized</i>	0.00	0.00	0.00
NRHP Listed/Eligible Strucs./Districts (1500' from edge of R/W)	0.00	0.00	0.00
<i>Normalized</i>	0.00	0.00	0.00
Natural			
Natural Forests (Acres)	12.44	13.21	22.25
<i>Normalized</i>	0.00	0.08	1.00
Stream/River Crossings	2.00	2.00	3.00
<i>Normalized</i>	0.00	0.00	1.00
Wetland Areas (Acres)	0.00	0.00	0.00
<i>Normalized</i>	0.00	0.00	0.00
Floodplain Areas (Acres)	52.20	47.02	24.47
<i>Normalized</i>	1.00	0.81	0.00
Engineering			
Length (Miles)	3.69	3.52	3.14
<i>Normalized</i>	1.00	0.69	0.00
Percent of Rebuild with Existing T	0.00%	0.00%	0.00%
<i>Normalized</i>	0.00%	0.00%	0.00%
<i>Inverted</i>	0.00%	0.00%	0.00%
Percent of Co-location with Existi	75.88%	72.16%	28.34%
<i>Normalized</i>	100.00%	92.17%	0.00%
<i>Inverted</i>	0.00%	7.83%	100.00%
Number of Parcels	4	4	9
<i>Normalized</i>	0.00	0.00	1.00
Total Project Costs	\$9,278,855	\$9,135,994	\$8,543,613
<i>Normalized</i>	1.00	0.81	0.00

The "Total Project Costs" criterion is intended to provide an approximate cost for the construction of the project. These figures are planning-grade cost estimates for comparison purposes only, and are not intended to precisely represent the actual final cost of construction of any particular alternate route. The cost calculations were assessed by combining several related factors. All costs metrics were unit-based and provided by BREC.

For all routes, \$1,600,000 per mile was used for construction of a single steel pole 345 kV transmission line. The land acquisition costs were calculated by using the PVA land value. The ROW clearing costs for the ROW for the routes are estimated at \$14,000 per naturally forested acre. There is a fee (estimated at \$3,000,000) for crossing over the Ohio River. Finally, there is an additional cost per high angle structure within each proposed route. If the angle is greater than 30 degrees, then the cost is \$118,000 per structure. If the angle is less than or equal to 30 degrees, then the cost is \$80,000 per structure. Detailed cost estimates are provided in Table 14.

TABLE 14: COST CALCULATIONS

ROUTE DATA	Route A	Route B	Route C
Construction	\$5,904,000	\$5,632,000	\$5,024,000
Land	\$2,695	\$3,054	\$10,113
Clearing	\$174,160	\$184,940	\$311,500
Ohio River Crossing	\$3,000,000	\$3,000,000	\$3,000,000
Angle Cost (> 30 degrees)	\$118,000	\$236,000	\$118,000
Angle Cost (< 30 degrees)	\$80,000	\$80,000	\$80,000
Total Project Costs	\$9,278,855	\$9,135,994	\$8,543,613

Tables 15, 16, 17 and 18 illustrate the Alternate Route Evaluation Matrix emphases on Engineering Considerations, the Natural Environment, the Built Environment, and the Simple Average perspectives. The tables show each perspective and their weighted values. Like the Alternate Corridors, each perspective has a five times emphasis, or 72%, on the features within that perspective. The remaining perspectives have a weight of 14% each. The Simple Average perspective has an equal amount of weight assigned to each of the three perspectives (33.3%). The routes are also ranked in order of their suitability, with the lower values being the most preferable. Each of the routes is ranked according to its values with respect to the individual environment being emphasized.

4. Emphasis on Engineering Considerations

TABLE 15: ALTERNATE ROUTE EVALUATION MATRIX EMPHASIS ON ENGINEERING CONSIDERATIONS

For All Routes		Weights		
Rank		1	2	3
Built	14%	Route A	Route B	Route C
Feature		Unit	Unit	Unit
Relocated Residences	0.0%	0	0	0
Weighted		0.00	0.00	0.00
Proximity to Residences (300')	0.0%	0	0	0
Weighted		0.00	0.00	0.00
Proposed Developments	0.0%	0	0	0
Weighted		0.00	0.00	0.00
Proximity to Commercial Buildings (300')	0.0%	0	0	0
Weighted		0.00	0.00	0.00
Proximity to Industrial Buildings (300')	0.0%	0	0	0
Weighted		0.00	0.00	0.00
School, DayCare, Church, Cemetery, Park Parcels (#)	0.0%	0	0	0
Weighted		0.00	0.00	0.00
NRHP Listed/Eligible Strucs /Districts (1500' from edge of R/W)	0.0%	0	0	0
Weighted		0.00	0.00	0.00
Total		0.00	0.00	0.00
Weighted Total		0.00	0.00	0.00
Natural	14%			
Natural Forests (Acres)	73.3%	0.00	0.08	1.00
Weighted		0.00	0.06	0.73
Stream/River Crossings	20.7%	0	0	1
Weighted		0.00	0.00	0.21
Wetland Areas (Acres)	0.0%	0	0	0
Weighted		0.00	0.00	0.00
Floodplain Areas (Acres)	6.0%	1.00	0.81	0.00
Weighted		0.06	0.05	0.00
Total		0.06	0.11	0.94
Weighted Total		0.01	0.01	0.13
Engineering	72%			
Percent of Rebuild with Existing T/L*	0.0%	0.00%	0.00%	0.00%
Weighted		0	0	0
Percent of Co-location with Existing Utility*	79.0%	0.00%	7.83%	100.00%
Weighted		0.00	0.06	0.79
Total Project Costs	21.0%	1.00	0.81	0.00
Weighted		0.21	0.17	0.00
Total		0.21	0.23	0.79
Weighted Total		0.15	0.17	0.57
Sum of Weighted Totals		0.16	0.18	0.70
Rank		1	2	3

* Inverted for calculations

Lowest Number is Best

5. Emphasis on Natural Environment

TABLE 16: ALTERNATE ROUTE EVALUATION MATRIX EMPHASIS ON NATURAL ENVIRONMENT

For All Routes		Weights		
Rank		1	2	3
Built	14%	Route A	Route B	Route C
Feature		Unit	Unit	Unit
Relocated Residences	0.0%	0	0	0
Weighted		0.00	0.00	0.00
Proximity to Residences (300')	0.0%	0	0	0
Weighted		0.00	0.00	0.00
Proposed Developments	0.0%	0	0	0
Weighted		0.00	0.00	0.00
Proximity to Commercial Buildings (300')	0.0%	0	0	0
Weighted		0.00	0.00	0.00
Proximity to Industrial Buildings (300')	0.0%	0	0	0
Weighted		0.00	0.00	0.00
School, DayCare, Church, Cemetery, Park Parcels (#)	0.0%	0	0	0
Weighted		0.00	0.00	0.00
NRHP Listed/Eligible Strucs./Districts (1500' from edge of RW)	0.0%	0	0	0
Weighted		0.00	0.00	0.00
Total		0.00	0.00	0.00
Weighted Total		0.00	0.00	0.00
Natural	72%			
Natural Forests (Acres)	73.3%	0.00	0.08	1.00
Weighted		0.00	0.06	0.73
Stream/River Crossings	20.7%	0	0	1
Weighted		0.00	0.00	0.21
Wetland Areas (Acres)	0.0%	0	0	0
Weighted		0.00	0.00	0.00
Floodplain Areas (Acres)	6.0%	1.00	0.81	0.00
Weighted		0.06	0.05	0.00
Total		0.06	0.11	0.94
Weighted Total		0.04	0.08	0.68
Engineering	14%			
Percent of Rebuild with Existing T/L*	0.0%	0.00%	0.00%	0.00%
Weighted		0	0	0
Percent of Co-location with Existing Utility*	79.0%	0.00%	7.83%	100.00%
Weighted		0.00	0.06	0.79
Total Project Costs	21.0%	1.00	0.81	0.00
Weighted		0.21	0.17	0.00
Total		0.21	0.23	0.79
Weighted Total		0.03	0.03	0.11
Sum of Weighted Totals		0.07	0.11	0.79
Rank		1	2	3

