



201 Third Street
P.O. Box 24
Henderson, KY 42419-0024
270-827-2561
www.bigrivers.com

May 11, 2018

RECEIVED

MAY 14 2018

PUBLIC SERVICE
COMMISSION

VIA OVERNIGHT DELIVERY

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

Re: *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*

Dear Ms. Pinson:

Enclosed for filing on behalf of Big Rivers Electric Corporation are an original and ten copies of the following: (i) Big Rivers' responses to the Public Service Commission Staff's First Request for Information; (ii) Big Rivers' responses to the Attorney General's First Request for Information; and (iii) a petition for confidential treatment.

Please confirm the Commission's receipt of this information by placing the Commission's date stamp on the enclosed additional copy of this letter and returning it to Big Rivers in the self-addressed, postage paid envelope provided.

I certify that on this date, a copy of this letter, a copy of the responses, and a copy of the petition were served on each of the persons listed on the enclosed service list by overnight courier.

Please feel free to contact me if you have any questions.

Sincerely,

Tyson Kamuf
Corporate Attorney,
Big Rivers Electric Corporation

Enclosures

cc: Service List
Hon. James M. Miller

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**

Service List

Hon. Kent A. Chandler
Hon. Justin M. McNeil
Hon. Lawrence W. Cook
Hon. Rebecca Goodman
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Hon. James W Gardner
Hon. M. Todd L. Osterloh
Sturgill, Turner, Barker & Moloney, PLLC
333 West Vine Street, Suite 1400
Lexington, KY 40507
jgardner@sturgillturner.com
tosterloh@sturgillturner.com

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MAY 14 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

Responses to Commission Staff's Initial Request for Information
 dated
 April 27, 2018

FILED: May 14, 2018

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MAY 14 2018

PUBLIC SERVICE
COMMISSION

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

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In the matter of:

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

PETITION FOR CONFIDENTIAL TREATMENT

1. Big Rivers Electric Corporation (“Big Rivers”) hereby petitions the Kentucky Public Service Commission (“Commission”), pursuant to 807 KAR 5:001 Section 13 and KRS 61.878, to grant confidential protection to certain information in Big Rivers’ responses to Item 1 of the Commission Staff’s First Request for Information (“PSC 1-1”) and Item 1 of the Attorney General’s First Request for Information (“AG 1-1”). The information for which Big Rivers seeks confidential treatment is hereinafter referred to as the “Confidential Information.”

2. The Confidential Information consists of confidential and sensitive cost information for costs that Republic Transmission has incurred or estimates it will incur for the transmission line project that is the subject of this proceeding.

3. One (1) copy of the pages containing Confidential Information, with the Confidential Information highlighted with transparent ink, printed on yellow paper, or otherwise marked “CONFIDENTIAL,” is being filed with this petition. A copy of those pages, with the Confidential Information redacted, or a sheet noting that the entirety of the pages have been redacted, is being filed with the original and each of the ten (10) copies of Big Rivers’ responses to the information requests filed with this petition. 807 KAR 5:001 Section 13(2)(a)(3).

1 4. This petition and one (1) copy of Big Rivers' responses with the Confidential
2 Information redacted have been served on all parties to this proceeding. 807 KAR 5:001 Section
3 13(2)(b).

4 5. If and to the extent the Confidential Information becomes generally available to
5 the public, whether through filings required by other agencies or otherwise, Big Rivers will
6 notify the Commission and have its confidential status removed. 807 KAR 5:001 Section
7 13(10)(b).

8 6. As discussed below, the Confidential Information is entitled to confidential
9 protection based upon KRS 61.878(1)(c)(1), which protects "records confidentially disclosed to
10 an agency or required by an agency to be disclosed to it, generally recognized as confidential or
11 proprietary, which if openly disclosed would permit an unfair commercial advantage to
12 competitors of the entity that disclosed the records." KRS 61.878(1)(c)(1); 807 KAR 5:001
13 Section 13(2)(a)(1).

14 **I. Big Rivers Faces Actual Competition.**

15 7. Big Rivers, as a participant in the credit markets and the wholesale power
16 markets, faces economic competition from other entities.

17 8. Big Rivers competes in the wholesale power market to sell energy it produces in
18 excess of its members' needs. Big Rivers' ability to successfully compete in the wholesale
19 power market is dependent upon a combination of its ability to negotiate the maximum price for
20 the power sold and its ability to keep its cost of production as low as possible. If Big Rivers'
21 cost of producing a kilowatt-hour of energy increases, its ability to sell that kilowatt-hour in
22 competition with other utilities is adversely affected.

1 9. Big Rivers also competes for reasonably priced credit in the credit markets, and
2 its ability to compete is directly impacted by its financial results. Any event that adversely
3 affects Big Rivers’ margins will adversely affect its financial results and potentially impact the
4 price it pays for credit. As was described in the proceeding before this Commission in the Big
5 Rivers Unwind Transaction, Big Rivers expects to be in the credit markets on a regular basis in
6 the future.¹

7 10. As is evidenced by these economic pressures, Big Rivers faces actual competition
8 from other market participants in the wholesale power and credit markets.

9 **II. The Confidential Information is Generally Recognized as Confidential or** 10 **Proprietary.**

11 11. The Confidential Information for which Big Rivers seeks confidential treatment
12 under KRS 61.878(1)(c)(1) is generally recognized as confidential or proprietary under Kentucky
13 law.

14 12. Big Rivers and Republic Transmission have entered into a non-disclosure
15 agreement (“NDA”) to protect Republic Transmission’s confidential, sensitive, and proprietary
16 cost information such as the Confidential Information. Republic Transmission shared this
17 information with Big Rivers as part of the project subject to the terms of the NDA, but has not
18 authorized Big Rivers to disclose it publicly. Information such as this which bears upon a
19 company’s detailed inner workings is generally recognized as confidential or proprietary. *See,*
20 *e.g., Hoy v. Kentucky Indus. Revitalization Authority, 907 S.W.2d 766, 768 (Ky. 1995)* (“It does
21 not take a degree in finance to recognize that such information concerning the inner workings of
22 a corporation is ‘generally recognized as confidential or proprietary’”); *Marina Management*

¹ See *In the Matter of: Joint Application of Big Rivers, E.ON, LG&E Energy Marketing, Inc., and Western Kentucky Energy Corporation for Approval to Unwind Lease and Power Purchase Transactions*, Order, P.S.C. Case No. 2007-00455 (March 6, 2009), pages 27-30 and 37-39.

1 *Servs. v. Cabinet for Tourism, Dep't of Parks*, 906 S.W.2d 318, 319 (Ky. 1995) (unfair
2 commercial advantage arises simply from “the ability to ascertain the economic status of the
3 entities without the hurdles systemically associated with the acquisition of such information
4 about privately owned organizations”). Moreover, the Commission previously granted
5 confidential treatment to this type of information. *See, e.g., In the Matter of: Application of*
6 *Cumberland Valley Electric, Inc. for Commission Approval for a Certificate of Public*
7 *Convenience and Necessity to Install an Advanced Metering Infrastructure (AMI) System*
8 *Pursuant to KRS 807 KAR 5:001 and KRS 278.020*, Order, P.S.C. Case No. 2018-00056 (May 9,
9 2018) (granting confidential treatment to the pricing of components of a project for which
10 Cumberland Valley Electric, Inc. (“Cumberland Valley”) was seeking a certificate of public
11 convenience and necessity).

12 13. The Confidential Information is not publicly available, is not disseminated within
13 Big Rivers or Republic Transmission except to those employees and professionals with a
14 legitimate business need to know and act upon the information, and is not disseminated to others
15 without a legitimate need to know and act upon the information.

16 14. Accordingly, the information for which Big Rivers seeks confidential treatment is
17 recognized as confidential or proprietary under Kentucky law and is entitled to confidential
18 protection as further discussed below.

19 **III. Disclosure of the Confidential Information Would Permit an Unfair Commercial**
20 **Advantage to Big Rivers’ Competitors.**
21

22 15. Disclosure of the Confidential Information would permit an unfair commercial
23 advantage to Big Rivers’ competitors. As discussed above, Big Rivers faces actual competition
24 in the wholesale power market and in the credit market. It is likely that Big Rivers would suffer

1 competitive injury if that Confidential Information was publicly disclosed, and the information
2 should therefore be subject to confidential treatment.

3 16. In P.S.C. Case No. 2003-00054, in which the Commission granted confidential
4 treatment to bids submitted to Union Light, Heat & Power (“ULH&P”), the Commission
5 implicitly accepted ULH&P’s argument that the bidding contractors would not want their bid
6 information publicly disclosed, and that disclosure would reduce the contractor pool available to
7 ULH&P, which would drive up ULH&P’s costs, hurting its ability to compete with other gas
8 suppliers. *In the Matter of: Application of the Union Light, Heat and Power Company for*
9 *Confidential Treatment*, Order, P.S.C. Case No. 2003-00054 (August 4, 2003). Republic
10 Transmission and companies like it do not want their sensitive cost information publicly
11 disclosed. Knowledge that such information provided to Big Rivers could be publicly disclosed
12 would thus reduce the number of companies willing to contract with Big Rivers or to partner
13 with Big Rivers on projects such as this, which would drive up Big Rivers’ costs and hurt its
14 ability to compete with other power suppliers, or reduce its ability to successfully participate in
15 such projects and thus reduce its revenues. Any competitive pressure that adversely affects Big
16 Rivers’ revenue and margins could make the company appear less creditworthy and thus impair
17 its ability to compete in the credit markets.

18 17. Additionally, the Confidential Information reveals the pricing of individual
19 components of a competitively bid transmission line project, including the detailed breakdown of
20 the estimated costs for the project shown in the response to PSC 1-1 and the costs incurred for
21 the components of the project that have been completed to date shown in the response to AG 1-1.
22 The Commission recently granted confidential treatment to similar component pricing
23 information provided by Cumberland Valley in P.S.C. Case No. 2018-00056. *In the Matter of:*

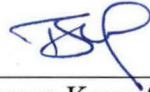
1 *Application of Cumberland Valley Electric, Inc. for Commission Approval for a Certificate of*
2 *Public Convenience and Necessity to Install an Advanced Metering Infrastructure (AMI) System*
3 *Pursuant to KRS 807 KAR 5:001 and KRS 278.020, Order, P.S.C. Case No. 2018-00056 (May 9,*
4 *2018). In that case, the Commission recognized “that the specific cost information may be used*
5 *to the financial detriment of Cumberland Valley and its ratepayers by allowing potential future*
6 *vendors to bid just under the cost of its current vendor, which, in turn, would place Cumberland*
7 *Valley at a competitive disadvantage.” Id.*

8 18. The Commission also recognized these effects in P.S.C. Case No. 2003-00054.
9 ULH&P argued, and the Commission implicitly accepted, that if the bids it received were
10 publicly disclosed, contractors on future work could use the bids as a benchmark, which would
11 likely lead to the submission of higher bids. *In the Matter of: Application of the Union Light,*
12 *Heat and Power Company for Confidential Treatment, Order, P.S.C. Case No. 2003-00054*
13 *(August 4, 2003). The Commission also implicitly accepted ULH&P’s further argument that the*
14 *higher bids would lessen ULH&P’s ability to compete with other gas suppliers. Id.*

15 19. The same competitive harm that the Commission recognized in P.S.C. Case Nos.
16 2003-00054 and 2018-00056 would befall Republic Transmission if the Confidential Information
17 in this case were publicly disclosed. This fact further evidences that Republic Transmission and
18 similar companies would be reluctant to bid on Big Rivers projects or to partner with Big Rivers
19 if they knew that their confidential, sensitive, and proprietary cost information could be publicly
20 disclosed, which could reduce the contractor pool available to Big Rivers, driving up Big Rivers’
21 costs and hurting its ability to compete with other power suppliers, as the Commission similarly
22 recognized in P.S.C. Case No. 2003-00054.

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Respectfully submitted,



Tyson Kamuf
Corporate Attorney,
Big Rivers Electric Corporation
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Henderson, Kentucky 42419-0024
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Facsimile: (270) 827-1201
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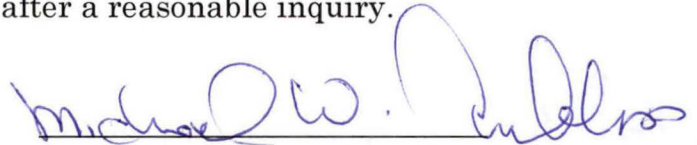
Counsel for Big Rivers Electric Corporation

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

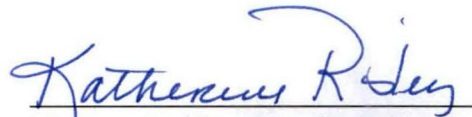
I, Michael W. (Mike) Chambliss, verify, state, and affirm that I prepared or supervised the preparation of my responses to data requests filed with this Verification, and that those responses are true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.



Michael W. (Mike) Chambliss

COMMONWEALTH OF KENTUCKY)
COUNTY OF HENDERSON)

SUBSCRIBED AND SWORN TO before me by Michael W. (Mike) Chambliss on this the 11th day of May, 2018.



Notary Public, Ky. State at Large

My Commission Expires Oct. 31, 2020



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**

**Response to Commission Staff's Initial Request for Information
dated April 27, 2018**

May 14, 2018

1 **Item 1)** *Refer to the Application, paragraph 14, regarding the estimated*
2 *purchase price for the Kentucky portion of the proposed transmission line*
3 *project. Provide a detailed, tabulated breakdown of the estimated \$6 million*
4 *purchase price.*

5

6 **Response)** The table on the following page details and tabulates the breakdown of
7 costs for the Kentucky segment of the proposed transmission line based on the initial
8 project estimate. These costs were in 2016 dollars (the basis of the Midcontinent
9 Independent System Operator, Inc. ("MISO") proposal), but escalation is included to
10 get to nominal dollars.

11

12

BIG RIVERS ELECTRIC CORPORATION

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CASE NO. 2018-00004**

**Response to Commission Staff's Initial Request for Information
dated April 27, 2018**

May 14, 2018

1

Big Rivers Electric Corporation Cost Breakdown of Kentucky Segment of Transmission Line	
In Present Year \$	Total
Project Management	
Route & Site Evaluation	
Regulatory Permitting	
Right-of-Way & Land Acquisition	
Engineering & Surveying	
Structure Material Costs	
Conductor Material Costs	
Other Material Costs	
Structure Construction Labor Costs	
Conductor Construction Labor Costs	
Other Construction Labor Costs	
Commissioning & Energization	
Total Project Implementation Costs	
In Present Year \$	Total
Total Allowance for Contingencies	
Administrative & General Overhead	
Miscellaneous and Other Expenses	
In Present Year \$	Total
Project Specific AFUDC	
Escalation	
TOTAL	

2

BIG RIVERS ELECTRIC CORPORATION

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TRANSMISSION LINE IN HANCOCK COUNTY, KENTUCKY
CASE NO. 2018-00004**

**Response to Commission Staff's Initial Request for Information
dated April 27, 2018**

May 14, 2018

1

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3 **Witness)** Michael W. Chambliss

4

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**

**Response to Commission Staff's Initial Request for Information
dated April 27, 2018**

May 14, 2018

1 **Item 2) *Refer to the Application, paragraph 15.***

2

3 ***a. Provide a copy of the application for a river crossing permit that***
4 ***was submitted to the U.S. Army Corps of Engineers.***

5 ***b. When does Big Rivers anticipate receiving a decision on this***
6 ***application?***

7 ***c. Identify any other permits that will need to be obtained prior to***
8 ***commencing construction of the proposed transmission line project.***

9

10 **Response)**

11 a. Please find attached a copy of the application of the river crossing permit
12 that was submitted to the U.S. Army Corps of Engineers.

13 b. Republic Transmission advises Big Rivers that the Section 10 river crossing
14 permit application is expected to be determined by the third quarter of
15 2018.

16 c. Please see the attached table provided by Republic Transmission
17 containing the required permits needed to construct the Kentucky portion
18 of the proposed transmission line project.

19

20

21 **Witness) Michael W. Chambliss**

22

**PSC 1-2a – Republic Transmission's
U.S. ACOE Permit Application**

**Nationwide Permit 12 Preconstruction
Notification:
Section 10, Rivers and Harbors Act of 1899**



**Republic Transmission
Duff to Coleman Transmission Line
Hancock County, Kentucky and Spencer County,
Indiana**

January 29, 2018





REPUBLIC TRANSMISSION, LLC
16150 Main Circle Drive, Suite 310
St. Louis, MO 63017
info@republictransmission.com · (866) 673-9037

January 29, 2018

U.S. Army Corps of Engineers
CELRL-RD, Room 752
600 Dr. Martin Luther King Jr. Place
Louisville, KY 40202-0059

To Whom it May Concern:

Republic Transmission, LLC (Republic), a partnership between LS Power and Hoosier Energy, herein submits a Preconstruction Notification for Nationwide Permit 12 (utility line activities). The Midcontinent Independent System Operator (MISO) determined that the proposed transmission line was needed due to significant transmission system congestion in the region. Republic was designated by MISO to design, construct, own, and operate a new single circuit 345 kilovolt (kV) electric transmission line to address this need, the Duff to Coleman 345kV Transmission Line.

The proposed Nationwide Permit activity involves the construction of a 345 kV high-voltage transmission line over waters of the United States. The proposed transmission line will aerially span the Ohio River and Crooked Creek, both Section 10 waters of the United States, installation that requires approval under Section 10 of the Rivers and Harbors Act of 1899. Disturbance below the Ordinary High Water Mark of these Section 10 waters is not required. Please see the attached Application including forms and appendices for more information.

If you have any questions on this submittal, please contact me at (636) 534-3228 or via email at lmarton@lspower.com

Very truly yours,

A handwritten signature in black ink that reads "Lucy Marton". The signature is written in a cursive, flowing style.

Lucy Marton
Environmental Engineer

Enclosures: as noted

**U.S. ARMY CORPS OF ENGINEERS
APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT
33 CFR 325. The proponent agency is CECW-CO-R.**

*Form Approved -
OMB No. 0710-0003
Expires: 30-SEPTEMBER-2015*

Public reporting for this collection of information is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of the collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters, Executive Services and Communications Directorate, Information Management Division and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE
--------------------	----------------------	------------------	------------------------------

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME First - Lucy Middle - Wright Last - Marton Company - Republic Transmission, LLC E-mail Address - LMarton@LSPower.com		6. AUTHORIZED AGENT'S NAME AND TITLE (agent is not required) First - Middle - Last - Company - E-mail Address -	
6. APPLICANT'S ADDRESS: Address- 16150 Main Circle Drive, Suite 310 City - Chesterfield State - MO Zip - 63017 Country -		9. AGENT'S ADDRESS: Address- City - State - Zip - Country -	
7. APPLICANT'S PHONE NOs. w/AREA CODE a. Residence b. Business c. Fax 636-534-3228		10. AGENTS PHONE NOs. w/AREA CODE a. Residence b. Business c. Fax	

STATEMENT OF AUTHORIZATION

11. I hereby authorize, _____ to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

SIGNATURE OF APPLICANT DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see Instructions) Duff to Coleman 345 kV Transmission Line, Ohio River Crossing	
13. NAME OF WATERBODY, IF KNOWN (if applicable) Ohio River	14. PROJECT STREET ADDRESS (if applicable) Address City - State - Zip -
15. LOCATION OF PROJECT Latitude: +N 37.9931 Longitude: -W -86.832161	
16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see Instructions) State Tax Parcel ID PLEASE SEE ATTACHMENT A Municipality Section - Township - Range -	

17. DIRECTIONS TO THE SITE

On the Indiana side, head East from Troy on E County Rd 800 N (HWY 66). Go 2 miles from the intersection of 545. From there, the line crossing is 0.5 miles south in the woodlot.

On the Kentucky side, take River Road (334) east out of Lewisport. From the intersection of 1st and River Road go approximately 5.5 miles. From there, the line crossing is 0.8 miles north.

The crossing is located approximately 9 miles downstream of the Lincoln Trail Highway Bridge at mile marker 732.5.

18. Nature of Activity (Description of project, include all features)

Construction of a new 345 kV transmission line across a Section 10 Water utilizing Nationwide Permit 12. Construction is expected to begin in the fall of 2018. Construction of the line will require the right-of-way to be cleared of all trees and vegetation. No tree and/or vegetation clearing will take place within the Jurisdictional boundaries of the Ohio River. No disturbance below the Ordinary High Water Mark (OHWM) of the Ohio River will be required, this will be an aerial crossing only. The OHWM of the river measured at the centerline of the crossing location is 1,400 feet. Please see the attached wetlands delineation report in Appendix A and figures in Appendix E for more information.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

Republic Transmission, LLC (Republic), was designated by the Midcontinent Independent System Operator (MISO) to design, construct, own, and operate a new single circuit 345 kilovolt (kV) electric transmission line. MISO identified the need for this project due to significant transmission system congestion in the region and determined that a new high voltage transmission line would increase reliability. Construction is expected to begin in the fall of 2018 and is expected to be completed by the winter of 2020.

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

N/A. No discharge of dredged and/or fill material into the Ohio River will occur as a result of the proposed Nationwide Permit activities.

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type Amount in Cubic Yards	Type Amount in Cubic Yards	Type Amount in Cubic Yards
N/A	N/A	N/A

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres N/A
or
Linear Feet N/A

23. Description of Avoidance, Minimization, and Compensation (see instructions)

The proposed nationwide permit activities do not involve discharge of dredged or fill material. The activities will all take place outside of the OHWM of the Ohio River. The Ohio River will only be crossed aerially. No mitigation will be required.

24. Is Any Portion of the Work Already Complete? Yes No IF YES, DESCRIBE THE COMPLETED WORK

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (If more than can be entered here, please attach a supplemental list)

a. Address- PLEASE SEE ATTACHMENT B: BLOCK 25

City - State - Zip -

b. Address-

City - State - Zip -

c. Address-

City - State - Zip -

d. Address-

City - State - Zip -

e. Address-


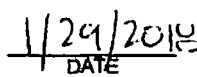


City - State - Zip -

26. List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED

* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for permit or permits to authorize the work described in this application. I certify that this information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than \$10,000 or imprisoned not more than five years or both.

Attachment A:

Block 16

Block 16. Other Location Descriptions, if Known

- a. State Tax Parcel ID – 74-09-15-800-003.000-013
Municipality – Huff
Section – 15
Township – 6
Range – 4
- b. State Tax Parcel ID – 18-07
Municipality – n/a
Section – n/a
Township – n/a
Range – n/a

Attachment B:

Block 25

Block 25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody

- a. Don Masterson Trust
8450 E. State Road 66
Grandview, Indiana 47615
- b. Beverly Masterson Trust
8450 E. State Road 66
Grandview, Indiana 47615
- c. John Werner, c/o Waldschmidt & Werner
644 12th Street
Tell City, Indiana 47586
- d. Anne Nestruck Trust
710 Blue Ridge Road
Evansville, Indiana 47717
- e. Pottinger-Amato Ruth Ann Irrev Trust, c/o John Pottinger, Trustee
431 Marks Lane
Bardstown, Kentucky 40004

**U.S. ARMY CORPS OF ENGINEERS
APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT
33 CFR 325. The proponent agency is CECW-CO-R.**

*Form Approved -
OMB No. 0710-0003
Expires: 30-SEPTEMBER-2015*

Public reporting for this collection of information is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of the collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters, Executive Services and Communications Directorate, Information Management Division and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE
--------------------	----------------------	------------------	------------------------------

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME First - Lucy Middle - Wright Last - Marton Company - Republic Transmission, LLC E-mail Address - L.Marton@LSPower.com			8. AUTHORIZED AGENT'S NAME AND TITLE (agent is not required) First - Middle - Last - Company - E-mail Address -		
6. APPLICANT'S ADDRESS: Address- 16150 Main Circle Drive, Suite 310 City - Chesterfield State - MO Zip - 63017 Country -			9. AGENT'S ADDRESS: Address- City - State - Zip - Country -		
7. APPLICANT'S PHONE NOs. w/AREA CODE a. Residence b. Business c. Fax 636-534-3228			10. AGENTS PHONE NOs. w/AREA CODE a. Residence b. Business c. Fax		

STATEMENT OF AUTHORIZATION

11. I hereby authorize, _____ to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

SIGNATURE OF APPLICANT DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions) Duff to Coleman 345 kV Transmission Line, Crooked Creek Crossing (North)			
13. NAME OF WATERBODY, IF KNOWN (if applicable) Crooked Creek		14. PROJECT STREET ADDRESS (if applicable) Address City - State - Zip -	
15. LOCATION OF PROJECT Latitude: -N 38.013189 Longitude: -W -86.853128			
16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions) State Tax Parcel ID PLEASE SEE ATTACHMENT A Municipality Section - Township - Range -			

17. DIRECTIONS TO THE SITE

From the intersection of Hwy 66 (E County Rd 800 N) and Main Street in Troy travel north west approximately 2 miles on Hwy 66 to N Old Lamar Hwy. Turn right onto N Old Lamar Hwy and travel approximately 1.8 miles at which point the crossing will be south of the road approximately 1,600 feet in the woodlot.

18. Nature of Activity (Description of project, include all features)

Construction of a new transmission 345 kV transmission line across a Section 10 Water utilizing Nationwide Permit 12. Construction is expected to begin in the fall of 2018. Construction of the line will require the right-of-way to be cleared of all trees and vegetation. Any tree clearing that is required within the Jurisdictional boundaries of Crooked Creek will be done utilizing non-mechanized methods. No disturbance below the Ordinary High Water Mark (OHWM) of Crooked Creek will be required for access, this will be an aerial crossing only. The OHWM of the creek crossing is 30 feet. Please see the attached wetland delineation reports in Appendix A and figures in Appendix E for more information.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

Republic Transmission, LLC (Republic), was designated by the Midcontinent Independent System Operator (MISO) to design, construct, own, and operate a new single circuit 345 kilovolt (kV) electric transmission line. MISO identified the need for this project due to significant transmission system congestion in the region and determined that a new extra-high voltage transmission line would increase reliability. Construction is expected to begin in the fall of 2018 and is expected to be completed by the winter of 2020.

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

N/A. No discharge of dredged and/or fill material into Crooked Creek will occur as a result of the proposed Nationwide Permit activities.

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type Amount in Cubic Yards	Type Amount in Cubic Yards	Type Amount in Cubic Yards
N/A	N/A	N/A

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres N/A

or

Linear Feet N/A

23. Description of Avoidance, Minimization, and Compensation (see instructions)

The proposed nationwide permit activities do not involve discharge of dredged or fill material. The activities will all take place outside of the OHWM of Crooked Creek. Crooked Creek will only be crossed aerially by our conductor. No mitigation will be required.

24. Is Any Portion of the Work Already Complete? Yes No IF YES, DESCRIBE THE COMPLETED WORK

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list)

a. Address- PLEASE SEE ATTACHMENT B: BLOCK 25

City - State - Zip -

b. Address-

City - State - Zip -

c. Address-

City - State - Zip -

d. Address-

City - State - Zip -

e. Address-

City - State - Zip -

26. List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described In This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED

* Would include but is not restricted to zoning, building, and flood plain permits

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Attachment A:

Block 16

Block 16. Other Location Descriptions, if Known

- a. State Tax Parcel ID – 74-09-09-100-006.000-013
Municipality – Huff
Section – 6
Township – 6
Range – 4
- b. State Tax Parcel ID – 74-09-09-100-007.000-013
Municipality – Huff
Section – 9
Township – 6
Range – 4

Attachment B:

Block 25

**U.S. ARMY CORPS OF ENGINEERS
APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT
33 CFR 325. The proponent agency is CECW-CO-R.**

*Form Approved -
OMB No. 0710-0003
Expires: 30-SEPTEMBER-2015*

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7. APPLICANT'S PHONE NOs. w/AREA CODE a. Residence b. Business c. Fax 636-534-3228			10. AGENTS PHONE NOs. w/AREA CODE a. Residence b. Business c. Fax		

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SIGNATURE OF APPLICANT DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions) Duff to Coleman 345 kV Transmission Line, Crooked Creek Crossing (South)	
13. NAME OF WATERBODY, IF KNOWN (if applicable) Crooked Creek	14. PROJECT STREET ADDRESS (if applicable) Address City - State - Zip -
15. LOCATION OF PROJECT Latitude: -N 38.010614 Longitude: -W -86.848775	
16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions) State Tax Parcel ID PLEASE SEE ATTACHMENT A Municipality Section - Township - Range -	

17. DIRECTIONS TO THE SITE

From the intersection of Hwy 66 (E County Rd 800 N) and Main Street in Troy travel north west approximately 2 miles on Hwy 66 to N Old Lamar Hwy. Turn right onto N Old Lamar Hwy and travel approximately 1.3 miles at which point the crossing will be south of the road approximately 2,300 feet in the woodlot.

18. Nature of Activity (Description of project, include all features)

Construction of a new transmission 345 kV transmission line across a Section 10 Water utilizing Nationwide Permit 12. Construction is expected to begin in the fall of 2018. Construction of the line will require the right-of-way to be cleared of all trees and vegetation. Any tree clearing that is required within the Jurisdictional boundaries of Crooked Creek will be done utilizing non-mechanized methods. No disturbance below the Ordinary High Water Mark (OHWM) of Crooked Creek will be required for access, this will be an aerial crossing only. The OHWM of the creek crossing is 30 feet. Please see the attached wetland delineation reports in Appendix A and figures in Appendix E for more information.

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Type Amount in Cubic Yards	Type Amount in Cubic Yards	Type Amount in Cubic Yards
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22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres N/A

or

Linear Feet N/A

23. Description of Avoidance, Minimization, and Compensation (see instructions)

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24. Is Any Portion of the Work Already Complete? Yes No IF YES, DESCRIBE THE COMPLETED WORK

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list)

a. Address- PLEASE SEE ATTACHMENT B: BLOCK 25

City - State - Zip -

b. Address-

City - State - Zip -

c. Address-

City - State - Zip -

d. Address-

City - State - Zip -

e. Address-

City - State - Zip -

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SIGNATURE OF APPLICANT

1/29/2018

DATE

SIGNATURE OF AGENT

DATE

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Attachment A:

Block 16

Block 16. Other Location Descriptions, if Known

- a. State Tax Parcel ID – 74-09-10-200-016.000-013
Municipality – Huff
Section – 10
Township – 6
Range – 4
- b. State Tax Parcel ID – 74-09-10-200-001.004-013
Municipality – Huff
Section – 10
Township – 6
Range – 4
- c. State Tax Parcel ID – 74-09-10-200-007.000-013
Municipality – Huff
Section – 10
Township – 6
Range – 4
- d. State Tax Parcel ID – 74-09-09-100-006.000-013
Municipality – Huff
Section – 6
Township – 6
Range – 4

Attachment B:

Block 25

Block 25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody

- a. Brandon Leigh Banks
8986 E State Road 66
Grandview, Indiana 47615
- b. Casey Schulthise
8994 N. Old Lamar Hwy
Evanston, Indiana 47531
- c. Donald and Rose Marie Braun Limited Partnership
9188 N. County Road 1100 E
Evanston, Indiana 47531

Appendix A: Wetlands Reports

Republic relied upon two consultants to conduct delineations of wetlands, Waters of the United States, and Section 10 Waters: GAI Consultants (GAI) and Redwing Ecological Services, Inc. (Redwing). Those Delineations reports are attached as Attachment A and B, respectively. Attachment A includes the delineations of the Ohio River in Indiana and both Crooked Creek Crossings. Attachment B includes the delineation of the Ohio River in Kentucky.

Attachment A:

Wetland Delineation and Stream Identification Report
GAI Consultants, Inc.
January 3, 2018



gai consultants

Wetland Delineation and Stream Identification Report

Republic Transmission
Duff to Coleman Transmission Line Project
Section 10 Crossings
Spencer County, Indiana

GAI Project Number: D170592.00, Task 001
January 3, 2018



Prepared by: GAI Consultants, Inc.
Indianapolis Office
6420 Castleway West Drive
Indianapolis, IN 46250

Prepared for: Republic Transmission
16150 Main Circle Drive, Suite 310
Chesterfield, MO 63017

Wetland Delineation and Stream Identification Report

Republic Transmission
Duff to Coleman Transmission Line Project
Section 10 Crossings
Spencer County, Indiana

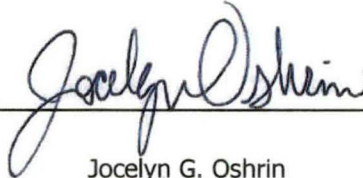
GAI Project Number: D170592.00, Task 001

January 3, 2018

Prepared for:
Republic Transmission
16150 Main Circle Drive, Suite 310
Chesterfield, MO 63017

Prepared by:
GAI Consultants, Inc.
Indianapolis Office
6420 Castleway West Drive
Indianapolis, Indiana 46250

Author:



Jocelyn G. Oshrin
Project Environmental Specialist

Project Manager:



Marc Walters, MPA, CPESC
Environmental Manager

Table of Contents

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3.0	Regulatory Discussion	2
3.1	Waters of the U.S.	2
3.2	Waters of the State	2
4.0	Results	2
5.0	Conclusions	3
6.0	References	4

Table 1 Waterbodies Identified Within the Project Study Area
 Waterbody Photographs

Table 2 Streams Identified Within the Project Study Area
 Stream Photographs

Figure 1 Project Vicinity
Figure 2 Resource Location

Appendix A Wetland Data Forms
Appendix B Upland Data Forms
Appendix C Descriptions of Soils Found Within the Project Study Area

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1.0 Introduction

Republic Transmission (Republic) is proposing three (3) United States Army Corps of Engineers (USACE) Section 10 Navigable Waters aerial electric crossings within the Duff to Coleman Transmission Line Project. The Section 10 Crossings are collectively referred to as the Duff to Coleman Transmission Line Project Section 10 Crossings (Section 10 Crossings Project) for purposes of this report. The Section 10 Crossings Project is located within Sections 9, 10 and 15, Township 6S, Range 4W, in Spencer County, Indiana. One (1) Section 10 Crossing extends across the Ohio River into Hancock County Kentucky, approximately 5 miles northeast of Louisport (**Figure 1, Project Vicinity**).

GAI Consultants, Inc. (GAI), on behalf of Republic, conducted wetland delineations and waterbody investigations of the Section 10 Crossings Project study area(s) at Crooked Creek and the Ohio River (north bank) on June 7, 2017 and September 12, 2017 within Indiana only. The survey of the south bank of the Ohio River was completed by others, as GAI did not complete any survey on the Kentucky side of the Ohio River crossing. Some measurements presented herein specific to the Ohio River may have been taken from aerial desktop review. GAI identified approximate boundaries of wetlands and waterbodies located within an approximate 175-foot right-of-way (ROW) study area specific to three (3) Section 10 Crossing locations. This report describes the methods and results of the environmental field survey within the Section 10 Crossings Project study area(s), with respect to Indiana only, and was prepared in support of expected USACE Section 10 Navigable Waters aerial crossing authorizations.

2.0 Methods

Wetland delineations were conducted in accordance with the 1987 USACE Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory, 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0) (USACE, 2010). Wetlands were classified using the Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al., 1979). Classification of the indicator status of vegetation is based on The National Wetland Plant List: 2016 wetland ratings (Lichvar et al. 2016).

The growing season in the Project area is generally between mid-March and mid-November in Spencer County, IN (USDA-NRCS, 2017). Field observations were supplemented with a review of United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) mapping, United States Department of Agriculture, Natural Resource Conservation Service (USDA-NRCS) soils mapping, historical aerial photography (ArcGIS and Google Earth), and local landscape topography/morphology to provide a determination of wetlands present within the study area. Professional judgment was used to determine and document whether dominant hydrophytic vegetation and hydric soils existed within the identified wetlands if on-site data was ambiguous.

Each wetland and waterbody feature was given a unique map designation and each boundary flag location was recorded using a Trimble GEO XH model global positioning system mapping grade unit with the capability of sub-meter accuracy. Judgmental upland and wetland soil test pits were taken within the study corridor at the discretion of the delineator to confirm the presence or absence of wetlands in areas exhibiting wetland indicators. Wetland boundaries, stream centerlines, and other waterbody perimeters were mapped.

3.0 Regulatory Discussion

3.1 Waters of the U.S.

"Waters of the U.S." are within the jurisdiction of the USACE under the Clean Water Act (CWA). "Waters of the U.S." is a broad term, which includes waters that are used or could be used for interstate commerce. This includes wetlands, ponds, lakes, territorial seas, rivers, tributary streams including any definable intermittent waterways, and some ditches below the ordinary high water mark (OHWM). Also included are manmade waterbodies such as quarries and ponds, which are no longer actively being mined or constructed and are connected to other "waters." Wetlands, mudflats, vegetated shallows, riffle and pool complexes, coral reefs, sanctuaries, and refuges are all considered special aquatic sites which involve more rigorous regulatory permitting requirements. A specific, detailed definition of "Waters of the U.S." can be found in the Federal Register (33 CFR 328.3).

The USACE will assert jurisdiction over traditionally navigable waters (TNW), adjacent wetlands, and non-navigable tributaries of traditionally navigable waters that have "relatively permanent" flow, and wetlands that border these waters, regardless of whether or not they are separated by roads, berms, and similar barriers. In addition, the USACE will use a case-by-case "significant nexus" analysis to determine whether waters and their adjacent wetlands are jurisdictional. A "significant nexus" can be found where waters, including adjacent wetlands, alter the physical, biological, or chemical integrity of the traditionally navigable water based on consideration of several factors.

3.2 Waters of the State

"Waters of the State" are within the jurisdiction of the Indiana Department of Environmental Management (IDEM). They are generally defined as surface and underground waterbodies, which extend through or exist wholly in the State, which includes, but is not limited to, streams and both isolated and non-isolated wetlands. Private ponds, or any pond, reservoir, or facility built for reduction of pollutants prior to discharge are not included in this definition. In addition to "Waters of the U.S.", the IDEM also regulates and issues permits for isolated wetland impacts. The State relies on the USACE decision regarding wetland determinations and delineations including whether or not a wetland is isolated or non-isolated.

4.0 Results

The Section 10 Crossings Project study area topography generally consisted of steep sloped woodlot, agricultural land, and Ohio River and Crooked Creek floodplain within the "Central Mississippi Valley Wooded Slopes, Eastern Part" Major Land Resource Areas (MLRA) (USDA-NRCS, 2006). Land adjacent to the study area consists primarily of steep sloped woodlot, agricultural land, rural residential, and existing transmission line ROW.

The Section 10 Crossings Project study area is found within the Ohio River-Corn Island (Hydrologic Unit Code [HUC] 05140201090020) and Crooked Creek-Cedar Crest Lake (HUC 05140201080050) 14-digit watersheds (**Figure 1, Project Vicinity**).

The USFWS' NWI data was reviewed for potential wetland locations. This data identifies potential wetlands on-site. The NWI data was prepared from high altitude photography and in most cases was not field verified. As a result wetlands are sometimes erroneously identified, missed, or misidentified within this data set. The presence of an NWI wetland does not necessarily constitute the presence of a wetland meeting USACE criteria. The NWI data of the area (**Figure 2, Resource Location**) identified one (1) wetland complex within the study area. This NWI feature is associated with the Ohio River and is listed as Riverine, Lower Perennial, Unconsolidated Bottom, Permanently Flooded (R2UBH).

Three likely jurisdictional wetlands and five likely jurisdictional streams were identified within the study area (**Figure 2, Resource Location**). Apart from the Section 10 Navigable Waters crossings, all other regulated activities and associated impacts will be avoided to the additional regulated features.

No wetlands were identified as Critical Wetlands and Critical Special Aquatic Sites to be synonymous with Rare and Ecologically Important Wetland Types under 327 IAC 17-1-3(3)(B). The identified stream features are not State Waters Designated for Special Protection in Indiana (Designated Salmonid Waters, Outstanding State Resource Waters, or Exceptional Use Streams), are not listed on the Indiana Department of Natural Resources (IDNR) Listing of State Natural and Scenic Rivers, and are not listed on the IDNR Listing of Outstanding Rivers in Indiana. Stream IN-SP-001-F (Ohio River), Stream IN-SP-006-A (Crooked Creek), and IN-SP-008-A (Crooked Creek) are listed as a USACE Section 10 Navigable Waters and IDNR Navigable Waterways.

In support of field findings, the identified wetlands and streams are summarized in **Tables 1 and 2**, respectively. Color photographs of each feature accompany these tables. Wetland data forms and upland data forms corresponding with the identified wetlands are provided in **Appendices A and B**, respectively. Additional upland soil test pit forms documenting soil and vegetation characteristics of portions of the study area are also included in **Appendix B**.

No stream data forms were completed during this investigation, as the streams are not expected to be permanently or temporarily impacted; however, data recorded for all stream features included top of bank (TOB) width and depth, bankfull (BF) width and depth, and width and depth at ordinary high water mark (OHWM). Additionally, the substrate characteristics and adjacent riparian buffer vegetation were documented for each stream and recorded in field notes.

In general, the riparian buffers were observed as successional upland mesic woodlots. Typical observed species included but are not limited to *Acer saccharinum* (silver maple), *Acer saccharum* (Sugar Maple), *Asimina triloba* (Pawpaw), *Lindera benzoin* (Spicebush), *Polystichum acrostichoides* (Christmas Fern), and *Microstegium vimineum* (Japanese Stiltgrass).