* Inverted for calculations

Lowest Number is Best

6. Emphasis on Built Environment

TABLE 17: ALTERNATE ROUTE EVALUATION MATRIX EMPHASIS ON BUILT ENVIRONMENT

For All Routes		Weights		
Rank		1	2	3
Built	72%	Route A	Route B	Route C
Feature		Unit	Unit	Unit
Relocated Residences	0.0%	0	0	0
Weighted		0.00	0.00	0.00
Proximity to Residences (300')	0.0%	0	0	0
Weighted		0.00	0.00	0.00
Proposed Developments	0.0%	0	0	0
Weighted		0.00	0.00	0.00
Proximity to Commercial Buildings (300')	0.0%	0	0	0
Weighted		0.00	0.00	0.00
Proximity to Industrial Buildings (300')	0.0%	0	0	0
Weighted		0.00	0.00	0.00
School, DayCare, Church, Cemetery, Park Parcels (#)	0.0%	0	0	0
Weighted		0.00	0.00	0.00
NRHP Listed/Eligible Strucs /Districts (1500' from edge of R/W)	0.0%	0	0	0
Weighted		0.00	0.00	0.00
Total		0.00	0.00	0.00
Weighted Total		0.00	0.00	0.00
Natural	14%			
Natural Forests (Acres)	73.3%	0.00	0.08	1.00
Weighted		0.00	0.06	0.73
Stream/River Crossings	20.7%	0.00	0.00	1.00
Weighted		0.00	0.00	0.21
Wetland Areas (Acres)	0.0%	0.00	0.00	0.00
Normalized		0.00	0.00	0.00
Floodplain Areas (Acres)	6.0%	1.00	0.81	0.00
Weighted		0.06	0.05	0.00
Total		0.06	0.11	0.94
Weighted Total		0.01	0.01	0.13
Engineering	14%			
Percent of Rebuild with Existing TL*	0.0%	0.00%	0.00%	0.00%
Weighted		0	0	0
Percent of Co-location with Existing Utility*	79.0%	0.00%	7.83%	100.00%
Weighted		0.00%	6.18%	79.00%
Total Project Costs	21.0%	1.00	0.81	0.00
Weighted		0.21	0.17	0.00
Total		0.21	0.23	0.79
Weighted Total		0.03	0.03	0.11
Sum of Weighted Totals		0.04	0.05	0.24
Rank		1	2	3

* Inverted for calculations

Lowest Number is Best

7. Equal Consideration of Categories (Simple Average)

TABLE 18: ALTERNATE ROUTE EVALUATION MATRIX EQUAL CONSIDERATION OF PERSPECTIVES

For All Routes		Weights		
Rank		1	2	3
Built	33%	Route A	Route B	Route C
Feature		Unit	Unit	Unit
Relocated Residences	0.0%	0	0	0
Weighted		0.00	0.00	0.00
Proximity to Residences (300')	0.0%	0	0	0
Weighted		0.00	0.00	0.00
Proposed Developments	0.0%	0	0	0
Weighted		0.00	0.00	0.00
Proximity to Commercial Buildings (300')	0.0%	0	0	0
Weighted		0.00	0.00	0.00
Proximity to Industrial Buildings (300')	0.0%	0	0	0
Weighted		0.00	0.00	0.00
School, DayCare, Church, Cemetery, Park Parcels (#)	0.0%	0	0	0
Weighted		0.00	0.00	0.00
NRHP Listed/Eligible Strucs /Districts (1500' from edge of RW)	0.0%	0	0	0
Weighted		0.00	0.00	0.00
Total		0.00	0.00	0.00
Weighted Total		0.00	0.00	0.00
Natural	33%			
Natural Forests (Acres)	73.3%	0.00	0.08	1.00
Weighted		0.00	0.06	0.73
Stream/River Crossings	20.7%	0	0	1
Weighted		0.00	0.00	0.21
Wetland Areas (Acres)	0.0%	0	0	0
Weighted		0.00	0.00	0.00
Floodplain Areas (Acres)	6.0%	1.00	0.81	0.00
Weighted		0.06	0.05	0.00
Total		0.06	0.11	0.94
Weighted Total		0.02	0.04	0.31
Engineering	33%			
Percent of Rebuild with Existing T/L*	0.0%	0.00%	0.00%	0.00%
Weighted		0	0	0
Percent of Co-location with Existing Utility*	79.0%	0.00%	7.83%	100.00%
Weighted		0.00	0.06	0.79
Total Project Costs	21.0%	1.00	0.81	0.00
Weighted		0.21	0.17	0.00
Total		0.21	0.23	0.79
Weighted Total		0.07	0.08	0.26
Sum of Weighted Totals		0.09	0.11	0.57
Rank		1	2	3

* Inverted for calculations

Lowest Number is Best

8. Overall Scores of Each Route

The Alternate Route Analysis compares Alternate Routes using a standard set of criteria. After evaluating the three routes, and recalling that lower scores better, route A scored the best in all categories. It is important to note, however, that Routes A and B are similar, both in terms of length and the physical and cultural geography they traverse, and therefore has Route B only has very slightly higher scores than Route A.

Route C was a route that Big Rivers wanted to examine as a possibility of taking the shortest path possible between the existing Coleman EHV Substation and River Crossing North Structure endpoint. After identifying the statistics and then normalizing them for all three routes it became apparent that Route C, while being significantly shorter than the other routes, had significantly higher scores than either Route A or B. Therefore, based on Big Rivers expert opinion we removed Route C from consideration as a viable route for a new transmission line.

With respect to the Built Environment, there were no criteria present within the study area which would have been affected by the alternate routes. Therefore, there overall score is equal in terms of only the built features.

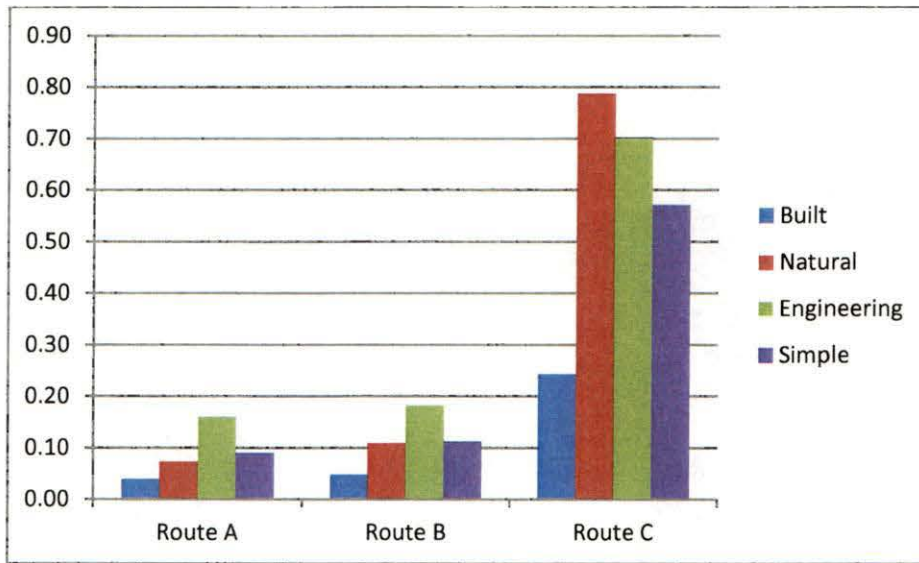
Within the Engineering Environment perspective, Route B has less Total Project Costs and but had slightly less co-location opportunity with existing transmission lines. Route B is slightly shorter than Route A as it "cuts the corner." Route A had a higher Construction Cost; however, it had lower Land, Clearing, and Angle costs than Route B. Route A scored the best according to the Engineering Environment Perspective.

When examining the layers that constitute the Natural Considerations portion of the Alternate Route Analysis, Route A goes through approximately 0.77 fewer acres of Natural Forest than Route B. Route A and B both cross two streams and rivers. Route C is the only proposed route to cross a wetland. Neither of the proposed routes come into contact with any wetland areas. Route A does however contact approximately 5.18 more acres of floodplain than Route B. Within the Natural Considerations, Route A scored the best.

The Simple Average portion of the Alternate Route Analysis is an even weighting of all the perspectives. Since there are no Built features in the study area effecting these three proposed routes, the Simple Average just utilized the Natural and Engineering statistics. Route A scored the best in both the Natural and Engineering perspective, and therefore scored the best in the Simple Average perspective.

FIGURE 41: COMPARISON OF THE ROUTES

	Route A	Route B	Route C
Built	0.04	0.05	0.24
Engineering	0.07	0.11	0.79
Natural	0.16	0.18	0.70
Simple	0.09	0.11	0.57



9. Route Descriptions

Route A

Route A exists the Coleman EHV Substation heading northeast then takes a 90 degree angle to the northwest. The route then continues northwest paralleling the existing transmission line corridor all the way up to the River Crossing North Structure on the northern bank of the Ohio River.

Route B

Route B exits the Coleman EHV Substation heading in the same northeastern direction as Route A, but then makes a slight angle to the north-northeast to take advantage of the terrain. It then makes a hard angle to the northwest and parallels the existing transmission line corridor all the way up to the River Crossing North Structure on the northern bank of the Ohio River.

Route C

Route C exits the Coleman EHV Substation heading in the same northeastern direction as Routes A and B, but almost immediately makes a hard angle to the northwest. It continues to run northwest eventually paralleling the existing transmission line corridor all the way up to the River Crossing North Structure on the northern bank of the Ohio River.

10. Expert Judgment

In the Expert Judgment phase, the team considers factors that do not readily lend themselves to quantification but which are nevertheless important in the selection of a preferred route. Each factor is assigned a percentage weight by the project team based on its overall importance. The judgments are derived from the project team's awareness of the project area, particularly its geographical and sociological makeup. Any comments from the public and/or elected officials that have been provided during the routing process are considered. The selected routes are then discussed, reviewed, compared. Each route receives a value between 1 and 3, with lower values indicating higher suitability.

1. Visual (5%)

Visual concerns are defined as those considerations pertaining to the preservation of existing views within the project study area.

- There are few occupied houses along any of the 3 proposed routes.
- Routes A and B had equal values in the Built environment, with no features present.
- Routes A and B received an Expert Judgment value of 1 for Visual concerns.

2. Community (15%)

Community concerns are defined as those considerations that encompass the non-visual concerns of a new transmission line. This includes consideration of the impact of a new transmission line on the existing land uses in the study area.

- The project team determined there were no significant Community Concerns associated with Routes A and B. Thus, they all received Expert Judgment values of 1 for Community issues.

3. Project Management (25%)

Project Management concerns are defined as those considerations with the potential to drive up project cost and delay the project schedule. Overall length, total project cost, crossing or paralleling existing linear infrastructure, permitting, stream crossings, and number of required easements are considered under Project Management.

- Route A is slightly longer than Route B, which results in a significantly higher construction cost.
- Both Route A and Route B require purchasing four easements, but Route A requires acquiring a little more land than Route A.
- Though Route B comes closer to an occupied house, the difference in baseline cost and the resulting project management costs of a shorter line make this the more desirable route.
- Route A received an Expert Judgement value of 2 for Project Management and Route B received a value of 1.

4. Special Permit (5%)

Some routes require special permitting for crossing or paralleling existing features. These features include railroads, state roads, existing transmission lines owned by other companies, and existing gas pipelines. All routes would require a Certificate of Public Convenience and Necessity from the Kentucky Public Service Commission.

- Routes A and B would need special permits to cross the Ohio River.
- Route A and B both received Expert Judgment values of 1 for Special Permit issues.

5. Accessibility (10%)

Accessibility concerns are those considerations pertaining to the ease with which the new transmission line route may be accessed during construction and maintenance.

- Routes A and B all have similar surroundings as it pertains to accessibility.
- Routes A and B all got an Expert Judgment value of 1 for Accessibility issues.

6. Reliability (20%)

Reliability concerns arise from natural (weather) or human (accidents) sources which may cause outages on the new transmission line or on the entire area electrical grid.

- Route B has two hard angle structures as opposed to Route A's single hard angle structure, and was therefore deemed less reliable (although not significantly so).
- Route A received an Expert Judgement value of 1 for Reliability, and Route B received an Expert Judgement value of 1.5.

7. Maintenance Cost (20%)

Maintenance Cost concerns are defined as those considerations with the potential to contribute to the cost of maintaining a transmission line after construction. Length and forests were considered, among other factors.

- Route B has slightly more forested areas to clear, as well as one additional angle structure to maintain than Route A. This results in a higher average maintenance cost for Route B (although not significantly so.)
- Route A received an Expert Judgement value of 1 for Maintenance Cost, and Route B received an Expert Judgement value of 1.5.

Table 19 summarizes the relative values that each Alternate Route received in the Expert Judgment analysis. After completing the Expert Judgment exercise, Route B emerged as the best scoring route. That is, Route B had a lower (better) overall impact score than Route A. Route B is the preferred route for the proposed transmission line.