The identified Palustrine Forested (PFO) wetlands occurred in floodplains and were dominated by deciduous hardwood species such as *Fraxinus pennsylvanica* (Green Ash), *Platanus occidentalis* (American Sycamore), and Silver Maple in the overstory and *Urtica dioica* (Stinging Nettle), *Persicaria pennsylvanica* (Pennsylvania Smartweed), and *Solidago canadensis* (Canada goldenrod) in the understory. Wetland soils were generally unconsolidated silty clay with depleted matrices and mottling.

Descriptions of soils found within the 175-foot study area are provided in **Appendix C** and presented on **Figure 2, Resource Location**.

5.0 Conclusions

Wetland delineations and stream investigations of Republic Transmission's Duff to Coleman Transmission Line Project Section 10 Crossings were completed on June 7, 2017 and September 12, 2017, in Indiana only. GAI identified approximate boundaries of waterbodies and wetlands located within an approximate 175-foot wide ROW study area. Three (3) likely jurisdictional wetlands and five (5) likely jurisdictional streams were identified within the study area. The results of the field study are provided in this report.

All statements in this document pertaining to the jurisdictional status of streams and wetlands with regard to USACE and state regulations represent the opinion of GAI and are based on present USACE guidance. The jurisdictional status of these features may be confirmed by a USACE Jurisdictional Determination and/or by State agencies.

6.0 References

- Cowardin, D.M., Carter, V., Golet, F.C., and La Roe, E.T. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. Publication No. FWS/OBS-79/31. United States Department of the Interior, Fish and Wildlife Service, Washington, D.C.
- Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*. Technical Report Y-87-1. United States Department of the Army, United States Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.
- Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. *The National Wetland Plant List: 2016 wetland ratings*. Phytoneuron 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X.
- United States Army Corps of Engineers (USACE). 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Mid-West Region, Version 2.0*. ERDC/EL TR-12.1. United States Army Engineer Research and Development Center, Vicksburg, Mississippi.
- United States Department of Agriculture, Natural Resources Conservation Service (USDA-NRCS). 2017. *Field Office Technical Guide, WETS Climatic Data*. Available at <http://efotg.sc.egov.usda.gov/treemenuFS.aspx>. Accessed August 2017.
- United States Department of Agriculture, Natural Resources Conservation Service (USDA-NRCS). 2006. *Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific*. U.S. Department of Agriculture Handbook, 296.

TABLE 1
Wetlands Identified Within the Project Study Area

Table 1.
Wetlands Identified Within the Project Study Area

Feature Designation ¹	Latitude ²	Longitude ²	Cowardin Classification ³	NWI Wetland Classification ⁴	Critical Wetland or Critical Special Aquatic Site ⁵	Approximate Size (acres) ⁶	Within a FEMA Designated Floodplain ⁷	Open Ended	"Waters of the U.S."
Wetland-IN-SP-009-A	38.014072	-86.854344	PFO	n/a	No	0.053	Yes	Yes	Yes
Wetland-IN-SP-009-B	38.013871	-86.854033	PFO	n/a	No	0.093	Yes	Yes	Yes
Wetland-IN-SP-008-A	38.013421	-86.853733	PFO	n/a	No	0.06	Yes	Yes	Yes
Total Wetland Acreage within Study Area						0.206 ac			

Notes:

- ¹ GAI map designation.
- ² Decimal degrees; Coordinates provided in NAD 83.
- ³ Palustrine system wetlands were classified as emergent (PEM), forested (PFO), scrub-shrub (PSS), or unconsolidated bottom (PUB). Routine wetland data forms were not collected for any PUB (pond) features due to water depth. These features are presented as Open Water in Figure 2, Resource Location.
- ⁴ National Wetlands Inventory (NWI) wetlands as mapped by the United States Fish and Wildlife Service.
- ⁵ IDEM defines Critical Wetlands and Critical Special Aquatic Sites to be synonymous with Rare and Ecologically Important Wetland Types under 327 IAC 17-1-3(3)(B).
- ⁶ Extent of wetland delineated acreage within study area. Wetland or open water may extend beyond these limits if noted as open ended. Wetland data presented in Figure 2, Resource Location may extend outside of study area shown.
- ⁷ Wetlands residing within the limits of a designated Federal Emergency Management Agency (FEMA) designated 100-yr floodplain or floodway.

WETLAND PHOTOGRAPHS

Wetland Photographs



Photograph 1. Wetland-IN-SP-009-A, PFO, Facing East (September 12, 2017).



Photograph 2. Wetland-IN-SP-009-A, PFO, Facing West (September 12, 2017).



Photograph 3. Wetland-IN-SP-009-B, PFO, Facing East (September 12, 2017).



Photograph 4. Wetland-IN-SP-009-B, PFO, Facing West (September 12, 2017).



Photograph 5. Wetland-IN-SP-008-A, PFO, Facing North (September 12, 2017).



Photograph 6. Wetland-IN-SP-008-A, PFO, Facing South (September 12, 2017).

TABLE 2
Waterbodies Identified
Within the Project Study Area

Table 2.
Waterbodies Identified Within the Project Study Area

Feature Designation ¹	Latitude ²	Longitude ²	Name	Type	OHW ³ Width (ft)	OHW ³ Depth (ft)	BF ⁴ Width (ft)	BF ⁴ Depth (ft)	TOB ⁵ Width (ft)	TOB ⁵ Depth (ft)	Length Within Study Area ⁶ (ft)	Indiana or Federal Special Listing ^{7,8,9,10,11,12}	Open Ended
Stream-IN-SP-008-A	38.013047	-86.852942	Crooked Creek	Perennial	30	3	30	5	35	10	369.94	Yes ^{7,12}	Yes
Stream-IN-SP-006-A	38.010611	-86.84891	Crooked Creek	Perennial	30	4	30	5	51	10	187.06	Yes ^{7,12}	Yes
Stream-IN-SP-001-F	37.994912	-86.833402	Ohio River	Perennial	1,400 ¹³	N/A	N/A	N/A	1,483 ¹³	N/A	176.12	Yes ^{7,12}	Yes
Total Stream (feet) within Study Area											733.12 ft		

Notes:

- ¹ GAI map designation.
- ² Decimal degrees; Coordinates provided in NAD 83. Taken from center point of the longest bank within study area.
- ³ Ordinary High Water Mark.
- ⁴ Bankfull.
- ⁵ Top of Bank.
- ⁶ Extent of stream within study area. Stream may extend beyond these limits if noted as open ended. Stream data presented in Figure 2, Resource Location may extend outside of study area shown. Length equates to the longest bank within the study area for double banked streams.
- ⁷ USACE Navigable Streams Listing (Section 10 Waters) Louisville District (<http://www.lrl.usace.army.mil/Portals/64/docs/regulatory/publicnotices/Limits%20of%20Jurisdiction%20Public%20Notice-revised.pdf>).
- ⁸ IDNR Listing of State Natural and Scenic Rivers (https://www.in.gov/dnr/water/files/Appdx_E-4.pdf).
- ⁹ IDNR Outstanding Rivers List for Indiana (https://www.in.gov/dnr/water/files/Appdx_E-4.pdf).
- ¹⁰ IDNR Listing of Public Freshwater Lakes (<http://www.in.gov/legislative/iac/20170531-IR-312170269NRA.xml.pdf>).
- ¹¹ State Waters Designated for Special Protection in Indiana (Designated Salmonid Waters, Outstanding State Resource Waters, or Exceptional Use Streams) (http://www.in.gov/dnr/water/files/Appdx_F-2.pdf).
- ¹² IDNR Navigable Waterways Roster (<https://www.in.gov/nrc/2392.htm>).
- ¹³ Survey on right downstream (north/Indiana) bank of Ohio River completed by GAI; survey on left downstream (south/Kentucky) bank of Ohio River completed by others.
- ¹⁴ Top of bank width dimensions for double banked streams have been determined utilizing GIS measurement over field collected data utilizing an average across the length of stream present in the study area.

WATERBODY PHOTOGRAPHS

Waterbody Photographs



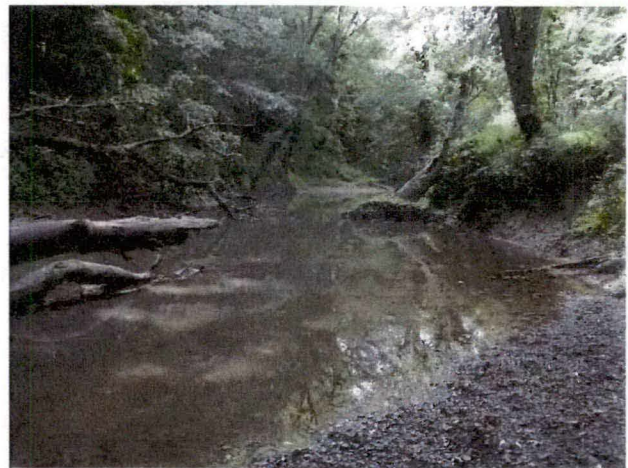
Photograph 1. Stream-IN-SP-008-A Crooked Creek), Upstream, Facing Southeast (September 12, 2017).



Photograph 2. Stream-IN-SP-008-A (Crooked Creek), Downstream, Facing Northwest (September 12, 2017).



Photograph 3. Stream-IN-SP-006-A, (Crooked Creek), Upstream, Facing Northeast (September 12, 2017).



Photograph 4. Stream-IN-SP-006-A (Crooked Creek), Downstream, Facing Southwest (September 12, 2017).

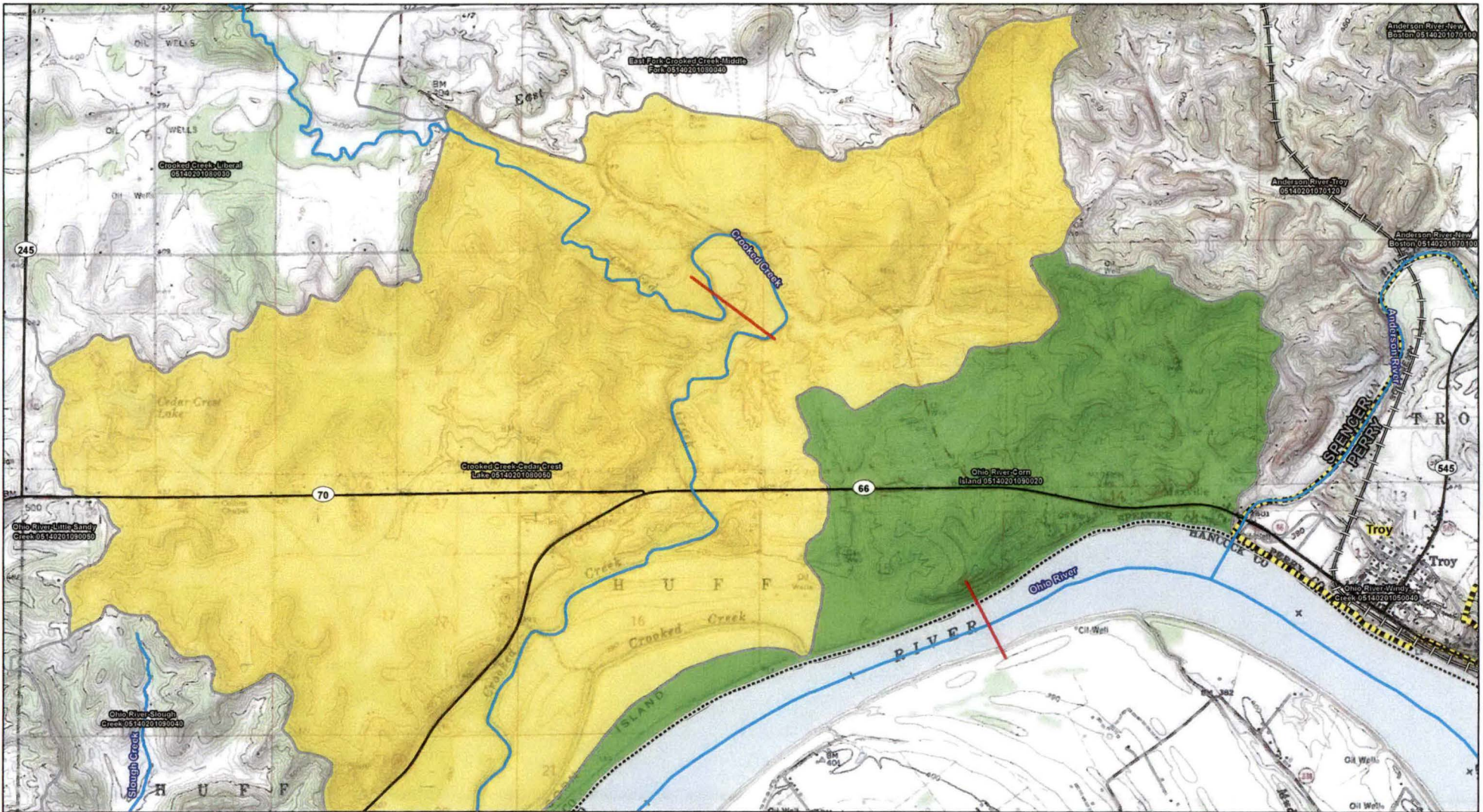


**Photograph 5. Stream-IN-SP-001-F (Ohio River),
Downstream, Facing Southwest (June 7, 2017).**



**Photograph 6. Stream-IN-SP-001-F (Ohio River),
Upstream, Facing Northeast (June 7, 2017).**

FIGURES



PROJECT LOCATION

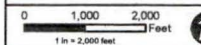


SPENCER COUNTY, IN

REFERENCE:

TOPOGRAPHIC MAP:
 - ERTD USA Topo Maps, Accessed 12/18/2017
 HIGHWAY:
 - ERTD USA Major Roads, 07/11/2016
 HAZARDOUS:
 - Indiana Department of Transportation's Active and Abandoned Railways, 2006
 COUNTY BOUNDARY:
 - Indiana Department of Survey's County Boundaries of Indiana, 09/21/2016
 INCORPORATED AREA:
 - Indiana Department of Homeland Security's County Government Boundaries, 12/17/2015
 ROUTE CENTERLINE:
 - Republic Transmission Details, Revised 10/24/2017
 NHD FLOWLINE:
 - U.S. Geological Survey's National Hydrography Dataset Local Resolution, 11/30/2016
 14 DIGIT WATERSHED BOUNDARY:
 - U.S. Geological Survey's 14-Digit Hydrologic Units, 11/2002

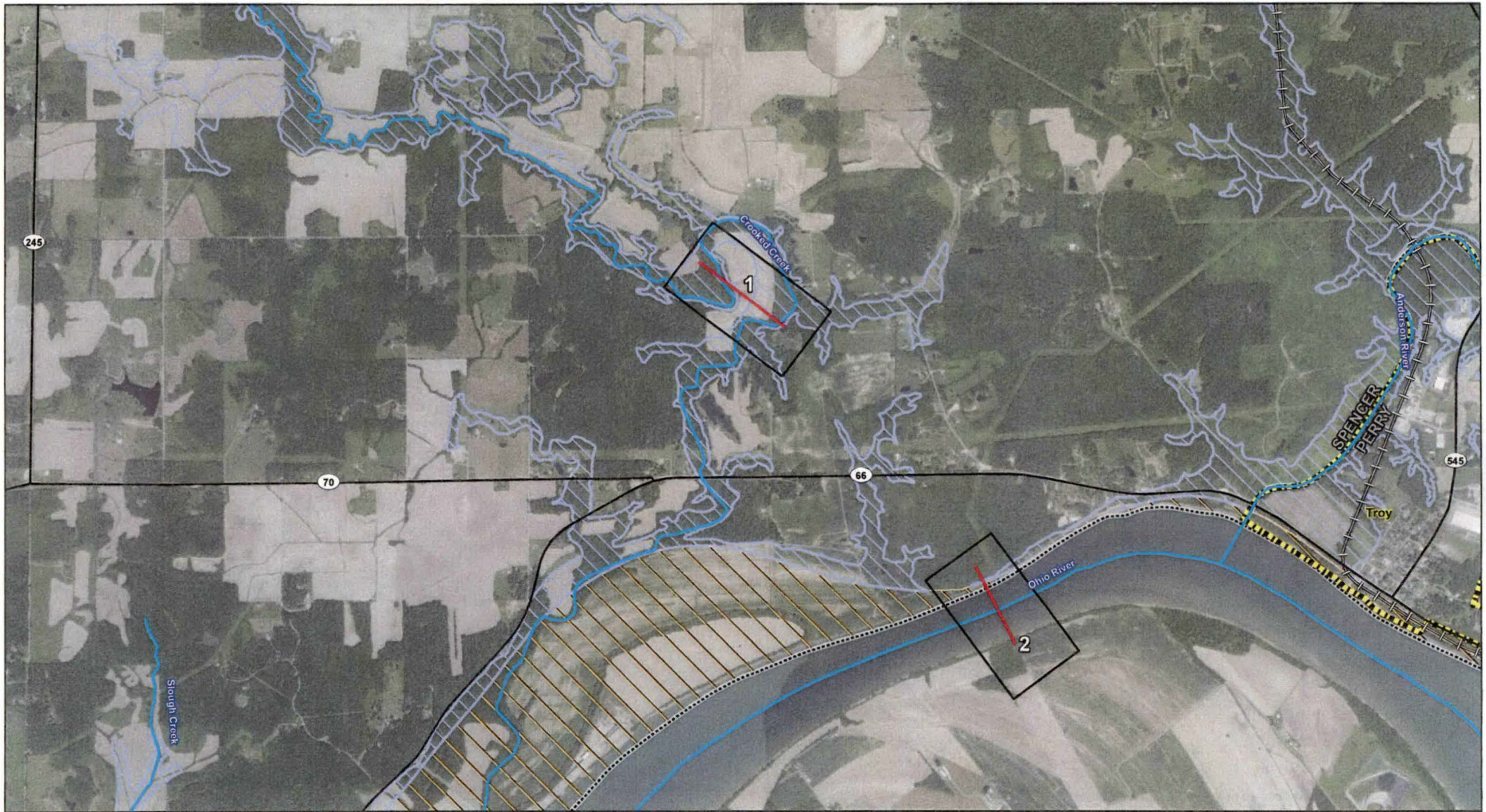
- County Boundary
- Incorporated Area
- Interstate Highway
- State Highway and Route
- US Highway
- Local Road
- Railway
- Section 10 Crossings Centerline
- NHD Flowline
- 14 Digit Watershed Boundary
- Crooked Creek-Cedar Crest Lake
- Ohio River-Corn Island



WETLAND DELINEATION AND
 STREAM IDENTIFICATION REPORT
 FIGURE 1: PROJECT VICINITY
 Republic Transmission
 Duff to Coleman Transmission Line Project
 Section 10 Crossings

DRAWN BY: BDPM DATE: 12/19/2017
 CHECKED: TER APPROVED: MRW

Geographic Information Presented Limited To Indiana Study Area.
 Project Data Presented In Kentucky For Reference Only.



PROJECT LOCATION

SPENCER COUNTY, IN

REFERENCE:
 AERIAL PHOTOGRAPHY
 - ESRI's World Imagery Accessed 12/18/2017
 HIGHWAY
 - ESRI's USA Major Roads, 07/11/2016
 RAILROAD
 - Indiana Department of Transportation's Active and Abandoned Highways, 2006
 COUNTY BOUNDARIES
 - Indiana Department of Survey's County Boundaries of Indiana, 09/21/2016
 INCORPORATED AREA
 - Indiana Department of Homeland Security's County Government Boundaries, 12/17/2015
 RIGHTS CENTERLINE AND SHEET INDEX
 - Republic Transmission Data, 10/26/2017
 FLOODPLAIN AND FLOODWAY
 - Republic Transmission Data, 10/26/2017
 NHD FLOWLINE
 - U.S. Geological Survey's National Hydrography Dataset Local Resolution, 11/30/2016

<ul style="list-style-type: none"> ----- County Boundary ----- Incorporated Area ----- Interstate Highway ----- State Highway and Route ----- US Highway ----- Railway 	<ul style="list-style-type: none"> ----- Section 10 Crossings Centerline ----- Sheet Index 	<ul style="list-style-type: none"> ----- NHD Flowline ----- 100-Year Floodplain ----- Floodway
--	--	---

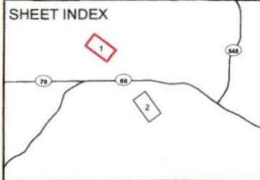
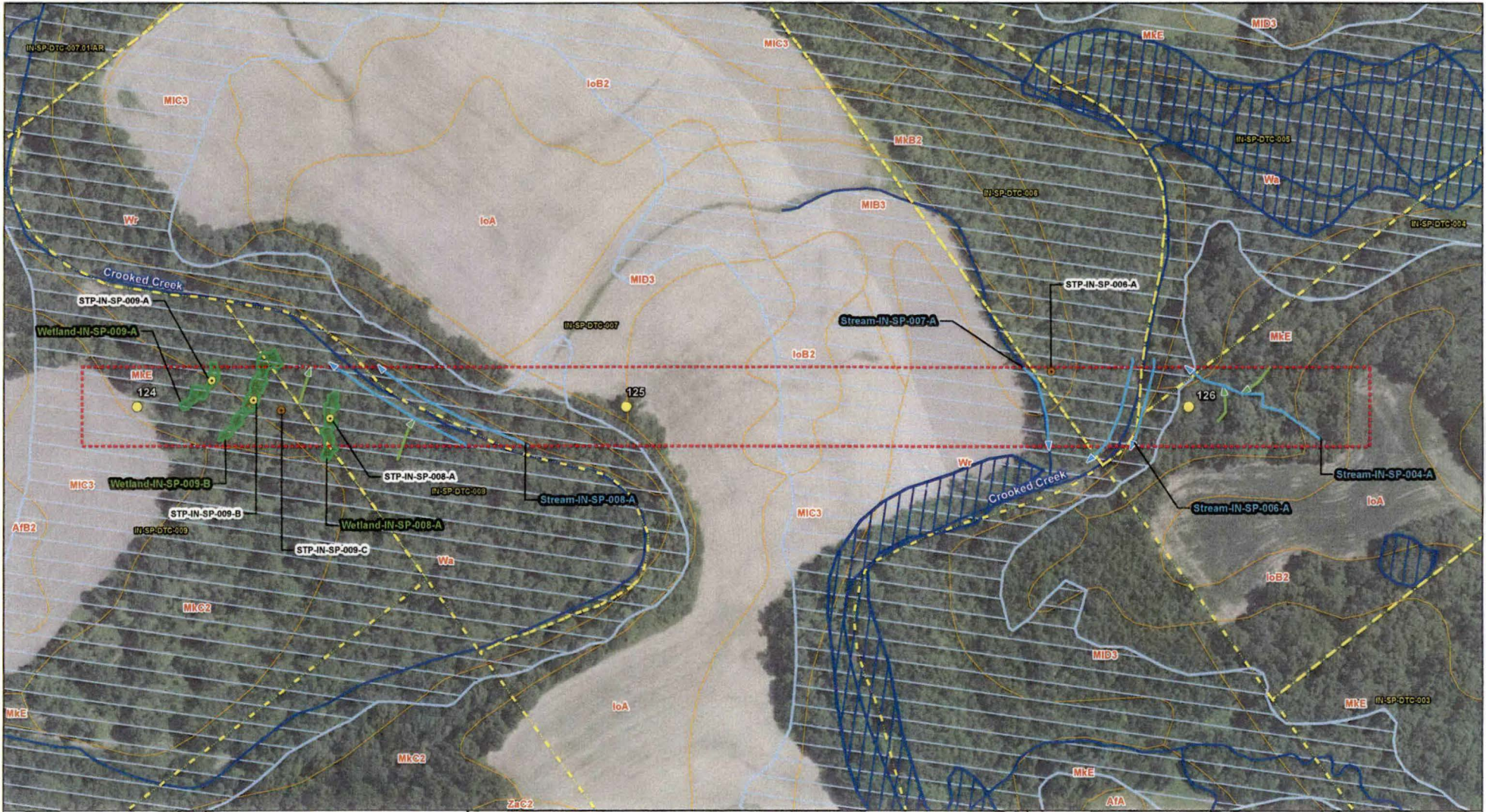
0 1,000 2,000 Feet
 1" = 2,000 feet

WETLAND DELINEATION AND
 STREAM IDENTIFICATION REPORT

FIGURE 2: RESOURCE LOCATION
 SHEET INDEX

Republic Transmission
 Duff to Coleman Transmission Line Project
 Section 10 Crossings

DRAWN BY: BDPM DATE: 12/19/2017
 CHECKED: TER APPROVED: MRW



REFERENCE:
 Aerial Photography: ESRI World Imagery, Accessed 1/20/18
 1:50,000
 USGS USGS Major Roads, 07/11/2016
 LOCAL MAPS:
 Indiana Department of Homeland Security's County Street Centerlines, 12/17/2015
 Indiana Department of Transportation's Active and Abandoned Railways, 2008
 COUNTY BOUNDARIES:
 Indiana Department of Homeland Security's County Boundaries of Indiana, 06/21/2016
 INCORPORATED AREAS:
 Indiana Department of Homeland Security's County Government Boundaries, 12/17/2015
 STUDY AREA STRUCTURE:
 REPUBLIC TRANSMISSION Details, 10/24/2017
 DEMONSTRATION:
 USGS
 FLOODPLAIN AND FLOODWAY:
 Indiana Department of Natural Resources' Floodable and Flood Hazard Zones, 06/02/2016
 NHD FLOWLINE:
 U.S. Geological Survey's National Hydrography Dataset Local Resolution, 11/09/2016
 NWI WETLAND:
 National Wetlands Inventory
 National Wetlands Inventory, 2014
 PROJECT DATA:
 Republic Transmission, 11/09/2017
 4 FOOT CONTOUR:
 Created from Wisnagar's LIDAR DEM, Spencer County, 2013

- County Boundary
- Incorporated Area
- Interstate Highway
- State Highway and Route
- US Highway
- Local Road
- Railway
- Proposed Structure
- Project Parcel Boundary
- Section 10 Crossings Study Area
- Upland Soil Test Pit
- Wetland Soil Test Pit
- Surface Drainage
- Debrained Stream
- PEM Wetland
- PFO Wetland
- PSS Wetland
- Pond
- NHD Flowline
- NWI Wetland
- 5-Foot Contour
- 100-Year Floodplain
- Floodway
- Soil Type Boundary
- Hydric Soil Type

REPUBLIC TRANSMISSION

gai consultants

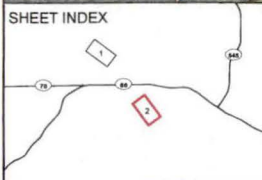
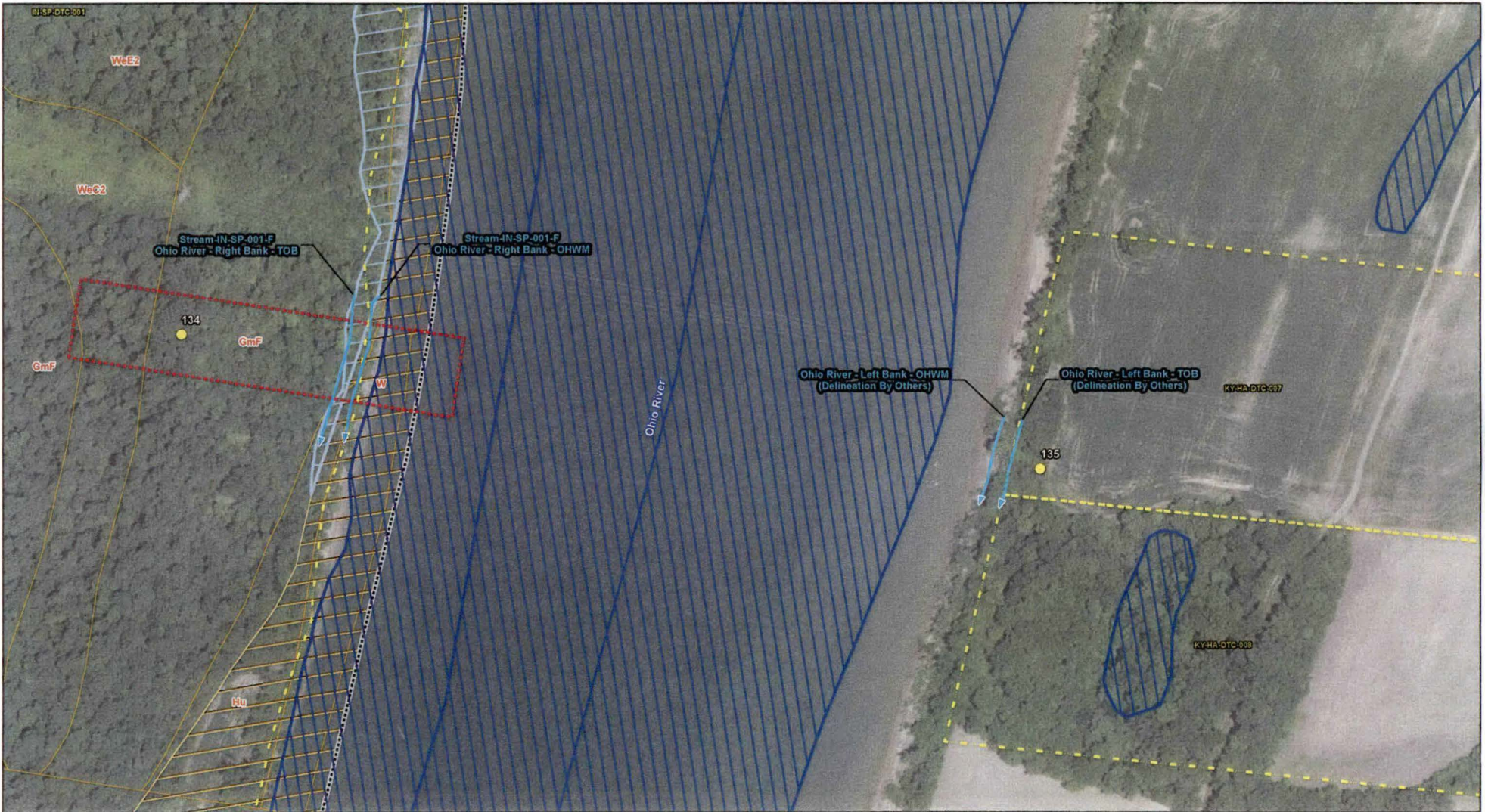
0 100 200 Feet
1 in = 200 feet

WETLAND DELINEATION AND STREAM IDENTIFICATION REPORT
 FIGURE 2: RESOURCE LOCATION
 SHEET 1 of 2

Republic Transmission
 Duff to Coleman Transmission Line Project
 Section 10 Crossings

DRAWN BY: BOPM DATE: 1/3/2018
 CHECKED: TER APPROVED: MRW

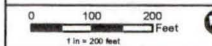
Geographic Information Presented Limited to Indiana Study Area.
 Project Data Presented in Kentucky For Reference Only.



REFERENCE:
 AERIAL PHOTOGRAPH: ESRI's World Imagery, Accessed 1/3/2018.
 ADDRESS: EDI's USA Major Roads, 01/11/2016.
 LOCAL ROAD: Indiana Department of Homeland Security's County Street Centerlines, 12/17/2015.
 RAILROAD: Indiana Department of Transportation's Active and Abandoned Railroads, 2008.
 COUNTY BOUNDARY: Indiana Department of Homeland Security's County Boundaries of Indiana, 08/21/2016.
 INCORPORATED AREA: Indiana Department of Homeland Security's County Government Boundaries, 12/17/2015.
 STUDY AREA STRUCTURE: Indiana Department of Homeland Security's County Government Boundaries, 12/17/2015.
 SOIL DATA FEATURE: National Wetland Inventory, 12/24/2017.
 FLOODPLAIN AND FLOODWAY: Department of Natural Resources' Floodplain and Flood Hazard Zones, 06/06/2016.
 NWI FLOWLINE: National Wetland Inventory's National Hydrography Dataset Local Features, 11/30/2016.
 NWI WETLAND: U.S. Fish and Wildlife Service's National Wetland Inventory, 2014.
 PARCEL BOUNDARY: Parcel Information System, 11/09/2017.
 4 FOOT CONTOUR: Created from Woodbury's LIDAR DEM, Spencer County, 2013.

County Boundary	Section 10 Crossings Study Area	NHD Flowline
Incorporated Area	Upland Soil Test Pit	NWI Wetland
Interstate Highway	Wetland Soil Test Pit	5-Foot Contour
State Highway and Route	Surface Drainage	100-Year Floodplain
US Highway	Delineated Stream	Floodway
Local Road	PEM Wetland	Soil Type Boundary
Railway	PFO Wetland	Hydric Soil Type
Proposed Structure	PSS Wetland	
Project Parcel Boundary	Pond	

WETLAND DELINEATION AND STREAM IDENTIFICATION REPORT
 FIGURE 2: RESOURCE LOCATION SHEET 2 of 2
 Republic Transmission
 Duff to Coleman Transmission Line Project
 Section 10 Crossings
 DRAWN BY: BDPM DATE: 1/3/2018
 CHECKED: TER APPROVED: MRW



Geographic Information Presented Limited To Indiana Study Area.
 Project Data Presented In Kentucky For Reference Only.

APPENDIX A

Wetland Data Forms

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Duff to Coleman City/County: Spencer County Sampling Date: 9/12/2017
 Applicant/Owner: Republic Transmission State: IN Sampling Point: STP SP-008-A
 Investigator(s): JGO, TER Section, Township, Range: Sec 9, Twp 6S, Rng 4W
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave
 Slope (%): 0% Lat: 38.103456 Long: -86.853698 Datum: NAD83
 Soil Map Unit Name: Wakeland silt loam, frequently flooded, brief duration NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland?	Yes <u>X</u>	No <u> </u>
Hydric Soil Present?	Yes <u>X</u>	No <u> </u>			
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>			
Remarks:					

VEGETATION – Use scientific names of plants.

Trees Stratum (Plot size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. <i>Acer saccharinum</i>	80%	Yes	FACW	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)	
2. <i>Fraxinus pennsylvanica</i>	10%	No	FACW	Total Number of Dominant Species Across All Strata: <u>2</u> (B)	
3. <u> </u>				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (AB)	
4. <u> </u>				Prevalence Index worksheet:	
5. <u> </u>				Total % Cover of: <u> </u> Multiply by: <u> </u>	
<u>70%</u> = Total Cover				OBL species	<u> </u> x1 = <u> </u>
Sapling/Shrub Stratum (Plot size: <u>15' radius</u>)				FACW species	<u>175%</u> x2 = <u>3.5</u>
1. <u> </u>				FAC species	<u> </u> x3 = <u> </u>
2. <u> </u>				FACU species	<u>10%</u> x4 = <u>0.4</u>
3. <u> </u>				UPL species	<u> </u> x5 = <u> </u>
4. <u> </u>				Column Totals:	<u>1.85</u> (A) <u>3.9</u> (B)
5. <u> </u>				Prevalence Index = B/A = <u>2.11</u>	
<u> </u> = Total Cover				Hydrophytic Vegetation Indicators:	
Herb Stratum (Plot size: <u>5' radius</u>)				<u>X</u> 1-Rapid Test for Hydrophytic Vegetation	
1. <i>Leersia virginica</i>	90%	Yes	FACW	<u>X</u> 2-Dominance Test is >50%	
2. <i>Panicum pennsylvanica</i>	15%	No	FACW	<u>X</u> 3-Prevalence Index is ≤3.0 ¹	
3. <i>Solidago canadensis</i>	10%	No	FACU	<u> </u> 4-Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
4. <u> </u>				<u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)	
5. <u> </u>				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
6. <u> </u>				Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	
7. <u> </u>					
8. <u> </u>					
9. <u> </u>					
10. <u> </u>					
11. <u> </u>					
12. <u> </u>					
13. <u> </u>					
14. <u> </u>					
15. <u> </u>					
16. <u> </u>					
17. <u> </u>					
18. <u> </u>					
19. <u> </u>					
20. <u> </u>					
<u>115%</u> = Total Cover					
Woody Vine Stratum (Plot size: <u>30' radius</u>)					
1. <u> </u>					
2. <u> </u>					
<u> </u> = Total Cover					

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: STP SP-008

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features			Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹			
0-2	10YR 6/2	80	10YR 5/6	20	C	M	slty clay	
2-16	10YR 6/2	50	10YR 5/6	50	C	M	slty clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Iron-Manganese Masses (F12)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Dark Surface (S7)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input checked="" type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
 Type: _____
 Depth (Inches): _____

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Primary Indicators (minimum of one is required: check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Iron Deposits (B5)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input type="checkbox"/> Water-Stained Leaves (B9)	
<input type="checkbox"/> Aquatic Fauna (B13)	
<input type="checkbox"/> True Aquatic Plants (B14)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Gauge or Well Data (D9)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations:

Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (Inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (Inches): _____	
Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (Inches): _____	

(Includes capillary fringe)

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Duff to Coleman City/County: Spencer County Sampling Date: 9/12/2017
 Applicant/Owner: Republic Transmission State: IN Sampling Point: STP SP-009-A
 Investigator(s): JGO, TER Section, Township, Range: Sec 9, Twp 6S, 4W
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave
 Slope (%): 0% Lat: 38.014073 Long: -86.854248 Datum: NAD83
 Soil Map Unit Name: Wakeland silt loam, frequently flooded, brief duration NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Remarks:					

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67%</u> (A/B)																					
1. <u>Acer saccharinum</u>	80%	Yes	FACW																						
2. <u>Fraxinus pennsylvanica</u>	10%	No	FACW																						
3. _____																									
4. _____																									
5. _____																									
	<u>90%</u> = Total Cover																								
Scrub/Shrub Stratum (Plot size: <u>15' radius</u>)				Prevalence Index worksheet: <table border="0"> <tr> <td></td> <td>Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species</td> <td><u>5%</u></td> <td>x1 = <u>0.05</u></td> </tr> <tr> <td>FACW species</td> <td><u>205%</u></td> <td>x2 = <u>4.1</u></td> </tr> <tr> <td>FAC species</td> <td></td> <td>x3 = _____</td> </tr> <tr> <td>FACU species</td> <td><u>45%</u></td> <td>x4 = <u>1.8</u></td> </tr> <tr> <td>UPL species</td> <td></td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals:</td> <td><u>2.55</u> (A)</td> <td><u>5.95</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.33</u>		Total % Cover of:	Multiply by:	OBL species	<u>5%</u>	x1 = <u>0.05</u>	FACW species	<u>205%</u>	x2 = <u>4.1</u>	FAC species		x3 = _____	FACU species	<u>45%</u>	x4 = <u>1.8</u>	UPL species		x5 = _____	Column Totals:	<u>2.55</u> (A)	<u>5.95</u> (B)
	Total % Cover of:	Multiply by:																							
OBL species	<u>5%</u>	x1 = <u>0.05</u>																							
FACW species	<u>205%</u>	x2 = <u>4.1</u>																							
FAC species		x3 = _____																							
FACU species	<u>45%</u>	x4 = <u>1.8</u>																							
UPL species		x5 = _____																							
Column Totals:	<u>2.55</u> (A)	<u>5.95</u> (B)																							
1. _____																									
2. _____																									
3. _____																									
4. _____																									
5. _____																									
Herb Stratum (Plot size: <u>5' radius</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1-Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2-Dominance Test is >50% <input checked="" type="checkbox"/> 3-Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4-Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																					
1. <u>Carex grayi</u>	75%	Yes	FACW																						
2. <u>Solidago canadensis</u>	40%	Yes	FACU																						
3. <u>Urtica dioica</u>	30%	No	FACW																						
4. <u>Panicum pensylvanicum</u>	10%	No	FACW																						
5. <u>Asarum canadense</u>	5%	No	FACU																						
6. <u>Lobelia cardinalis</u>	5%	No	OBL																						
7. _____																									
8. _____																									
9. _____																									
10. _____																									
11. _____																									
12. _____																									
13. _____																									
14. _____																									
15. _____																									
16. _____																									
17. _____																									
18. _____																									
19. _____																									
20. _____																									
	<u>165%</u> = Total Cover																								
Woody Vine Stratum (Plot size: <u>30' radius</u>)				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																					
1. _____																									
2. _____																									

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: STP SP-009

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-18	10YR 6/2	80	10YR 5/8	20	C	M	silty clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Coast Prairie Redox (A16)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Iron-Manganese Masses (F12)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 2 cm Muck (A10)	<input checked="" type="checkbox"/> Depleted Matrix (F3)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)		
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)		
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
 Type: _____
 Depth (Inches): _____

Hydric Soil Present? Yes No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one is required; check all that apply)			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input checked="" type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		

Field Observations:

Surface Water Present?	Yes ___ No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Water Table Present?	Yes ___ No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present?	Yes ___ No <input checked="" type="checkbox"/>	Depth (inches): _____	

(includes capillary fringe)

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Duff to Coleman City/County: Spencer County Sampling Date: 9/12/2017
 Applicant/Owner: Republic Transmission State: IN Sampling Point: STP SP-009-B
 Investigator(s): JGO, TER Section, Township, Range: Sec 9, Twp 6S, Rng 4W
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave
 Slope (%): 0% Lat: 38.013828 Long: -86.854084 Datum: NAD83
 Soil Map Unit Name: Wakeland silt loam, frequently flooded, brief duration NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80%</u> (AB)
1. <i>Acer saccharinum</i>	80%	Yes	FACW	
2. <i>Platanus occidentalis</i>	30%	Yes	FACW	
3.				
4.				
5.				
	<u>90%</u> = Total Cover			
Sapling/Shrub Stratum (Plot size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet: Total % Cover of: OBL species <u> </u> x1 = <u> </u> FACW species <u>160%</u> x2 = <u>3.2</u> FAC species <u>5%</u> x3 = <u>0.15</u> FACU species <u>10%</u> x4 = <u>0.4</u> UPL species <u> </u> x5 = <u> </u> Column Totals: <u>1.75</u> (A) <u>3.75</u> (B) Prevalence Index = B/A = <u>2.14</u>
1. <i>Carya ovata</i>	10%	Yes	FACU	
2.				
3.				
4.				
5.				
	<u>10%</u> = Total Cover			
Herb Stratum (Plot size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators: <u> </u> 1-Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2-Dominance Test is >50% <input checked="" type="checkbox"/> 3-Prevalence Index is $\leq 3.0^1$ <u> </u> 4-Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <i>Urtica dioica</i>	50%	Yes	FACW	
2. <i>Persicaria pensylvanica</i>	20%	Yes	FACW	
3. <i>Microstegium vimineum</i>	5%	No	FAC	
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
	<u>75%</u> = Total Cover			
Woody Vine Stratum (Plot size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
1.				
2.				
	<u> </u> = Total Cover			