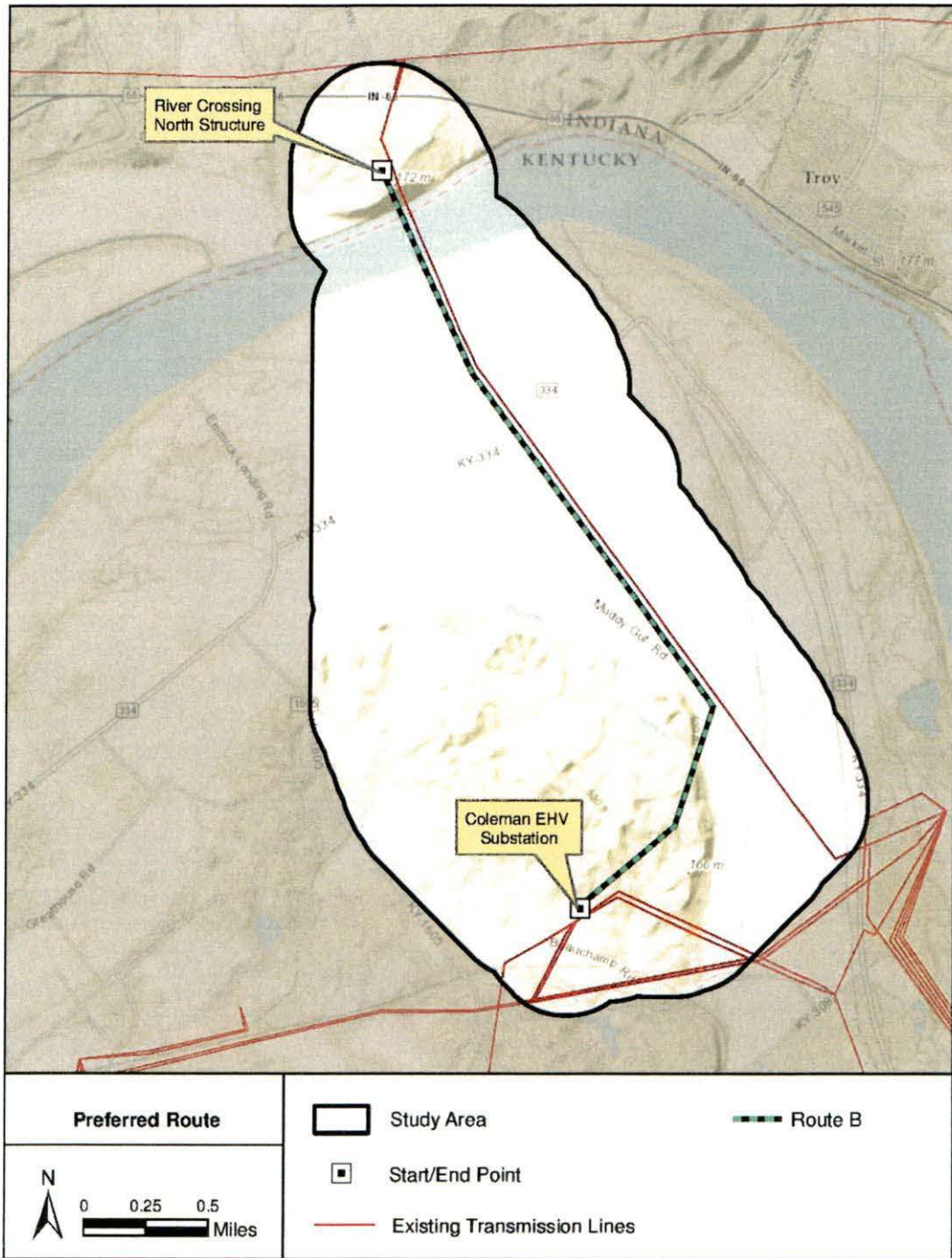
TABLE 19: EXPERT JUDGMENT MATRIX

EXPERT JUDGMENT TABLE			
	1 = Low Impact	2 = Med. Impact	3 = High Impact
	Per Project	Route A	Route B
Visual Issues	5%	1	1
<i>Weighted</i>		0.05	0.05
Community Issues (relocation, prox. Homes, property owner impacts)	15%	1	1
<i>Weighted</i>		0.15	0.15
Project Management (Sch, Cost)	25%	2	1
<i>Weighted</i>		0.5	0.25
Special Permit Issues	5%	1	1
<i>Weighted</i>		0.05	0.05
Accessibility (Construction/Maintenance)	10%	1	1
<i>Weighted</i>		0.1	0.1
Reliability	20%	1	1.5
<i>Weighted</i>		0.2	0.3
Maintenance Cost (Forest, length)	20%	1	1.5
<i>Weighted</i>		0.2	0.3
TOTAL			
	100%	1.25	1.2

Part XI: Conclusion

This study is based on the EPRI-GTC siting methodology as calibrated for use in the Commonwealth of Kentucky. This study has identified one preferred route for a new 345 kV transmission line right-of-way connecting the Coleman EHV Substation to the River Crossing North Structure across the Ohio River. Through the application of the Kentucky Model, the BREC project team has demonstrated that the preferred route, Route B, is a reasonable route for the construction of the new transmission lines.

FIGURE 42: PREFERRED ROUTE



Part XII: References

EPRI-GTC Overhead Electric Transmission Line Siting Methodology. Electric Power Research Institute, Palo Alto, CA, and Georgia Transmission Corporation, Tucker, GA: 2006. EPRI Document 1013080.

Kentucky Transmission Line Siting Methodology. Electric Power Research Institute, Palo Alto, CA, Eastern Kentucky Power Cooperative, Winchester, KY, and E.ON U.S., Louisville, KY: 2007. EPRI Document 1016198.

U.S. Census Bureau State and County Quick Facts

<http://quickfacts.census.gov/qfd/states/>

Kentucky Geological Survey, University of Kentucky

<http://www.uky.edu/KGS/geoky/regionbluegrass.htm>

Woods, A.J., Omernik, J.M., Martin, W.H., Pond, G.J., Andrews, W.M., Call, S.M., Comstock, J.A., and Taylor, D.D., 2002, Ecoregions of Kentucky (color poster with map, descriptive text, summary tables, and photographs): Reston, VA., U.S. Geological Survey (map scale 1:1,000,000). ftp://ftp.epa.gov/wed/ecoregions/ky/ky_eco_lg.pdf

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Google Maps Street View

<https://www.google.com/maps>

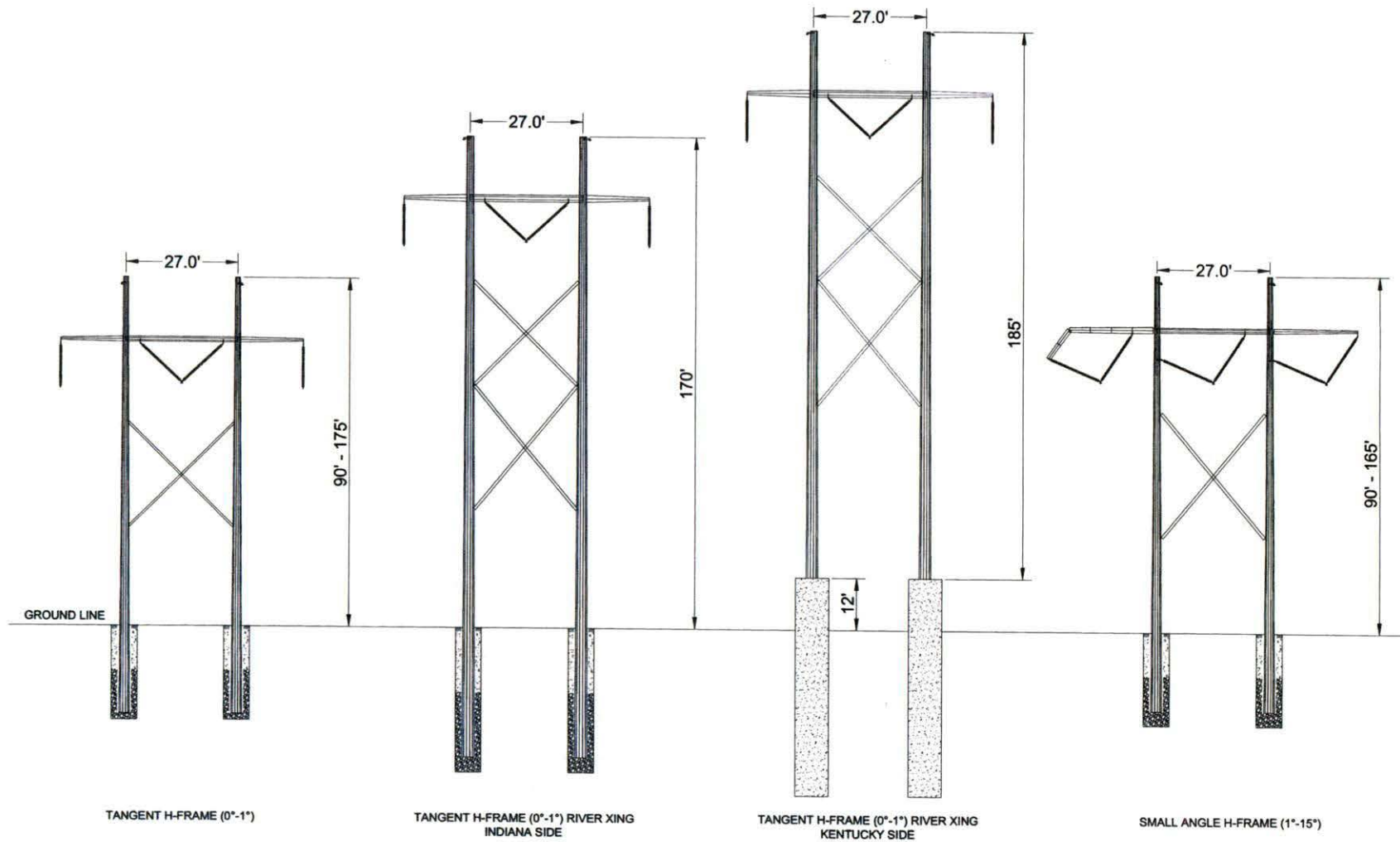


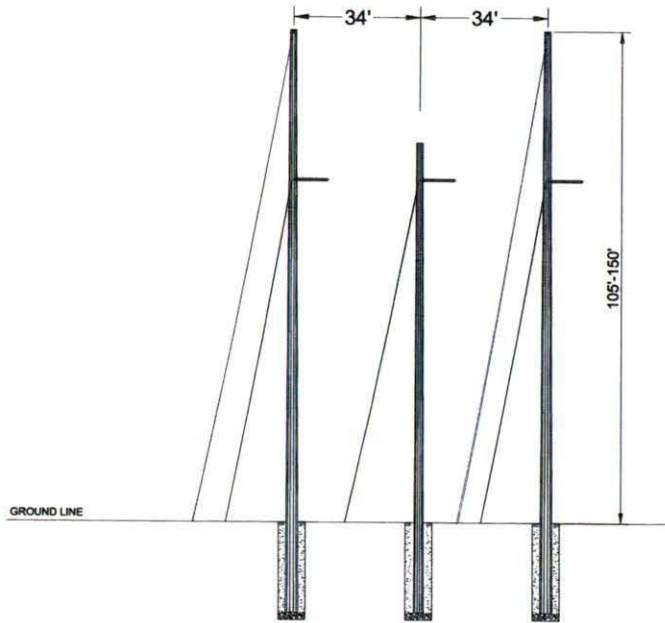
Exhibit E-1
Case No. 2018-00004



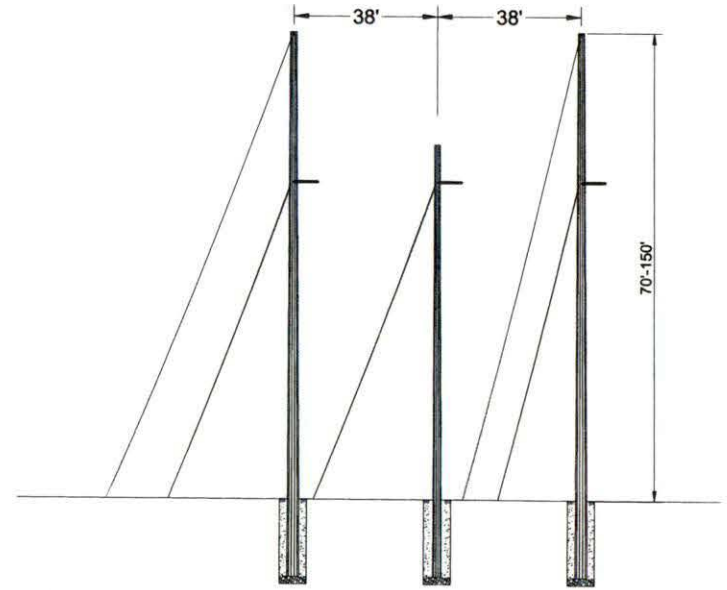
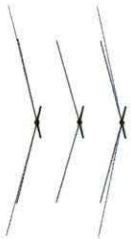
DUFF-COLEMAN 345KV LINE
H-FRAMES

SCALE: NTS

SHEET 1 OF 1



3-POLE MEDIUM ANGLE DEADEND (30°-60°)



3-POLE HEAVY ANGLE DEADEND (60°-80°)



Exhibit E-2
Case No. 2018-00004



DUFF-COLEMAN 345KV LINE
 3-POLE DEADENDS

SCALE: NTS

CONFIDENTIAL

SHEET 1 OF 1

March 13, 2018

RE: Notice of Proposed Electric Transmission Lines Construction Project

Dear _____:

Big Rivers Electric Corporation (“Big Rivers”), a western Kentucky electric generation and transmission cooperative, proposes to construct a 3.3-mile 345 kilovolt (“kV”) transmission line in northern Hancock County, Kentucky. The purpose of the proposed transmission line is to relieve electrical transmission congestion in western Kentucky and southern Indiana.

It is expected that this line will cross property you own in northern Hancock County. As such, Terril Riley, Real Estate Agent at Big Rivers, has been in contact with you to discuss a line-of-sight centerline survey, and has purchased an easement from you across your property for the proposed electric line.

The proposed route for the transmission line extends from northern Hancock County, Kentucky to a substation in western Dubois County, Indiana. The proposed route for the Kentucky portion of the line begins at a point at an existing Big Rivers substation located on Beauchamp Road (CR 1314) in Hancock County. From this substation, the transmission line section in Kentucky will extend northward approximately 3.3 miles to the state line near the Indiana bank of the Ohio River. A map showing the route of the Kentucky portion of the proposed line is attached to this letter. The transmission line will typically be constructed using two-pole steel structures.

Big Rivers plans to file an application with the Kentucky Public Service Commission (“Commission”), on or about March 16, 2018, seeking a certificate of public convenience and necessity authorizing this project. The purpose of the Commission’s review of Big Rivers’ application is to determine whether the proposed transmission line is required by the public convenience and necessity. You have the right to move to intervene and participate in the proceeding. You also have the right to request the Commission to conduct a public hearing on that application in Hancock County.

To request to intervene in the Commission’s proceeding on Big Rivers’ application for a certificate of public convenience and necessity, or to request a public hearing in that case,

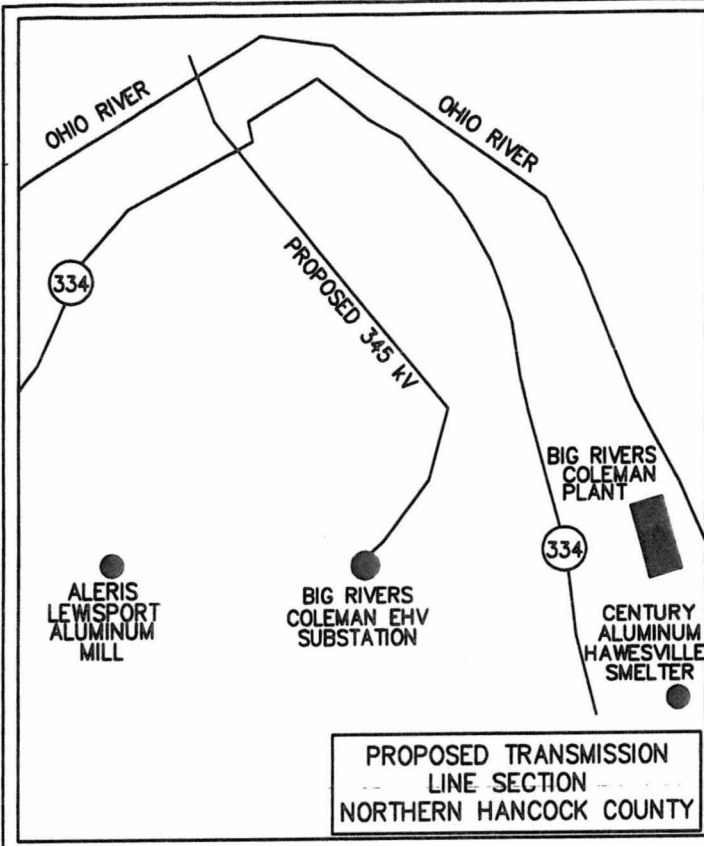
March 13, 2018
Page 2

you should contact the Executive Director, Public Service Commission, 211 Sower Boulevard, P.O. Box 615, Frankfort, Kentucky 40602-0615, telephone number (502) 564-3940. The docket number under which this application will be processed is 2018-00004. If you have any questions for me, you may contact me at (270) 844-6212 or via email at Bob.Warren@BigRivers.com.