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: STP SP-009

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR 8/2	80	10YR 5/6	20	C	M	silty clay	
2-16	10YR 8/2	50	10YR 5/6	50	C	M	silty clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Coast Prairie Redox (A16)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Iron-Manganese Masses (F12)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S8)	<input type="checkbox"/> Dark Surface (S7)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 2 cm Muck (A10)	<input checked="" type="checkbox"/> Depleted Matrix (F3)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)		
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)		
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Crayfish Burrows (C8)	
<input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	

Field Observations:		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Surface Water Present?	Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present?	Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Duff to Coleman City/County: Spencer County Sampling Date: 9/12/2017
 Applicant/Owner: Republic Transmission State: IN Sampling Point: STP SP-009-C
 Investigator(s): JGO, TER Section, Township, Range: Sec 9, Twp 6S, Rng 4W
 Landform (hillslope, terrace, etc.): floodplain, ridge Local relief (concave, convex, none): convex
 Slope (%): 0% Lat: 38.013674 Long: -86.853961 Datum: NAD83
 Soil Map Unit Name: Wakeland silt loam, frequently flooded, brief duration NWI classification: none
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland?	Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>		
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>		
Remarks:			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>43%</u> (A/B)
1. <i>Carya ovata</i>	70%	Yes	FACU	
2. <i>Carya cordiformis</i>	20%	Yes	FACU	
3. _____				
4. _____				
5. _____				
	<u>90%</u> = Total Cover			
Seedling/Shrub Stratum (Plot size: <u>15' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x1 = <u> </u> FACW species <u>30%</u> x2 = <u>0.6</u> FAC species <u>35%</u> x3 = <u>1.05</u> FACU species <u>160%</u> x4 = <u>6.4</u> UPL species <u> </u> x5 = <u> </u> Column Totals: <u>2.25</u> (A) <u>8.05</u> (B) Prevalence Index = B/A = <u>3.58</u>
1. <i>Fraxinus pennsylvanica</i>	20%	Yes	FACW	
2. <i>Carya ovata</i>	20%	Yes	FACU	
3. _____				
4. _____				
5. _____				
	<u>40%</u> = Total Cover			
Herb Stratum (Plot size: <u>5' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators: _____ 1-Rapid Test for Hydrophytic Vegetation _____ 2-Dominance Test Is >50% _____ 3-Prevalence Index Is ≤3.0 ¹ _____ 4-Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <i>Solidago canadensis</i>	50%	Yes	FACU	
2. <i>Microstegium vimineum</i>	25%	Yes	FAC	
3. <i>Urtica dioica</i>	10%	No	FACW	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
12. _____				
13. _____				
14. _____				
15. _____				
16. _____				
17. _____				
18. _____				
19. _____				
20. _____				
	<u>85%</u> = Total Cover			
Woody Vine Stratum (Plot size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>
1. <i>Toxicodendron radicans</i>	10%	Yes	FAC	
2. _____				
	<u>10%</u> = Total Cover			

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: STP SP-009

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 4/3	100					silty loam	
4-16	10YR 4/4	100					silty loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Iron-Manganese Masses (F12)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Dark Surface (S7)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Other (Explain In Remarks)
<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	Primary Indicators (minimum of one is required: check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations:	
Surface Water Present? Yes _____ No <u>X</u> Depth (Inches): _____	Wetland Hydrology Present? Yes _____ No <u>X</u>
Water Table Present? Yes _____ No <u>X</u> Depth (Inches): _____	
Saturation Present? Yes _____ No <u>X</u> Depth (Inches): _____	
<i>(Includes capillary fringe)</i>	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

APPENDIX B

Upland Data Forms

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Duff to Coleman City/County: Spencer County Sampling Date: 9/12/2017
 Applicant/Owner: Republic Transmission State: IN Sampling Point: STP SP-008-A
 Investigator(s): JGO, TER Section, Township, Range: Sec 10, Twp 6S, Rng 4W
 Landform (hill/slope, terrace, etc.): floodplain Local relief (concave, convex, none): none
 Slope (%): 0% Lat: 38.011073 Long: -86.849111 Datum: NAD83
 Soil Map Unit Name: Markland silty clay loam, 2-6% slopes, severely eroded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland?	Yes <u> </u>	No <u>X</u>
Hydric Soil Present?	Yes <u> </u>	No <u>X</u>			
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>			

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30' radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (AB)
1. <u>Acer saccharinum</u>	<u>80%</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Ulmus americana</u>	<u>10%</u>	<u>No</u>	<u>FACW</u>	
3. <u> </u>				
4. <u> </u>				
5. <u> </u>				
	<u>90%</u> = Total Cover			Prevalence Index worksheet: Total % Cover of: OBL species <u>50%</u> x1 = <u>0.5</u> FACW species <u>180%</u> x2 = <u>3.8</u> FAC species <u> </u> x3 = <u> </u> FACU species <u> </u> x4 = <u> </u> UPL species <u> </u> x5 = <u> </u> Column Totals: <u>2.40</u> (A) <u>4.3</u> (B) Prevalence Index = B/A = <u>1.79</u>
Sapling/Shrub Stratum (Plot size: <u>15' radius</u>)				
1. <u> </u>				
2. <u> </u>				
3. <u> </u>				
4. <u> </u>				
5. <u> </u>				
Herb Stratum (Plot size: <u>5' radius</u>)				Hydrophytic Vegetation Indicators: <u>X</u> 1-Rapid Test for Hydrophytic Vegetation <u>X</u> 2-Dominance Test is >50% <u>X</u> 3-Prevalence Index is ≤3.0 ¹ <u> </u> 4-Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Leersia virginica</u>	<u>60%</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Lobelia cardinalis</u>	<u>40%</u>	<u>Yes</u>	<u>OBL</u>	
3. <u>Urtica dioica</u>	<u>40%</u>	<u>Yes</u>	<u>FACW</u>	
4. <u>Solidago patula</u>	<u>10%</u>	<u>No</u>	<u>OBL</u>	
5. <u> </u>				
6. <u> </u>				
7. <u> </u>				
8. <u> </u>				
9. <u> </u>				
10. <u> </u>				
11. <u> </u>				
12. <u> </u>				
13. <u> </u>				
14. <u> </u>				
15. <u> </u>				
16. <u> </u>				
17. <u> </u>				
18. <u> </u>				
19. <u> </u>				
20. <u> </u>				
	<u>150%</u> = Total Cover			
Woody Vine Stratum (Plot size: <u>30' radius</u>)				Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>
1. <u> </u>				
2. <u> </u>				

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: STP SP-006

Profile Description: (Describe to the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR 4/3	100					silt loam	
2-16	10YR 5/3	70	10YR 5/2	30			silt loam	Mixed matrix

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> 2 cm Muck (A10)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	Primary Indicators (minimum of one is required: check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations:	
Surface Water Present? Yes _____ No <u> X </u> Depth (inches): _____	
Water Table Present? Yes _____ No <u> X </u> Depth (inches): _____	
Saturation Present? Yes _____ No <u> X </u> Depth (inches): _____	
(Includes capillary fringe)	Wetland Hydrology Present? Yes <u> X </u> No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

APPENDIX C

Descriptions of Soils Found Within the Project Study Area

<u>Soil Unit Symbol</u>	<u>Soil Unit Name</u>	<u>Acres</u>	<u>% within Study Area</u>	<u>Hydric</u>
Wr	Wilbur silt loam, frequently flooded, brief duration	2.54	17.73	No
MkE	Markland silt loam, 18 to 25 percent slopes	2.29	15.98	No
Wa	Wakeland silt loam, frequently flooded, brief duration	1.97	13.75	No
GmF	Gilpin-Wellston silt loams, 25 to 35 percent slopes	1.95	13.61	No
IoA	Iona silt loam, 0 to 2 percent slopes	1.32	9.21	No
MIC3	Markland silty clay loam, 6 to 12 percent slopes, severely eroded	1.05	7.33	No
IoB2	Iona silt loam, 2 to 6 percent slopes, eroded	1.04	7.26	No
WeC2	Wellston silt loam, 6 to 12 percent slopes, eroded	0.63	4.40	No
MkC2	Markland silt loam, 6 to 12 percent slopes, eroded	0.47	3.28	No
W	Water	0.39	2.72	No
MID3	Markland silty clay loam, 12 to 18 percent slopes, severely eroded	0.33	2.30	No
MIB3	Markland silty clay loam, 2 to 6 percent slopes, severely eroded	0.33	2.30	No
Hu	Huntington silt loam, frequently flooded, brief duration	0.02	0.14	No
TOTAL:		14.33	100%	

Attachment B:

Section 10 Permit Ecological Overview Transmission
Line 19-J Project
Redwing Ecological Services, Inc.
December 21, 2017



December 21, 2017

Ms. Lucy Marton
Environmental Engineer
Republic Transmission, LLC
16150 Main Circle Drive, Suite 310
Chesterfield, Missouri 63017

**Subject: Section 10 Permit Ecological Overview
Transmission Line 19-J Project
Hancock County, Kentucky
Redwing Project 17-051**

Dear Ms. Marton:

Redwing Ecological Services, Inc. (Redwing) is pleased to submit this Section 10 Permit Ecological Overview to Republic Transmission, LLC (Republic) in support of the Transmission Line 19-J Project. This report presents the assessment findings regarding potential impacts to federally-listed species, and to waters of the U.S., by the proposed electric transmission line at the proposed Ohio River crossing. This submittal includes: a summary of the proposed project; study methodology; assessment results in terms of jurisdictional waters/wetlands and threatened/endangered species.

PROPOSED PROJECT

Republic proposes the construction of an overhead transmission line in northern Hancock County, Kentucky, which will involve a crossing of the Ohio River (Figure 1). Redwing investigated an approximately 200-foot wide corridor at the proposed Ohio River crossing.

STUDY METHODOLOGY

The ecological assessment was conducted to determine the presence/absence of federally-listed species as it pertains to the crossing of the Ohio River; to make a jurisdictional determination of open waters, such as streams and ponds, within the study corridor based on the presence/absence of ordinary high water mark (OHWM), defined bed and bank features, and flow regime; and to delineate the ordinary high water OHWM and top-of-bank of the Ohio River at the proposed crossing.

Redwing assessed the potential for the proposed Ohio River crossing to impact federally-listed species through a combination of in-house review and field surveys. In-house review involved review of available mapping and aerial photographs and submittal of a data request to the USFWS Information for Planning and Consultation (IPaC). Redwing biologists conducted a habitat assessment of the proposed crossing to characterize the on-site natural areas and to document the presence/absence of potential habitat for the Indiana bat, northern long-eared bat, gray bat, federally-listed

mussels, and the least tern. Areas of suitable habitat were marked on site maps and documented with notes and photographs.

ASSESSMENT RESULTS

WATER/WETLAND DELINEATION

At the Ohio River crossing, the river is approximately 1,260 feet wide with predominately silt and sand substrate. The ordinary high water mark (OHWM) and top-of-bank of the river are depicted on Figure 1.

THREATENED/ENDANGERED SPECIES

Federally-listed species identified in the IPaC data report (IPaC Consultation Code 04EK1000-2017-SLI-0863) include three mammal species, eight mussel species, and one bird species potentially occurring within the vicinity of the project site. Species listed on the report, the presence/absence of suitable habitat for these species on the site, and potential effects on each species are summarized in the following table and discussed below.

Scientific Name	Common Name	Federal Status	Habitat Present	Species Impacted
Mammals				
<i>Myotis grisescens</i>	Gray Bat	E	Potential Foraging	No
<i>Myotis septentrionalis</i>	Northern Long-eared Bat	T	Potential Summer Roosting	Unknown
<i>Myotis sodalis</i>	Indiana Bat	E	Potential Summer Roosting	Unknown
Mussels				
<i>Cyprogenia stegaria</i>	Fanshell	E	No	No
<i>Lampsilis abrupta</i>	Pink Mucket	E	No	No
<i>Obovaria retusa</i>	Ring Pink	E	No	No
<i>Plethobasus cooperianus</i>	Orangefoot Pimpleback	E	No	No
<i>Plethobasus cyphus</i>	Sheepnose	E	No	No
<i>Pleurobema clava</i>	Clubshell	E	No	No
<i>Pleurobema plenum</i>	Rough Pigtoe	E	No	No
<i>Potamilus capax</i>	Fat Pocketbook	E	No	No
Birds				
<i>Sterna antillarum</i>	Least Tern	E	No	No

E = Federally Endangered; T = Federally Threatened

Indiana and Northern Long-Eared Bats: The federally-endangered Indiana bat and the federally-threatened northern long-eared bat require distinct habitat types during the winter and summer months. Winter habitat is restricted to suitable underground hibernacula typically consisting of caves located in karst areas; however, these species also hibernate in cave-like locations, including abandoned mines. During the habitat assessment, a pedestrian survey of the project corridor was performed to identify caves, abandoned mines, sinkholes, and other underground features that could be potentially used as winter habitat.

Summer habitat for the Indiana and northern long-eared bats consist of a variety of forested habitats utilized for roosting, foraging, and commuting. These habitats include forested blocks and linear features that consist of dense or loose aggregates of trees with variable amounts of canopy closure. Suitable summer roosting habitat is defined as trees (live or dead) with a diameter at breast height (dbh) of five inches or greater for the Indiana bat and three inches or greater for the northern long-eared bat that exhibit exfoliating bark, crevices, or cracks. Northern long-eared bats have also been found roosting in man-made structures, including barns, sheds, and bat houses.

Typical foraging habitat includes closed to semi-open forested habitats, where bats forage along forest edges and the tree canopy. Commuting habitat is used to travel between roosting and foraging areas, and typically includes forest edges and linear features, including riparian corridors and wooded fencerows.

As no caves, rock shelters, or mine portals are present, no winter habitat for the Indiana bat or northern long-eared bat is present on the site. The mature woods along the bank of the Ohio River and within the top-of-bank was identified as potential summer roosting habitat for the Indiana and northern long-eared bat. The identified potential summer roosting habitat was marked on aerial photographs and surveyed using GPS equipment (Figure 1). The project area is located within a zone designated by the USFWS as "Potential" summer roosting/maternity habitat for both species.

Clearing of the habitat will occur during the unoccupied timeframe (October 15 to March 31). Indirect effects resulting from loss of potential summer roosting habitat will be mitigated through a payment to the Imperiled Bat Conservation Fund. Cumulative effects to habitat for these species are not anticipated.

Gray Bat: The project area was assessed for caves, rock shelters, and underground mines, which could be used for summer and winter habitat. Gray bats are also known to roost on the underside of bridges and within culverts of perennial and intermittent streams. This federally-endangered species roosts in caves year-round, but utilizes different caves during the winter and summer. Gray bats have also been known to roost in abandoned mines and other cave-like structures, under bridges, and in culverts. No caves, abandoned mines, rock shelters, or sinkholes were identified within the project corridor during the assessment.

Typical foraging habitat for the gray bat includes riparian areas and open water bodies, such as rivers, streams, lakes, and reservoirs. Commuting habitat for this species primarily consists of wooded corridors used to travel between roosting and foraging habitat. The Ohio River was identified as potential foraging habitat for the gray bat. An Erosion Prevention and Sediment Control plan will be implemented to ensure sediment is not transferred off the construction site.

Mussels: The eight federally-threatened/endangered mussel species potentially occurring in Hancock County in the vicinity of the project are found in small to large rivers in shallow or deep water. Coarse sediments, such as sand and gravel, are preferred habitat, though some of the species tolerate muddy sediments. The Ohio River provides suitable habitat for these species; however, no impacts are proposed within the OHWM of the Ohio River and an Erosion Prevention and Sediment Control plan will be implemented to ensure sediment is not transferred off the construction site.

Least Tern: The potential habitat for the federally-endangered least tern includes sandbars and mud flats free of vegetation along large river systems and salt-pond dikes along lakes. This species is a seasonal resident in Kentucky, and spends winter along the Gulf Coast. No suitable habitat for the least tern was observed on the site. Adverse effects to the least tern are not anticipated from the project due to the lack of suitable habitat at the proposed Ohio River crossing.

SUMMARY

This ecological overview of the proposed Transmission Line 19-J Project as it pertains to the crossing of the Ohio River. The purpose of this assessment was to identify federally-listed species and waters of the U.S., and identify the OWHM and top-of-bank of the Ohio River at the proposed transmission line crossing (Figure 1).

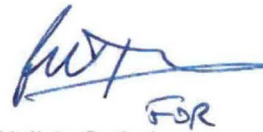
Potential summer roosting and foraging habitat for the Indiana bat and northern long-eared bat was identified along the banks of the Ohio River. Impacts to bat habitat will require a mitigation contribution to the IBCF per coordination with the USFWS.

We appreciate the opportunity to work with you on this important project. If you have any questions regarding this overview, please do not hesitate to call Richard Fangman or Neil Guthals at (502) 625-3009.

Sincerely,



Richard J. Fangman
Project Aquatic Biologist



Neil A. Guthals
Senior Ecologist

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Attachment: Figure 1 – Ecological Resource Map

Source: World Imagery - Esri and the GIS User Community (2016).



TRANSMISSION LINE 19-J
HANCOCK COUNTY, KENTUCKY



SECTION 10 ECOLOGICAL
OVERVIEW MAP

REVISED DATE: 12-11-17

DRAWN BY: JMD

FIGURE 1

P:\2017\Projects\17-051-TL 19-J\Figures\Section 10 Ecological Map.mxd, 12-11-2017, jday

Appendix B: General Condition 18 Compliance

General Condition 18 requires the permittee to submit a pre-construction notification if any Endangered Species Act (ESA) listed species or designated critical habitat may be affected or is in the vicinity of the NWP activity. A description of the relevant species and related effects at three locations requiring NWP coverage is discussed below and in the attachments. Because the project spans two states with two different USFWS offices, Indiana and Kentucky will be discussed separately. This document is intended to encompass both the Crooked Creek Crossings and the Ohio River Crossing.

Indiana

In February 2017 during the routing phase of project development, Republic sent letters to several agencies in Indiana, including the United States Fish and Wildlife Service (USFWS). These letters included a study area which encompassed all of the potential routes Republic had identified (“Study Area”). USFWS responded to the letter on March 14, 2017, a copy which is included in Attachment A.

After the final route (“Project Area”) was selected in July 2017, Republic submitted a request to the Indiana Department of Natural Resources (IDNR) Division of Nature Preserves for information on the endangered, threatened, or rare (ETR) species located within a half mile of the project area. Their response is attached as Attachment B for reference.

Additionally, after the final route was chosen, Republic began coordinating with the USFWS through the Bloomington Field office. Several meetings and communications have taken place since that time and will be referenced throughout this appendix.

In USFWS’s March 14, 2017 response to the consultation letter, USFWS identifies the endangered species with the potential to occur within the Study Area, which included Dubois and Spencer Counties in Indiana. Although the Study Area was narrowed once a route was chosen, all of the species mentioned in the initial response letter are discussed herein. The endangered and threatened species identified in the USFWS letter with ranges within the Study Area in Indiana include the federally endangered Indiana bat (*Myotis sodalis*), gray bat (*M. grisescens*), fanshell mussel (*Cryprogenia stegaria*), fat pocketbook mussel (*Potamilus capax*), rabbitsfoot mussel (*Quadrula cylindrica cylindrica*), sheepnose mussel (*Plethobasus cyphus*), least tern (*Sterna antillarum*), and the federally threatened northern long-eared bat (*M. septentrionalis*).

Fanshell Mussel (*Cryprogenia stegaria*), Fat Pocketbook Mussel (*Potamilus capax*)

USFWS noted in their March 14, 2017 letter that the fanshell and fat pocketbook mussels range is limited to the East Fork White River, and there were no records of the fanshell or fat pocketbook mussels within the Study Area. Additionally, the selected route does not affect the

East White Fork River. Therefore, this project will not affect the fanshell or fat pocketbook mussels due to lack of suitable habitat.

Rabbitsfoot Mussel (*Quadrula cylindrica cylindrica*), Sheepnose Mussel (*Plethobasus cyphus*)

The rabbitsfoot and sheepnose mussels, which are found in the Ohio River, had records located within the Study Area. In discussions with USFWS, those records are not located within the Project Area. No records of the above mentioned mussels were provided in the data provided by IDNR. However, even if records fell within the Project Area, Republic will not be disturbing the Ohio River below the Ordinary High Water Mark of the river, as the transmission facilities will span the river. Republic will also be implementing erosion prevention and sediment control measures. Therefore, due to the lack of suitable habitat, the lack of activity taking place below the OHWM of the Ohio River, and the implementation of erosion and sediment control measures, the project will not have any effects upon any mussels that may be in the Ohio River.

Least Tern (*Sterna antillarum*)

In its March 14, 2017 letter USFWS mentioned two known nesting colonies of least terns within the Study Area near the Ohio River. After meeting with USFWS on March 23, 2017, Republic requested data for the least tern. No records of the least tern were identified within our Project Area by USFWS or IDNR. This project will have no effect the least tern due to lack of suitable habitat.

Indiana bat (*Myotis sodalis*), gray bat (*M. grisescens*), northern long-eared bat (*M. septentrionalis*)

Republic performed summer surveys for the Indiana bat, gray bat, and northern long-eared bats in the survey season of 2017. The survey approach was developed in coordination with and the approval of USFWS. Survey efforts for the NWP 12 crossings included three mist net surveys sites and two acoustic survey sites; see Attachment C for these survey site locations. Two mist net surveys were completed at two sites near the Ohio River. No Indiana bats, gray bats, or northern long-eared bats were captured at any of the mist net sites near the Ohio River. Acoustic surveys were deployed for two nights at both Crooked Creek Crossings. Qualitative review confirmed probable presence of the gray bat at the southern Crooked Creek Crossing and probably presence of both the Indiana and gray bat at the northern Crooked Creek Crossing. Follow-up mist-net surveys were conducted at the northern Crooked Creek Crossing per Phase 3 of the USFWS Guidelines. No Indiana bats, gray bats, or northern long-eared bats were captured at the northern Crooked Creek follow-up mist-net site. Follow-up mist net surveys were not conducted at the southern Crooked Creek crossing due to gray bat being the only target species heard. This was done with approval from the USFWS (email received from Marissa Reed on July 27, 2017).

Republic considered wooded lands during the routing process and was able to minimize impacts to wooded habitat. Only approximately 15% of the line is located in wooded lands. Republic also evaluated the percentage of woodlots being affected by their line within the typical 5 mile

foraging distance of Indiana bats. It was determined that only approximately 0.16% of the woodlots within 5 miles of the line will be affected by this project. Gray bat's typical foraging habitat is larger at 20 miles; Republic evaluated the woodlots within 20 miles of the line within Spencer County only as gray bats were not detected in Dubois County. The percentage of the woodlots in Spencer County within 20 miles of the line being affected by this project is approximately 0.12%. Republic will perform all wooded vegetation clearing along the line, regardless of the bat detection survey results in the area, during the winter season when the bats are hibernating (October 1 to March 31). Additionally, it is anticipated that Republic will provide compensatory mitigation for impacts to potential bat habitat. Republic continues to informally consult with the Bloomington Field office about the project and its effects to the listed bat species. Given the seasonal clearing restrictions, the minimal amount of surrounding woodlots being affected, and compensatory mitigation expected to be provided, the project is not likely to adversely affect the Indiana bat or gray bat.

Republic's 2017 survey efforts revealed no acoustic detections or mist-net captures of northern long-eared bats, therefore this project will not affect the northern long-eared bat due to lack of presence of the species.

Kentucky

The species with the potential to occur in the project area in Kentucky includes the federally endangered gray bat (*Myotis grisescens*), Indiana bat (*Myotis sodalis*), fanshell mussel (*Cyprogenia stegaria*), pink mucket mussel (*Lampilis abrupta*), ring pink mussel (*Obovaria retusa*), orangefoot pimpleback mussel (*Plethobasus cooperianus*), sheepsnose mussel (*Plethobasus cyphus*), clubshell mussel (*Pleurobema clava*), rough pigtoe mussel (*Pleurobema plenum*), fat pocketbook mussel (*Potamilus capax*), least tern (*Sterna antillarum*), and federally threatened northern long-eared bat (*Myotis septentrionalis*).

These species and the potential effects Republic's project will have on these species are discussed further in the Request for Informal Consultation prepared and submitted by Redwing Ecological Services, Inc. (Redwing) on January 8, 2018. This report is attached as Attachment D.

In correspondence dated January 19, 2018 received from the Kentucky USFWS Frankfort office (Attachment E), the agency has concurred with Redwing's evaluation and proposed mitigation.

Attachment A:

Consultation Letter Response
United States Fish and Wildlife Service (USFWS) Indiana
Field Office
March 14, 2017



United States Department of the Interior

Fish and Wildlife Service



Indiana Field Office (ES)
620 South Walker Street
Bloomington, IN 47403-2121
Phone: (812) 334-4261 Fax: (812) 334-4273

March 14, 2017

Mr. Douglas Mulvey
Republic Transmission
400 Chesterfield Center, Suite 110
St. Louis, Missouri 60317

Dear Mr. Mulvey:

This responds to your letter dated February 14, 2017 requesting U.S. Fish and Wildlife Service (FWS) review of the proposed Duff to Coleman EHV transmission line project area in Dubois, Spencer and Warrick counties, Indiana.

These comments are consistent with the intent of the National Environmental Policy Act of 1969, the Endangered Species Act of 1973, and the U. S. Fish and Wildlife Service's Mitigation Policy.

The project consists of construction of a new 345 kilovolt transmission line from Duff Substation in Dubois County, Indiana to Coleman Substation in Hancock County, Kentucky. The information provided below is for the Indiana portion of the proposed study area.

Endangered Species

Dubois, Spencer and Warrick counties are within the range of the federally endangered Indiana bat (*Myotis sodalis*), gray bat (*M. grisescens*), fanshell mussel (*Cyprogenia stegaria*), fat pocketbook mussel (*Potamilus capax*), rabbitsfoot mussel (*Quadrula cylindrica cylindrica*), sheepnose mussel (*Plethobasus cyphus*), least tern (*Sterna antillarum*), and the federally threatened northern long-eared bat (*M. septentrionalis*).

The range of the fanshell and fat pocketbook mussels is limited to the East Fork White River. There are no records of these mussels within the study area. The rabbitsfoot and sheepnose mussels are found in the Ohio River, and there are records of each species located within the study area.

Indiana bats hibernate in caves, then disperse to reproduce and forage in relatively undisturbed forested areas associated with water resources during spring and summer. Recent research has shown that they will inhabit fragmented landscapes with adequate forest for roosting and foraging. Young are raised in nursery colony roosts in trees, typically near drainageways in undeveloped areas. Like all other bat species in Indiana, the Indiana bat diet consists exclusively of insects.

The gray bat is a southern species which inhabits caves year-around and typically migrate between winter hibernation caves and summer cave roosts used for reproduction and foraging. Preferred foraging habitat is typically along wooded stream corridors and their forage base often includes a high percentage of aquatic insects. There is only one significant summer maternity colony known in Indiana, in southern Clark County (there is evidence that another colony may be located nearby). Previous studies have shown that Silver Creek and Muddy Fork are the main foraging habitat for this colony.

During the summer, northern long-eared bats typically roost singly or in colonies in cavities, underneath bark, crevices, or hollows of both live and dead trees and/or snags (typically ≥ 3 inches dbh). Males and non-reproductive females may also roost in cooler places, like caves and mines. This bat seems opportunistic in selecting roosts, using tree species based on presence of cavities or crevices or presence of peeling bark. It has also been occasionally found roosting in structures like barns and sheds (particularly when suitable tree roosts are unavailable). They forage for insects in upland and lowland woodlots and tree lined corridors. During the winter, northern long-eared bats predominately hibernate in caves and abandoned mine portals. Additional habitat types may be identified as new information is obtained.

There are records of Indiana and gray bats within the study area. Suitable summer habitat for all three species is present in the study area.

The least tern is the smallest tern found in North America. Least terns nest on barren to sparsely vegetated sandbars along rivers, sand and gravel pits, lake and reservoir shorelines, and occasionally gravel rooftops. They hover over and dive into standing or flowing water to catch small fish. The interior least tern breeding season is April through August. Nesting in small colonies, least tern nests are shallow depressions scraped in open sandy areas, gravelly patches, or exposed flats. Interior least terns breed in isolated areas along the Missouri, Mississippi, Ohio, Red, and Rio Grande river systems. There are two known nesting colonies of least terns within the study area near the Ohio River.

Although no longer federally listed under the Endangered Species Act (ESA), bald eagles, along with their foraging and winter roosting habitat, remain protected pursuant to the Bald and Golden Eagle Protection Act (BGEPA) and Migratory Bird Treaty Act (MBTA). As defined in these acts, any take and/or disturbance of bald and golden eagles is strictly prohibited. As such, the Service recommends taking all practical measures to reduce any detrimental effects on eagles. Guidelines for avoidance of disturbance of eagle nests are available at <http://www.fws.gov/midwest/eagle/pdf/NationalBaldEagleManagementGuidelines.pdf>. Based on 2016 data, there are two records of bald eagle nests within the study area.

This endangered species information is provided for technical assistance only, and does not fulfill the requirements of Section 7 of the Endangered Species Act.

For further discussion, please contact Marissa Reed at (812) 334-4261 ext. 1215 or Marissa_Reed@fws.gov.

Sincerely yours,

Marissa R. Reed

for
Scott E. Pruitt
Field Supervisor

Attachment B:

Request for Information Response
Indiana Department of Natural Resources Division of
Nature Preserves
October 19, 2017



Division of Nature Preserves
402 W. Washington St., Rm W267
Indianapolis, IN 46204-2739

October 19, 2017

Lucy Marton
Republic Transmission, LLC
16150 Main Circle Drive, Suite 310
Chesterfield, MO 63017

Dear Lucy Marton:

I am responding to your request for information on the endangered, threatened, or rare (ETR) species, high quality natural communities, and natural areas for a for a transmission line project located within Dubois and Spencer Counties, Indian. The Indiana Natural Heritage Data Center has been checked and included you will find a datasheet with information on the ETR species documented within 0.5 mile of the project area.

For more information on the animal species mentioned, please contact Christie Stanifer, Environmental Coordinator, Division of Fish and Wildlife, 402 W. Washington Room W273, Indianapolis, Indiana, 46204, (317)232-8163.

The information I am providing does not preclude the requirement for further consultation with the U.S. Fish and Wildlife Service as required under Section 7 of the Endangered Species Act of 1973. If you have concerns about potential Endangered Species Act issues you should contact the Service at their Bloomington, Indiana office.

U.S. Fish and Wildlife Service
620 South Walker St.
Bloomington, Indiana 47403-2121
812-334-4261

At some point, you may need to contact the Department of Natural Resources' Environmental Review Coordinator so that other divisions within the department have the opportunity to review your proposal. For more information, please contact:

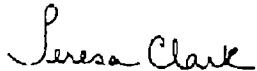
Department of Natural Resources
Attn: Christie Stanifer
Environmental Coordinator
Division of Fish and Wildlife
402 W. Washington Street, Room W273
Indianapolis, IN 46204
(317)232-8163

Please note that the Indiana Natural Heritage Data Center relies on the observations of many individuals for our data. In most cases, the information is not the result of comprehensive field surveys conducted at particular sites. Therefore, our statement that there are no documented significant natural features at a site should not be interpreted to mean that the site does not support special plants or animals.

Due to the dynamic nature and sensitivity of the data, this information should not be used for any project other than that for which it was originally intended. It may be necessary for you to request updated material from us in order to base your planning decisions on the most current information.

Thank you for contacting the Indiana Natural Heritage Data Center. You may reach me at (317)232-3517 if you have any questions or need additional information.

Sincerely,



Teresa L. Clark
Indiana Natural Heritage Data Center

Enclosure: invoice
 Datasheet
 shapefile

October 19, 2017

INDIANA HERITAGE DATA WITHIN 0.5 MILES OF:

*Republic Transmission Line Project,
Dubois and Spencer Counties*

Sci. Name	Com. Name	State	Fed.	Date	TRS	Site
Bird						
<i>Lanius ludovicianus</i>	Loggerhead Shrike	SE		1988-90	002S005W 31 SEQ SWQ	
<i>Lanius ludovicianus</i>	Loggerhead Shrike	SE		1988-90	004S005W 10 SWQ NEQ	
<i>Lanius ludovicianus</i>	Loggerhead Shrike	SE		1988-90	005S004W 07 NWQ NEQ SWQ	
<i>Lanius ludovicianus</i>	Loggerhead Shrike	SE		1988-90	005S004W 32 SEQ NWQ	
<i>Lanius ludovicianus</i>	Loggerhead Shrike	SE		1988-90	003S006W 12 NWQ SEQ	
<i>Lanius ludovicianus</i>	Loggerhead Shrike	SE		1988-90	006S004W 04 SEQ SEQ & NEQ NWQ SEQ	
<i>Lanius ludovicianus</i>	Loggerhead Shrike	SE		1988-06	003S006W 01 SWQ SEQ	
<i>Tyto alba</i>	Barn Owl	SE		2001-08	002S006W 25	
Mammal						
<i>Myotis grisescens</i>	Gray Bat	SE	LE	8/6/1997	006S004W 04 SWQ	CROOKED CREEK
Mollusk						
<i>Pleurobema cordatum</i>	Ohio Pigtoe	SSC		7/7/2010	007S005W	OHIO RIVER
Vascular Plant						
<i>Platanthera peramoena</i>	Purple Fringeless Orchis	WL		7/20/2007	005S004W 6	SANTA FE
<i>Scutellaria parvula</i> <i>var. australis</i>	Southern Skullcap	WL		5/29/1926	003S005W 19	

Fed: LE= Listed Federal endangered; C = Federal candidate species

State: SE = State endangered; ST= State threatened; SR = State rare; SSC = State species of special concern; SG = State significant; WL = watch list; no rank - not ranked but tracked to monitor status

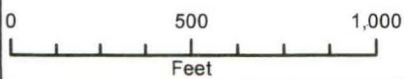
Attachment C:

Ohio River and Crooked Creek Survey Locations



Legend

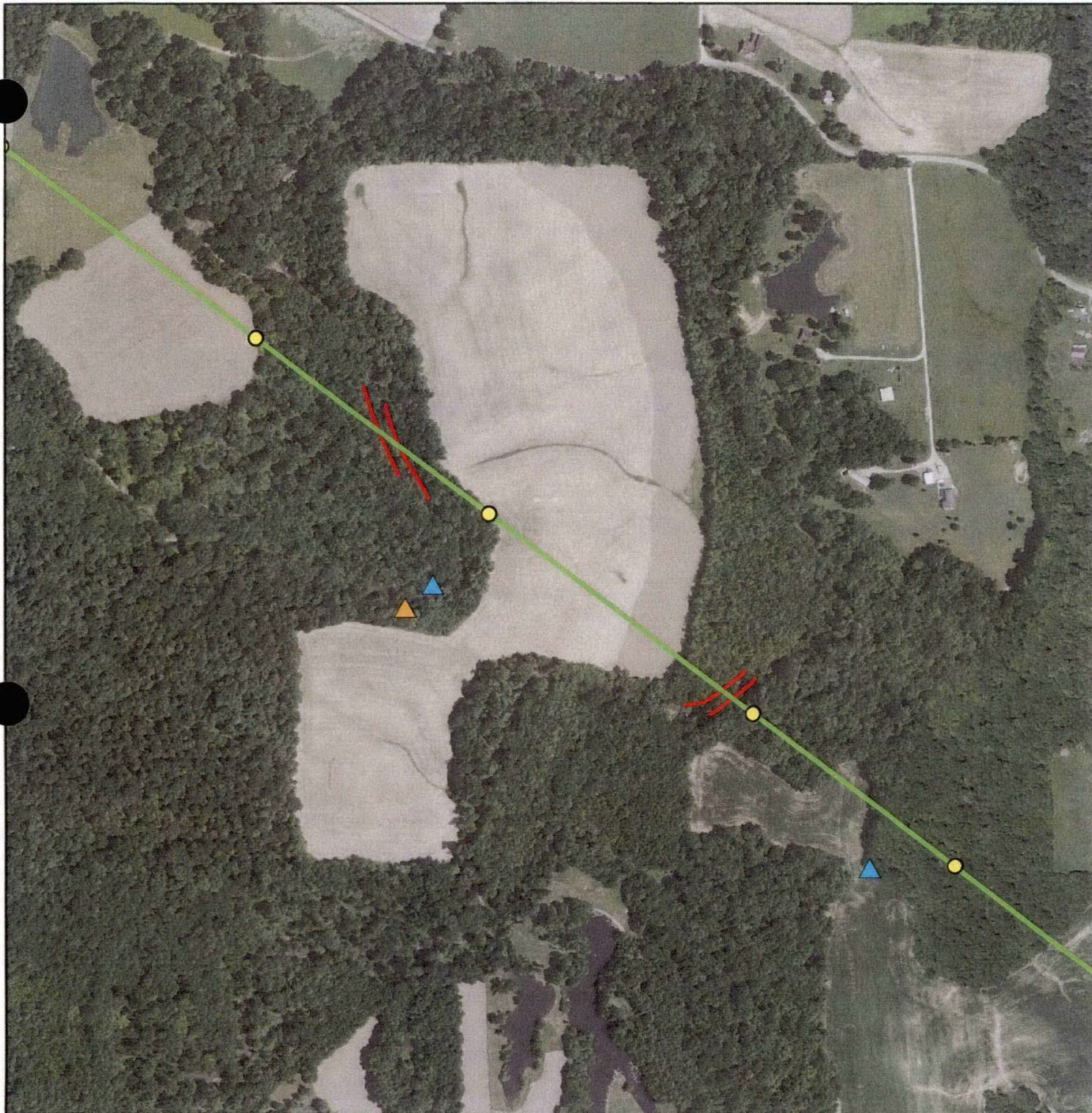
- Duff to Coleman 345kV Preliminary Structure Locations
- Duff to Coleman 345kV Transmission Line
- Ordinary High Water Mark
- Ohio River Top of Bank
- Mist Net Survey



**Duff to Coleman 345kV Transmission Line
Ohio River Survey Locations**

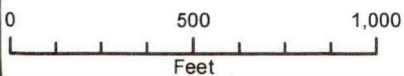
Plan View Map

Revised: 1/22/2018



Legend

-  Duff to Coleman 345kV Preliminary Structure Locations
-  Duff to Coleman 345kV Transmission Line
-  Crooked Creek Top of Bank
-  Acoustic Survey
-  Mist Net Survey



**Duff to Coleman 345kV Transmission Line
Crooked Creek Survey Locations**

Plan View Map

Revised: 1/22/2018

Attachment D:

Request for Informal Consultation to Kentucky United
States Fish and Wildlife Service
January 8, 2018



January 8, 2018

Mr. Lee Andrews
U.S. Fish and Wildlife Service
JC Watts Federal Building – Room 265
330 West Broadway
Frankfort, Kentucky 40601

**Subject: Request for Informal Consultation
Transmission Line 19-J Project
Hancock County, Kentucky
IPaC Consultation Code: 04EK1000-2017-SLI-0863
Redwing Project 17-051**

Dear Mr. Andrews:

On behalf of Republic Transmission, LLC, Redwing Ecological Services, Inc. (Redwing) respectfully submits this Request for Informal Consultation to the U.S. Fish and Wildlife Service (USFWS) regarding proposed habitat impacts to the federally endangered Indiana bat (*Myotis sodalis*) and the federally-threatened northern long-eared bat (*Myotis septentrionalis*) associated with the proposed approximately three mile long Transmission Line 19-J project located in Hancock County, Kentucky. The purpose of this request is to address potential impacts to federally-listed threatened and endangered species that could result from the project, and complete required consultation under Section 7 of the Endangered Species Act.

This submittal follows the *Revised Conservation Strategy for Forest-Dwelling Bats in the Commonwealth of Kentucky* (effective June 2016) developed by the USFWS. It includes a brief background of the proposed project, a description of the study methodology, survey results in terms of on-site habitat and an effects analysis for federally-listed threatened/endangered species, and a summary of proposed tree clearing mitigation.

The proposed project will include clearing of 16.48 acres of suitable summer roosting Indiana and northern long-eared bat habitat, located within a zone designated as "Potential" habitat by the USFWS, during the unoccupied period (October 15 to March 31). Republic Transmission proposes to mitigate for indirect effects to the Indiana and northern long-eared bats from the loss of suitable summer roosting habitat through a payment to the Imperiled Bat Conservation Fund (IBCF). Adverse effects to other federally threatened/endangered species are not anticipated as a result of the project based on:

- The absence of caves, abandoned mines, sinkholes, and other cave-like features that represent suitable winter hibernacula for the Indiana bat and northern long-eared bat, and suitable summer and winter roosting habitat for the gray bat (*Myotis grisescens*).
- The lack of suitable habitat present on site for other federally-listed species.

PROJECT BACKGROUND

The approximately three mile project corridor extends from the Coleman EHV substation north to the Ohio River (Figures 1 and 2). The corridor primarily consists of agricultural field, open field, and mature woods (Figure 3).

STUDY METHODOLOGY

Redwing assessed the potential for the proposed project to impact federally-listed threatened/endangered species through a combination of in-house review and field surveys. In-house review involved review of available mapping and aerial photographs and submittal of a data request from the USFWS Information for Planning and Consultation (IPaC). Redwing biologists conducted a habitat assessment of the project corridor on August 22 and 23, 2017 to characterize the on-site natural areas and to document the presence/absence of potential habitat for the Indiana bat, northern long-eared bat, gray bat, federally-listed mussels, and least tern. Areas of suitable habitat were marked on site maps and documented with notes and photographs.

RESULTS

The results of the ecological assessment are presented below in terms of existing natural habitats and federally-listed species.

EXISTING HABITATS

On-site habitats consist of agricultural field, open field, and mature woods (Figure 3). In addition, seven ephemeral streams and six emergent wetlands were identified within the project corridor.

Species identified in the agricultural field include soybean (*Glycine max*).

Species identified in the open field include tall fescue (*Schedonorus arundinaceus*), wingstem (*Verbesina alternifolia*), ironweed (*Vernonia gigantea*), and Japanese honeysuckle (*Lonicera japonica*).

Species identified in the mature woods include green ash (*Fraxinus pennsylvanica*), honey locust (*Gleditsia triacanthos*), black locust (*Robinia pseudoacacia*), northern red oak (*Quercus rubra*), osage orange (*Maclura pomifera*), shagbark hickory (*Carya ovata*), sugar maple (*Acer saccharum*), and white oak (*Quercus alba*).

Species identified in the emergent wetlands include rough cocklebur (*Xanthium strumarium*), rice cutgrass (*Leersia oryzoides*), and crowned beggarticks (*Bidens coronata*).

THREATENED/ENDANGERED SPECIES

Federally threatened/endangered species identified in the IPaC data report (IPaC Consultation Code 04EK1000-2017-SLI-0863) include three mammal species, eight mussel species, and one bird species potentially occurring within the vicinity of the project corridor. Species listed in the report, the presence/absence of suitable habitat for these species on the site, and potential effects on each species are summarized in the following table and discussed below.

Scientific Name	Common Name	Federal Status	Habitat Present	Species Impacted
Mammals				
<i>Myotis grisescens</i>	Gray Bat	E	Potential Foraging	No
<i>Myotis septentrionalis</i>	Northern Long-eared Bat	T	Potential Summer Roosting	Unknown
<i>Myotis sodalis</i>	Indiana Bat	E	Potential Summer Roosting	Unknown
Mussels				
<i>Cyprogenia stegaria</i>	Fanshell	E	No	No
<i>Lampsilis abrupta</i>	Pink Mucket	E	No	No
<i>Obovaria retusa</i>	Ring Pink	E	No	No
<i>Plethobasus cooperianus</i>	Orangefoot Pimpleback	E	No	No
<i>Plethobasus cyphus</i>	Sheepnose	E	No	No
<i>Pleurobema clava</i>	Clubshell	E	No	No
<i>Pleurobema plenum</i>	Rough Pigtoe	E	No	No
<i>Potamilus capax</i>	Fat Pocketbook	E	No	No
Birds				
<i>Sterna antillarum</i>	Least Tern	E	No	No

E = Federally Endangered; T = Federally Threatened

Indiana and Northern Long-Eared Bats: The federally endangered Indiana bat and the federally threatened northern long-eared bat require distinct habitat types during the winter and summer months. Winter habitat is restricted to suitable underground hibernacula typically consisting of caves located in karst areas; however, these species also hibernate in cave-like locations, including abandoned mines. During the habitat assessment, a pedestrian survey of the project corridor was performed to identify caves, abandoned mines, sinkholes, and other underground features that could be potentially used as winter habitat.

Summer habitat for the Indiana and northern long-eared bats consist of a variety of forested habitats utilized for roosting, foraging, and commuting. These habitats include forested blocks and linear features that consist of dense or loose aggregates of trees with variable amounts of canopy closure. Suitable summer roosting habitat is defined as trees (live or dead) with a diameter at breast height (dbh) of five inches or greater for the Indiana bat and three inches or greater for the northern long-eared bat that exhibit exfoliating bark, crevices, or cracks. Northern long-eared bats have also been found roosting in man-made structures, including barns, sheds, and bat houses. Typical foraging habitat includes closed to semi-open forested habitats, where bats forage along forest edges and the tree canopy. Commuting habitat is used to travel between roosting and foraging areas, and typically includes forest edges and linear features, including riparian corridors and wooded fencerows.

As no caves, rock shelters, or mine portals are present, no winter habitat for the Indiana bat or northern long-eared bat is present on the site. The mature woods was identified as potential summer roosting habitat for the Indiana and northern long-eared bat. The identified potential summer roosting habitat was marked on aerial photographs, and the location and extent of this habitat was transferred into ArcGIS to calculate habitat acreages. A total of 16.48 acres of suitable summer roosting habitat for the Indiana and northern long-eared bats was identified within the disturbance limits of the project. The project area is located within a zone designated by the USFWS as "Potential" summer roosting/maternity habitat for both species (Figure 2).

Effects and Minimization: The proposed project will result in impacts to 16.48 acres of suitable summer roosting habitat for the Indiana and northern long-eared bats. Clearing of the habitat will occur during the unoccupied timeframe (October 15 to March 31). Indirect effects resulting from loss of potential summer roosting habitat will be mitigated through a payment to the IBCF. Cumulative effects to habitat for these species are not anticipated.

Gray Bat: The project area was assessed for caves, rock shelters, and underground mines, which could be used for summer and winter habitat. Gray bats are also known to roost on the underside of bridges and within culverts of perennial and intermittent streams. This federally-endangered species roosts in caves year-round, but utilizes different caves during the winter and summer. Gray bats have also been known to roost in abandoned mines and other cave-like structures, under bridges, and in culverts. No caves, abandoned mines, rock shelters, or sinkholes were identified within the project corridor during the assessment.

Typical foraging habitat for the gray bat includes riparian areas and open water bodies, such as rivers, streams, lakes, and reservoirs. Commuting habitat for this species primarily consists of wooded corridors used to travel between roosting and foraging habitat.

Effects and Minimization: Based on the lack of caves, abandoned mines, and sinkholes identified on the project site, no effects to gray bat summer roosting or winter habitat are anticipated from the project. The on-site streams do not represent suitable foraging habitat due to the ephemeral nature of their flows and limited forage provided. Additionally, Best Management Practices (BMPs) will be used during construction to minimize sediment inputs to the streams in and adjacent to the project corridor. Based on the limited proposed clearing of commuting habitat and the availability of commuting habitat immediately adjacent to the proposed project corridor, indirect effects to foraging habitat are not anticipated as a result of this project. Based on the limited roosting, foraging, and commuting habitat identified within the project corridor, no adverse effects to the gray bat are anticipated from the project. To minimize impacts to potential off-site foraging habitat, erosion prevention and sediment controls will be implemented to limit inputs of sediment and other contaminants into downstream waters. Therefore, adverse effects to this species are not anticipated as a result of the project.

Mussels: The eight federally threatened/endangered mussel species potentially occurring in Hancock County in the vicinity of the project are found in small to large rivers in shallow or deep water. Coarse sediments, such as sand and gravel, are preferred habitat, though some of the species tolerate muddy sediments. The streams within the project corridor do not provide suitable habitat for these species due to their small size, flow regime, lack of riffle/run habitat, and unsuitable substrate.

Effects and Minimization: The project is not likely to adversely affect federally-listed mussel species, based on the lack of impacts to suitable habitat for the mussel species and the implementation of an Erosion Prevention and Sediment Control plan to ensure sediment is not transferred off site.

Least Tern: The potential habitat for the federally-endangered least tern includes sandbars and mud flats free of vegetation along large river systems and salt-pond dikes along lakes. This species is a seasonal resident in Kentucky, and spends winter along the Gulf Coast. No suitable habitat for the least tern was observed on the site. Adverse effects to the least tern are not anticipated from the project due to the lack of suitable habitat within the project corridor.

PROPOSED TREE CLEARING

A total of 16.48 acres of "potential" summer roosting habitat for Indiana and northern long-eared bats will be cleared within the project area during the unoccupied time frame between October 15 and March 31. In order to be in compliance with the USFWS-KFO Conservation Strategy, Republic Transmission proposes to contribute **\$28,180.80** to the IBCF, as summarized in the table below.

Habitat Type	Acres of Habitat Impact	Price Per Acre	Multiplier	Payment
Potential	16.48	\$3,420*	0.5	\$28,180.80

*current price per acre as determined by UK Department of Agricultural Economics in the Agricultural Situation and Outlook and subject to change

CONCLUSION

Adverse effects are not anticipated for federally listed mussel species, least tern, and gray bat. The project will result in the loss of suitable summer habitat for the Indiana bat and northern long-eared bat. Republic Transmission proposes the contribution of \$28,180.80 to the IBCF to mitigate for potential indirect effects to the Indiana bat and northern long-eared bat from the loss of this habitat. Payment will be made following concurrence of the payment amount from the USFWS and prior to any tree clearing.

The contact information for Republic Transmission is:

Ms. Lucy Marton
Environmental Engineer
Republic Transmission, LLC
16150 Main Circle Drive, Suite 310
Chesterfield, Missouri 63017

We respectfully request your concurrence with the findings of this report: that any potential indirect impacts to Indiana and northern long-eared bats will be mitigated through an IBCF contribution; that the proposed project is not likely to adversely affect other federally-listed species; and that required consultation under Section 7 of the Endangered Species Act has been successfully completed.

We appreciate the opportunity to work with you on this project. If you have any questions regarding this report or the overall project, please feel free to contact Richard Fangman or Neil Guthals at (502) 625-3009.

Sincerely,



Richard J. Fangman
Project Aquatic Biologist



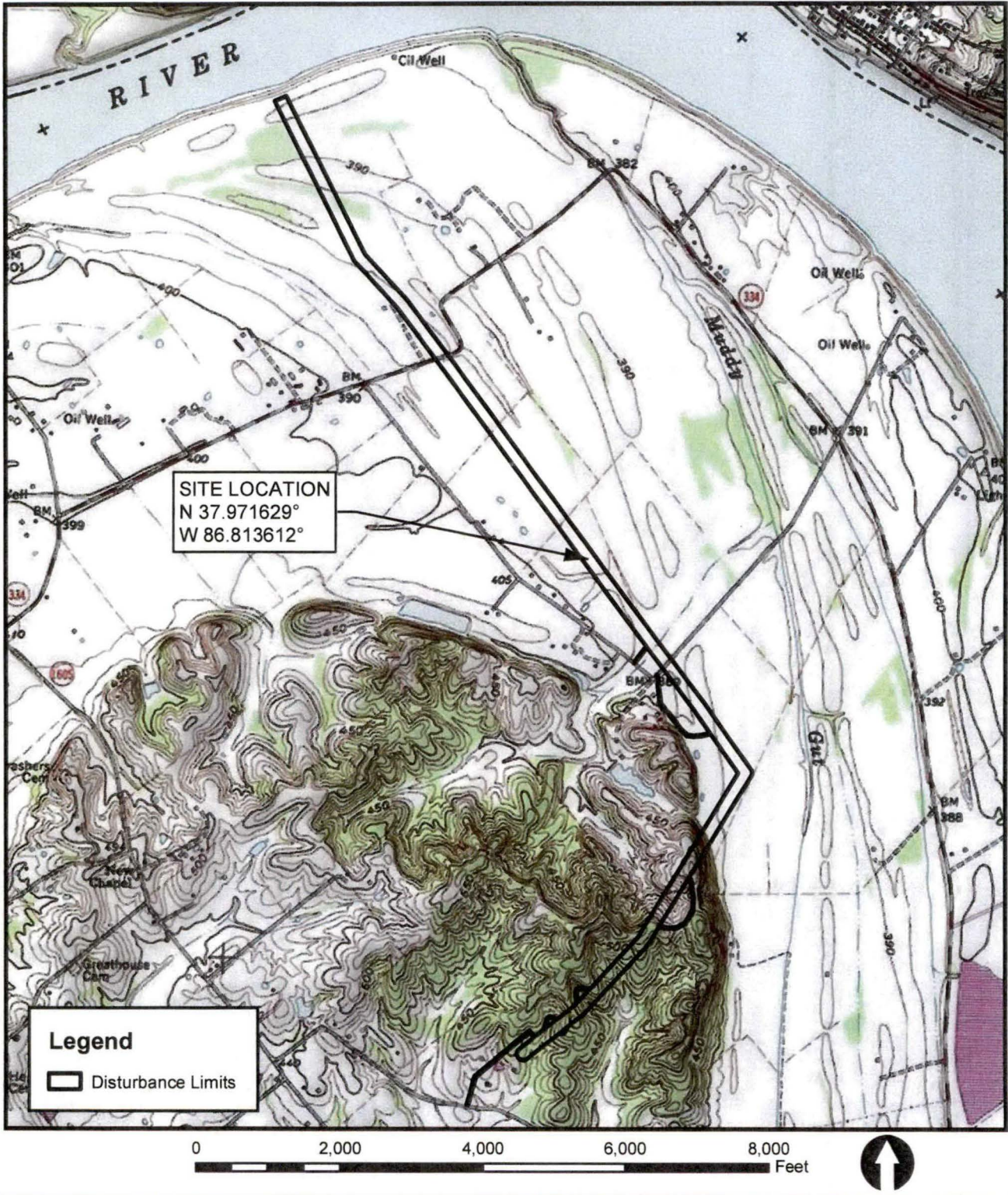
Neil A. Guthals
Senior Ecologist

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cc: Ms. Lucy Marton – Republic Transmission, LLC (electronic copy)

Attachments: Figures
Photographs
Appendix A – IPaC Data Report

Source: USGS 7.5-minute Topographic Map - Tell City, Kentucky Quadrangle.



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TRANSMISSION LINE 19-J
HANCOCK COUNTY, KENTUCKY

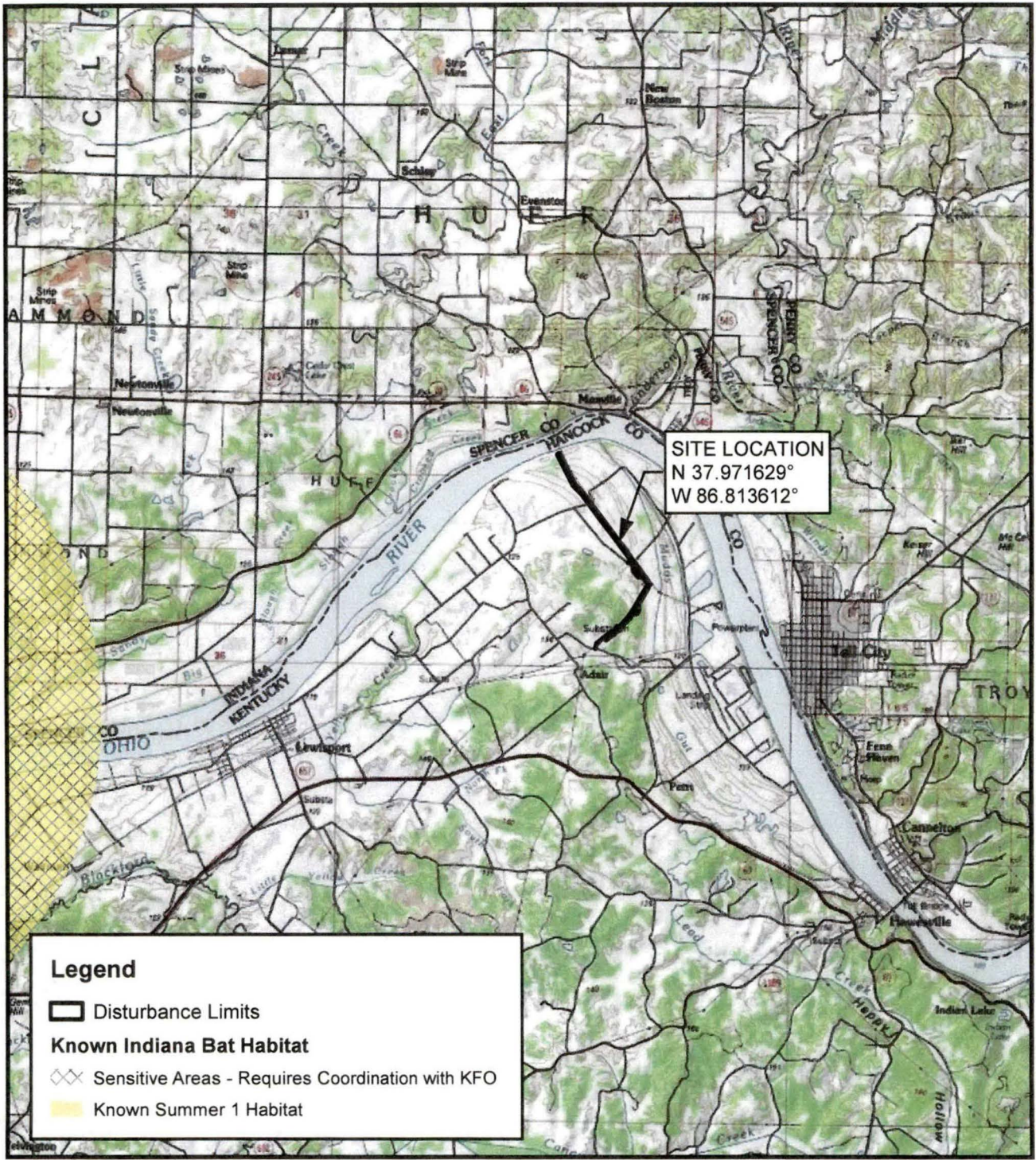


SITE LOCATION MAP




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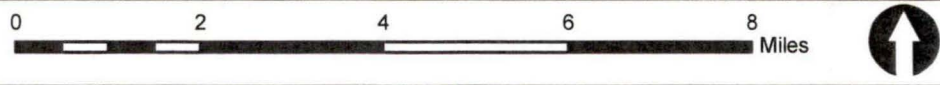
FIGURE 1

Source: USGS 7.5-minute Topographic Map - Tell City, Kentucky Quadrangle; USFWS Kentucky Field Office - Indiana and Northern Long-eared Bat Habitat (2016).



Legend

-  Disturbance Limits
- Known Indiana Bat Habitat**
-  Sensitive Areas - Requires Coordination with KFO
-  Known Summer 1 Habitat



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TRANSMISSION LINE 19-J
HANCOCK COUNTY, KENTUCKY

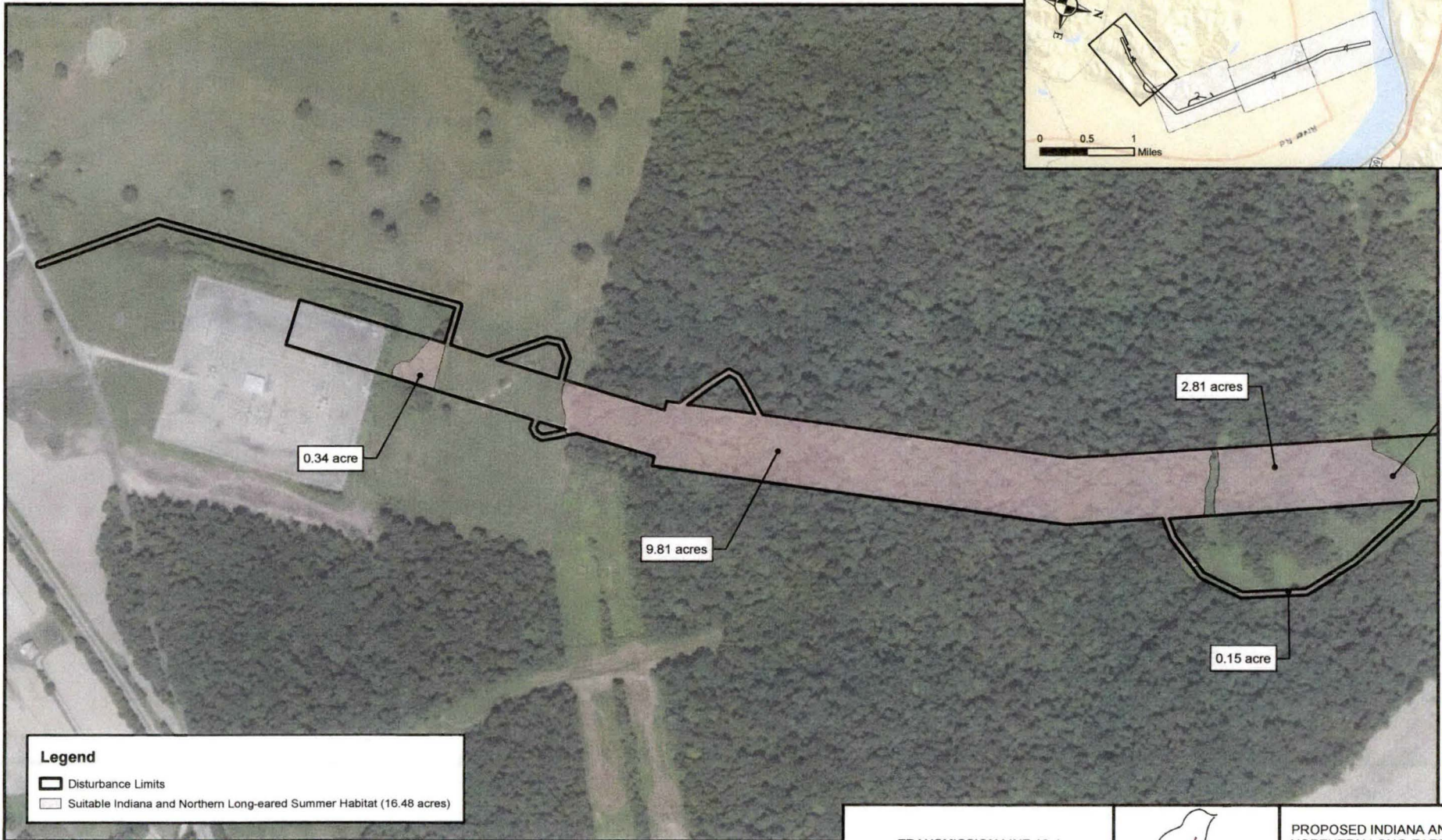
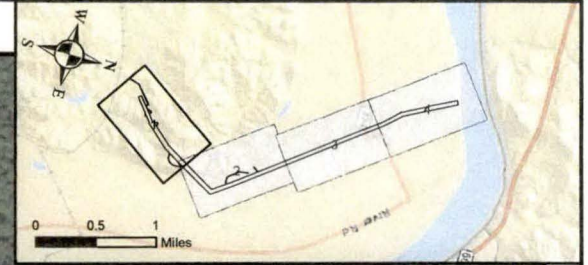


KNOWN INDIANA AND
NORTHERN LONG-EARED
BAT HABITAT MAP

REVISED DATE: 11-07-17 | DRAWN BY: KJM/JMD/EDB

FIGURE 2

Source: World Imagery - Esri and the GIS User Community (2016); Disturbance limits provided by LS Power Development, LLC.



Legend

- Disturbance Limits
- Suitable Indiana and Northern Long-eared Summer Habitat (16.48 acres)

0 150 300 600 900 1,200 Feet

NOTE: HABITAT ASSESSMENT PERFORMED BY REDWING BIOLOGISTS, ON AUGUST 22 AND 23, 2017.



TRANSMISSION LINE 19-J
HANCOCK COUNTY, KENTUCKY

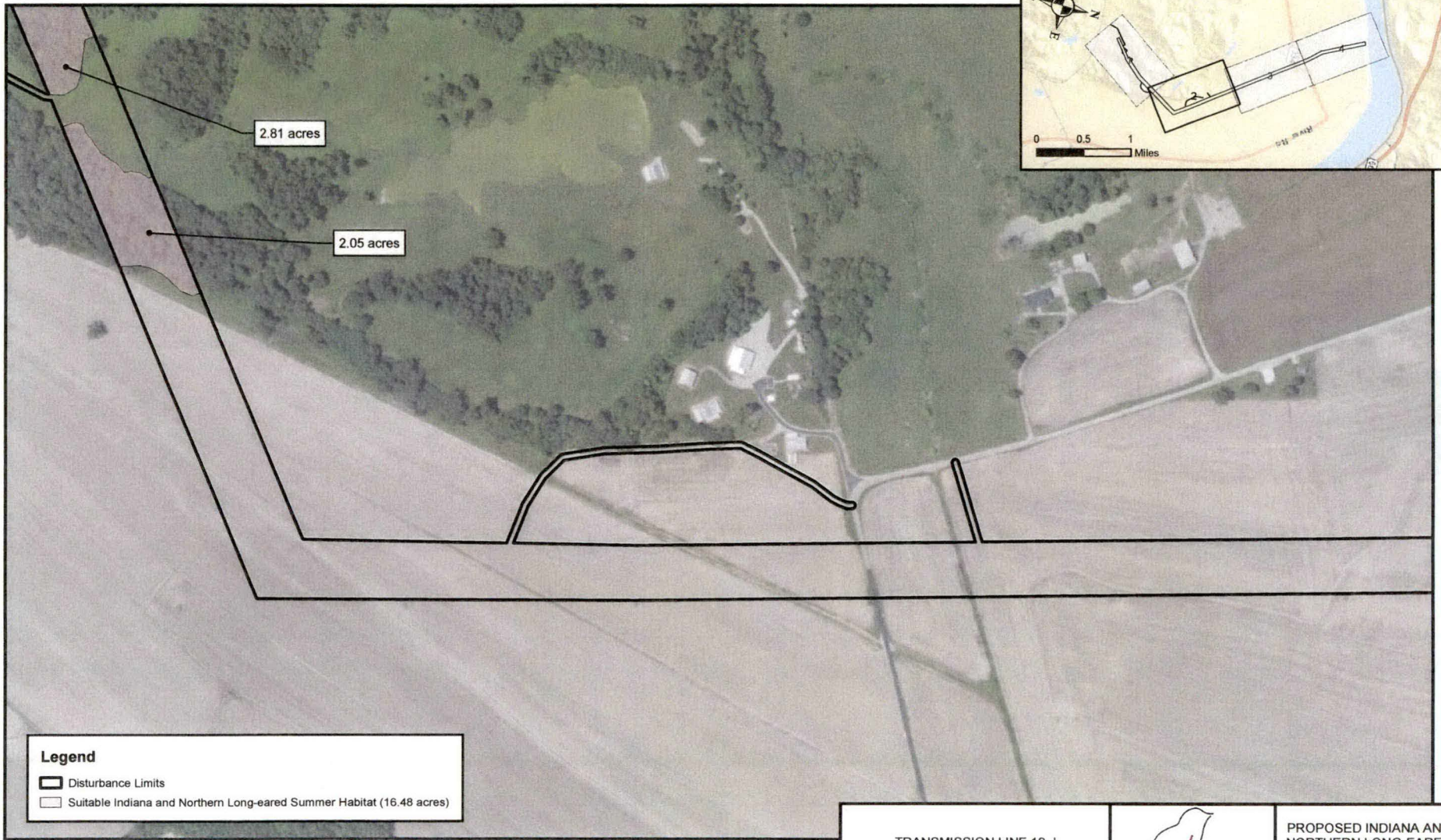
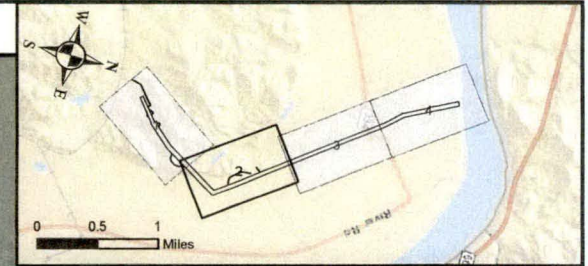


PROPOSED INDIANA AND
NORTHERN LONG-EARED
BAT SUMMER ROOSTING
HABITAT IMPACT MAP



REVISED DATE: 11-22-17 DRAWN BY: EDB/JMD

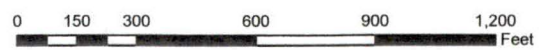
FIGURE 3
SHEET 1 of 4

Source: World Imagery - Esri and the GIS User Community (2016); Disturbance limits provided by LS Power Development, LLC.



Legend

-  Disturbance Limits
-  Suitable Indiana and Northern Long-eared Summer Habitat (16.48 acres)



NOTE: HABITAT ASSESSMENT PERFORMED BY REDWING BIOLOGISTS, ON AUGUST 22 AND 23, 2017.



TRANSMISSION LINE 19-J
HANCOCK COUNTY, KENTUCKY

REVISED DATE: 11-22-17 DRAWN BY: EDB/JMD



PROPOSED INDIANA AND
NORTHERN LONG-EARED
BAT SUMMER ROOSTING
HABITAT IMPACT MAP

FIGURE 3
SHEET 2 of 4

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Source: World Imagery - Esri and the GIS User Community (2016); Disturbance limits provided by LS Power Development, LLC.



Legend
□ Disturbance Limits

0 150 300 600 900 1,200
Feet

NOTE: HABITAT ASSESSMENT PERFORMED BY REDWING BIOLOGISTS, ON AUGUST 22 AND 23, 2017.



TRANSMISSION LINE 19-J
HANCOCK COUNTY, KENTUCKY



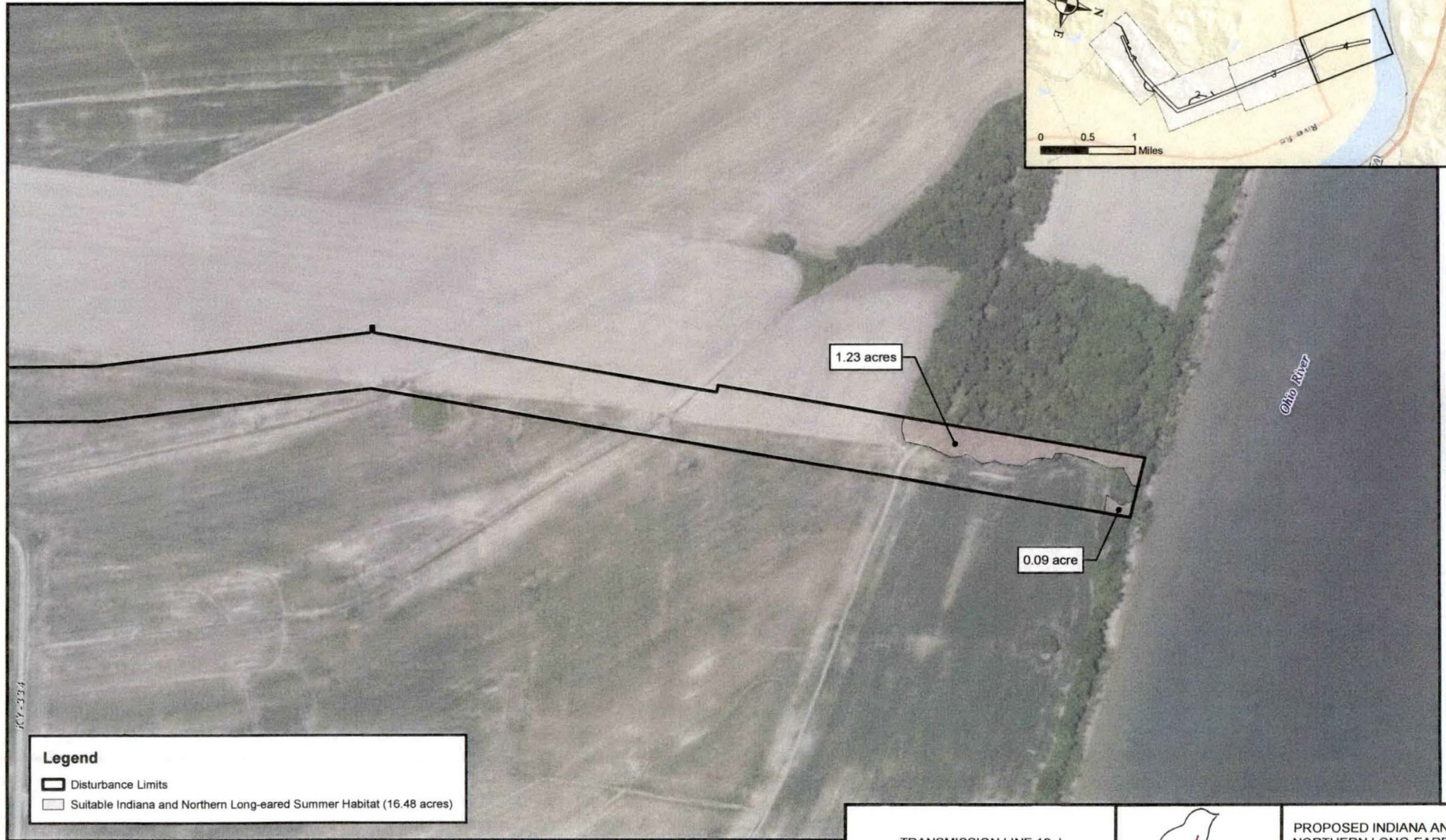
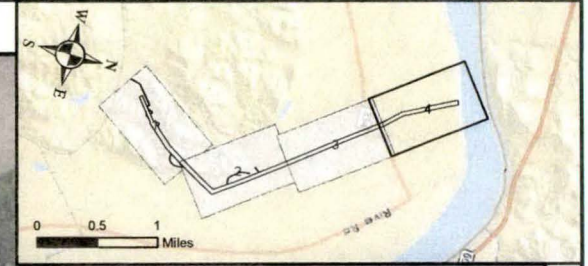
PROPOSED INDIANA AND
NORTHERN LONG-EARED
BAT SUMMER ROOSTING
HABITAT IMPACT MAP

REVISED DATE: 11-22-17 DRAWN BY: EDB/JMD

FIGURE 3
SHEET 3 of 4

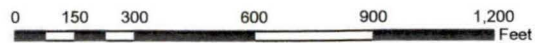
P:\2017 Projects\17-051-TL-19-J\Figures\Proposed IBNLEB Habitat Impact Map.mxd, 11-22-2017, 1:41pm

Source: World Imagery - Esri and the GIS User Community (2016); Disturbance limits provided by LS Power Development, LLC.



Legend

- Disturbance Limits
- Suitable Indiana and Northern Long-eared Summer Habitat (16.48 acres)



NOTE: HABITAT ASSESSMENT PERFORMED BY REDWING BIOLOGISTS, ON AUGUST 22 AND 23, 2017.



TRANSMISSION LINE 19-J
HANCOCK COUNTY, KENTUCKY



PROPOSED INDIANA AND
NORTHERN LONG-EARED
BAT SUMMER ROOSTING
HABITAT IMPACT MAP

REVISED DATE: 11-22-17 | DRAWN BY: EDB/JMD

FIGURE 3
SHEET 4 of 4

P:\2017 Projects\17-051-TL-19-J\Figures\Proposed IBNLEB Habitat Impact Map.mxd, 11-22-2017, 1:45



Photograph 1: View of typical open field habitat in southern portion of the study corridor. August 22, 2017.



Photograph 2: View of typical mature woods habitat in the southern portion of the corridor. These wooded areas in the corridor provide potential Indiana bat and northern long-eared bat summer roosting habitat. August 22, 2017.



Photograph 3: View of mature woods habitat in the northern portion of the corridor near the Ohio River. These wooded areas in the corridor provide potential Indiana bat and northern long-eared bat summer roosting habitat. August 23, 2017.



Photograph 4: View of an ephemeral streams in the southern portion of the corridor. August 22, 2017.



Photograph 5: View of linear wetland located in the central portion of the corridor. August 23, 2017.



Photograph 6: View of ephemeral stream in the central portion of the corridor. August 23, 2017.



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Kentucky Ecological Services Field Office
J C Watts Federal Building, Room 265
330 West Broadway
Frankfort, KY 40601-8670
Phone: (502) 695-0468 Fax: (502) 695-1024
<http://www.fws.gov/frankfort/>

In Reply Refer To:
Consultation Code: 04EK1000-2017-SLI-0863
Event Code: 04EK1000-2017-E-02551
Project Name: Transmission Line 19-J Project

September 01, 2017

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

Your concern for the protection of endangered and threatened species is greatly appreciated. The purpose of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.) (ESA) is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. The species list attached to this letter fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the ESA to provide information as to whether any proposed or listed species may be present in the area of a proposed action. This is not a concurrence letter; additional consultation with the Service may be required.

The Information in Your Species List:

The enclosed species list identifies federal trust species that may occur within the boundary that you entered into IPaC. For this list to most accurately represent the species that may potentially be affected by the proposed project, the boundary that you input into IPaC should represent the entire "action area" of the proposed project by considering all the potential "effects of the action," including potential direct, indirect, and cumulative effects, to federally-listed species or their critical habitat as defined in 50 CFR 402.02. This includes effects of any "interrelated actions" that are part of a larger action and depend on the larger action for their justification and "interdependent actions" that have no independent utility apart from the action under consideration (e.g.; utilities, access roads, etc.) and future actions that are reasonably certain to occur as a result of the proposed project (e.g.; development in response to a new road). If your project is likely to have indirect effects that extend well beyond the project footprint (e.g.;

substantial impacts to water quality), we highly recommend that you coordinate with the Service early to appropriately define your action area and ensure that you are evaluating all the species that could potentially be affected.

We must advise you that our database is a compilation of collection records made available by various individuals and resource agencies available to the Service and may not be all-inclusive. This information is seldom based on comprehensive surveys of all potential habitats and, thus, does not necessarily provide conclusive evidence that species are present or absent at a specific locality. New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list.

Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the ESA, the accuracy of this species list should be verified after 90 days. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and associated information. To re-access your project in IPaC, go to the IPaC web site (<https://ecos.fws.gov/ipac/>), select "Need an updated species list?", and enter the consultation code on this letter.

ESA Obligations for Federal Projects:

Under sections 7(a)(1) and 7(a)(2) of the ESA and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

If a Federal project (a project authorized, funded, or carried out by a federal agency) may affect federally-listed species or critical habitat, the Federal agency is required to consult with the Service under section 7 of the ESA, pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). Recommended contents of a Biological Assessment are described at 50 CFR 402.12. For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat.

ESA Obligations for Non-federal Projects:

Proposed projects that do not have a federal nexus (non-federal projects) are not subject to the

obligation to consult under section 7 of the ESA. However, section 9 of the ESA prohibits certain activities that directly or indirectly affect federally-listed species. These prohibitions apply to all individuals subject to the jurisdiction of the United States. Non-federal project proponents can request technical assistance from the Service regarding recommendations on how to avoid and/or minimize impacts to listed species. The project proponent can choose to implement avoidance, minimization, and mitigation measures in a proposed project design to avoid ESA violations.

Additional Species-specific Information:

In addition to the species list, IPaC also provides general species-specific technical assistance that may be helpful when designing a project and evaluating potential impacts to species. To access this information from the IPaC site (<https://ecos.fws.gov/ipac/>), click on the text "My Projects" on the left of the black bar at the top of the screen (you will need to be logged into your account to do this). Click on the project name in the list of projects; then, click on the "Project Home" button that appears. Next, click on the "See Resources" button under the "Resources" heading. A list of species will appear on the screen. Directly above this list, on the right side, is a link that will take you to pdfs of the "Species Guidelines" available for species in your list. Alternatively, these documents and a link to the "ECOS species profile" can be accessed by clicking on an individual species in the online resource list.

Next Steps:

Requests for additional technical assistance or consultation from the Kentucky Field Office should be submitted following guidance on the following page <http://www.fws.gov/frankfort/PreDevelopment.html> and the document retrieved by clicking the "outline" link at that page. When submitting correspondence about your project to our office, please include the Consultation Tracking Number in the header of this letter. (There is no need to provide us with a copy of the IPaC-generated letter and species list.)

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Kentucky Ecological Services Field Office

J C Watts Federal Building, Room 265

330 West Broadway

Frankfort, KY 40601-8670

(502) 695-0468

This project's location is within the jurisdiction of multiple offices. Expect additional species list documents from the following office, and expect that the species and critical habitats in each document reflect only those that fall in the office's jurisdiction:

Indiana Ecological Services Field Office

620 South Walker Street

Bloomington, IN 47403-2121

(812) 334-4261

Project Summary

Consultation Code: 04EK1000-2017-SLI-0863

Event Code: 04EK1000-2017-E-02551

Project Name: Transmission Line 19-J Project

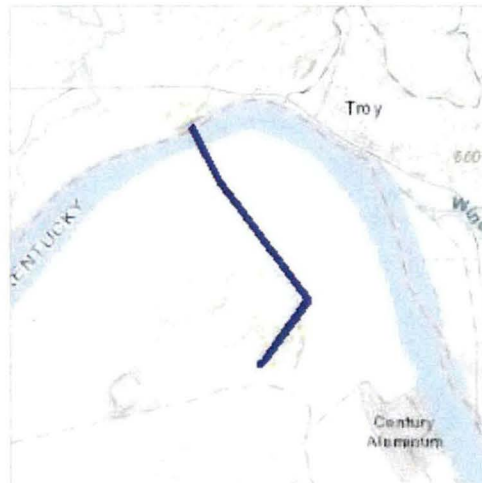
Project Type: TRANSMISSION LINE

Project Description: The approximately 3-mile long Transmission Line 19-J project extends from the Coleman EHV substation north to the Ohio River in Hancock County, Kentucky.