Sincerely yours,

BIG RIVERS ELECTRIC CORPORATION

Robert M. Warren, P.E.
Director Engineering



List of Property Owners Affected by Transmission Line

1. Taylor, C. W. Jr.
409 Griffith Avenue, Owensboro, KY 42301

2. Emmick, William S.
230 Emmick Landing Road, Lewisport, KY 42351

3. William F. Allard
827 Muddy Gut Road, Lewisport, KY 42351

4. Emmick, Jesse & Deana
10383 River Road, Lewisport, KY 42351

5. Emmick, Shelby & Heather
8500 River Road, Lewisport, KY 42351

6. Ruth Ann Pottinger-Amato Irrevocable Trust
c/o Michael Pottinger
431 Marks Lane
Bardstown, KY 40004

For inclusion in the Hancock County Clarion newspaper:

March 15, 2018

Notice of Proposed Electric Transmission Line Construction Project

Big Rivers Electric Corporation (“Big Rivers”), a western Kentucky member-owned, not-for-profit electric generation and transmission cooperative headquartered in Henderson, Kentucky, proposes to participate in the construction of a 345 kV transmission line, which will include approximately 3.3 miles in northern Hancock County, Kentucky. The project is sponsored by the Midcontinent Independent System Operator, Inc. (“MISO”). The purpose of the proposed transmission line is to relieve transmission line congestion in western Kentucky and southern Indiana.

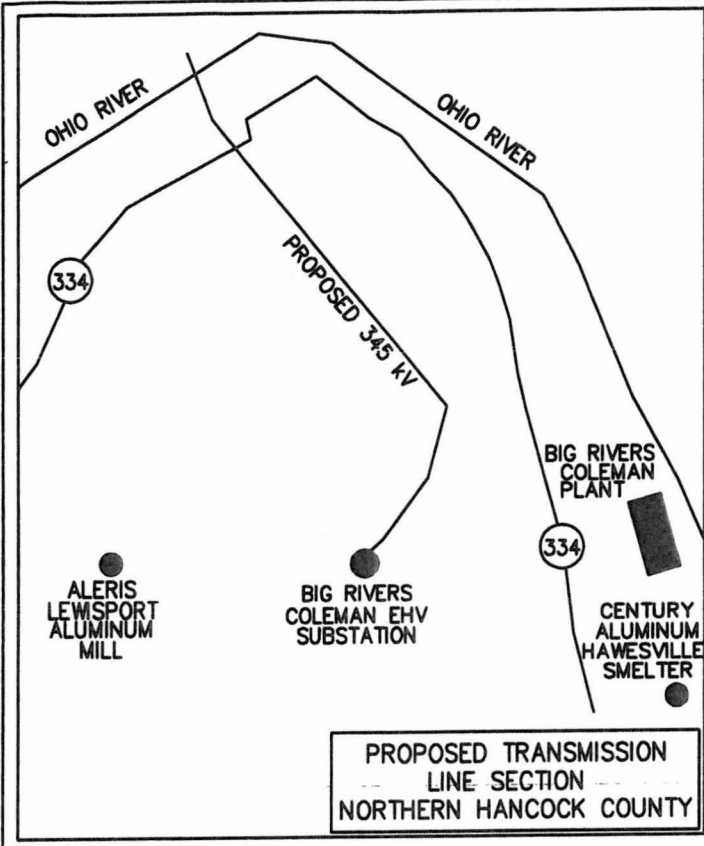
The proposed route for the transmission line extends from northern Hancock County, Kentucky, to a substation in western Dubois County, Indiana.

The proposed route for the Kentucky portion of the line begins at a point at the existing Big Rivers Coleman EHV Substation, which is located west of the Century Aluminum smelter and the Big Rivers idled Coleman Power Plant. From this substation, the transmission line section will extend northward approximately 3.3 miles terminating near the Indiana bank of the Ohio River. The entire transmission line will typically be constructed using two-pole steel structures. Big Rivers either has or will send a letter to each Kentucky property owner (according to Property Valuation Administrators records) over whose property the transmission line section is expected to cross in Hancock County.

Big Rivers plans to file an application with the Kentucky Public Service Commission (“Commission”) on or about March 16, 2018, seeking a certificate of public convenience and necessity authorizing this project. The purpose of the Commission’s review of Big Rivers’ application is to determine whether the proposed transmission line is required by the public convenience and necessity. Interested persons have the right to move to intervene and participate in the proceeding. They also have the right to request the Commission to conduct a public hearing in Hancock County on that application.

Interested parties may request to intervene in the Commission’s proceeding on the Big Rivers application for a certificate of public convenience and necessity, or may request a public hearing in that case, by contacting the Executive Director, Public Service Commission, 211 Sower Boulevard, P.O. Box 615, Frankfort, Kentucky 40602-0615, telephone number (502) 564-3940. The docket number under which this application will be processed is 2018-00004. You may also direct questions to Big Rivers by contacting Robert M. Warren, Big Rivers Director Engineering, at (270) 827-2561 or Bob.Warren@BigRivers.com.

[INSERT MAP]



1
2 COMMONWEALTH OF KENTUCKY
3 BEFORE THE PUBLIC SERVICE COMMISSION OF KENTUCKY
4

5 In the Matter of:

6
7 APPLICATION OF BIG RIVERS ELECTRIC)
8 CORPORATION FOR A CERTIFICATE OF) Case No. 2018-00004
9 PUBLIC CONVENIENCE AND NECESSITY)
10 TO CONSTRUCT AND ACQUIRE A 345 KV)
11 TRANSMISSION LINE IN HANCOCK)
12 COUNTY, KENTUCKY)
13
14
15

16 **TESTIMONY OF MICHAEL W. CHAMBLISS**
17

18 **I. INTRODUCTION**

19 **Q. Please state your name, your position, and give a summary of your education and**
20 **work experience.**

21 A. My name is Michael W. Chambliss. My position with Big Rivers Electric Corporation
22 (“Big Rivers”) is Vice President of System Operations. I graduated from the University
23 of Southern Indiana with a Bachelor of Science in Business Administration and from
24 Oakland City University with a Master of Science in Management. In my 35-year career
25 at Vectren Corporation, I served in various positions in the operations area, including
26 roles in the transmission and energy delivery division of the organization, along with
27 serving on multiple Midcontinent Independent System Operator (“MISO”) transmission
28 committees. I served as a District Manager, General Foreman of Substation Construction
29 and Maintenance, Supervisor of Protective Relays and Gas Turbines, Electrical
30 Maintenance Foreman and Director Network Operations. I was employed by Big Rivers
31 in my current position as Vice President System Operations in January 2014.

1 Q. Have you previously testified before the Kentucky Public Service Commission
2 (“Commission”)?

3 A. Yes. I testified before the Commission in *In the Matter of: Joint Application of*
4 *Kenergy Corp. and Big Rivers Electric Corporation for Approval of Contracts, PSC*
5 *Case No. 2016-00117.*

6

7

II. BACKGROUND

8 Q. Please explain why you are filing testimony in this proceeding.

9 A. I am filing this testimony in support of Big Rivers’ application (“Application”) for a
10 certificate of public convenience and necessity (“CPCN”) for construction, acquisition
11 and operation of the Kentucky portion of an interstate transmission line that is being built
12 by Republic Transmission, LLC (“Republic”) as part of the Midcontinent Independent
13 System Operator, Inc. (“MISO”) Duff-Coleman EHV 345kV Competitive Transmission
14 Project (“MISO Project”). Big Rivers requests that the Commission find that
15 construction and acquisition of the Kentucky portion of the MISO Project (the “Kentucky
16 Portion”) in accordance with the Asset Purchase Agreement between Big Rivers and
17 Republic dated as of March 14, 2018, (the “Asset Purchase Agreement” or “APA”),
18 which is attached as Exhibit A to the Application, is required by the public convenience
19 and necessity.