Project Location:

Approximate location of the project can be viewed in Google Maps:

<https://www.google.com/maps/place/37.9746042970325N86.81648271196863W>



Counties: Spencer, IN | Hancock, KY

Endangered Species Act Species

There is a total of 12 threatened, endangered, or candidate species on this species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

Mammals

NAME	STATUS
Gray Bat <i>Myotis grisescens</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329	Endangered
Indiana Bat <i>Myotis sodalis</i> There is a final critical habitat designated for this species. Your location is outside the designated critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: <ul style="list-style-type: none"> ▪ Incidental take of the northern long-eared bat at this location is excepted by the 4(d) rule and is, therefore, not prohibited under the ESA. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Birds

NAME	STATUS
Least Tern <i>Sterna antillarum</i> Population: interior pop. No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8505	Endangered

Clams

NAME	STATUS
Clubshell <i>Pleurobema clava</i> Population: Wherever found; Except where listed as Experimental Populations No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3789	Endangered
Fanshell <i>Cyprogenia stegaria</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4822	Endangered
Fat Pocketbook <i>Potamilus capax</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2780	Endangered
Orangefoot Pimpleback (pearlymussel) <i>Plethobasus cooperianus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1132	Endangered
Pink Mucket (pearlymussel) <i>Lampsilis abrupta</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7829	Endangered
Ring Pink (mussel) <i>Obovaria retusa</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4128	Endangered
Rough Pigtoe <i>Pleurobema plenum</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6894	Endangered
Sheepnose Mussel <i>Plethobasus cyphus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6903	Endangered

Critical habitats

There are no critical habitats within your project area under this office's jurisdiction.

Attachment E:

Kentucky United States Fish and Wildlife Service
Request for Informal Consultation Response
January 19, 2018



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Kentucky Ecological Services Field Office
330 West Broadway, Suite 265
Frankfort, Kentucky 40601
(502) 695-0468

January 19, 2018

Mr. Richard J. Fangman
Mr. Neil A. Guthals
Redwing Ecological Services, Inc.
1139 South Fourth Street
Louisville, Kentucky 40203

Re: FWS 2017-B-0846; Redwing Project No.: 17-051; Republic Transmission, LLC;
Transmission Line 19-J; Hancock County, Kentucky

Dear Mr. Fangman and Mr. Guthals:

The U.S. Fish and Wildlife Service (Service) has reviewed your February January 8, 2018 biological evaluation (BE), regarding this proposed project. The applicant, Republic Transmission, LLC, proposes to create a new 3-mile long electrical transmission corridor. The Service offers the following comments in accordance with the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*).

Indiana Bat (*Myotis sodalis*)

Northern Long-eared Bat (*Myotis septentrionalis*)

The BE states that the project area does not contain caves or other features that could potentially provide winter habitat for these species. The proposed project would involve the removal of forested habitat that may provide suitable summer roosting, foraging, and/or commuting habitat for the species. The BE states that the project proponent proposes to contribute \$28,180.80 to the Imperiled Bat Conservation Fund (IBCF). This is a conservation measure to provide appropriate compensatory mitigation following the process in the Kentucky Field Office's 2016 *Revised Conservation Strategy for Forest-Dwelling Bats* (Conservation Strategy), for the impacts to forested habitat proposed in the BE: 16.48 acres of "potential" Indiana bat habitat and "potential" northern long-eared bat habitat from October 15 – March 31. Based on the description of the proposed action and other information available to us, we conclude that the proposed action is consistent with the actions evaluated in the 2015 Biological Opinion: *Kentucky Field Office's Participation in Conservation Memoranda of Agreement for the Indiana Bat and/or Northern Long-eared Bat* (BO) that supports the Conservation Strategy. Upon completion of the specified mitigation, any take of the Indiana bat and/or the northern long-eared bat resulting from the specified forested habitat removal associated with this project would not

be prohibited. The BO concludes that this take is not likely to jeopardize the continued existence of the Indiana bat or the northern long-eared bat or result in the destruction or adverse modification of designated critical habitat for this species and of the Indiana bat or the northern long-eared.

The mitigation process detailed in the Conservation Strategy can be applied to both federal projects and non-federal projects. However, if there is a federal nexus for the proposed project (i.e., federal funding, permitting, or authorization) we recommend coordinating with the federal action agency under the section 7 consultation process prior to submitting the contribution. Contributions should be sent to the following address:

Kentucky Natural Lands Trust
c/o Hugh Archer, Executive Director
433 Chestnut Street
Berea, Kentucky 40403

The check or money order should be made payable to the Kentucky Natural Lands Trust with "IBCF Contribution" on the memo line. The contribution should be accompanied with a cover letter that includes the following information: the project proponent's name, the FWS project number referenced in the subject line of this letter, and a contact name and address to receive the receipt of payment.

Gray Bat (*Myotis grisescens*)

The BE states that the project area does not contain caves or other features that could potentially provide hibernacula or roosting habitat for this species. The ephemeral streams on site do not represent significant foraging habitat for the species. Because of the scale of the disturbance, the temporary nature of the impacts during construction, and the use of BMPs to limit impacts to downstream resources, we believe that any impacts to downstream gray bat foraging habitat and resources would be insignificant. Based on this information, the Service would concur with a "may affect - not likely to adversely" affect determination for the gray bat.

You state that there is no habitat in the project site suitable for the following species: fanshell (*Cyprogenia stegaria*), pink mucket (*Lampsilis abrupta*), ring pink (*Obovaria retusa*), orangefoot pimpleback (*Plethobasus cooperianus*), sheepsnose (*Plethobasus cyphus*), clubshell (*Pleurobema clava*), rough pigtoe (*Pleurobema plenum*), and interior least tern (*Sterna antillarum athalassos*). The Service has no further comments regarding these species.

The comments provided in this letter are based on the information available to us and must be reconsidered if: (1) new information reveals that the proposed action may affect listed species in a manner or to an extent not previously considered, (2) the proposed action is subsequently modified to include activities which were not considered during this consultation, or (3) new species are listed or critical habitat designated.

Thank you again for your request. Your concern for the protection of endangered and threatened species is greatly appreciated. If you have any questions regarding the information that we have provided, please contact Jessica Blackwood Miller at (502) 695-0468 extension 104 or jessica_miller@fws.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Virgil Lee Andrews, Jr.", written in a cursive style.

Virgil Lee Andrews, Jr.
Field Supervisor

Appendix C: General Condition 20 Compliance

General Condition 20 requires the permittee to comply with the requirements of Section 106 of the National Historic Preservation Act (NHPA). In order to comply with this requirement, Republic Transmission conducted several desktop and field reconnaissance studies, for which relevant reports are attached:

Attachment A: Archeological Literature Review and Field Reconnaissance, Access Cultural and Environmental Solutions, LLC, August 9, 2017

Attachment B: Archaeological Studies, GAI Consultants, Inc, January 15, 2018

The report written by Access Cultural and Environmental Solutions, LLC was commissioned to find any known archeological resources near the Section 10 Crossings. As a result of that report, Republic altered the final alignment to avoid a previously recorded burial mound (SP-0027) resource that was discovered. The altered final alignment is shown in the report written by GAI Consultants, Inc. Additionally, there is a previously-recorded prehistoric rock shelter, SP-0644, situated on steep slopes, as discussed in both reports below the proposed route. Clearing of the steep slopes of the bluff, below the structure on the Indiana side, where the prehistoric rock shelter is located will not be necessary, avoiding impacts to SP-0644. The project has been designed to avoid impacts to all known archaeological resources.

Attachment A:

Archeological Literature Review and Field
Reconnaissance

Access Cultural and Environmental Solutions, LLC

August 9, 2017

**ARCHAEOLOGICAL LITERATURE REVIEW AND
FIELD RECONNAISSANCE**

**Duff to Coleman 345kV Electrical Transmission Line
Ohio River Crossing, Spencer County, Indiana**

For:

Republic Transmission, LLC



Prepared by:

ACCESS
CULTURAL AND ENVIRONMENTAL
SOLUTIONS
LLC

**Access Cultural and Environmental Solutions, LLC
1075 Broad Ripple Avenue, Suite 204
Indianapolis, Indiana 46220**

Approved by:

A handwritten signature in black ink, appearing to read 'Anthony W. Adderley'.

(Revised August 9, 2017)

**Anthony W. Adderley M.S., RPA
Principal Investigator**

**Access Cultural and Environmental Solutions, LLC Project #:
7074.02.Sp**

**ARCHAEOLOGICAL LITERATURE REVIEW AND FIELD RECONNAISSANCE
Duff To Coleman 345kV Transmission Line, Ohio River Crossing
Spencer County, Indiana**

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EXECUTIVE SUMMARY

In response to a request by Republic Transmission, LLC, an archaeological literature review and field reconnaissance has been completed for a proposed electrical transmission structure which will carry an electrical transmission line across the Ohio River in Spencer County, Indiana. The records review revealed one archaeological site, 12Sp27-a Woodland burial mound, was potentially located within or adjacent to the area proposed for this project. Site 12Sp27 was located, and a cursory examination of the mound was made. A 100 foot buffer was established around the mound, and an approximate 300 foot (91.2 meter) NE/SW x 140 foot (42.3 meter) NW/SE area was surveyed to the west of site. The area formally surveyed for this project, the 300 foot x 140 foot area, totals approximately 0.96 acres. Archaeological materials were not identified in the 0.96 acre area surveyed.

ARCHAEOLOGICAL LITERATURE REVIEW AND FIELD RECONNAISSANCE
Duff To Coleman 345kV Transmission Line, Ohio River Crossing
Spencer County, Indiana

1.0 INTRODUCTION

In response to a request from Republic Transmission, LLC (Republic), and in compliance with IC 14-21-1, and anticipated compliance with Section 106 of the National Historic Preservation Act of 1966 as amended, Access Cultural and Environmental Solutions, LLC (Access Solutions) has completed an archaeological literature review and field reconnaissance of a proposed electrical transmission structure in Spencer County, Indiana (Figure 1). Specifically, the project is located in Section 15, Township 6 South, Range 4 West, as shown on the USGS 7.5' Tell City, Indiana Topographic Quadrangle (Figure 2).

The project involves the emplacement of a new electrical transmission structure, which will be emplaced within an approximate 140 foot (42.3 meter) x 140 foot (42.3 meter) compound. The preferred location of the proposed electrical transmission line places the line immediately west of an existing electrical transmission line which was constructed in the late 1960's.



Figure 1: Location of project area within Spencer County, Indiana.

2.0 LITERATURE REVIEW

The literature review utilized public documents that include site records, maps, and materials that are on file at Access Solutions' office and the files contained at the Indiana Department of Natural Resources (IDNR) Division of Historic Preservation and Archaeology (DHPA) to locate and evaluate the documented and predicted cultural resources within the project area. The literature review was conducted at a level specific to the project area and its vicinity.

2.1. Setting

2.1.1. *Physiography*

The project area is located in the bedrock physiographic unit known as the Sullivan Lowland (Schneider 1966:54). Bedrock surrounding the project area consists of shale and sandstone of the Pennsylvanian Age Raccoon Creek Group (Gray et. al. 1987) underneath Late Mississippian and Early Pennsylvanian Sandstone, shale, and limestone in the uplands and Holocene alluvium in the lowland bottoms (Gray 1989). The lowlands and areas along larger drainages generally fall within the Southern Bottomlands Section of the Southern Bottomlands Natural Region, with the uplands within the Driftless Section of the Southwestern Lowlands Natural Region (Homoya et al, 1985). Presettlement vegetation would be a mix of Oak-Hickory and Western Mesophytic forests (Petty and Jackson (1966). The project area is within the Lower Ohio River Watershed (USGS 2016).

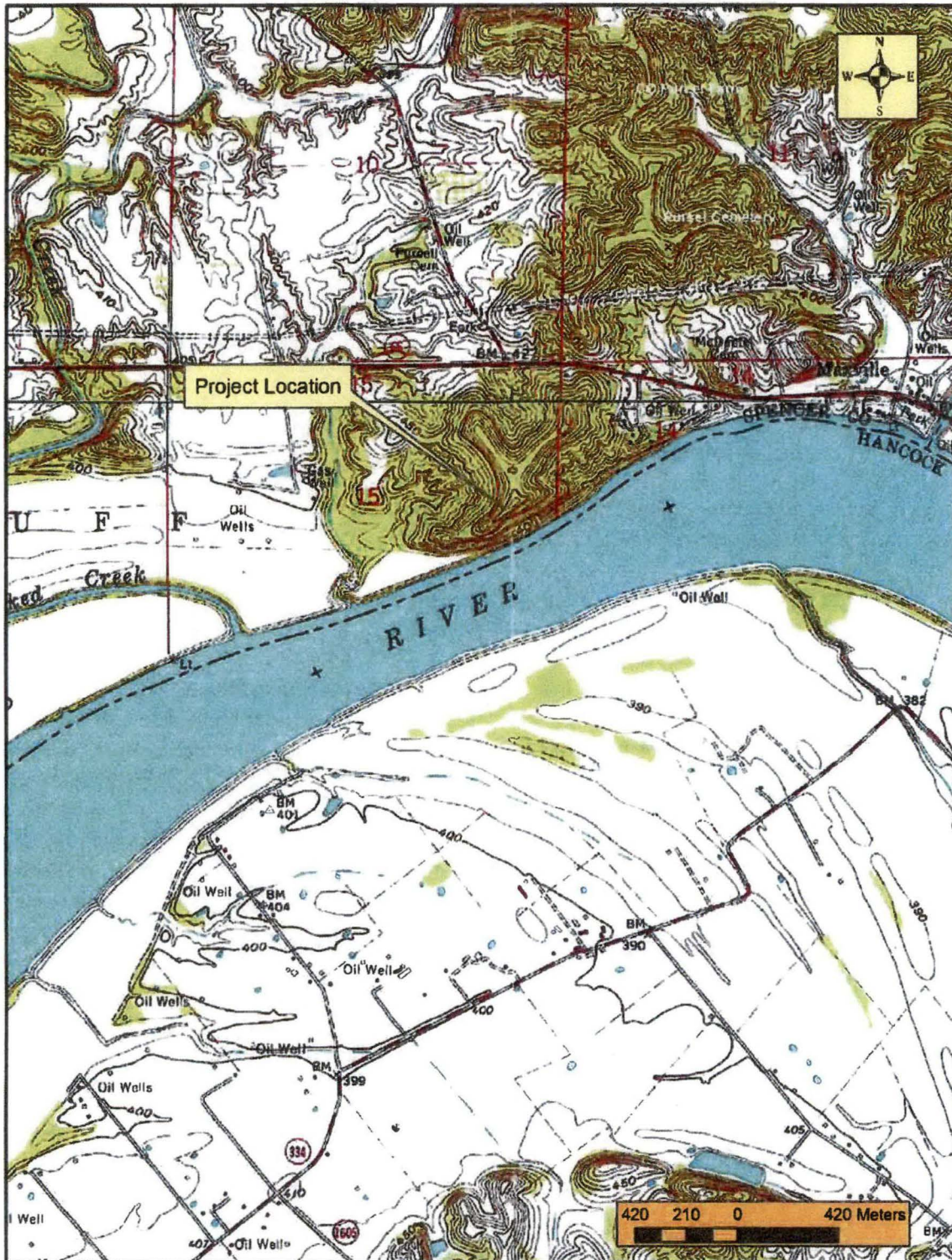


Figure 2: Portion of USGS 7.5' Tell City (south) and Fulda (north), Indiana Topographic Quadrangles showing the location of the proposed project. Scale 1:24000

2.2. Soils

General soil associations within the project are within the Zanesville-Wellston-Gilpin general soil association, which is described as deep and moderately deep, well drained and moderately well drained, medium textured, nearly level to very steep soils found on uplands. (Williamson and Shively 1973). Specific soils within the project area include Wellston silt loam, 6-12% slopes, eroded (WeC2), which is described as a shallow, well drained soil formed from thin fine-silty noncalcareous loess over loamy residuum weathered from sandstone and shale that is found on back and side slopes of hills; and Gilpin-Wellston silt loams, 25-35 % slopes (GmF), which is described as a shallow, well drained soil formed from loamy residuum over sandstone and shale that is found on shoulders and backslopes of hills (USDA 2017).

2.3. Background

2.3.1. Cultural History

The region encompassing and surrounding Spencer County, Indiana has archaeological evidence spanning the entire range of Midwestern North American prehistory (Kellar 1983, Swartz 1981). This evidence is reported from professional investigations and private collections that have documented remains from Paleoindian (ca. 12,000-9,500 Before Present) to Contact (ca. 350 BP) time periods.

Diagnostic artifacts recovered from surface and excavation contexts in Spencer and surrounding counties indicate 12,000 years of human occupation (Kellar 1983). The earliest known human occupations in the area consisted of Paleoindian cultures dating approximately 10,000-12,000 years B.P. The Paleoindian occupations of the surrounding area are known from isolated artifacts in disturbed/plowzone contexts with the absence of other associated artifacts or deposits (Tankersley 1987). Little is known of the Paleoindian period in Indiana, although a number of researchers (Cochran et al. 1990; Smith 1984, 1987, 1989; Tankersley 1987, 1989, 1990; Tankersley et al. 1990; Holsten and Cochran 1986) have added to the known distributions of these sites within the state. Evidence from sites located throughout North America indicate populations consisted of small groups of highly mobile hunters who occupied the region during the waning of the Pleistocene and the beginning of the Holocene geologic periods. Data from Indiana suggests that the greatest frequency of sites are in riparian settings closest to lithic raw material outcrops (Tankersley et al. 1990), mainly in the southern portions of Indiana. To date, no *in situ* Paleoindian deposits have been identified in Indiana.

Early Archaic sites from the area are similar to those of the preceding Paleoindian period. These sites are usually small in size, contain small quantities of lithic debris and lack associated midden or pit features. Tools represented at Early Archaic sites are a variety of notched points and unifacial scrapers. Early Archaic sites and isolated finds are documented on most landforms in Indiana. Larger sites occur on terraces and floodplain

ridges of the Ohio River and its tributaries (Sieber et al. 1989), and are frequently deeply buried in flood plain settings (Cantlin 1986; Smith 1986; Stafford and Cantlin 1992). Increased evidence of upland exploitation, such as rockshelter and cave utilization, is noted for this time period (Sieber et al. 1989). Local Early Archaic projectile point types include Thebes, Kirk, and Bifurcate base clusters (Justice 1987).

The Middle Archaic period is better represented in Indiana. Sites dating to this period are usually larger and have a more functionally diverse association of tools. Included in the Middle Archaic toolkit are points from the Godar and Matanzas cluster (Justice 1987), as well as hafted scrapers, bifaces, hardstone/groundstone tools such as axes, mortars, pestles and atlatl weights, as well as a broad range of bone tools and large quantities of fire cracked rock (FCR). High quantities of FCR at Middle Archaic base camps suggests intensive food processing, probably the extraction of hickory nutmeats and oil (Stafford 1994). Data suggests that during the latter portions of this period (5500-5000 BP) some sites were being occupied for longer periods on a seasonal and perhaps multi-seasonal basis (Stafford 1994). These base camps often have dark midden stains, numerous associated pit features, and in some instances human and dog burials (Anslinger 1988).

Late Archaic cultures in the Midwest are generally known as a period of increasing complexity and diversity. During the later portions of this period, a significant transition from established Archaic traditions to more complex Woodland traditions is evident with the introduction of small scale cultivation and increased importance of burial ceremonialism (Griffin 1983). Larger habitation sites with evidence of recurring use suggests population growth, which may be connected to the spread of cooler and wetter conditions and the proliferation of mixed deciduous forests across the landscape (Griffin 1983). An increase in the diversity of diet is evident with the increased use of plant foods, the larger numbers of grinding stones to process plant foods, the larger and greater variety of faunal remains, and the presence of shell middens (Griffin 1967; Griffin 1983; Kellar 1983). Increased social complexity is evident with the presence of long distance exchange of raw materials and finished objects, as well as the inclusion of exchange objects of non-local materials found in some burials.

Late Archaic cultures in Indiana are poorly understood. Riverton (Winters 1969; Anslinger 1986) peoples occupied the central and southern portions of Indiana during the latter portions of the Late Archaic (ca 3500-2700 BP). Larger, more permanent base camps are located along major drainages, although smaller, more specialized sites used for the procurement and processing of subsistence resources are also reported. Riverton sites are usually identified by the presence of small, expediently manufactured points and tools of local gravel cherts. While the Riverine tradition defines southern portions of Indiana, the Late Archaic cultures in the northern half of the state are not as well understood.

The Woodland Traditions follow the Archaic period in Indiana, and are marked by an increase in importance on burial ceremonialism and the advent of pottery. The Adena

culture is the most well understood Early Woodland (2900-1600 BP) tradition in Indiana. Adena culture sites are most commonly identified within east-central Indiana. These sites usually consist of small hamlets with large residential structures located near major drainages. Burial ceremonialism continues to heighten during this period, with log or bark lined tombs constructed within man made earthen structures.

Evidence suggests a hunting and collecting subsistence strategy. Limited experimentation with agriculture is suggested with the cultivation of squash (*Cucurbita pepo*) and starchy seeds like Goosefoot (*Chenopodium berlandieri*), Maygrass (*Phalaris caroliniana*) and Knotweed (*Polygonum erectum*), which occupy a prominent position in many Middle and Late Woodland seed collections (Asch and Asch 1985). Ceramics are described as thick with very coarse grit temper. Vessels are typically jar shaped with flattened bases and cord marked interior and exterior surfaces. Points commonly associated with this period include the Adena and Saratoga clusters (Justice 1987). Wyandotte and other higher quality chert types replaced the use of local gravel cherts.

The Hopewell Culture, which is largely a continuation of the preceding Adena period, dominates the Middle Woodland Period (1600-1300 BP). However, Hopewell cultures saw a climax of burial ceremonialism, widespread trade and social interaction (Kellar 1983), as well as burial mounds, mound complexes and earthwork construction. Diagnostic projectile points of this period include Snyders, Chesser, Lowe, and Stueben types (Justice 1987). Astronomical alignments between some Middle Woodland mound sites in east-central Indiana have also been recognized (Cochran 1992). Other regional phases of the Middle Woodland within Indiana include the Mann, Goodall, Allison-Lamotte, and Havanna (Kellar 1979, Ruby 1994, Schurr 1997).

The Late Woodland saw a decline in the construction of earthworks and mounds, and a major reduction in trade and the use of exotic materials. Late Woodland cultures are very poorly defined in Indiana. Components of the Albee Phase are geographically confined to the White River drainage and its tributaries. Diagnostic artifacts include globular, grit tempered jars with wedge shaped profiles. Exterior surfaces are vertically cord marked. Points recovered from Late Woodland contexts include the Madison trianguloid varieties (Justice 1987). Temporal limits have not been established, although current data suggests a range from 1200-800 years B.P. (Ansilinger 1990).

Mississippian occupations in Indiana are also poorly understood. While trianguloid points and some shell tempered ceramics have been identified, there is no evidence of major occupations outside of southwestern Indiana. Late Pre-Contact cultures in Indiana include Fort Ancient to the southeast, Oliver in the central portions, and Fisher to the north. Fort Ancient and Oliver cultures developed from Woodland traditions and were contemporaneous with Mississippian cultures adopting aspects of each (Redmond 1991, McCullough and Wright 1997, Redmond and McCullough 1996). Mississippian influence is seen in subsistence patterns, house types and stockaded villages, while ceramics are

mainly a continuation of Late Woodland traditions. The Caborn-Welborn phase of Mississippian, with more dispersed and unfortified settlements, replaces earlier Mississippian occupations in the Ohio/Wabash area after A.D. 1450 and continues until the time of European exploration of eastern North America (Griffin 1983:288).

Guernsey (1932) lists both Delaware and Shawnee villages in the area surrounding Spencer County, and in the neighboring Warrick County.

The most significant geographic component of the county was the Ohio River, which provided transportation and access to regional markets. The first Euro-American in the area was Uriah Lamar from North Carolina, settling in the area of Grandview between 1804 and 1807. Lamar served the county as its first Justice of the Peace and first Sheriff. Other early settlers included Daniel Grass, who settled near Rockport in 1807.

The county was formed in 1818 from Warrick County and named after a Kentucky militiaman who fell at the Battle of Tippecanoe. The county seat was soon established at Rockport. Guernsey recorded several early roads crossing the county including the Rome Trace, the Yellow Banks Trace, the Sprinkle Trace and the Owensboro and Clarksville Road (Lake 1879).

2.3.2. Archaeology

A search of the in-house records maintained by the DHPA and the State Historic Architectural and Archaeological Research Database (SHAARD) was conducted on March 28, 2017 and on June 29, 2017. Information reviewed in the DHPA files reported at least 1140 archaeological sites documented in Spencer County. Sites have been found in similar topographic settings to the project area within the local area and region. One site, 12Sp27, was found to be mapped in DHPA files as being located potentially within or adjacent to the proposed project. The site is described as a 30-60 foot diameter mound, mapped in DHPA files as an approximate 5.7 acre area (Figure 3).

A search of the files maintained by the DHPA revealed a total of 14 previously documented archaeological sites within one mile of the proposed project. Table 1 provides details of these identified sites. Within one mile of the proposed project, at least 6 professional archaeological surveys or excavations (Pace 1983, Schock 1984, Myers 1988, Myers 1989, Snyder and Anderson 2002, Koepfel et al 2003) have been completed, and an additional 4 citations (Collett 1872, Kellar 1956, Baltz and Munson 1987, McCord and Cochran 2015) reference archaeological sites documented here. These references are shown in Table 2.



Figure 3: Portion of 2013 aerial photograph showing the location and site limits of archaeological sites in DHPA files. Scale as shown

Site #	Description	Affiliation	NRHP Eligibility	Reference
12Sp-0027	Mound	Woodland	Undetermined	Kellar 1956, Baltz and Munson 1987
12Sp-0028	Rockshelter	Woodland-Mississippian	Undetermined	Kellar 1956, Baltz and Munson 1987
12Sp-0029	Habitation	Woodland-Mississippian	Determined Eligible	Kellar 1956, Pace 1983, Baltz and Munson 1987
12Sp-0047	Habitation	Unknown Precontact	Undetermined	Kellar 1956
12Sp-0049	Mound (Shell)	Unknown Precontact	Undetermined	Kellar 1956, Pace 1983
12Sp-0051	Habitation	Unknown Precontact	Undetermined	Kellar 1956
12Sp-0351	Buried Midden	Archaic-Mississippian	Undetermined	GRA 1988, Titus 2003
12Sp-0372	Lithic Scatter	Unknown Precontact	Undetermined	Baltz and Munson 1987
12Sp-0373	Buried Midden	Unknown Precontact	Undetermined	Pace 1983, Schock 1984
12Sp-0374	Lithic Scatter	Woodland	Undetermined	Pace 1983
12Sp-0376	Isolate	Paleoindian	Undetermined	Baltz and Munson 1987
12Sp-0642	Mound/Lithic Scatter	Unknown Precontact	Undetermined	Baltz and Munson 1987
12Sp-0643	Rockshelter	Unknown Precontact	Undetermined	Baltz and Munson 1987
12Sp-0644	Rockshelter	Unknown Precontact	Undetermined	Baltz and Munson 1987

Table One: Sites reported within the Study Area

Author	Project Type	Sites Referenced
Collett 1872	Geologic Survey of Perry County	"Mound on Gage's Hill"
Kellar 1956	County Overview	12Sp27, 28, 29, 47, 49
Pace 1983	Phase Ia for proposed Barging Facility	12Sp27, 28, 29, 47, 49, 373, 374
Schock 1984	Phase II Testing for Proposed Barging Facility	12Sp29, 373
Baltz 1987	Database Enhancement of Southwestern Indiana	12Sp27, 28, 29, 47, 49, 372, 373, 374, 643, 644
Myers 1988	Phase Ia for proposed Shipyard	12Sp325, 351
Snyder and Anderson 2002	Phase Ic for proposed Shipyard	12Sp351
Koeppl et al 2003	Phase Ic for proposed Shipyard	12Sp351
McCord and Cochran 2015	Statewide Synthesis of Earthwork and Mound Sites	12Sp27

Table Two: Archaeological Investigations completed in the Study Area

The first reference to archaeological resources near the project area comes in 1872, when Indiana State Geologist John Collett writes, in describing the archaeological resources of neighboring Perry County:

I heard of no mounds in this county, but there is a very large one in the edge of Spencer County, two miles below Troy. It is on the top of a high hill, is fifteen feet in high (*sp*), oval in shape; and about thirty feet in its greater diameter. The decayed stump of an oak tree which grew on its side measured two feet in diameter. A hole had been dug in the top of the mound, but Dr. Gage, who owns the land, informed me that no relics had been found. From the top of the mound there is a commanding view for several miles both up and down the river. (Collett 1872).

Kellar completed an overview survey of the archaeological resources in Spencer County in 1956. Much of this overview is concerned with the most obvious archaeological sites across the landscape—large habitations, shell middens/mounds, burial mounds/earthworks, and rockshelters. Kellar describes site 12Sp27 as a burial mound located on the highest point of Gage's Hill, rising 10 feet and approximately 60 feet in diameter. Kellar describes a large hole in the mound, created by pot-hunters in the late 1800's. Other than describing the site as providing a magnificent view of the wide upstream bend in the river, it is unclear if he visited the site. Collector reports collected

in the 1980s (Baltz and Munson 1987), from which the State site form is based, report “no human burials”, and artifacts likely dating the site to the Middle Woodland Hopewell Period. Site 12Sp28 is described by Kellar as a rockshelter at least 90 feet long, 10 feet wide/deep, and 8 feet high at the opening. Two “rooms” are reported, split by sandstone outcropping. A bedrock mortar is located in the eastern room, and surface artifacts in the shelter include Mississippian and Woodland ceramics and a scatter of lithic debitage. The site is reportedly located just above the Ohio River. Site 12Sp29 was not described by Kellar (1956), but his 1956 State site form describes the site as a campsite in the floodplain.

Pace (1983) completed a survey in anticipation of a coal barging facility to be located in an approximate 10 acre floodplain field along the river. This study resurveyed several of the sites described by Kellar, including 12Sp28 and 12Sp29, and described sites 12Sp373 and 12Sp374. Kellar’s observations of 12Sp28 were confirmed by Pace. Pace further identified 12Sp29 as a Late Woodland Yankeetown occupation, with 12Sp373 as a buried occupation at least partially underlying 12Sp29. Recommendations were made to test the sites to be affected by the proposed barging facility.

Schock (1984) completed what appears to be strictly mechanical testing of sites 12Sp29 and 12Sp373, in anticipation of the proposed barging facility. Little information relative to these sites can be gleaned from this report. Based on a review of correspondence from the State and Federal Agencies and attorneys for the coal barging facility, the 1984 testing of these sites was determined to not be complete, thorough, or comprehensive. The US Army Corp of Engineers asked the National Park Service to determine whether the sites were eligible for the National Register of Historic Places (NRHP) in 1985. The sites were determined to be eligible for the NRHP, although the property owners contested the listing. Rather than pay for additional archaeology at the sites, the proposed coal barging facility was moved downriver.

Baltz and Munson (1987) completed a database enhancement of many of the counties making up southwestern Indiana. Much of this effort consisted of avocational/collector interviews, with only limited effort given to field verifying sites. This effort led to the documentation of many site locations, but in many cases only cursory information beyond site location was recorded.

McCord and Cochran (2015) completed a Statewide inventory of mounds and earthworks, which listed a total of 6 shell mounds, 12 individual mounds, and 7 earthwork complexes in Spencer County. Site 12Sp27 is listed among these, and recommended for field verification.

2.3.3. Historic Sites and Structures

The project is located in a rural setting. Historical maps (Figure 3a-d) of the county (Anonymous 1968, Guernsey 1932, USPS 1910, Lake 1879) illustrate a county road and

warehouse along the river, likely abandoned after the 1937 flood. Willard Gage, mentioned by Collett's 1872 writings, is shown as the property owner by DJ Lake in 1879.

A review of the Indiana Historic Sites and Structures Inventory (Anonymous 2001) for the county does not show historic sites or structures within or adjacent to the project.



Figure 4a: Historic map showing the project area in 1876 (Anonymous 1968)

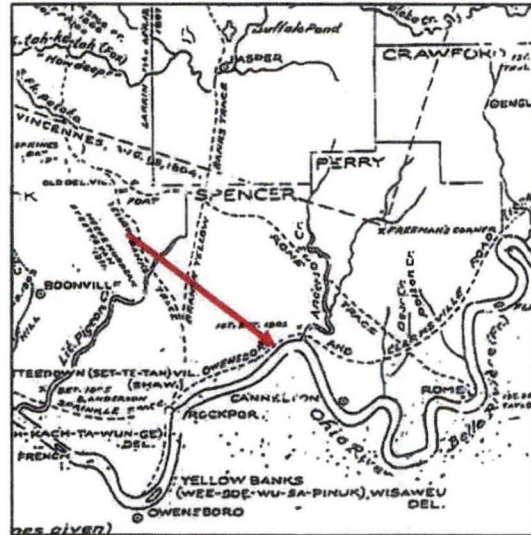


Figure 4b: Historic map showing the project area (Guernsey 1932)

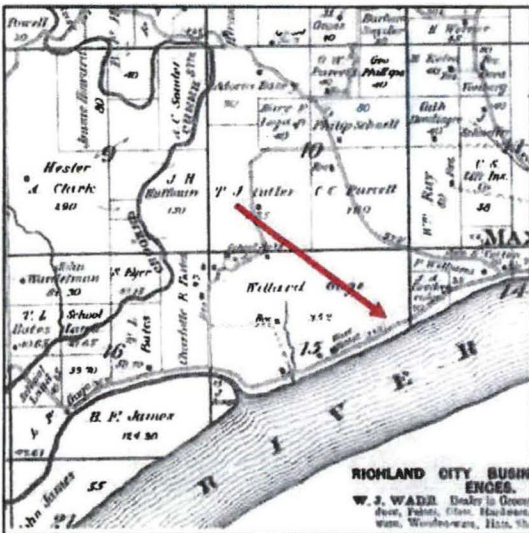


Figure 4c: Historic map showing the project area in 1879 (Lake 1879)

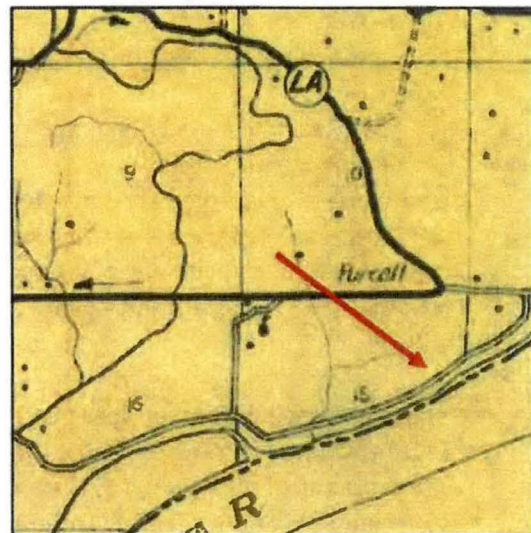


Figure 4d: Historic map showing the project area in 1910 (Anonymous 1968)

2.3.4. Cemeteries

The DHPA Cemetery Registry files nor SHAARD report cemeteries within or immediately adjacent to the proposed project. While burials have not been reported from 12Sp27, Kellar specifically refers to the site as a “burial mound”.

3.0 RESEARCH DESIGN

Based on the known cultural history of the region and the predicted density of archaeological sites within the physiographic zone, a Phase Ia archaeological survey was deemed necessary. The methodology used in this investigation was designed to document significant or potentially significant archaeological resources within the project area. The primary objective of the reconnaissance was to determine whether site 12Sp27 was located in the area preferred for this project, and if it was, secondarily to locate an area suitable for the proposed electrical transmission structure. Data obtained from this investigation will be used to enhance the state’s archaeological database and existing predictive models for the region.

4.0 FIELD RECONNAISSANCE

4.1. Methodology

An archaeological reconnaissance of the project was conducted on April 18 and 25, 2017 by Anthony Adderley of Access Solutions, accompanied by engineers from Republic on both surveys. Weather during both surveys was good, with temperatures in the 70s and clear skies. The April 18 survey concentrated on the blufftop where the structure will sit, and the April 25 survey concentrated on the south facing bluffslope directly below the structure.

Shovel tests excavated during the reconnaissance measured at least 30cm in diameter and were excavated to at least 10cm into subsoil, or generally 25-30cm below surface. Soil from shovel probes was troweled through and passed through ¼ inch hardware cloth and examined for evidence of cultural material. Areas shovel tested included those with less than 25% slope, although some areas with greater than 25% slope were shovel tested as well.

The bluff slope and other areas with greater than 25% slope were visually examined at less than 30m intervals. The south/river facing slope was given particular attention for the presence of rock shelters (as several are noted in the area), rock overhangs, collapsed overhangs, and potential chert outcrops. Early greening of vegetation and extreme slopes and erosional blowouts hampered the survey, and a “stop-look-go” approach was taken in these areas at approximate 20-30 meter intervals.

A Magellan sub-meter accuracy handheld GPS unit was used in the field, pre-loaded with polygon shapefiles of locations of known archaeological sites in the area.

Color photographs were taken of the project area during the archaeological field reconnaissance. These images show overviews of the project area and archaeological sites encountered.

4.2. Results

Upon reaching the highest point of the hill, in the preferred area for the proposed electrical transmission structure, it was clear site 12Sp27 was located here. Photographs of the site are available in Appendix A. The mound proper and the immediate area surrounding it were examined visually at approximate 2 meter intervals. Changes in elevation surrounding the mound are dramatic, and vegetation is thick with early growth, making discerning the base of the mound difficult. GPS coordinates were taken of the approximate base of the mound, and a 100 foot (30.5 meter) buffer was placed around the mound (Figure 4).

As stated in all previous descriptions of the site, the mound is located on the highest point of the hill. East of the mound, towards the existing electrical transmission corridor and existing tower, topography is generally flat. South of the mound is a dramatic, almost sheer, drop down the bluff for approximately 30 feet, before continuing to slope dramatically to the river below. North of the mound is a backslope of the bluff, increasing in slope as you move north and northwest away from the mound. While not nearly as dramatic as the bluffslope to the south, the slope to the north and northwest increases well beyond 25%. West and southwest of the mound is a gradual slope (20-30%) along a ridge crest, extending approximately 120 meters. The crest of the ridge is as wide as 5-10 meters to the east, but tapers to less than a meter wide at the western limits, before sloping dramatically to the west. Dramatic slopes extend south (bluffslope) and north (backslope) along the ridge crest.

Shovel testing began at the western edge of the 100 foot (30.5 meter) buffer surrounding the mound, and continued at 10 meter intervals west and southwest along the ridge crest. Only one transect of shovel tests was excavated due to the increasingly narrow width of the ridge crest. No cultural materials were recovered from shovel tests, and all shovel tests showed evidence of erosion. The typical shovel test consisted of less than 10cm of brown (10YR4/3) silt loam over at least 20cm of yellowish brown (10YR5/6) clay loam. Visual examination of the bluffslope and backslope was also completed.

The reconnaissance level survey revisited two previously reported archaeological sites (Figure 5). Site specific details follow.

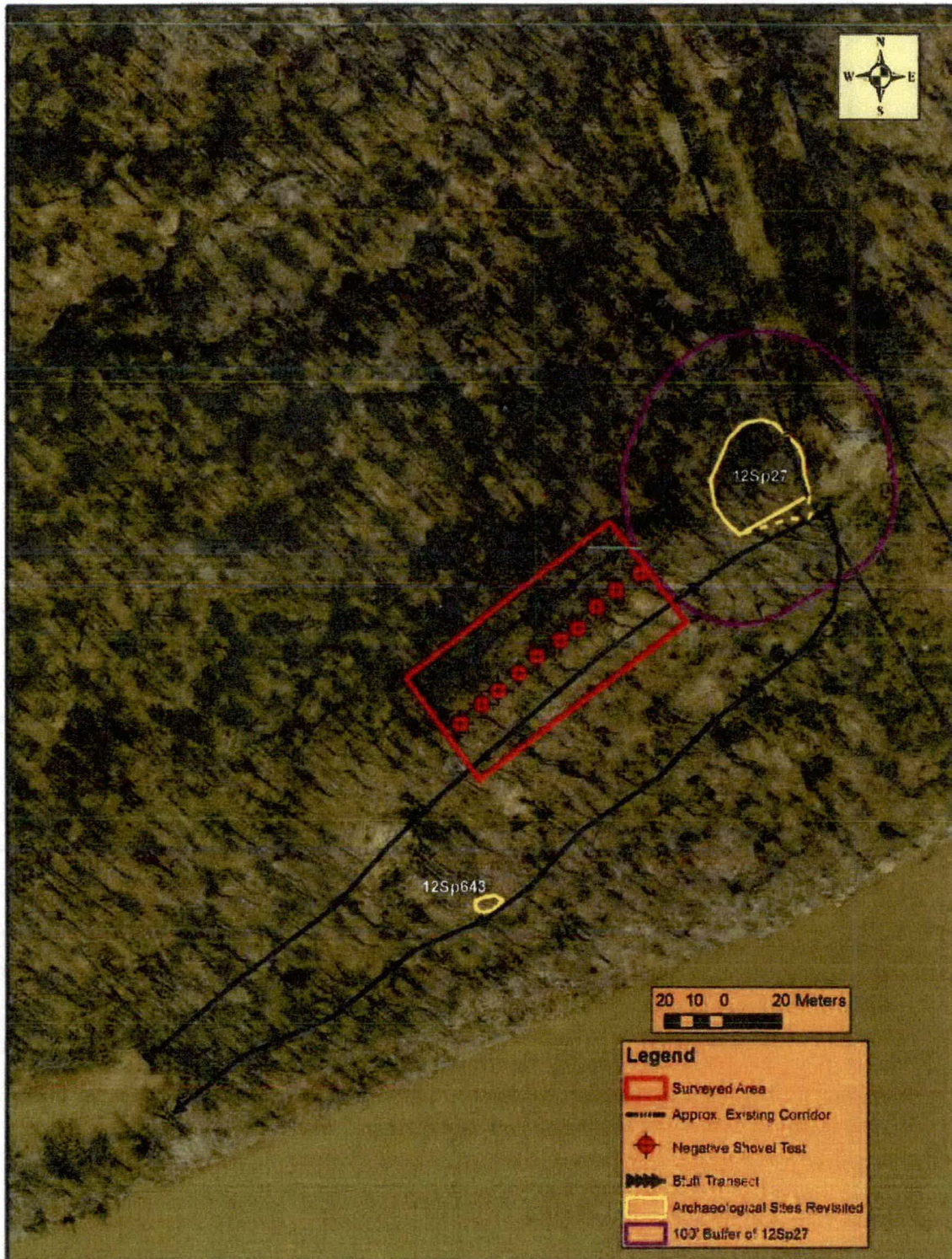


Figure 5: Portion of 2013 aerial photograph showing areas surveyed and archaeological sites revisited. (Scale as shown)

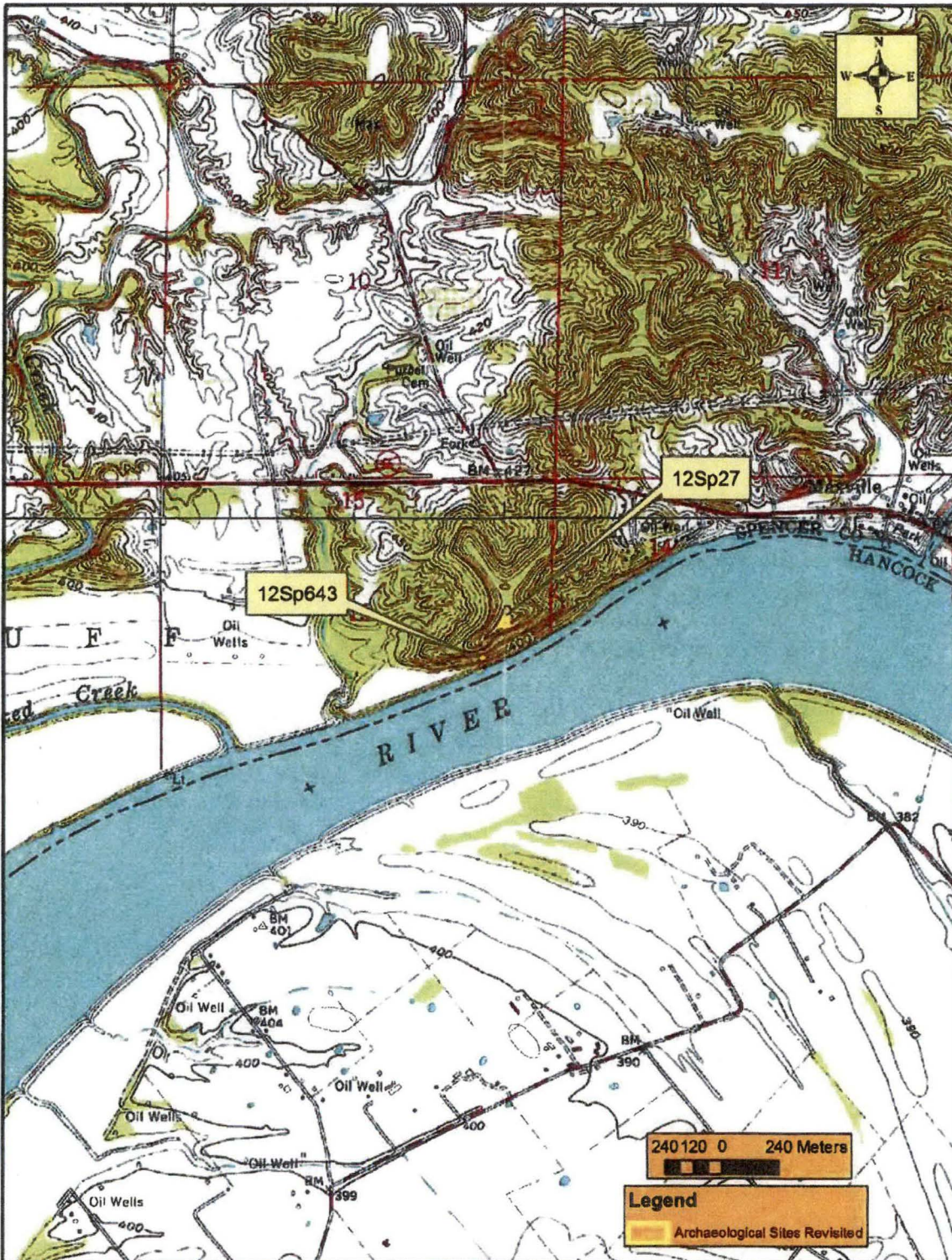


Figure 6: Portion of USGS 7.5' Tell City (south) and Fulda (north), Indiana Topographic Quadrangles showing the location of the proposed project. Scale 1:24000

12Sp27

Location: SW ¼ of the NE ¼ of the SE ¼ of the NE ¼ (NE Grid Alignment) of Sect. 15, Township 6S, Range 4W, as shown on the USGS 7.5' Tell City, Indiana Quadrangle; UTM Zone 16, 4205403N, 514641E (NAD83).

Physiographic Zone: Driftless Section of the Southwestern Lowlands Natural Region

Watershed: Lower Ohio-Little Pigeon

Topography: Blufftop Edge

Elevation: 560' AMSL

Soil Type: Wellston silt loam, 6-12% slopes, eroded (WeC2)

Closest Water Source: Ohio River

Distance and Direction to Water Source: 120 meters south

Ground Cover and Visibility: Leaf litter, 0-5% visibility

Survey Strategy: Visual Pedestrian Survey at 2 meter intervals, measurements and GPS coordinates were the only collections

Cultural Affiliation: Precontact – Middle Woodland based on previous reports

Site Type: Mound

Dimensions: Approximately 100 feet (30.5 meters) in diameter, including spoil piles

Materials Recovered:

No materials recovered

Discussion: As with many mounds and earthworks, 12Sp27 is placed as to take advantage of the surrounding landscape to give it the appearance of being potentially larger than it is. Collett (1872) describes the mound as 30 feet in diameter, while Kellar (1956) describes the mound as 60 feet in diameter. Both describe the mound as having a commanding view both up and down river. From the east, the mound appears as a small rise; from the north, the mound appears much taller and steeper, and has a much more defined conical appearance; from the west, the mound is again tall, but has a more "loaf" appearance. From the south, the mound is generally imperceptible due to the dramatic slope of the bluff.

Collett (1872), Kellar (1956) and the site forms completed for the Baltz and Munson (1987) project all report some digging is evident in the mound. One large pit has been dug into the upper most portion of the mound. It is difficult to measure because of erosion and vegetation growth, but the pit measures at least 4.5 meters north/south by at least 3.5 meters east/west. Because the top of the mound has been removed, it is difficult to determine how deeply it has been dug into, but the pit extends at least 1.8 meters below the current "top" surface of the mound. Several spoil piles are located along the base of the mound to the north and northwest, and are included in the current site limits.

Two potential features were noted associated with the mound (Figure 6), although it should be noted that no investigations involving ground disturbance within the



Figure 7: Portion Of 2013 aerial photograph showing the location of 12Sp27 and associated features

mound or 100 feet surrounding the mound were completed, so determinations of their cultural or natural context is limited.

Feature One is a small grouping of at least 3 sandstone blocks which appear similar in size (ca 30cmx20cmx20cm) and were seen eroding from the eastern portion of the mound, approximately 1-2 meters below the “top” of the mound. These could be naturally occurring eroding pieces of sandstone, but without further clearing of vegetation and leaf litter it is difficult to discern their origin.

Feature Two is located in a small rock overhang located directly below the mound to the south, over the edge of the bluff, but within 2-3 meters of the base of the mound. The overhang measures approximately 3.5-4 meters long (east-west), is approximately 2 meters deep at maximum, and approximately 1.5 meters high, tapering to the back. The “floor” is quite sloped, however, the overhang does provide some protection from the weather. A 2.5 meter long dark, black stain covers the back wall of the overhang, and a grey (10YR5/1) loose silty ash covers the floor below the stain. A few very small flecks of charcoal were seen intermixed with the ash. The only disturbance noted within the overhang is natural, and caused by water and erosion.

Based on the available data, the site should be considered eligible for the NRHP, and should be avoided by ground disturbing activities.

12Sp643

Location: SE ¼ of the SW ¼ of the SE ¼ of the NE ¼ (NE Grid Alignment) of Sect. 15, Township 6S, Range 4W, as shown on the USGS 7.5' Tell City, Indiana Quadrangle; UTM Zone 16, 4205256N, 514544E (NAD83).

Physiographic Zone: Driftless Section of the Southwestern Lowlands Natural Region

Watershed: Lower Ohio-Little Pigeon

Topography: Bluff slope over Ohio River

Elevation: 430' AMSL

Soil Type: Gilpin-Wellston silt loams

Closest Water Source: Ohio River

Distance and Direction to Water Source: 50 meters south

Ground Cover and Visibility: Leaf litter, 0-50% visibility

Survey Strategy: Visual Survey at <1 meter intervals, measurements and GPS coordinates were the only collections

Cultural Affiliation: Precontact

Site Type: Rockshelter

Dimensions: 4.5 meters wide (east/west), 1.8 meters tall (dripline), 3 meters deep maximum

Materials Recovered:

No materials recovered

Discussion: This site was originally documented in 1987 by Baltz from collector reports. The site is one of two, along with 12Sp644, rockshelters documented at this time. They were reported as being collected as one site, one with a bedrock mortar and another with a midden and Woodland(?) ceramics. However, it is unclear from the site forms for each site what descriptions should be attributed to which site.

The site is a small rockshelter, enclosing approximately 12² meters. Approximately half the floor is soil, with the remainder sandstone outcropping or fall. Dark black staining lines portions of the back wall and roof. No bedrock mortar was noted in the rockshelter, although a small natural “shelf” is noted along the south facing western wall. One excavated hole is noted to have been previously dug into the floor of the rockshelter. Leaf litter was removed from the hole, which measured approximately 80cm in diameter. Three pieces of FCR were noted loose in the bottom of the excavated hole, and were left in place. No additional artifacts were noted or collected.

Based on the available data, the site should be considered eligible for the NRHP, and should be avoided. The site is well outside the areas proposed for this project.

5.0 DISCUSSION AND RECOMMENDATION

In response to a request by Republic Transmission LLC, an archaeological literature review and field reconnaissance have been completed for areas proposed to be impacted by the emplacement of an electrical transmission tower. Background research conducted at Access Solutions' office, and the Division of Historic Places and Archaeology (DHPA), indicated that the potential existed for archaeological deposits to be located within the area proposed for the project.

The field reconnaissance for this project was conducted on April 18, and 25, 2017 by the author. The record search of known archaeological sites and professional surveys in relation to the proposed project indicated site 12Sp27 was located within or adjacent to the proposed project. Records identified the site as a Woodland Mound, between 30-60 feet in diameter, although location maps of the site document the site size as approximately 5.7 acres. The survey for the preferred electrical tower compound identified the mound within the preferred compound. Additional survey of a ridge crest, bluffslope, and backslope located west of archaeological site 12Sp27 was completed to identify an area suitable for the proposed tower site, and no additional archaeological deposits were identified in that area.

With regard to site 12Sp27, avoidance of the site is the only recommendation. It is recommended that no ground disturbing work be completed within the site limits. The limits of the site have been determined strictly through topographic and elevation changes, and a 100 foot buffer was applied to the site limits. While no burials or human remains have been reported for the site, the presence or absence of burials within or on the flanks of the mound cannot be determined without further archaeological work, and their presence should be assumed. As per IC 14-21-1-3, a cemetery development plan will be needed for any work completed within the 100 foot buffer surrounding the site.

No further archaeological work is recommended within the approximate 300 foot (91.2 meter NE/SW x 140 foot (42.3 meter) NW/SE area surveyed to the southwest of the buffer surrounding site 12Sp27.

However, if artifact concentrations, archaeological features or burials are encountered during project implementation, the project must be halted and the Division of Historic Preservation and Archaeology contacted for an evaluation before the project resumes.

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APPENDIX A

Photographs



Looking south down the existing utility corridor and existing electrical transmission tower



Looking west from the existing utility towards Site 12Sp27 (rise noted in red)



Looking west at Site 12Sp27 from just outside the existing utility corridor



Looking southwest at Site 12Sp27 from just outside the existing utility corridor



Looking south from within the limits of Site 12Sp27



Looking east at Site 12Sp27 (Note electrical tower in background, and 6 foot tall individual standing in right center on top of mound)



Looking east from within Site 12Sp27 at the existing electrical transmission tower located outside the site limits



Looking east across the top of the mound showing pit excavated in the top center



Looking south across the top of the mound showing pit excavated in the top center



Spoil piles located north and northwest of the mound on the lower flanks



View looking upriver from 12Sp27



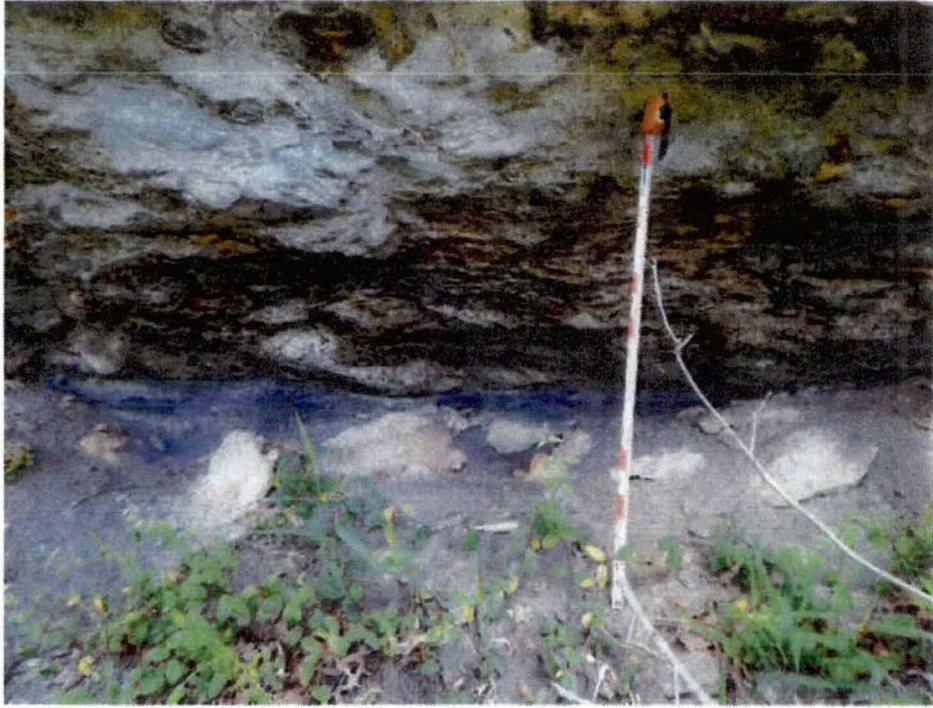
View looking downriver from 12Sp27



View looking immediately south down the bluff from 12Sp27



View showing Feature Two located directly below 12Sp27



View showing Feature Two located directly below 12Sp27



Looking west/downriver from within the overhang Feature 2 (12Sp27) is located



Looking west within the 0.96 acre area surveyed showing typical slope and width of the ridge crest



Looking east within the 0.96 acre area surveyed showing typical slope along the northern and northwestern backslope



Looking west within the 0.96 acre area surveyed showing typical slope associated with the bluff edge



Typical negative shovel test excavated within the 0.96 acre area surveyed



Typical erosion noted along the steep bluff slope within the 0.96 acre area surveyed



Looking northeast into rockshelter documented as 12Sp643



Looking northwest into rockshelter documented as 12Sp643



Looking at floor of 12Sp643 showing disturbance of excavated pit

Attachment B:

Archaeological Studies
GAI Consultants, Inc.
January 15, 2018



Fort Wayne Office
1502 Magnavox Way
Fort Wayne, Indiana 46804

T 260.969.8800
F 260.969.8888

January 15, 2018
Project C171086.04

Ms. Lucy Marton
LS Power Development, LLC
16150 Main Circle Drive, Suite 310
Chesterfield, Missouri 63017

Archaeological Studies
LS Power Development, LLC
Duff to Coleman 345 kV Transmission Line Project
Spencer County, Indiana and Hancock County, Kentucky

Dear Ms. Marton:

GAI Consultants, Inc. (GAI), on behalf of Republic Transmission, LLC (Republic), is pleased to provide this letter report detailing the current results of archaeological studies conducted for the Duff to Coleman 345 kV Transmission Line Project (Project) in Spencer County, Indiana and Hancock County, Kentucky (Attachment 1: Figure 1: Sheets 1–2). GAI understands the Project includes two aerial electric crossings of Crooked Creek in Spencer County, Indiana and another aerial crossing of the Ohio River spanning from Spencer County, Indiana into Hancock County, Kentucky. The aerial crossings of these waterways requires permitting by United States Army Corps of Engineers (USACE) under Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) Navigable Waters. The remaining portions of the Project have been designed to avoid impact to USACE jurisdictional streams and/or wetlands.

The three Section 10 crossings include two crossings of Crooked Creek and the Ohio River. Crooked Creek is encountered twice (IN-SP-008-A and IN-SP-006-A) as it meanders to the north and then south (Attachment 1: Figure 1: Sheet 1). The landforms consist of steep bluffs on both south banks of the stream with stream banks that lead to broad floodplain landforms on the north banks. As currently designed, the proposed Project does not have structures located within 30 meters (m) (100 feet [ft]) of the ordinary high water mark (OHWM) of either crossing of Crooked Creek (see Attachment 1: Figure 1: Sheet 1).

The Ohio River crossing includes the north bank in Indiana and the south bank in Kentucky (see Attachment 1: Figure 1: Sheet 2). The north bank is a steep bluff with a narrow flood-prone terrace at the river's edge at an elevation of 115 m (378 ft) above mean sea level (AMSL). The nearest transmission line structure is located approximately 135 m (444 ft) to the north on top of the steep bluff at an elevation of 164.8 ft (541 ft) AMSL. The south bank of the Ohio River consists of the river bank which rises approximately 5.1 m (17 ft) over a distance of 21.3 m (70 ft) to the floodplain surface. The proposed Project includes one transmission line structure situated approximately 30 m (100 ft) from the OHWM.

Background Research

As part of the due diligence studies for the Project, Republic and GAI completed background research by accessing the Indiana Department of Natural Resources State Historic Architectural and Archaeological Research Database (SHAARD) and completed data requests of the Kentucky Heritage Council for architectural resources and the Office of State Archaeology (OSA) for previously-recorded archaeological sites. Examining the Project's Area of Potential Effect (APE), which is a 30-m (100-ft) buffer from the OHWM of the Section 10 crossings resulted in the identification of a single archaeological site in Indiana.

An additional site, located outside of the USACE APE is in close proximity to the Section 10 Crossing in Indiana (Table 1). No previously recorded archaeological sites are located within the APE in Kentucky.

Table 1. Previously-Recorded Archaeological Sites within and adjacent to the Section 10 Crossings

Site ID	Site Name	Project Name	Site Type	Integrity	Status	Proximity to Project ROW
SP-0027	-	-	Mound	Unknown	Not Evaluated	62 feet east of proposed ROW
Sp-0644 / Sp-0644 R_1	-	Database Enhancement 1987	Lithic Scatter	Unknown	Not Evaluated	Within proposed ROW
	-	Database Enhancement II 1987	Rock Shelter	Unknown	Not Evaluated	Within proposed ROW

Within the APE, the previously-recorded archaeological site is located directly below the proposed aerial crossing of the Ohio River. This site is identified as SP-0644 / R_1, which is a prehistoric rock shelter situated on steep slopes (see Attachment 1: Figure 1: Sheet 2). Republic along with another consultant determined the accurate location of this site on the slopes. The site has not been formally evaluated for National Register of Historic Places (NRHP) listing.

Located north of site SP-0644 / R_1 on top of the bluff and just east of the proposed ROW is site SP-0027. As depicted on SHAARD, the site is approximately 35.6 m (117 ft) east of the proposed ROW. Republic along with another consultant, during their due diligence, identified site SP-0027 and documented the location of the mound to be approximately 18.8 m (62 ft) east of the proposed ROW (see Attachment 1: Figure 1: Sheet 2).

As noted no previously-recorded archaeological sites are mapped within or adjacent to the Section 10 Crossing within the state of Kentucky. However, background research provided by the OSA identified a Phase I survey having been located along the south bank of the Ohio. This survey was completed in 1977 by J.T. Glover and C. Glover for proposed industrial facilities that were to be located along the Ohio and Green Rivers (see Attachment 1: Figure 1: Sheet 2; OSA ID 5543).

Based on Condition 20 for the use of Nationwide Permits from the USACE guidance for historic properties, Republic and GAI determined a Phase Ia survey should occur at those sites occurring within the Project ROW or within 100 feet to minimize the potential risks of inadvertent discoveries (36 CFR 800.13) during construction. Based on past experience in various USACE districts, GAI archaeologists examined a 30-m (100-ft) buffer from the known site boundary within the Project ROW for SP-0027. These results are presented below. Republic with another consultant, determined there would be no impacts to site SP-0644 / R_1 given the site's location on steep terrain that will be aerially spanned.

Phase Ia Archaeological Survey Methods and Results

Following initial background research, GAI conducted pedestrian reconnaissance, as well as surface and subsurface investigations within portions of the previously-identified archaeological site: SP-0027. This initial review identified areas of steep slopes, as well as settings maintaining moderate to high potential for archaeological sites. Low potential settings (those with greater than 20 percent slope, water-saturated soils, or ground disturbance) were eliminated from subsurface investigations.

Following the initial reconnaissance, GAI conducted subsurface shovel testing in those portions of the Project APE maintaining moderate to high archaeological potential yet did not maintain adequate ground surface visibility (due to the presence of vegetation) to afford a controlled surface collection strategy. Subsurface testing focused on areas northwest of site SP-0027 for a proposed construction route. Shovel test pits (STPs) were excavated at 15-m (49.2-ft) intervals in transects spaced 15 m (49.2 ft) apart in moderate to high potential settings. STPs measured 50 centimeters (cm) (19.7 inches [in]) in diameter and were excavated 10 cm (3.93 in) into culturally sterile subsoil. Excavated soils were screened through

six millimeter (mm) (0.25-in) hardware mesh to recover artifacts. For each STP, GAI completed a standardized excavation form containing provenience data, depth of soil horizons, and soil descriptions. STPs were backfilled following excavation and mapped using a handheld Global Positioning System (GPS) unit.

SP-0027 Study Area

The SP-0027 study area encompasses 0.29 ha (0.72 ac) and occurs on a section of hillslope northeast of the extant mound. The earthen mound is located at the apex of the ridgetop and overlooks the Ohio River and its floodplain on the south bank. Vegetation is comprised of mixed deciduous hardwoods with sparse understory (Attachment 2: Photograph 1). This portion of the Project area was subjected to survey for future potential access needs. A total of 24 shovel tests were excavated at 15-m (49.2-ft) intervals along seven transects (A-G) within the APE (Attachment 1: Figure 2). The surficial A horizon within STPs B2, B5, and D2 each yielded a single prehistoric lithic flake fragment composed of St. Louis Chert. As typified by STP B5, the soil profile in this area contains a 25-cm- (9.84-in)-thick A horizon composed of brown (10YR 4/3) silt loam underlain by a yellowish brown (10YR 5/6) silty clay loam B horizon subsoil that was present to the base of excavation at 45 cm (17.71 in) below ground surface (bgs) (Attachment 1: Figure 3). Site boundaries were established by excavating radial STPs in the cardinal directions around the original positive STP at five-m (16.4-ft) intervals until two negative STPs or the edge of the study corridor was encountered. A total of 14 radial STPs were excavated, identifying two additional positive STPs. Surficial soil horizons within STP R1 and R9 both yielded a single flake fragment comprised of the same lithic material. In total, five non-diagnostic prehistoric lithic flake fragments were recovered from the site (Table 2). Based on Phase I investigation, the findings represent a low-density prehistoric lithic scatter along wooded hillslope situated northeast of the mound and outside the Section 10 APE.

Table 2. Artifact Assemblage from SP-0027 Test Area

STP	Elev (cm bgs)	#	Size (mm)	Lithic Material	Class	Type	Cortex	Thermal Alteration
B2	0-26	1	21-30	Chert, St. Louis	Debitage	Flake Fragment	Absent	No
B5	0-25	1	31-40	Chert, St. Louis	Debitage	Flake Fragment	Absent	No
D2	0-22	1	11-20	Chert, St. Louis	Debitage	Flake Fragment	Absent	No
R1 (5m SE of D2)	0-26	1	31-40	Chert, St. Louis	Debitage	Flake Fragment	Absent	Yes
R9 5m SE of B2	0-26	1	11-20	Chert, St. Louis	Debitage	Flake Fragment	Absent	No

Summary and Recommendations

Background research indicated one previously-identified archaeological site within the Section 10 Crossings and one adjacent to the proposed 53.3-m (175-ft)-wide ROW of the Duff to Coleman 345 kV Transmission Line Project. Site SP-0644 / R_1 is a rockshelter located on steep slopes that will be aerially spanned by the Project. Situated east of the proposed ROW and outside of the USACE APE is site SP-0027. Survey at site SP-0027 resulted in the recovery of five pieces ofdebitage from five individual STPs located away from the prehistoric mound. The results of the testing indicate there is a very low-density lithic scatter adjacent to the mound.

Based on the negative results of this evaluation, GAI recommends the Project proceed as planned and with no further archaeological investigation.

Ms. Lucy Marton
January 15, 2018
Project C171086.04

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If you have any questions or concerns, please feel free to contact me at 412-399-5085 or via email at r.petyk@gaiconsultants.com.

Sincerely,

GAI Consultants, Inc.



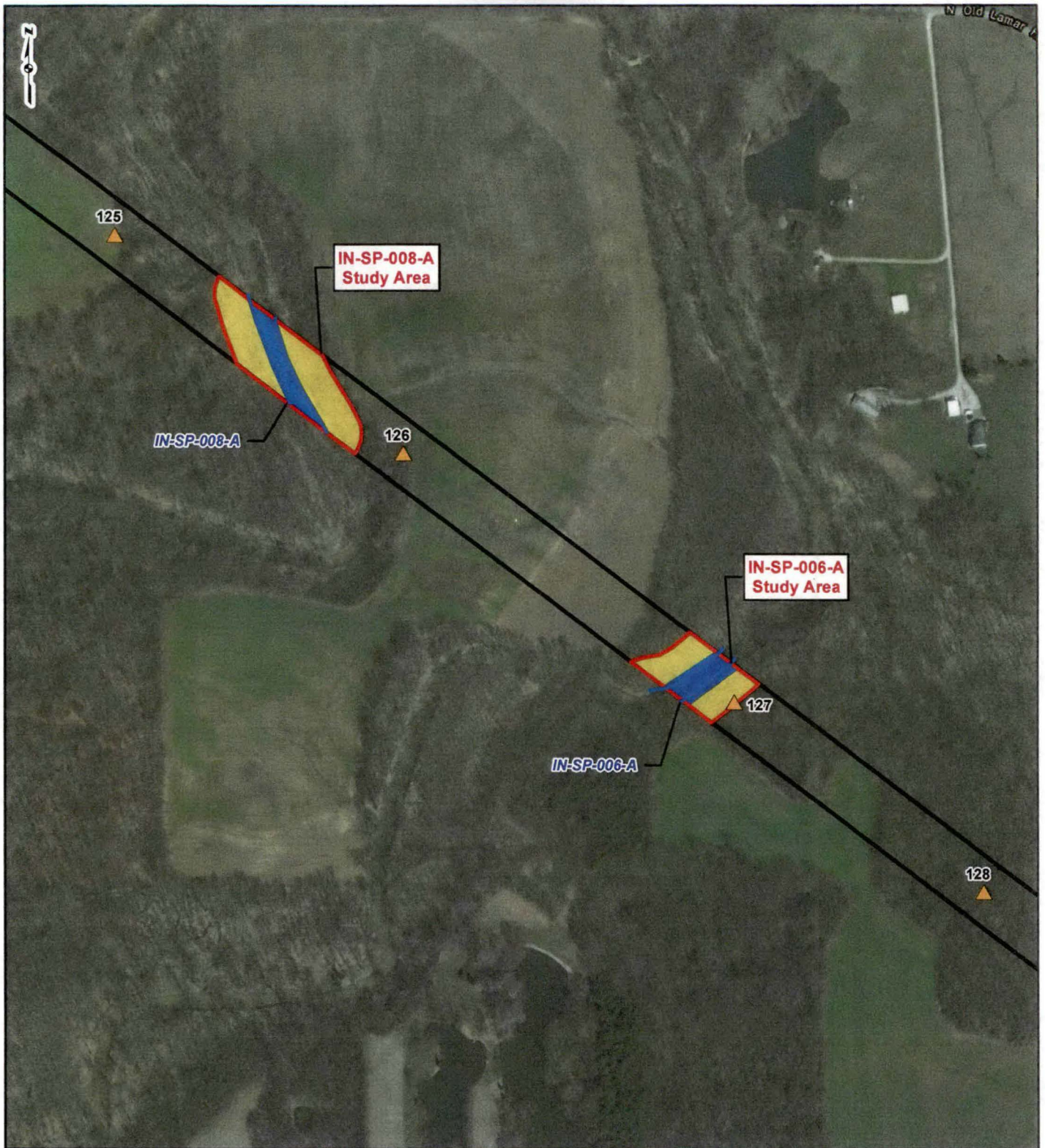
Richard C. Petyk, M.A., RPA
Senior Project Archaeologist

RCP/djz

Attachments: Attachment 1 (Figure 1: Project Location; Figure 2 Overview; Figure 3: Typical STP Soil Profile), Attachment 2 (Project Photograph)

January 15, 2018
Project C171086.04

ATTACHMENT 1
PROJECT FIGURES



PROJECT LOCATION

DUBOIS AND SPENCER
COUNTIES, INDIANA AND
HANCOCK COUNTY, KENTUCKY

LEGEND

STRUCTURE LOCATION	SURFACE COLLECTED
STREAM	SHOVEL TESTED
STUDY AREA	SATURATED SOILS / WATER
ARCHAEOLOGICAL SITE	SLOPED
PROJECT RIGHT-OF-WAY	PREVIOUSLY SURVEYED

0 200 400 800 Feet

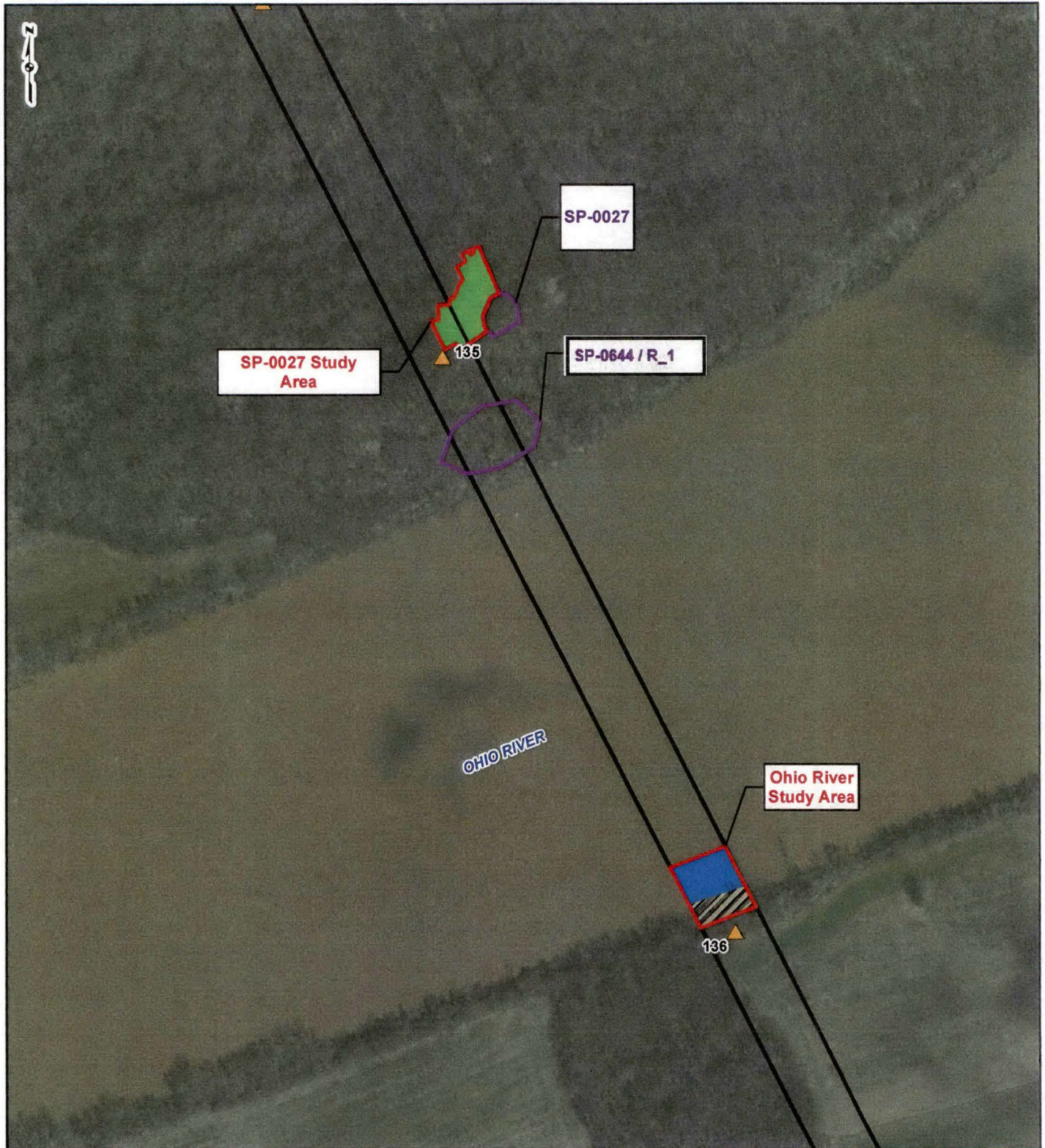
**FIGURE 1
PROJECT OVERVIEW
SHEET 1 OF 2**

DUFF TO COLEMAN 345 KV
TRANSMISSION
LINE PROJECT

REPUBLIC TRANSMISSION, LLC

DRAWN BY: AJW DATE: 1/14/2018
CHECKED: SWW APPROVED: RCP

REFERENCE: ESRI WORLD IMAGERY, PROVIDED BY NAIP, 2015, AND WORLD TRANSPORTATION, OBTAINED THROUGH ESRI ARCGIS ONLINE, © 2012 ESRI, DELORME, NAVTEQ, TOMTOM, ACCESSED 01/2018.



PROJECT LOCATION

DUBOIS AND SPENCER COUNTIES, INDIANA AND HANCOCK COUNTY, KENTUCKY

LEGEND

STRUCTURE LOCATION	SURFACE COLLECTED
STREAM	SHOVEL TESTED
STUDY AREA	SATURATED SOILS / WATER
ARCHAEOLOGICAL SITE	SLOPED
PROJECT RIGHT-OF-WAY	PREVIOUSLY SURVEYED

0 200 400 800 Feet

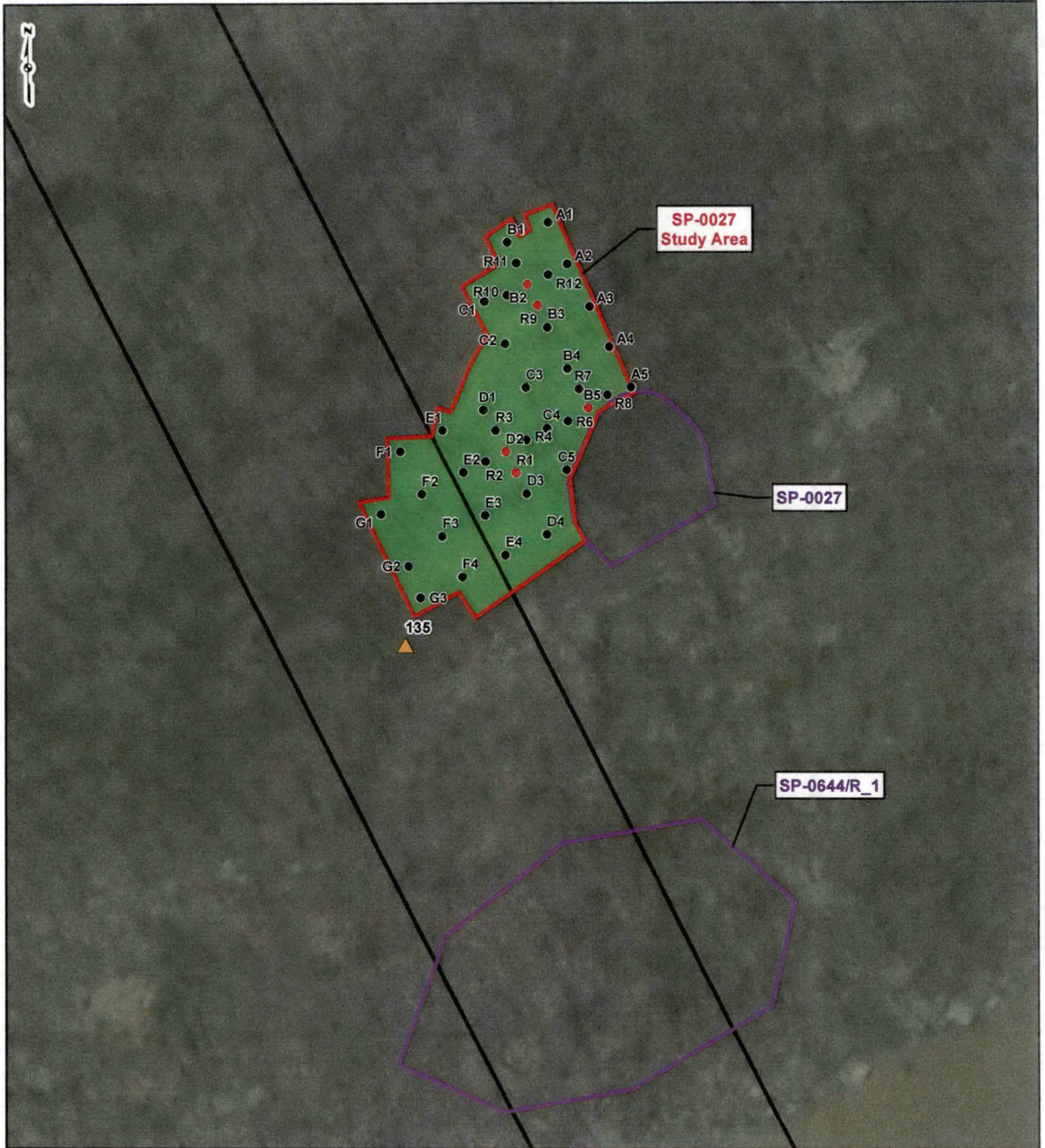
**FIGURE 1
PROJECT OVERVIEW
SHEET 2 OF 2**

DUFF TO COLEMAN 345 KV
TRANSMISSION
LINE PROJECT

REPUBLIC TRANSMISSION, LLC

DRAWN BY: AJW DATE: 1/14/2018
CHECKED: SWW APPROVED: RCP

REFERENCE: ESRI WORLD IMAGERY, PROVIDED BY NAIP, 2015, AND WORLD TRANSPORTATION, OBTAINED THROUGH ESRI ARCGIS ONLINE, © 2012 ESRI, DELORME, NAVTEQ, TOMTOM, ACCESSED 01/2018.



PROJECT LOCATION

DUBOIS AND SPENCER COUNTIES, INDIANA AND HANCOCK COUNTY, KENTUCKY

LEGEND

- POSITIVE STP
- NEGATIVE STP
- ▲ STRUCTURE LOCATION
- ▭ STUDY AREA
- ▭ ARCHAEOLOGICAL SITE
- ▭ PROJECT RIGHT-OF-WAY
- ▭ SHOVEL TESTED

0 50 100 200 Feet

**FIGURE 2
PHASE I RESULTS
AT SP-0027**

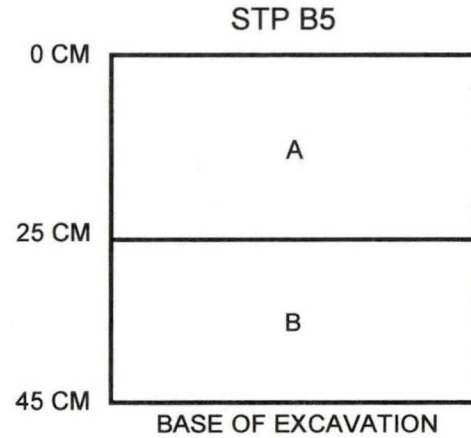
DUFF TO COLEMAN 345 KV
 TRANSMISSION
 LINE PROJECT

 REPUBLIC TRANSMISSION, LLC

DRAWN BY: AJW DATE: 1/15/2018
 CHECKED: SWW APPROVED: RCP

REFERENCE: ESRI WORLD IMAGERY, PROVIDED BY NAIP, 2015, AND WORLD TRANSPORTATION, OBTAINED THROUGH ESRI ARCGIS ONLINE, © 2012 ESRI, DELORME, NAVTEQ, TOMTOM, ACCESSED 01/2018.