20

21

III. CPCN FOR CONSTRUCTION OF A TRANSMISSION LINE

22 Q. Please describe the proposed transmission line construction project.

1 A. The transmission line construction project that is the subject of Big Rivers' Application
2 is part of the larger MISO Project. The MISO Board of Directors approved the 2015
3 MISO Transmission Expansion Plan ("MTEP15"), which included the Duff-Coleman
4 expansion Market Efficiency Project. I have previously defined this project for purposes
5 of my testimony as the "MISO Project." The MISO Project consists of a new single-
6 circuit 345 kV transmission line to be constructed, owned and operated between the Duff
7 Substation located in Dubois County, Indiana (the "Duff Substation") and the Big Rivers
8 Coleman Extra High Voltage substation located in Hancock County, Kentucky (the
9 "Coleman EHV Substation"). The MISO Project is scheduled to be in service no later
10 than January 1, 2021. It will be physically located in Dubois County, Indiana, Spencer
11 County, Indiana and Hancock County, Kentucky with a crossing over the Ohio River (the
12 "Ohio River Crossing").

13 The MISO project will interconnect to Southern Indiana Gas & Electric Company
14 d/b/a Vectren Energy Delivery of Indiana, Inc. ("Vectren") through the Duff Substation.
15 Vectren will design, engineer, install, own, operate and maintain the necessary equipment
16 additions within the Duff Substation, which are not a part of the MISO Project.

17 The MISO Project will also interconnect to Big Rivers through the Coleman EHV
18 Substation at the first transmission line structure located outside the Coleman EHV
19 Substation fence. Big Rivers will design, engineer, install, own, operate and maintain
20 the necessary equipment additions within the Coleman EHV Substation, which are not a
21 part of the MISO Project.

22 Republic will construct, own, operate and maintain all transmission line facilities
23 that are part of the MISO Project, including conductors, wires, structures, hardware and

1 easements, subject to the terms of the Asset Purchase Agreement with Big Rivers
2 regarding Big Rivers' acquisition of the Kentucky Portion. Republic will not install, own
3 or operate any material station equipment at either the Duff Substation or the Coleman
4 EHV Substation.

5 **Q. Are any interstate benefits expected to be achieved by construction of the Kentucky**
6 **Portion in the Commonwealth of Kentucky?**

7 A. Yes. As described in the front part of this Application, the MTEP15 indicated a
8 significant amount of congestion in southern Indiana and Kentucky, particularly around
9 the Coleman Substation, which is a gateway for the nearby Hancock County large
10 industrial load pocket. Page 6 of the MTEP15 identifies the border of Indiana and
11 Kentucky as the area with the greatest need and therefore the highest potential benefit.
12 In the event of certain transmission outages, the supply route for this area shifts to the
13 lower voltage branches. As a result, congestion on the lower voltage circuits increases.
14 Further exacerbating this issue are the projected load growth and the in-service status of
15 local coal generation. Congestion relief in this area would mean that the load pocket
16 could be more easily supplied with alternative generation. MISO studies indicate that
17 the MISO Project completely mitigates the congestion issues on the MISO system around
18 the Newtonville, Indiana, and Coleman areas and strengthens the 345 kV backbone in
19 the region. The studies also show that the MISO Project provides high value and satisfies
20 all no-harm tests.

21 **Q. Why was the Duff to Coleman Project approved in MTEP15?**

22 A. The Duff to Coleman Project was approved as a market efficiency project in
23 MTEP15. MISO performs an extensive congestion planning study that first identifies

1 areas with the greatest need for congestion relief, referred to as top congested
2 flowgates. Next, MISO solicits stakeholder solutions to the identified
3 congestion. Project submittals are analyzed under a number of different forecast
4 scenarios defined with stakeholder input. MTEP15 analyzed the following five future
5 scenarios: Business As Usual, High Growth, Limited Growth, Generation Shift, and
6 Public Policy. Stakeholders also develop an agreed-upon weighting for each future
7 scenario within the MTEP.

8 Project submittals are next screened against the potential production cost savings
9 relative to the estimated cost, then analyzed for robustness and reliability impacts. The
10 robustness testing identifies projects/portfolios that provide the best value to address a
11 specific congested area under most, if not all, future scenarios. The reliability assessment
12 ensures a solution does not negatively impact system reliability. Finally, a project would
13 be approved as a market efficiency project if it a) has a benefit to cost ratio of at least
14 1.25, b) has an estimated cost of greater than \$5 million, and c) has a voltage of 345 kV
15 or higher for more than 50% of the estimated project on a cost basis.

16 The top congested flowgate within the MISO North/Central area was in Southern
17 Indiana, in the area of the Coleman substation, including congestion on the Newtonville-
18 Coleman 161 kV line. Six project alternatives were considered with an estimated cost of
19 \$57 million to \$144 million. The weighted benefit to cost ratio of these projects ranged
20 from 6.8:1 to 19.1:1. Although the Rockport to Coleman double circuit 345 kV option
21 was identified as the least cost and highest benefit to cost ratio, it caused several
22 overloads in the reliability analysis. Therefore MISO staff recommended the Duff to
23 Coleman 345 kV transmission project for approval in MTEP15. The Project was

1 identified as having a weighted benefit to cost ratio of approximately 16 to 1 which
2 implies a total net present value of benefits to MISO customers of approximately \$1
3 billion. The benefit to cost ratio was even greater than 16.8:1 in all future scenarios other
4 than the Public Policy future. The Project was the only market efficiency project
5 recommended for approval in MTEP15.

6 As a market efficiency project subject to regional cost allocation, the Duff to
7 Coleman Project was a Competitive Transmission Project under MISO's Order No. 1000
8 competitive transmission process.

9
10 **IV. CPCN FOR ACQUISITION AND**
11 **OPERATION OF THE KENTUCKY PORTION**

12 **Q. Please describe the Asset Purchase Agreement, or APA.**

13 A. The Asset Purchase Agreement between Big Rivers and Republic is the agreement by
14 which Big Rivers will acquire the Kentucky Portion of the MISO Project.

15 **Q. What assets does Big Rivers acquire under the APA?**

16 A. Under the APA, Big Rivers acquires the "Purchased Assets" that are defined in the APA.
17 The Purchase Assets include all the interests of Republic in real property, personal
18 property and intangible rights and property related to the Kentucky Portion. Big Rivers
19 has already acquired, by agreement with the landowners, all easement rights in Kentucky
20 that are required for the location, construction and operation of the Kentucky Portion.
21 Big Rivers will transfer rights in those easements to Republic that are sufficient for
22 Republic to construct the transmission facilities that are part of the Kentucky Portion.
23 The easement rights transferred to Republic, in the form of a license, terminate as of the

1 closing when Big Rivers acquires title to the Kentucky Portion. The value of the
2 easements rights conveyed to Republic by license will be less than \$1 million.

3 **Q. What consideration does Big Rivers pay to acquire the Purchased Assets?**

4 A. Big Rivers pays the “Purchase Price” as consideration for acquiring the Purchased Assets
5 at closing. The Purchase is defined in Section 2.02 of the APA, and is determined in
6 accordance with Schedule 2.02 to the APA.

7 As shown on Schedule 2.02, Big Rivers’ Purchase Price is the sum of the
8 “Kentucky Costs” as defined in Section 1.a of Schedule 2.02, and a proportionate share
9 of the General Costs of the project attributable to the Kentucky Portion. Because Big
10 Rivers is acquiring the “Purchased Assets” at Republic’s cost, the APA does not contain
11 the usual contractual remedies associated with standard construction contracts. Big
12 Rivers will protect itself through its monitoring rights, and if Big Rivers finds the
13 Purchased Assets to be unacceptable immediately after the closing, Big Rivers’ ultimate
14 remedy is to require Republic to take back the Purchased Assets.