SP-0027 STUDY AREA



A – BROWN (10YR 4/3) SILT LOAM
B – YELLOWISH BROWN (10YR 5/6)
SILT LOAM

FIGURE 3.
REPRESENTATIVE STP PROFILE WITHIN SP-0027 STUDY AREA



gai consultants **DUFF-COLEMAN 345 kV
TRANSMISSION LINE PROJECT** **REPUBLIC
TRANSMISSION, LLC**

DRAWN: LJA
CHECKED: WJC

DATE: 1/2/2018
APPROVED: RCP

January 15, 2018
Project C171086.04

ATTACHMENT 2
PROJECT PHOTOGRAPHS

January 15, 2018
Project C171086.04



Photograph 1. Warner Mound (SP-0027). View Southeast.

Appendix D: Clearance Requirements

Permits required under Section 10 of the Rivers and Harbors Act of 1899 for aerial transmission lines requires clearances sufficient to allow for the continued navigation of the waterway. As required by 33 CFR 322.5, minimum clearance requirements for aerial electric power transmission lines, are defined in 33 CFR 322.5 (i)(2), as shown below.

Nominal system voltage, kV	Minimum additional clearance (feet) above clearance required for bridges
115 and below	20
138	22
161	24
230	26
350	30
500	35
700	42
750-765	45

These clearance requirements are intended to be additional clearances above the clearances required for bridges by the US Coast Guard.

Ohio River Clearance

During a February 21, 2017 meeting with Mr. David Baldrige, the Section Chief of the South Branch of the Louisville USACE District, Republic inquired about the clearance requirements for the Ohio River. Mr. Baldrige informed Republic that the USACE relies on the US Coast Guard (USCG), specifically their fixed bridge requirements, to determine clearance requirements for Section 10 permits. Mr. Baldrige provided a contact with the USCG (Chad Yeaman) for coordination.

Following the February 21, 2017 meeting, Republic contacted Mr. Yeaman, for further clarifications. Republic also did independent research which revealed fixed bridge clearance requirements on the USCG website. These requirements detailed the fixed bridge clearance requirements for the Ohio River to be 69 feet above the average June flow¹ or 55 feet above the 2% flowline², whichever is greater. On June 9, 2017, Chad Yeaman replied to Republic Transmission concurring with the information Republic had found on their website but also indicating that they normally leave power line clearance determinations to the Army Corps of Engineers (see Attachment A).

The transmission line proposed by Republic is 345 kV. Therefore, 30' minimum additional clearance (feet) above clearance required for bridges is required by 33 CFR 322.5 (i)(2).

¹ The average June flow was equated to the project pool, 356.99' (NAVD88)

² The 2% flowlines was equated to the 50 year flood elevation which is 395.2' (NAVD88)

With the USCG's concurrence, Republic calculated clearance requirements based on the average June flow and 2% flowline to confirm their clearance. Attachment B shows the calculations performed by Republic based upon the USCG requirements. The Average June Flow was determined using the Cairo, Illinois to Foster, Kentucky Ohio River Navigation Charts from March 2014, and the 2% flow line was determined using the Spencer County, Indiana Flood Insurance Study performed by the Federal Emergency Management Agency (FEMA) effective May 18, 2015.

With this information, Republic determined the clearance requirement for the Section 10 Ohio River Crossing to be 123.2 feet (NAVD88) above the project pool which equates to an elevation of 480.2 feet (NAVD 88). A figure depicting this clearance requirement is included in Attachment C. The figure depicts the maximum sag, which is the lowest point the conductor will reach in worse case conditions.

Crooked Creek Clearance

While Crooked Creek is a navigable water of the United States, there are no fix bridge requirements defined on the USCG website.

Due to the fact that Crooked Creek is not actively navigable and there is no guidance on fixed bridge clearances, the minimum clearance indicated in 33 CFR 322.5 (i)(2) has been applied to the 100 year floodplain elevation.

The elevation of the 100 year floodplain at both of the Crooked Creek crossings is 396.2' (NAVD88), as detailed in the Indiana Department of Natural Resources Indiana Floodplain Information Portal. Therefore Republic's minimum conductor height above Crooked Creek will be at an elevation of 426.2' (NAVD88) to maintain required clearances. A figure depicting this clearance requirement is included in Attachment C. The figure depicts the maximum sag, which is the lowest point the conductor will reach in worse case conditions.

Attachment A:

Correspondence with United States Coast Guard

Lucy Marton

From: Yeamans, Chad A LT <Chad.A.Yeamans@uscg.mil>
Sent: Friday, June 09, 2017 10:19 AM
To: Lucy Marton
Subject: RE: Ohio River Clearance Requirements

Good Morning Lucy,

I wasn't able to directly confirm any specific Coast Guard requirements for the height of bridges and power lines over Navigable waterways. I contacted the Coast Guard Bridge branch in St. Louis who told me that they leave that determination to the responsible Army Corps District. However, we did a lot of research and what you found on the bridge branch's website appears to be correct. 69 feet above the average June flow or 55 ft above the 2 pct flow line, whichever is greater. We looked at every single bridge and power line crossing on the Ohio River (which is a lot) and came up with the following data:

The average height of the bridges over the Ohio to Louisville area is 89.5ft The lowest being 71.4ft, the Louisville and Indiana railroad draw bridge The heights of power line crossings on the Ohio River are also charted. The average of the power lines was 111.78ft, The lowest being 92.

We get our River Height and Flow data from the USGS river gages through the National Weather Service Website. But I am also pretty sure you could get that hydrology information from the Army Corps of Engineers or directly from USGS as well.

Hopefully some of this is helpful, let me know if you have any other questions and have a great day.

Very Respectfully,

Chad

LT Chad Yeamans
USCG Sector Ohio Valley
Waterways Management
P: 502-779-5344
C: 502-715-1429

-----Original Message-----

From: Lucy Marton [mailto:LMarton@Lspower.com]
Sent: Monday, June 05, 2017 10:22 AM
To: Yeamans, Chad A LT
Subject: [Non-DoD Source] RE: Ohio River Clearance Requirements

No problem, I'll look for it this week. I actually got that from the Coast Guard Website in the Bridge Clearance Guide section for the Ohio River from PA to IL (link below).

<https://www.uscg.mil/hq/cg5/cg551/Bridge.asp>

Please let me know if I can provide any other useful information.

Regards,

Lucy Marton
LS Power Development, LLC
400 Chesterfield Center, Suite 110
St. Louis, MO 63017
W: 636-534-3228
M: 314-607-1493

-----Original Message-----

From: Yeamans, Chad A LT [mailto:Chad.A.Yeamans@uscg.mil]
Sent: Monday, June 05, 2017 8:05 AM
To: Lucy Marton
Subject: RE: Ohio River Clearance Requirements

Hi Lucy,

Once again I apologize for the delay, there are only 3 of us to handle a waterways workload for 10 states. I should have you an answer this week though. I wanted to ask if it was the Army Corps that gave you the " 69 feet above the average June flow or 55 ft above the 2 pct flow line, whichever is greater." Is that where you got that? We are trying to confirm and should have some data from our end sometime this week.

v/r,

Chad

LT Chad Yeamans
USCG Sector Ohio Valley
Waterways Management
P: 502-779-5344
C: 502-715-1429

-----Original Message-----

From: Lucy Marton [mailto:LMarton@Lspower.com]
Sent: Monday, May 08, 2017 10:17 AM
To: Yeamans, Chad A LT
Subject: [Non-DoD Source] RE: Ohio River Clearance Requirements

Chad,

I wanted to check back in to see if there was any update on your research or if there is anything else I can provide about the project to assist.

Thank you,

Lucy Marton
LS Power Development, LLC
400 Chesterfield Center, Suite 110
St. Louis, MO 63017
W: 636-534-3228
M: 314-607-1493

-----Original Message-----

From: Yeamans, Chad A LT [mailto:Chad.A.Yeamans@uscg.mil]
Sent: Wednesday, March 29, 2017 8:58 AM
To: Lucy Marton
Subject: RE: Ohio River Clearance Requirements

Good Morning Lucy,

Sorry for the delay in getting back to you, this is actually a very difficult question to answer. The river is never at one particular level very long, and I don't know of any "standard" clearance requirements so this is a bit of a research project. I will get back to you as soon as possible.

Very respectfully,

Chad

LT Chad Yeamans
USCG Sector Ohio Valley
Waterways Management Chief
P: 502-779-5344
C: 502-715-1429

-----Original Message-----

From: Lucy Marton [mailto:LMarton@Lspower.com]
Sent: Tuesday, March 28, 2017 1:42 PM
To: Yeamans, Chad A LT
Subject: [Non-DoD Source] RE: Ohio River Clearance Requirements

LT. Yeamans,

I wanted to check in to see if you've had a chance to take a look at my questions below or if you could point me in the direction of someone who would be able to help.

I sent and inquiry a few weeks ago about the Ohio River clearance requirements as my company is in the process of developing a transmission line that will need to cross the River. I wanted to check in to see if you could confirm that the clearance requirements for fixed bridges over the Ohio River is 69 feet above the average June flow or 55 ft above the 2 pct flow line, whichever is greater. I also wanted to inquire about what source you typically use to determine the average June flow and 2 pct flow line.

We are still in the development process and through that process we have discovered we may also need to cross Crooked Creek which is considered a navigable water 7.7 miles from the Mouth of the Ohio River. I do not see it on your list of navigable waters with clearance requirements however the US Army Corps of Engineers asked us to still inquire with you for any clearance requirements you have for fixed bridges across the creek as their requirements are reflective of yours.

Thank you in advance for your assistance.

Lucy Marton

LS Power Development, LLC

400 Chesterfield Center, Suite 110

St. Louis, MO 63017

W: 636-534-3228

M: 314-607-1493

From: Lucy Marton

Sent: Monday, March 20, 2017 11:28 AM

To: 'Chad.A.Yeamans@uscg.mil'

Subject: RE: Ohio River Clearance Requirements

LT. Yeamans,

I wanted to check in to see if you've had a chance to take a look at my questions below or if you could point me in the direction of someone who would be able to help.

Thank you in advance for your assistance.

Lucy Marton

LS Power Development, LLC

400 Chesterfield Center, Suite 110

St. Louis, MO 63017

W: 636-534-3228

M: 314-607-1493

From: Lucy Marton

Sent: Tuesday, March 07, 2017 4:42 PM

To: 'Chad.A.Yeamans@uscg.mil'

Subject: RE: Ohio River Clearance Requirements

LT. Yeamans,

I sent an inquiry a few weeks ago about the Ohio River clearance requirements as my company is in the process of developing a transmission line that will need to cross the River. I wanted to check in to see if you could confirm that the clearance requirements for fixed bridges over the Ohio River is 69 feet above the average June flow or 55 ft above the 2 pct flow line, whichever is greater. I also wanted to inquire about what source you typically use to determine the average June flow and 2 pct flow line.

We are still in the development process and through that process we have discovered we may also need to cross Crooked Creek which is considered a navigable water 7.7 miles from the Mouth of the Ohio River. I do not see it on your list of navigable waters with clearance requirements however the US Army Corps of Engineers asked us to still inquire with you for any clearance requirements you have for fixed bridges across the creek as their requirements are reflective of yours.

Thank you in advance for your assistance.

Lucy Marton

LS Power Development, LLC

400 Chesterfield Center, Suite 110

St. Louis, MO 63017

W: 636-534-3228

M: 314-607-1493

From: Lucy Marton
Sent: Tuesday, February 21, 2017 1:52 PM
To: 'Chad.A.Yeamans@uscg.mil'
Subject: Ohio River Clearance Requirements

LT. Yeamans,

I was given your contact information by Mr. David Baldrige of the US Army Corps of Engineers. My company is in the process of developing a transmission line that will need to cross the Ohio River and will therefore need a Section 10 Permit from the Corps. Mr. Baldrige asked us to reach out to you to discuss fixed bridge clearance requirements for the Ohio River as transmission line clearance requirements for Section 10 permits are based upon your fixed bridge requirements.

The Clearance Guide on your website states that the clearance requirements for fixed bridges over the Ohio river is 69 feet above the average June flow or 55 ft above the 2 pct flow line, whichever is greater. I wanted to check to ensure that was still your requirement and inquire about what source you typically use to determine the average June flow and 2 pct flow line.

Thank you in advance for your assistance.

Lucy Marton

LS Power Development, LLC

400 Chesterfield Center, Suite 110

St. Louis, MO 63017

W: 636-534-3228

M: 314-607-1493

Attachment B:

Ohio River Clearance Requirement Calculations

Attachment B - Ohio River Clearance Requirement Calculations

Assumptions

Crossing Located a Mile 732.5
 CFR requirements - 30' above USCG Requirements
 USCG Ohio River requirements (whichever is greater):
 69' above average june flow
 55' above 2% flow line

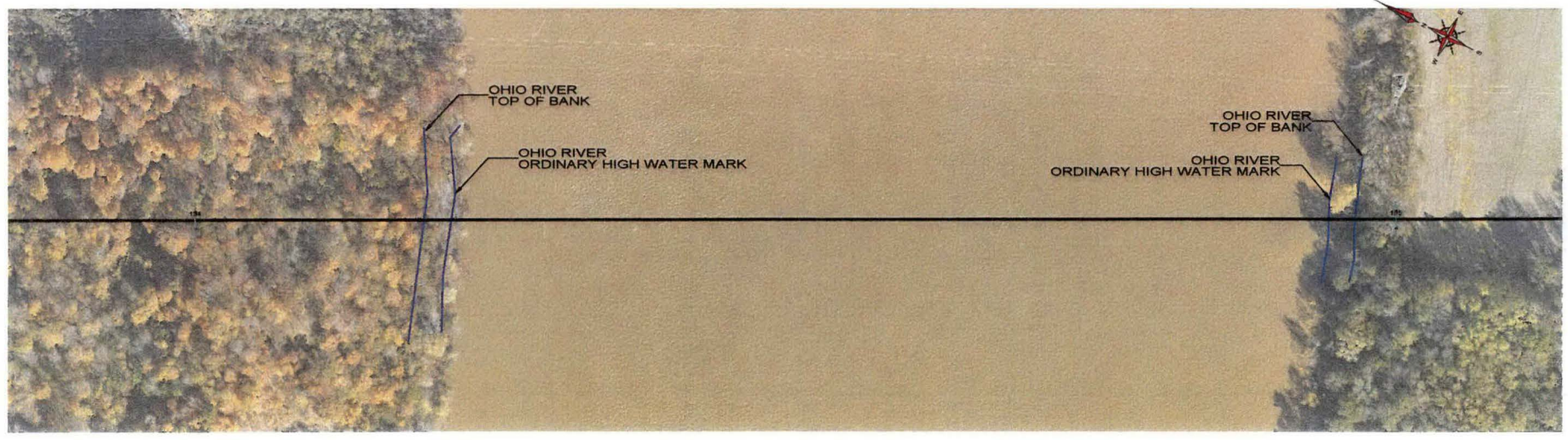
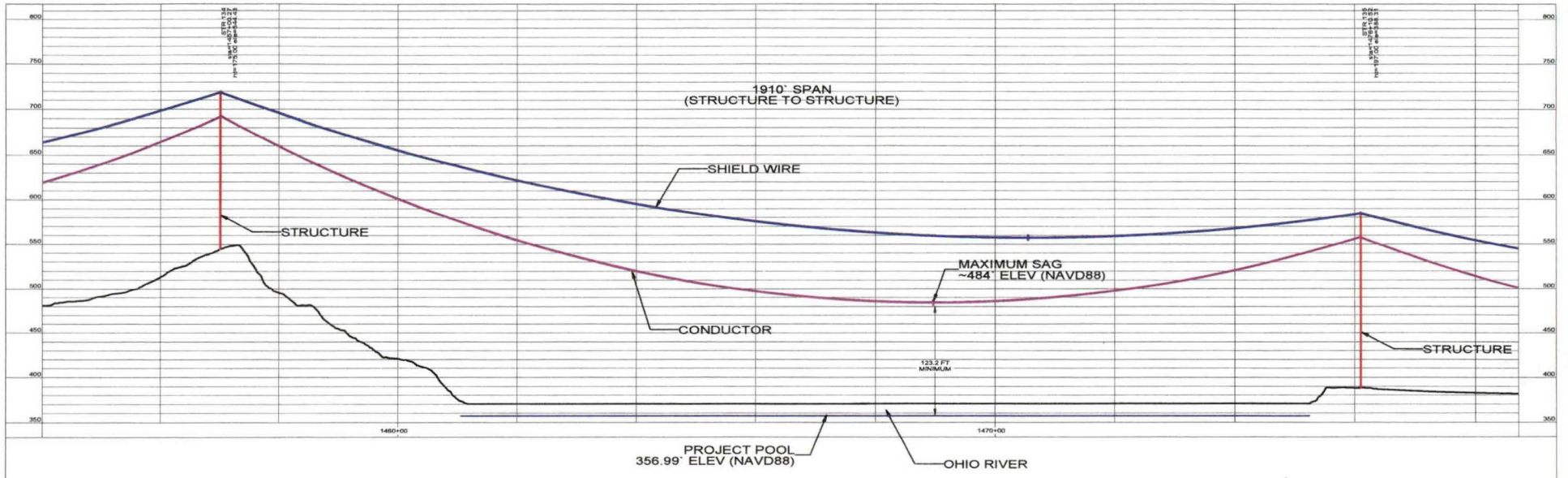
Duff to Coleman Crossing

Average June Flow (project pool) (NAVD88)	USCG Elevation Requirements	Clearance Requirement (above project pool)
356.99	425.99	99

2% flow line (2% annual chance flood) NAVD88	USCG Elevation Requirements	Clearance Requirement (Above 2% flow Line)	Clearance Requirement (above project pool)
395.2	450.2	85	123.21

Attachment C:

Plan & Profiles of Crossings



132 - 137, 04V, APL, OPJW, DND-11215, AC-3245/556, Ruling Span 1417 (ft), Tension 1897 (lbs) at 60 (deg F) Initial, Displayed 60 Deg F Creep FE
 132 - 137, 04V, APL, OPJW, DND-11215, AC-3245/556, Ruling Span 1418 (ft), Tension 1897 (lbs) at 60 (deg F) Initial, Displayed 60 Deg F Creep FE
 132 - 137, 3484V, 1500 0 kcmil 45/7 ACSS "Lapwing" ACSS/18285", Ruling Span 1418 (ft), Tension 8053 (lbs) at 60 (deg F) Initial, Displayed Maximum Operating (PROJECT) Max Sag FE

PRELIMINARY

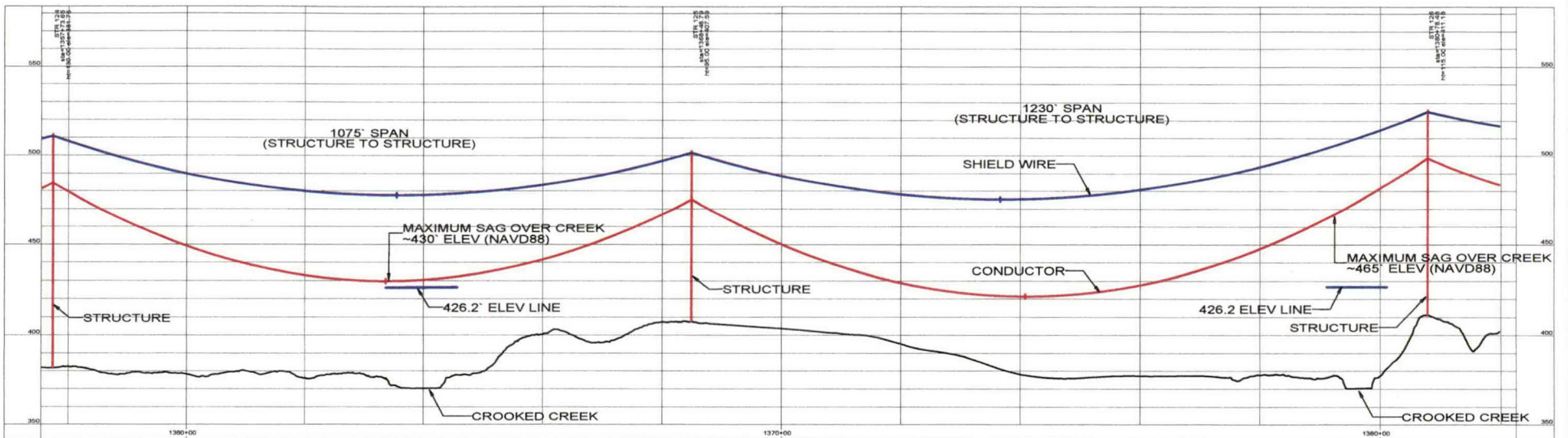
No.	Date	Revision	By	Chkd.	Engr.	Supv.



Drawn: A. SCOTT Date: 12/01/2017
 Chkd: J. ANDERSEN Design Engr: A. SCOTT
 75.0 H. Horiz. Scale
 80.0 V. Vert. Scale

MISO DUFF-COLEMAN
 345kV TRANSMISSION LINE
 PLAN & PROFILE

FIGURE 1: OHIO RIVER



120 - 126, 0kV, AFL OPGW DNO-11215, AC-3345/555, Rating Span 1177 (ft), Tension 1833 (lb) at 60 (deg F) Initial, Displayed 60 Deg F Creep FE
 120 - 126, 0kV, AFL OPGW DNO-11215, AC-3345/555, Rating Span 1176 (ft), Tension 1833 (lb) at 60 (deg F) Initial, Displayed 60 Deg F Creep FE
 120 - 126, 0kV, AFL OPGW DNO-11215, AC-3345/555, Rating Span 1176 (ft), Tension 1833 (lb) at 60 (deg F) Initial, Displayed Maximum Operating (PROJECT) Max Sag FE

PRELIMINARY

No.	Date	Revision	By	Chkd.	Engr.	Supv.

REPUBLIC TRANSMISSION

Drawn: A. SCOTT Date: 12/01/2017
 Chkd: J. ANDERSEN Design Engr: A. SCOTT

75.0 ft Horiz. Scale
 25.0 ft Vert. Scale

MISO DUFF-COLEMAN
 345KV TRANSMISSION LINE
 PLAN & PROFILE

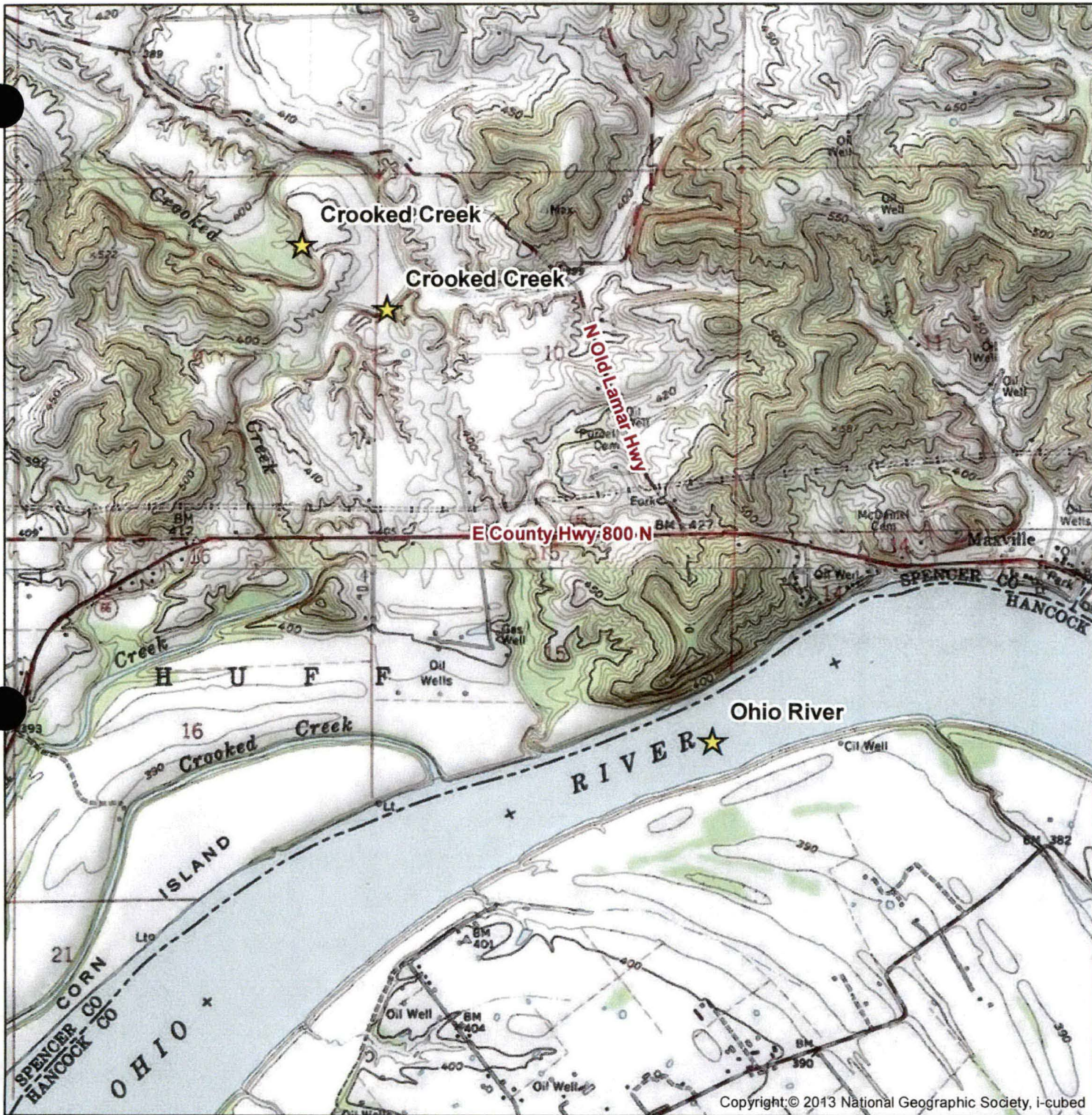
FIGURE 2: CROOKED CREEK

Appendix E: Figures

As detailed in the Instruction for Preparing a Department of the Army Permit Application, Republic has included a Vicinity Map, a Plan View, and a Cross Section Map.

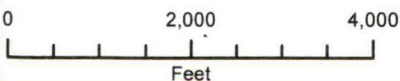
Attachment A:

Section 10 Crossing Vicinity Map



Legend

★ Crossing Locations



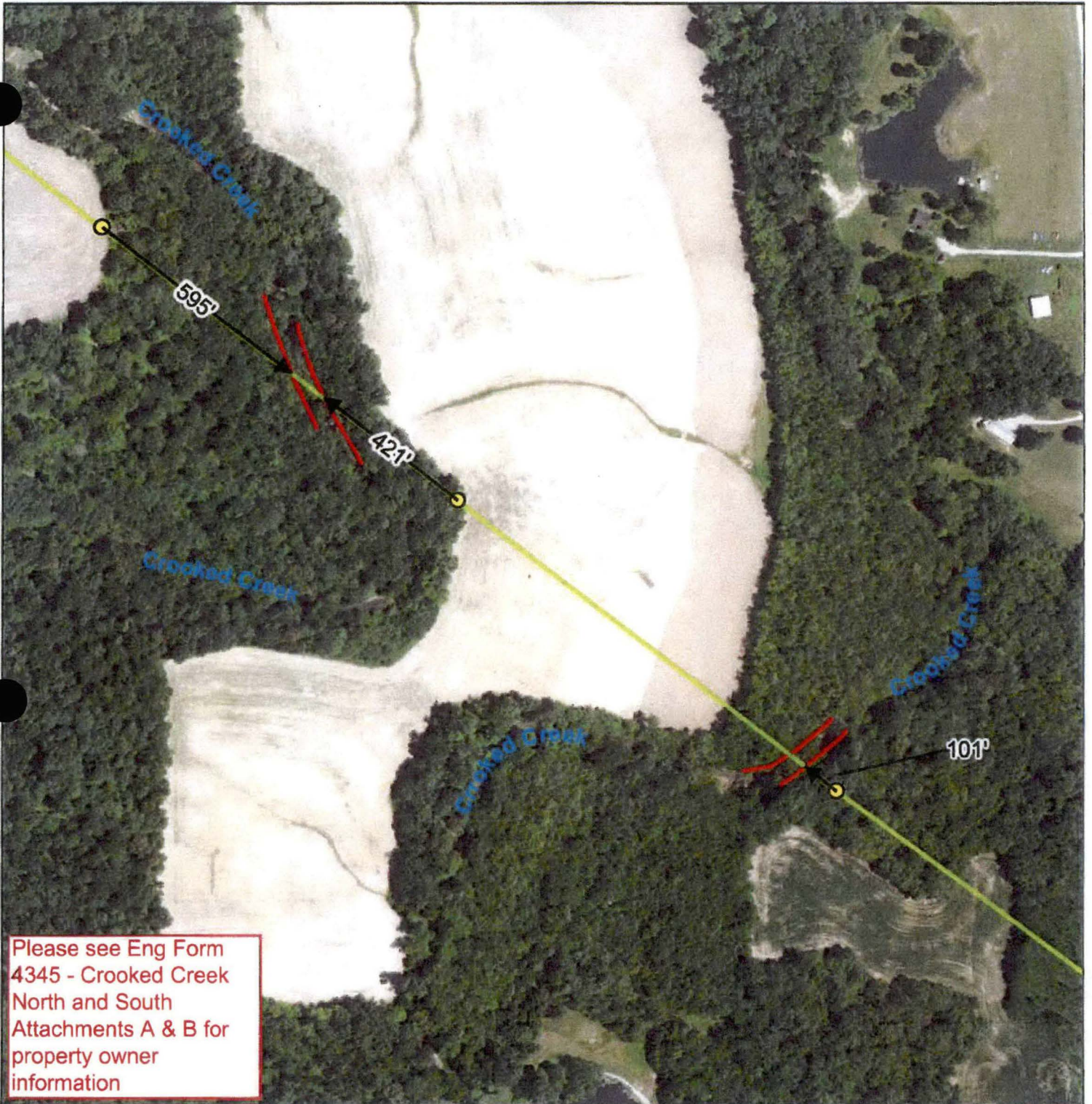
**Duff to Coleman 345kV Transmission Line
Section 10 Crossings**

Vicinity Map

Revised: 1/25/2018

Attachment B:

Section 10 Crossings Plan View Maps



Please see Eng Form 4345 - Crooked Creek North and South Attachments A & B for property owner information

Legend

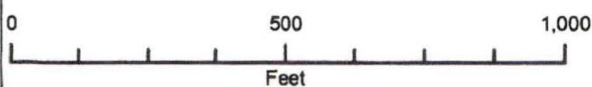
-  Duff to Coleman 345kV Preliminary Structure Locations
-  Duff to Coleman 345kV Transmission Line
-  Crooked Creek Top of Bank

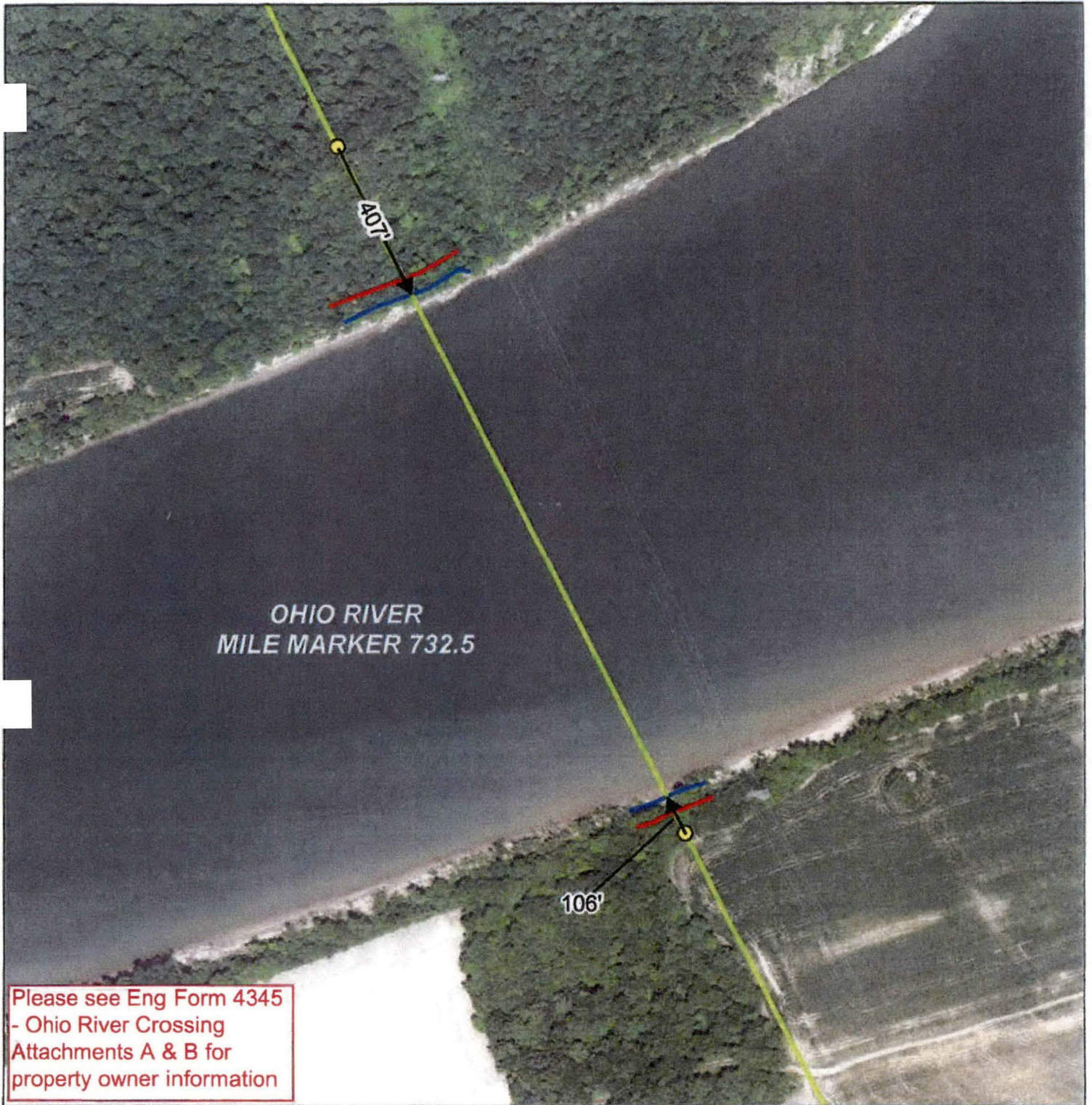


**Duff to Coleman 345kV Transmission Line
Crooked Creek Crossing**

Plan View Map

Revised: 1/25/2018





Legend

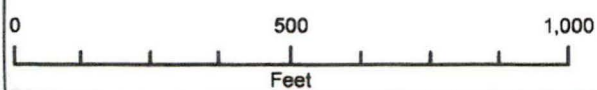
-  Duff to Coleman 345kV Preliminary Structure Locations
-  Duff to Coleman 345kV Transmission Line
-  Ordinary High Water Mark
-  Ohio River Top of Bank



**Duff to Coleman 345kV Transmission Line
Ohio River Crossing**

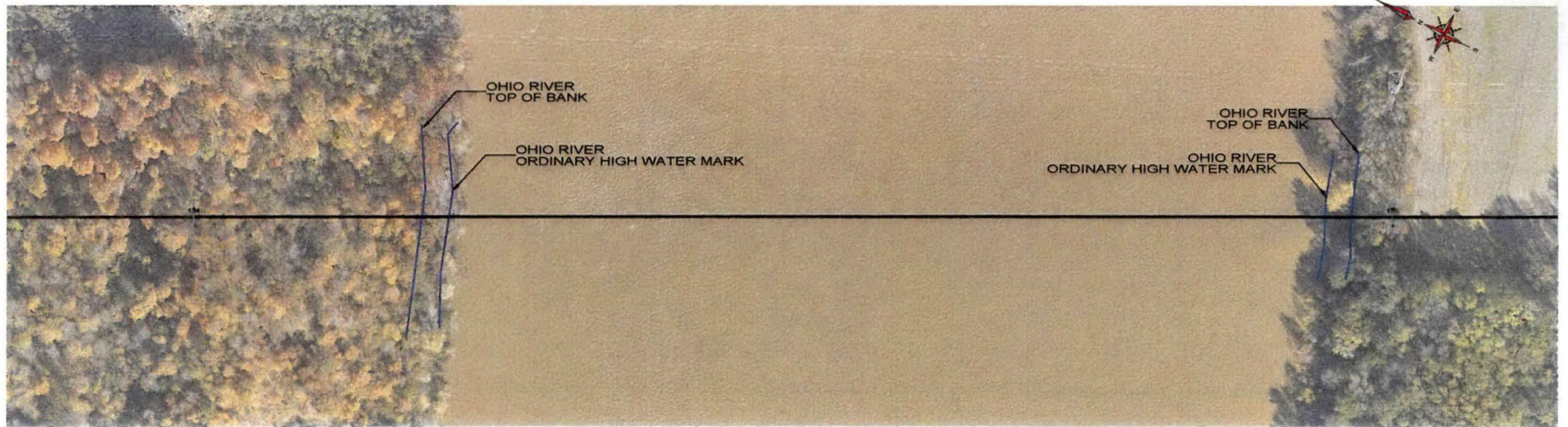
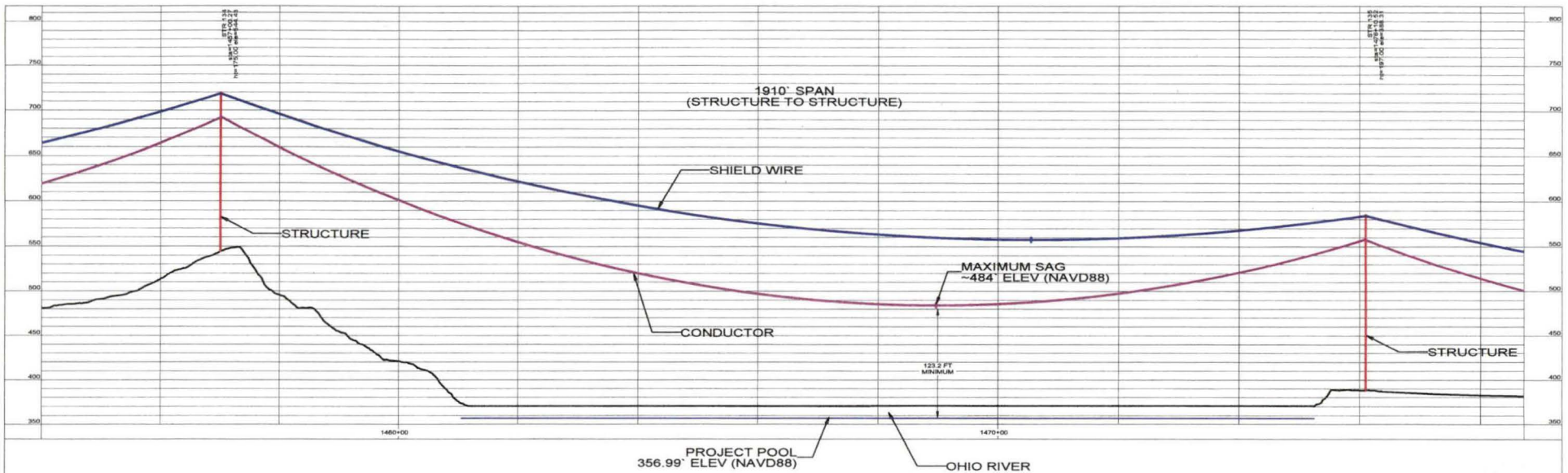
Plan View Map

Revised: 1/25/2018



Attachment C:

Section 10 Crossings Cross Section Maps



132 - 137, 0kV, AFL, OPGW, DNO-11216, AC-3245/056, Rating Span 1417 (ft), Tension 1987 (lbs) at 60 (deg F) Initial, Displayed 80 Deg F Creep FE
 132 - 137, 0kV, AFL, OPGW, DNO-11216, AC-3245/056, Rating Span 1416 (ft), Tension 1987 (lbs) at 80 (deg F) Initial, Displayed 80 Deg F Creep FE
 132 - 137, 345kV, 1000, 0 kV, 407 ACDS, 1, 400000/013381/02007, Rating Span 1419 (ft), Tension 8038 (lbs) at 80 (deg F) Initial, Displayed Maximum Operating (PROJECT) Max Sag FE

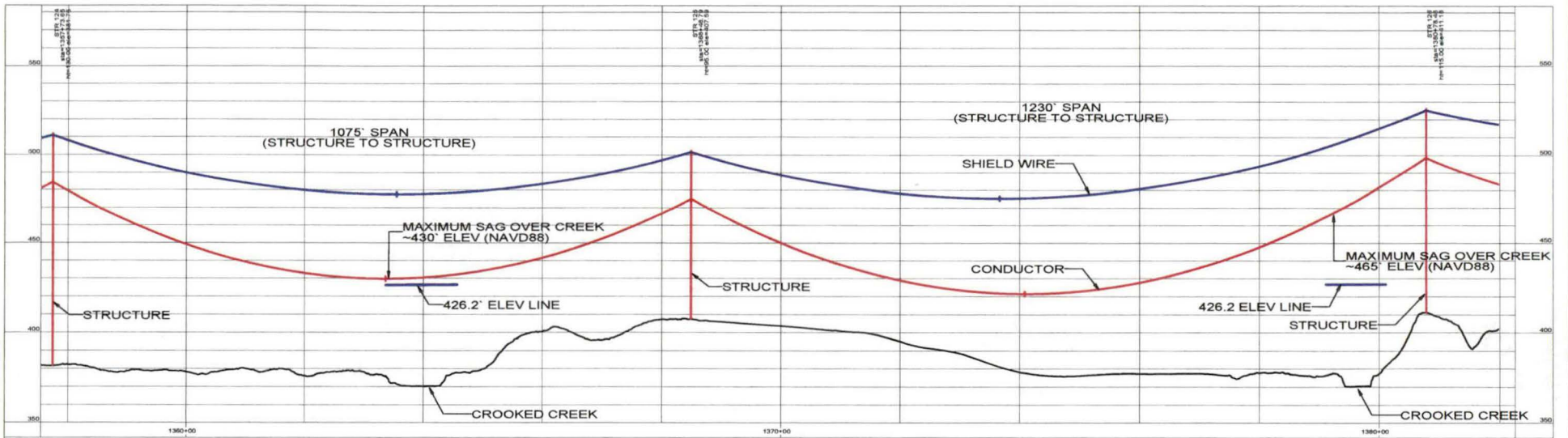
PRELIMINARY

No.	Date	Revision	By	Chkd.	Engr.	Supv.

Drawn: A. SCOTT Date: 12/01/2017 75.0 E.
 Chkd: J. ANDERSEN Design Engr: A. SCOTT 50.0 E.
 Horiz. Scale
 Vert. Scale

MISO DUFF-COLEMAN
 345kV TRANSMISSION LINE
 PLAN & PROFILE

FIGURE 1: OHIO RIVER



120 - 128, 0kV, AFL, OPOW, DRG-11215, AC-3246/556, Huling Span 1177 (R), Tension 1833 (lb) at 80 (deg P) Initial, Displayed 80 Deg P, Creep FE
 120 - 128, 0kV, AFL, OPOW, DRG-11215, AC-3246/556, Huling Span 1176 (R), Tension 1833 (lb) at 80 (deg P) Initial, Displayed 80 Deg P, Creep FE
 120 - 128, 0kV, AFL, OPOW, DRG-11215, AC-3246/556, Huling Span 1176 (R), Tension 1833 (lb) at 80 (deg P) Initial, Displayed Maximum Operating (PROJECT) Max Sag FE

PRELIMINARY

No.	Date	Revision	By	Chkd.	Engr.	Supv.

REPUBLIC
TRANSMISSION

Drawn: A. SCOTT Date: 12/01/2017
 Chkd: J. ANDERSEN Design Engr: A. SCOTT

35.0' Horiz. Scale
 25.0' Vert. Scale

MISO DUFF-COLEMAN
 345kV TRANSMISSION LINE
 PLAN & PROFILE

FIGURE 2: CROOKED CREEK

Big Rivers Electric Corporatio

Case No. 2018-00004

Permits Required to Construct Kentucky Portion of Transmission Line

Type of Permit/Approval/Notice	Statute Reference	Brief Description
Kentucky Pollution Discharge Elimination System (KPDES) Permit (construction)	401 KAR 5:055	Requires compliance with the general conditions set forth by the Kentucky Pollutant Discharge Elimination System (KPDES). A Storm Water Pollution Prevention Plan (SWPPP), and a Notice of Intent (NOI) filing are required.
Kentucky Department of Water Stream Construction in a Floodplain Permit	KRS 151 250	Requires a permit for the construction of any obstruction across or along any stream, or in the floodway of any stream.
Kentucky Transportation Cabinet, Department of Highways Encroachment Permit	KRS 177.106 (1)	Requires utilities that aerially cross state roads to obtain permission from the Kentucky Transportation Cabinet, Department of Highways, to ensure the utilities will not interfere with their Right-of-Way (ROW).
Federal Transportation Cabinet (FAA) No Hazard Determination Clearance	49 U.S.C.§ 44718 14 C.F.R. Part 77	Several Structures along the route will require approval from the FAA to determine that they will not interfere with air commerce.
Federal Transportation Cabinet (FAA) No Hazard Determination Clearance	49 U.S.C.§ 44718 14 C.F.R. Part 77	The temporary crane(s) used to construct some of the structures along the route will require approval from the FAA to determine that they will not interfere with air commerce.
Kentucky Transportation Cabinet, Airport Zoning Commission, Application for Permit to Construct or Alter a Structure	602 KAR 50:030	Any structure that requires approval from the FAA will also require approval from the Kentucky Transportation Cabinet, Airport Zoning Commission, to determine that they will not interfere with air commerce.
County driveway permits	County Policy / Ordinance	Application shall be made for driveway structures, piping, or any other drainage structures on county right-of-way

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**

**Response to Commission Staff's Initial Request for Information
dated April 27, 2018**

May 14, 2018

1 **Item 3)** *Refer to the Application, Exhibit A, page 4 of the Asset Purchase*
2 *Agreement ("APA"). "Existing ROW Price" is defined as \$175,000. Explain*
3 *whether this amount reflects the acquisition of the easements needed to*
4 *construct the proposed transmission line and provide whether this is an*
5 *estimated amount or an actual amount.*

6

7 **Response)** The "Existing ROW Price" of \$175,000 does not include the cost of the
8 easements needed to be acquired to construct the proposed transmission line. Rather,
9 it is an estimate of the value of the existing easements owned by Big Rivers, which
10 were formerly utilized by now retired 161 kV Transmission Line 7-D West (Coleman
11 to the Ohio River). This line was retired allowing the utilization of these easements
12 for the proposed 345 kV transmission line from Big Rivers Coleman EHV to Vectren
13 Duff.

14

15

16 **Witness)** Michael W. Chambliss

17

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**

**Response to Commission Staff's Initial Request for Information
dated April 27, 2018**

May 14, 2018

1 **Item 4)** *Refer to the APA, page 4. Explain whether the Joint Functional*
2 *Control Agreement has been executed. If so, provide a copy of the agreement.*

3

4 **Response)** Big Rivers has not executed the Joint Functional Control Agreement.

5

6

7 **Witness)** Michael W. Chambliss

8

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**

**Response to Commission Staff's Initial Request for Information
dated April 27, 2018**

May 14, 2018

1 **Item 5)** *Refer to the APA, page 7, Section 8.1. Provide a copy of the*
2 *Selected Developer Agreement referenced in this section.*

3

4 **Response)** Please find attached a copy of the Selected Developer Agreement. Also,
5 provided for convenience is a link to MISO's website where the Selected Developer
6 Agreement is located.

7

8 [https://cdn.misoenergy.org/MISO-Republic%20Transmission%20\(SDA\)%20DUFF-](https://cdn.misoenergy.org/MISO-Republic%20Transmission%20(SDA)%20DUFF-)
9 [COLEMAN%20EHV%20345kV%20SA3001%201st%20Rev%20Public%20Ver55718.](https://cdn.misoenergy.org/MISO-Republic%20Transmission%20(SDA)%20DUFF-COLEMAN%20EHV%20345kV%20SA3001%201st%20Rev%20Public%20Ver55718.pdf)
10 [pdf](https://cdn.misoenergy.org/MISO-Republic%20Transmission%20(SDA)%20DUFF-COLEMAN%20EHV%20345kV%20SA3001%201st%20Rev%20Public%20Ver55718.pdf)

11

12 **Witness)** Michael W. Chambliss

13

**PSC 1-5 – MISO – Republic Transmission
Selected Developer Agreement**

Project:

DUFF-COLEMAN EHV 345kV COMPETITIVE TRANSMISSION PROJECT

AMENDED AND RESTATED SELECTED DEVELOPER AGREEMENT

BY AND BETWEEN

REPUBLIC TRANSMISSION, LLC

AND

MIDCONTINENT INDEPENDENT SYSTEM OPERATOR, INC.

Amendment History

Effective Date	Document	Change Description
6/30/2017	Amended and Restated	Amendment reflects Selected Developer's change of domicile; no substantive term changes
2/27/2017	Original	Original effective agreement



AMENDED AND RESTATED SELECTED DEVELOPER AGREEMENT

BY AND BETWEEN

REPUBLIC TRANSMISSION, LLC

AND

MIDCONTINENT INDEPENDENT SYSTEM OPERATOR, INC.

**PROJECT: DUFF-COLEMAN EHV 345kV
COMPETITIVE TRANSMISSION PROJECT**

Dated: June 28, 2017



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APPENDICES

Appendix A – Project Details, Implementation Schedule, & Costs
Appendix B – Change Request Form
Appendix C – Change Order Form
Appendix D – Irrevocable Standby Letter of Credit Template
Appendix E – Cash Deposit Agreement
Appendix F – Interconnection Requirements and Standards
Appendix G – Project Construction Completion Notice



AMENDED AND RESTATED SELECTED DEVELOPER AGREEMENT

REPUBLIC TRANSMISSION, LLC

MIDCONTINENT INDEPENDENT SYSTEM OPERATOR, INC.

THIS AMENDED AND RESTATED SELECTED DEVELOPER AGREEMENT

("Agreement") is made between Republic Transmission, LLC, organized and existing under the laws of the State of Indiana ("Selected Developer"), and the Midcontinent Independent System Operator, Inc., a non-profit, non-stock corporation organized and existing under the laws of the State of Delaware ("Transmission Provider" or "MISO"). This Agreement supersedes and replaces the Selected Developer Agreement dated February 7, 2017. Selected Developer and Transmission Provider each may be referred to as a "Party" or collectively as the "Parties."

RECITALS

WHEREAS, Transmission Provider exercises functional control over the Transmission System; and

WHEREAS, Transmission Provider identified the Duff-Coleman EHV 345kV Competitive Transmission Project ("Project") from the list of projects approved by the Transmission Provider Board on December 10, 2015; and

WHEREAS, Transmission Provider developed and posted on its website a Request for Proposals for the Project (collectively with any amendments, the "RFP") inviting Qualified Transmission Developers to submit Proposals to construct, implement, own, operate, maintain,

repair, and restore all Competitive Transmission Facilities associated with the Project on January 8, 2016; and

WHEREAS, Selected Developer, in consideration of the posted RFP, submitted a Proposal to Transmission Provider on July 6, 2016 (collectively with any approved amendments, the "Proposal") to construct, implement, own, operate, maintain, repair, and restore all Competitive Transmission Facilities associated with the Project consisting of transmission facilities identified in Appendix A to this Agreement; and

WHEREAS, Transmission Provider evaluated submitted Proposals associated with the Project and pursuant to the Tariff in Section VIII.E of Attachment FF, and notified the Selected Developer on December 20, 2016 that it had been designated the Selected Developer for the Project; and

WHEREAS, Selected Developer accepted the Transmission Provider's Selected Developer designation for the Project and therefore has the obligation to construct, implement, own, operate, maintain, repair, and restore all Competitive Transmission Facilities associated with the Project pursuant to the Tariff and this Agreement; and

WHEREAS, if applicable, Selected Developer will seek to interconnect the Project to the Transmission System or other transmission facilities, as applicable, from the Interconnecting Transmission Owner(s) and any other entity in accordance with the requirements provided in this Agreement; and

WHEREAS, the Selected Developer will enter into the ISO Agreement to become a Transmission Owner or ITC, if it is not already a Transmission Owner or ITC, effective upon energization of the Project, and will turn functional control of all Competitive Transmission Facilities associated with the Project over to the Transmission Provider; and

WHEREAS, the Parties recognize that the Selected Developer has certain rights and obligations related to the Project that arise prior to the date upon which: (1) the Selected Developer will transfer functional control of the Project to the Transmission Provider; and (2) the Selected Developer executes the ISO Agreement and becomes effective as a Transmission Owner, if Selected Developer is not currently a signatory to the ISO Agreement; and

WHEREAS, the Selected Developer, with the consent of the Transmission Provider, has changed its corporate domicile from Delaware to Indiana and represents that this change does not diminish or render unenforceable any of the qualifications, rights, obligations, or representations of any Party under this Agreement, all of which remain unchanged; and

WHEREAS, this Agreement, originally executed on February 7, 2017, now is amended to: (1) replace the word “Delaware” with “Indiana” in all places where the Selected Developer’s state of organization is referenced in this Agreement; and (2) deem any identification of the Selected Developer by its prior state of organization to the extent not replaced in any Agreement Document or other document associated with the Project to refer to the Selected Developer’s current state of organization from the date of this amendment.

NOW, THEREFORE, in consideration of and subject to the mutual covenants contained herein, it is agreed:

ARTICLE 1. DEFINITIONS

When used in this Agreement, a term with initial capitalization shall have the meaning set forth in this Article 1 (“*Definitions*”) or the meaning set forth in the Article in which it is used. Any capitalized term not defined in this Agreement, shall have the meaning set forth in Module A of the Tariff (“*Common Provisions*”).

Acknowledgment of Support shall mean a document that the Transmission Provider provides to RFP Respondents for submission with Proposals, which: (1) is executed by an Affiliate of an RFP Respondent; (2) lists specific personnel, material, technical, financial, and/or other support that the Affiliate commits to provide to the RFP Respondent if that RFP Respondent’s Proposal is selected for a Competitive Transmission Project; and (3) authorizes the RFP Respondent to represent to the Transmission provider during proposal submission and evaluation that such RFP respondent will have access to the specified support if selected as the Selected Developer.

Additional Insured shall mean the Transmission Provider and the Transmission Provider’s respective directors, officers, agents, servants and employees.

Agreement shall mean this Selected Developer Agreement together with the Agreement Documents.

Agreement Documents shall mean the documents, including any attachments, appendices, exhibits, schedules, or amendments, incorporated into this Agreement.

Applicable Reliability Standards shall mean the reliability standards approved by the Federal Energy Regulatory Commission under Section 215 of the Federal Power Act.

Breach shall mean the failure of a Party to perform or observe any material term or condition of this Agreement.

Breaching Party shall mean a Party that is in Breach of this Agreement.

Cash Deposit Agreement shall mean a document in a form substantially as set forth in Appendix E of this Agreement.

Change Order shall mean the Transmission Provider’s written authorization to the Selected Developer to make changes in the Work or to provide extra Work pursuant to Article 6.4.

Change Request Form shall mean the document provided in Appendix B of this Agreement that the Selected Developer must use to detail and submit a change request to the Transmission Provider.

Default shall mean the failure of a Breaching Party to cure its Breach in accordance with Article Article 12 (“*Default*”) of this Agreement.

Disputing Party shall have the meaning provided in Article Article 21 (“*Disputes*”) of this Agreement.

Effective Date shall have the meaning specified in Article 2.1 (“*Effective Date*”) of this Agreement.

Federal Power Act shall mean the Federal Power Act, as amended, 16 U.S.C. §§ 791a et seq.

Force Majeure Event(s) shall have the meaning set forth in Article 11.1 (“add title”) of this Agreement.

Indemnified Party shall have the meaning provided in Article Article 21 (“*Disputes*”) of this Agreement.

Indemnifying Party shall have the meaning provided in Article Article 21 (“*Disputes*”) of this Agreement.

Interconnecting Transmission Owner shall mean any Transmission Owner or ITC, other than the Selected Developer, that owns or is building transmission facilities to which the Project will interconnect as part of the Transmission Provider’s Transmission System.

Interconnection Standards shall mean the transmission facility interconnection standards and requirements established from time to time by the Interconnecting Transmission Owner(s). Standards in effect as of the date this Agreement is executed are listed in Appendix F of this Agreement.

Irrevocable Standby Letter of Credit shall mean a letter of credit naming Transmission Provider as beneficiary in a form substantially as set forth in Appendix D of this Agreement.

Local Furnishing Bonds shall mean the local furnishing of electric energy with tax-exempt bonds, as described in Section 142(f) of the Internal Revenue Code.

Loss shall mean any and all damages, losses, and claims, including claims and actions relating to injury to or death of any person or damage to property, demand, suits, recoveries, costs and expenses, court costs, attorney fees, and all other obligations by or to third parties, but shall not include loss of profits.

Notice of Dispute shall have the meaning provided in Article Article 21 (“*Disputes*”) of this Agreement.

Other Party Group shall have the meaning provided in Article 13.3.1.5 (“*Additional Insured*”) of this Agreement.

Party or Parties shall mean the Transmission Provider, the Selected Developer, or the applicable combination of the above.

Planning Authority for the Project, as defined by NERC, shall mean the Transmission Provider from the time that the Project is identified in the Transmission Provider’s MISO Transmission Expansion Plan (the “MTEP”) and the MTEP is approved by the Transmission Provider Board, regardless of the status of Project construction or energization. As such, the Selected Developer shall be subject to the rights and obligations set forth in the Tariff that are applicable to Transmission Owners or ITCs as they pertain to the Project.

Project shall mean the Duff-Coleman EHV 345kV Competitive Transmission Project included as part of the MTEP approved by the Transmission Provider Board on December 10, 2015 including the details, specifications, timelines, details, drawings and representations contained in the RFP and accepted Proposal.

Project Confidential Information shall have the meaning set forth in Article 16 (“*Project Confidential Information*”) of this Agreement.

RFP shall mean the RFP posted on the Transmission Provider’s website on January 8, 2016 associated with the Project inviting Qualified Transmission Developers to submit Proposals to construct, implement, own, operate, maintain, repair, and restore the Project.

Proposal shall mean the Proposal submitted to the Transmission Provider on July 6, 2016, including any subsequently submitted and approved amendments or modifications, by the Selected Developer in consideration of the posted RFP to construct, implement, own, operate, maintain, repair, and restore the Project.

Work shall mean the performance of the Selected Developer’s obligations relating to the development, construction, maintenance, operation and repair of the Project in accordance with the Tariff and this Agreement, including the specifications, timelines, details, drawings and representations contained in the RFP and Proposal.

Written Notice shall mean a document meeting the requirements of Article 20 (“*Notices*”). All notices required to be in writing shall contain: (1) a statement that the document is a “*Notice*” pursuant to this Agreement; (2) a concise description of the fact(s) or circumstance(s) that are the subject matter of the Written Notice and what action the Party sending the Written Notice seeks performed; (3) if the Written Notice is tendered pursuant to a specific Article or requirement of this Agreement, an identification of that Article or requirement; (4) the name and contact information of a specific person that the Party receiving the Notice may contact for additional

information, and (5) any other information required to be included in such Written Notice under the provisions of this Agreement.

ARTICLE 2. EFFECTIVE DATE, TERM, AND TERMINATION

2.1. Effective Date

This Agreement shall become effective (the “Effective Date”) on such date as this Agreement is executed by the Parties and the Selected Developer has fulfilled the requirements of *Article 3 (“Financial Security”)* of this Agreement, subject to acceptance by FERC (if applicable). The Selected Developer shall submit its signed copy of this Agreement to the Transmission Provider no later than sixty (60) Calendar Days of the date in which Transmission Provider notified Selected Developer that its Proposal has been selected. The Selected Developer and Transmission Provider may execute this Agreement prior to the Selected Developer satisfying the requirements of Article 3 and the Agreement shall become provisionally effective for a period of up to thirty (30) Calendar Days thereafter. In such event, the Selected Developer shall have up to thirty (30) Calendar Days from the date that this Agreement was executed to satisfy the requirements of Article 3. If the Selected Developer has not satisfied the requirements of Article 3 within thirty (30) Calendar Days from the date of execution, then this Agreement shall terminate and be treated as the Agreement having not become effective. The Transmission Provider shall promptly file this Agreement with FERC upon execution in accordance with Article 4.1 (“*Filing*”) of this Agreement, if required.

2.2. Term of Agreement

This Agreement shall remain in effect as of the Effective Date, until it is terminated consistent with Article 2.3 (“*Agreement Termination*”) of this Agreement (the “Term”).

2.3. Agreement Termination

This Agreement shall terminate at the earlier of the following:

2.3.1. Project Completion

Except for the obligations set forth in Article 2.5 (“*Survival*”) of this Agreement, this Agreement shall terminate when functional control of the Project is turned over to the Transmission Provider and all other obligations of this Agreement have been satisfied.

2.3.2 Default

Subject to the Provisions of Article IX of Attachment FF of the Tariff, a Party may terminate this Agreement in accordance with Article Article 12 (“*Default*”) of this Agreement by sending a Written Notice.

2.3.3 Project Cancellation

In the event that pursuant to Section IX.E.4 of Attachment FF of the Tariff (“*Project Cancellation*”), the Transmission Provider elects to cancel the Project, the Transmission Provider will terminate this Agreement by providing Written Notice to the Selected Developer, which shall become effective upon receipt of such Written Notice, subject to the provisions of Article 2.5 (“*Survival*”) of this Agreement, unless FERC establishes another date for the termination.

2.3.4 Reassignment

In the event that, pursuant to Section IX.E.3 of Attachment FF of the Tariff (“*Reassignment*”), the Transmission Provider elects to reassign the Project to another entity, the Transmission Provider will terminate this Agreement, by providing Written Notice of termination to the Selected Developer, which shall become effective upon receipt of such Written Notice of termination, subject to the provisions of Article 2.5 (“*Survival*”) of this Agreement, or upon such other such date that FERC may establish for the reassignment.

2.3.5 Compliance with Applicable Laws and Regulations and FERC Acceptance

Notwithstanding Articles 2.3.1 (“*Project Completion*”), Article 12 (“*Default*”), 2.3.3 (“*Project Cancellation*”), and 2.3.4 (“**Reassignment**”) of this Agreement, no termination shall become effective until the Parties have complied with all Applicable Laws and Regulations applicable to such termination and, if applicable, FERC has accepted the Written Notice.

2.4. Termination Responsibilities

In the event a Party terminates this Agreement, the Parties shall use commercially Reasonable Efforts to mitigate the costs, damages, charges, and expenses arising as a consequence of the termination. Upon receipt of a termination notice, Selected Developer shall, unless otherwise agreed between the Parties or ordered by FERC, perform the following:

- A. With respect to any portion of the Project that has not yet been constructed or installed, the Selected Developer shall:

1. Within fifteen (15) Business Days after receiving Written Notice of termination, tender to the Transmission Provider a summary of all pending contracts, orders, procurements or other written agreements (collectively "Pending Contracts") relating to the unfinished or uninstalled portions of the Project. For each Pending Contract so identified, the Selected Developer shall provide a narrative description of the goods or services to be provided, the amount of money to be paid and any amounts already paid by the Selected Developer pursuant to the Pending Contract, the timing of such payments, the timing of when goods or services are to be delivered pursuant to the Pending Contract, and such other information as the Selected Developer deems useful or relevant. In the event that the Project is to be reassigned pursuant to the Variance Analysis provisions of the Tariff, the Selected Developer shall cooperate in good faith with the entity to which the Project is to be assigned and with any applicable third parties to facilitate the transfer of the Project, including the transfer of any contracts relating to the Project that the incoming developer desires to procure.
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- B. If a Selected Developer terminates this Agreement or the Agreement is terminated by the Transmission Provider due to a Default by the Selected Developer, the Selected Developer shall be responsible for all costs incurred as a result thereof, including any cancellation or reassignment costs incurred by the Transmission Provider. In the event that the Transmission Provider terminates this Agreement other than due to a Default by the Selected Developer, the Transmission Provider shall bear its own costs incurred as a result thereof and recover the same in accordance with the Tariff.
 - C. With respect to any portion of the Project already installed or constructed pursuant to the terms of this Agreement, Selected Developer shall be responsible for, and bear all costs associated with, storing and/or returning, preserving, maintaining, and rendering safe and reliable, all materials, equipment, or facilities associated with the Project pending further disposition of the same pursuant to Section IX of Attachment FF of the Tariff.
 - D. Keep the Transmission Provider fully informed about all actions taken or intended to be taken as a result of the termination. Within ten (10) Business Days of the Written Notice, the Selected Developer shall submit an itemized list of all actions taken or intended to be taken. Such list shall be updated both at regular intervals and upon request.

2.5. Survival

The rights and obligations of the Parties in this Agreement shall survive the termination, expiration, or cancellation of this Agreement to the extent necessary to provide for the determination and enforcement of said obligations arising from acts or events that occurred while this Agreement was in effect. The liability and indemnity provisions in Article 13 also shall survive termination, expiration, or cancellation of this Agreement until such time as the Selected Developer has executed the MISO ISO Agreement and included the Competitive Transmission Facilities in Appendix H of the ISO Agreement. In the event this Agreement is terminated by reassignment prior to the Selected Developer executing the ISO Agreement, the obligation of the Selected Developer to fulfill the functions of a Transmission Owner pursuant to Articles 6.5 (“*Generator Interconnection Study Process*”) and 6.6 (“*Transmission Service Request Process*”) shall survive until reassignment is completed.

ARTICLE 3. FINANCIAL SECURITY

The Selected Developer shall submit financial security to the Transmission Provider in the amount of \$1,615,452.51 (U.S. dollars), which shall be three percent (3%) of the Project cost provided by the Selected Developer in their Proposal as specified in Appendix A of this Agreement. In accordance with Article 2.1 of this Agreement, the Selected Developer can submit the financial security concurrently with the submission of its signed copy of this Agreement or within thirty (30) Calendar Days of its execution of this agreement if needed to secure the funds to do so. Security for the Selected Developer’s performance in accordance with this Agreement shall be in the form of: (a) an Irrevocable Standby Letter of Credit in a form substantially as set forth in Appendix D to this Agreement; or (b) a refundable Cash Deposit accompanied by a Cash Deposit Agreement in a form substantially as set forth in Appendix E to this Agreement.

3.1. Irrevocable Standby Letter of Credit

If an Irrevocable Standby Letter of Credit is provided as financial security, the Irrevocable Standby Letter of Credit shall be drawn on a commercial bank or trust organized under the laws of the United States, or a political subdivision thereof, with: (i) a Credit Rating of at least (a) “A-” by S&P or (b) “A3” by Moody’s or (c) “A-” by Fitch or (d) an equivalent short-term debt rating by any of these agencies at the time of issuance and at all times the Irrevocable Standby Letter of Credit is outstanding.

The Selected Developer shall maintain the Irrevocable Standby Letter of Credit in full force and effect for the term of this Agreement as specified in Article 2.2 (“*Term of Agreement*”) of this Agreement and for an additional period of sixty (60) Calendar Days following the date of termination of this Agreement to secure the performance of any surviving obligations in

accordance with Article 2.5 (“*Survival*”) of this Agreement. If the Irrevocable Standby Letter of Credit provides for a shorter term, the Selected Developer shall renew or replace the Irrevocable Standby Letter of Credit as needed to maintain it in continual effect for the period required herein.

3.2. Cash Deposit

If a Cash Deposit is provided as financial security, Selected Developer shall also execute a Cash Deposit Agreement with the Transmission Provider. Cash Deposit shall be wired to a segregated account designated by Transmission Provider in a Written Notice to Selected Developer. The Transmission Provider shall hold the Cash Deposit for the term of this Agreement as specified in Article 2.2 (“*Term of Agreement*”) and for an additional period of sixty (60) Calendar Days following the date of termination of this Agreement to secure the performance of any surviving obligations in accordance with Article 2.5 (“*Survival*”) of this Agreement. Upon return of a Cash Deposit, the Transmission Provider shall pay to the Selected Developer the total Cash Deposit minus any funds drawn pursuant to Article 3.3 (“*Right to Draw on Financial Security*”) plus interest at the Transmission Provider’s overnight bank rate from and including the date of deposit to, but excluding, the date such funds are returned to the Selected Developer.

3.3. Right to Draw on Financial Security

Transmission Provider shall have the right to draw on the Irrevocable Standby Letter of Credit or the Cash Deposit Agreement if the Transmission Provider invokes Variance Analysis based on a Default under this Agreement:

3.4. Distribution of Financial Security

In the event that the Transmission Provider draws upon the Irrevocable Standby Letter of Credit or the Cash Deposit Agreement in accordance with Article 3.3 (“*Right to Draw on Financial Security*”) of this Agreement, Transmission Provider shall utilize such funds to offset any costs reasonably incurred by the Transmission Provider in reevaluating the Project and/or Selected Developer, transitioning the Project to a new Selected Developer/Transmission Owner, and or otherwise distribute such funds as determined by FERC. Such costs may include reasonable consultant fees, attorneys’ fees, costs of litigation/regulatory proceedings, and staffing costs directly attributable to taking actions under the Variance Analysis provisions of the Tariff. The Transmission Provider shall provide the Selected Developer with a detailed and itemized description of how any Project Financial Security has been used within thirty (30) days after submitting a filing to terminate this Agreement. In the event that the Transmission Provider, in accordance with the Variance Analysis procedure set forth in Attachment FF, Section IX, elects to address Default through a decision to take no action or through requiring a mitigation plan without terminating the Agreement, the Transmission Provider shall provide a detailed and itemized description of how Project Financial Security has been used within 30 days after the

Transmission provider and Selected Developer complete implementation of the mitigation plan or the Transmission Provider determines to take no action.

3.5. Maintenance of Acknowledgement of Support

In the event that the Transmission Provider reasonably determines at any time that an entity that has provided an Acknowledgement of Support for a Selected Developer no longer is capable of providing the support described therein, (due to insolvency, transfer of assets, repudiation of commitments, or any other such reason that would cause the Transmission Provider to question the viability of commitment), the Transmission Provider shall have the right to require the Selected Developer to promptly: (1) obtain a substitute Acknowledgement of Support for the described items or (2) explain to the reasonable satisfaction of the Transmission Provider why: (a) such substitute Acknowledgement of Support should not be required, or (b) that some alternate arrangement would prove equally or more effective in ensuring that the Selected Developer continues to meet its obligations. Failure to provide a substitute Acknowledgement of Support, explanation acceptable to the Transmission Provider, or alternate arrangement acceptable to the Transmission Provider, shall be a Breach of this Agreement and, if uncured, grounds for conducting a Variance Analysis pursuant to Section IX of Attachment FF of the Tariff.

ARTICLE 4. REGULATORY FILINGS AND TARIFF COMPLIANCE

4.1. Filing

The Transmission Provider shall file this Agreement (and any amendment hereto) with FERC and if required, any other appropriate Governmental Authority. The Selected Developer may request that any information included in such filing be subject to the confidentiality provisions of Article Article 16 ("*Project Confidential Information*"). If the Selected Developer has executed this Agreement, or any amendment thereto, the Selected Developer shall reasonably cooperate with the Transmission Provider with respect to such filing and provide any information reasonably requested by the Transmission Provider needed to comply with applicable regulatory requirements.

4.2. Selected Developer subject to Tariff

The Selected Developer shall comply with all applicable provisions of the Tariff.

4.3. Relationship between this Agreement and the Tariff

If and to the extent a provision of this Agreement is inconsistent with the Tariff and dictates rights and obligations between the Transmission Provider and the Selected Developer, the Tariff shall govern.

4.4. Transmission-To-Transmission Interconnection Agreements

Unless the Project connects solely to the facilities of the Selected Developer, the Selected Developer shall: (1) execute a Transmission-to-Transmission Interconnection Agreement with each Interconnecting Transmission Owner(s); and (2) complete all requirements and execute all agreements or contracts required by each non-MISO entity to whose facilities the Project will interconnect.

The Selected Developer and Interconnecting Transmission Owner(s) shall take commercially reasonable efforts to finalize and execute the required Transmission-to-Transmission Interconnection at least one hundred and twenty (120) Calendar Days before the scheduled In Service Date of the Project. Any delays in the execution of a Transmission-To-Transmission Interconnection Agreements will not automatically be construed against the Selected Developer in consideration of the Variance Analysis pursuant to Article 10 ("*Variance Analysis*") of this Agreement.

If requested, the Transmission Provider shall facilitate the coordination between the Selected Developer and the Interconnecting Transmission Owner(s) and any other non-MISO entities to whose facilities the Project will interconnect.

All necessary Transmission-to-Transmission Interconnection Agreements associated with the Project shall be executed by an authorized officer or duly authorized official of the Selected Developer, Interconnecting Transmission Owner(s), and Transmission Provider with the authority to bind their respective organizations, or filed unexecuted with FERC, prior to the energization of any Competitive Transmission Facilities defined in the Project.

4.5. ISO Agreement and Requirement to Become a Transmission Owner

The Selected Developer agrees that the Project shall be placed under the functional control of the Transmission Provider upon completion and placement of the Project in service to the Transmission System.

To the extent the Selected Developer is not already a Transmission Owner or ITC, the Selected Developer further agrees that it shall execute the ISO Agreement in sufficient time for its execution to become effective as of the date of energization of the Project and that it has met or shall meet all other Tariff requirements to become a Transmission Owner or ITC and an Owner in accordance with Article Two, Section V of the ISO Agreement. If the Selected Developer is already a Transmission Owner or ITC, it shall add the Project to the list of facilities transferred to the list of facilities comprising the Transmission Provider's Transmission System pursuant to Appendix H to the ISO Agreement.

4.6. Commitment to Operate within a Local Balancing Authority

Selected Developer shall operate all Competitive Transmission Facilities associated with the Project within the boundaries of a Local Balancing Authority (“LBA”) and shall certify to the Transmission Provider that it has done so prior to the in-service date for the Competitive Transmission Facility.

4.7. NERC Registration & Reliability Standards

Selected Developer agrees to (1) register with NERC, or any successor entity serving as the Electric Reliability Organization (ERO) in accordance with NERC’s registration requirements, (2) comply with all applicable NERC and regional entity reliability standards, and (3) perform the reliability functions of a NERC transmission owner (TO), transmission operator (TOP), and transmission planner (TP) in accordance with NERC’s registration guidelines, for all Competitive Transmission Facilities associated with the Project. Prior to the In Service Date for the Competitive Transmission Facility, the Selected Developer shall certify to the Transmission Provider that it has complied with all such standards that are applicable to the Selected Developer prior to the In Service Date for the Competitive Transmission Facility.

4.8. Interconnection and Reliability Criteria, Requirements, or Standards

The Selected Developer shall comply with the interconnection requirements and/or standards regarding the interconnection of transmission facilities of each and every entity to whose facilities the Project will interconnect. This includes, but is not limited to, those standards and requirements required for compliance with applicable NERC Facilities Design, Connections, and Maintenance (“FAC”) reliability standards published by each Transmission Owner or ITC, as such requirements and standards exist from time to time. The Selected Developer shall also comply with the FERC Form 715 Part 4, Transmission Planning Reliability Criteria (“TPRC”) as filed with FERC by each Interconnecting Transmission Owner.

The interconnection requirements and/or standards applicable to the Selected Developer that are in effect as of the Effective Date of this Agreement shall be included or referenced in Appendix F of this Agreement.

ARTICLE 5. SCOPE OF SERVICE**5.1. Commencement of Project Construction and associated Competitive Transmission Facilities**

The Selected Developer shall commence construction of the Project as soon as practicable after the Effective Date of this Agreement.

5.2. Exclusive Responsibility of Selected Developer

The Selected Developer shall be solely responsible for all planning, design, engineering, procurement, construction, installation, management, operations, safety, and compliance with Applicable Laws and Regulations associated with the Project, including but not limited to obtaining all necessary permits, siting, and other regulatory approvals.

The Selected Developer shall perform its obligations of this Agreement in accordance with the terms of this Agreement, including the accepted Proposal and other Agreement Documents; Applicable Laws and Regulations; Applicable NERC Reliability Standards; transmission facility interconnection standards and requirements, established and provided by the Transmission Owner(s) or ITC(s) in Appendix F to this Agreement to which the Project's Competitive Transmission Facilities will interconnect; the requirement(s) or qualification criteria(s) specific to the state(s) where the Competitive Transmission Facilities are to be located in provided in Appendix G of this Agreement; the Tariff; the ISO Agreement; applicable MISO Business Practice Manuals; and Good Utility Practice.

All modifications to the Project must be approved by the Transmission Provider in accordance with Article 6.4 ("*Modification*") of this Agreement. Unless otherwise agreed to by the Parties, the Selected Developer shall develop and construct the Project in accordance with the specifications and implementation schedule set forth in the Proposal as accepted by the Transmission Provider, and such dates shall be set forth in Appendix A of this Agreement.

Except as provided in Article 5.4 ("*Transmission Provider Support*") of this Agreement, the Transmission Provider shall have no responsibility or right to manage, supervise, or direct the day-to-day operations of the Selected Developer, or to dictate the specific manner of the Selected Developer's compliance with the requirements of this Article. The Selected Developer shall report all violations of Applicable Laws and Regulations and safety standards to the Transmission Provider promptly upon reporting such violation to, or receiving notice of such violation from, a Governmental Authority. After receiving notice of a violation from the Selected Developer pursuant to this paragraph, the Transmission Provider may require the Selected Developer to provide supporting information regarding such violation, including information regarding the nature of the violation, its anticipated impact on the Project, and the Selected Developer's plans for addressing the violation as such information becomes available to the Selected Developer.

5.3. Performance Standards

Each Party shall perform all of its obligations under this Agreement in accordance with all Applicable Laws and Regulations, Applicable Reliability Standards, and Good Utility Practice. To the extent a Party, through no fault of its own, is required to take, or is prevented from, or is

limited in taking any action by such regulations and standards, such Party shall not be deemed to be in Breach of this Agreement for its lack of compliance therewith.

5.4. Transmission Provider Support

Upon request from the Selected Developer and pursuant to Section VI.D of Attachment FF of the Tariff, Transmission Provider shall assist the Selected Developer in justifying the need for, and obtaining certification of, any facilities required by the Project by preparing and presenting testimony in any proceedings before state or federal courts, regulatory authorities, or other agencies as may be required.

ARTICLE 6. FACILITIES ENGINEERING, PROCUREMENT, AND CONSTRUCTION

6.1. General

The Selected Developer shall, at its expense, design, procure, construct, and own, and install the Project, as set forth in Appendix A to this Agreement. The Selected Developer shall comply with all applicable requirements of law and shall assume responsibility for the design, procurement, and construction of the Project using Good Utility Practice and the standards and requirements provided by the Interconnecting Transmission Owner or other interconnecting entity, as applicable. The Project shall be based on the assumed accuracy and completeness of all technical information and data received by the Transmission Provider from the Selected Developer and by technical information received by the Selected Developer from any Interconnecting Transmission Owner or other interconnecting entity(ies) providing Transmission Interconnection Service. Any Modifications to the Project design provided in Appendix A to this Agreement must be approved by the Transmission Provider in accordance with Article 6.4 ("*Modification*") of this Agreement. Unless otherwise agreed by the Parties, the Selected Developer shall develop and construct the Project consistent with the Selected Developer's Proposal that was selected by the Transmission Provider, and such dates shall be set forth in Appendix A of this Agreement.

6.2. Variance Analysis & Project Status Reporting

The Selected Developer and Transmission Provider shall be bound by the Variance Analysis Provisions of Attachment FF of the Tariff and shall report the status of the Competitive Transmission Project to the Transmission Provider pursuant to the provisions in Attachment FF of the Tariff and Business Practices Manual BPM-020.

6.3. Project Monitoring

The Transmission Provider shall have the ongoing right to monitor the progress of the Selected Developer's Work on the Project, Project costs, schedule and milestones, compliance with the accepted Proposal and the Selected Developer's qualifications, to determine whether any action is appropriate under the Variance Analysis provisions of Section IX of Attachment FF of the Tariff. The Selected Developer agrees to provide the Transmission Provider with any documents or information reasonably requested for this purpose subject to the confidentiality provisions of Article Article 16 ("*Project Confidential Information*") of this Agreement.

6.4. Modification

Selected Developer shall be bound by its accepted Proposal and may not modify the Project or its Proposal without prior written consent of Transmission Provider as provided in Section 6.4.1. The Transmission Provider's written consent shall be subject to the provisions of this Agreement and the Tariff and shall not be unreasonably withheld, conditioned, or delayed.

6.4.1 Change Order Procedures

All modifications to this Agreement seeking to change the scope, timing or type of Work to be performed, shall be made and processed according the procedures set forth in this Article.

If the Selected Developer desires to undertake any modification to the Work, it shall submit a Change Request Form in the form of Appendix B to this Agreement. The Selected Developer shall provide the Change Request Form to the Transmission Provider at least ninety (90) Calendar Days in advance of the commencement of the work or within such shorter period upon which the Parties may agree. The Transmission Provider shall determine if a modification is in accordance with the original Project criteria and intent and whether to approve the modification through the issuance of a Change Order in the form of Appendix C of this Agreement within sixty (60) Calendar Days after the Selected Developer's submission.

The Transmission Provider may initiate a change in the scope, type, or manner of performance of the Work under this Agreement by issuing a Change Order with the agreement of the Selected Developer. Change Orders initiated by the Transmission Provider shall be effective upon such date as is agreed between the Transmission Provider and Selected Developer. In the event that a Transmission Provider-initiated Change Order increases the total cost of the Work or the time necessary to complete the Work, the Selected Developer shall be entitled to an adjustment to the Project schedule and/or total Project cost to account for the Change Order on terms to be agreed between the Transmission Provider and Selected Developer. If the Selected Developer has agreed

to cost cap or cost containment provisions in its Proposal, the Transmission Provider and Selected Developer shall adjust such cost cap or cost containment provisions to account for the Change Order.

No Change Order shall be effective until executed by a duly authorized employee of the Transmission Provider and an officer of the Selected Developer. Except in the case of a Change Order initiated by the Transmission Provider, any request for a Change Order shall be initiated using the Change Request Form as set forth in Appendix B of this Agreement.

6.4.2 Approved Modifications

Any additions, modifications, or replacements made to the Project shall be designed, constructed, and operated in accordance with this Agreement, Applicable