15 **Q. What is the estimated dollar amount of the Purchase Price that Big Rivers will pay
16 for the Purchased Assets?**

17 A. Based on the estimates for the entire MISO Project, Big Rivers estimates that the
18 Purchase Price of the Kentucky Portion will be approximately \$6 million. That amount
19 is payable at the closing under the APA.

20 **Q. Will Big Rivers finance the Purchase Price?**

21 A. Big Rivers has not yet made a final decision about its source of funds for acquisition of
22 the Kentucky Portion. Big Rivers currently expects to finance the Purchase Price through

1 the Rural Utilities Service of the United States Department of Agriculture (the “RUS”),
2 although Big Rivers may utilize its cash reserves.

3 **Q. Please explain the purpose of the Project Ownership and Operation Agreement**
4 **(“POOA”), which is attached to the APA as Exhibit D and is an agreement that the**
5 **APA requires Big Rivers to execute after it receives required approvals for the APA**
6 **from the Commission and the RUS.**

7 A. The POOA establishes the relationship between the parties regarding the MISO Project
8 after Big Rivers acquires the Kentucky Portion at the closing. It provides that Big Rivers
9 will accept certain MISO requirements imposed upon Republic in the MISO Selected
10 Developer Agreement, and NERC reporting requirements related to the MISO Project.

11 **Q. What obligations does Big Rivers have in connection with the construction of the**
12 **Kentucky Portion under the APA?**

13 A. Big Rivers is obligated to acquire the easement rights for the Kentucky Portion, which it
14 has already done by agreement with the relevant landowners. Big Rivers is also seeking
15 this CPCN, and Republic may ask Big Rivers, acting as a consultant to Republic, to assist
16 with acquiring other approvals and permits for the construction of the Kentucky Portion.
17 Big Rivers also has the right, but not the obligation, under the APA to inspect and monitor
18 construction to satisfy itself that the construction is being in executed in accordance with
19 Republic’s obligations to MISO under the Selected Developer Agreement. Big Rivers
20 will be paid for the work it performs for Republic on the Kentucky Portion, and those
21 expenses will eventually become part of the Purchase Price.

22 **Q. How will the Purchase Price of the Purchased Assets be included in Big Rivers’**
23 **rates?**

1 A. The Purchase Price will be an input in a FERC-approved Big Rivers MISO Attachment
2 O which is a formula that calculates Big Rivers' MISO transmission rates. The MISO
3 Attachment O is used as an input into MISO Attachment GG, which is used to calculate
4 MISO Schedule 26. The MISO Project costs will be recovered through MISO Schedule
5 26.

6 **Q. How will the impact on Big Rivers' transmission rates affect Big Rivers' members
7 and their retail customers?**

8 A. Big Rivers' members will not pay a higher rate because the costs of the MISO Project
9 will flow through MISO's tariff as a Schedule 26 charge, and Big Rivers'
10 "grandfathered" transmission rates to its members do not include those charges. The
11 only retail customers of a Big Rivers member that will be affected by the higher
12 transmission rate are the Century smelters and Domtar, for backup power purchased for
13 its cogeneration facility. These customers, who are subject to Schedule 26 charges, are
14 impacted similarly whether or not Big Rivers acquires the Kentucky Portion of the MISO
15 Project. The MISO Project is a Market Efficiency Project, the costs of which are
16 allocated across the MISO footprint as follow: 20% of the costs are allocated across the
17 entire footprint on a postage stamp basis, and 80% of the costs are allocated to Local
18 Resource Zones based on the MISO determined beneficiaries of the project.

19 **Q. Please describe any cost controls that are or will be in place regarding the costs of
20 construction of the MISO Project, including the Kentucky Portion.**

21 A. First, there are financial incentives and penalties in the Selected Developer Agreement
22 between Republic and MISO that encourage bringing the MISO Project in on time and

1 on budget. To assure that the MISO Project costs and timeline are properly managed,
2 Republic and Big Rivers will:

- 3 • Implement a risk management plan to identify, assess, mitigate and monitor risks;
- 4 • Adhere to a detailed budget and contractual commitments;
- 5 • Develop and manage a detailed project schedule;
- 6 • Track actual versus budgeted expenditures, a process that is also used for reporting
7 to MISO;
- 8 • Obtain review and sign-off for project contracts from Republic legal and the project
9 directors; and
- 10 • Obtain Project Director approval for unbudgeted items or certain costs that exceed
11 the budget.

12 **Q. Why is acquisition of the Kentucky Portion of the MISO Project important to Big
13 Rivers and the public in Kentucky?**

14 A. MISO approved this project as a Market Efficiency Project to address interstate
15 transmission congestion issues in the area. Congestion issues in the Coleman area will
16 be fully mitigated by the MISO Project. This reduction of congestion will increase the
17 ability of transmission users in the vicinity of Coleman in Kentucky to import and export
18 power. That may enable Century Aluminum's Hawesville smelter to retire the special
19 protection scheme it has been required to utilize for reliability purposes, which is a
20 distinct benefit for Century Aluminum. That special protection scheme includes
21 interruption of electric service to the Century Hawesville aluminum smelter if congestion
22 becomes too severe.

1 Decreased transmission congestion also opens up economic development
2 opportunities in Hancock County for large industries whose electrical load could
3 exacerbate the congestion problems in the area, and increase the likelihood of curtailment
4 or interruption of electric service to the Century Hawesville smelter. And in a larger
5 sense, the project strengthens the 345 kV transmission backbone in the region, which is
6 beneficial to the bulk electric system.

7 **Q. Are there any other benefits to Big Rivers from the Kentucky Portion of the MISO**
8 **Project?**

9 A. Big Rivers does receive a return on the equity it invests in the MISO Project, and the
10 substation upgrades Big Rivers is separately making as a consequence of the MISO
11 Project. Based upon the estimated total investment by Big Rivers of \$6 million spend on
12 the Kentucky Portion, we estimate that Big Rivers will receive approximately \$612,000
13 per year return on its investment, which is a return of approximately 10.2%. This cash
14 flow will be adequate to pay for Big Rivers' investment in the Kentucky Portion, and
15 provide additional revenue that can potentially reduce Big Rivers' rates to its members.

16
17 **V. OTHER CONSIDERATIONS**

18 **Q. Is Big Rivers required to obtain any creditor approvals for the Asset Purchase**
19 **Agreement to become effective?**

20 A. Yes. Big Rivers must submit the Asset Purchase Agreement to the Rural Utilities Service
21 for review in accordance with the requirements of Big Rivers' loan contract with the
22 Rural Utilities Service.

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VI. CONCLUSION

Q. What action by the Commission does Big Rivers seek in this proceeding?

A. Big Rivers requests that the Commission find that the public convenience and necessity require the construction and acquisition by Big Rivers of the Kentucky Portion of the MISO Project in accordance with the APA, and issue a certificate of public convenience to that end. Big Rivers also requests that the Commission find that its express approval of the APA is not required, but in the alternative, if the Commission finds that its express approval of the APA is required, that the Commission approve the APA.

Q. Does this conclude your testimony?

A. Yes.

BIG RIVERS ELECTRIC CORPORATION

**APPLICATION OF BIG RIVERS ELECTRIC CORPORATION
FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY
TO CONSTRUCT AND ACQUIRE A 345 KV TRANSMISSION LINE IN
HANCOCK COUNTY, KENTUCKY
CASE NO. 2018-00004**

VERIFICATION

I, Michael W. (Mike) Chambliss, verify, state, and affirm that I prepared or supervised the preparation of my testimony filed with this Verification, and that testimony is true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.



Michael W. (Mike) Chambliss

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

SUBSCRIBED AND SWORN TO before me by Michael W. (Mike) Chambliss on this
the 15th day of March 2018.



Notary Public, Kentucky State at Large

My Commission Expires

October 31, 2020

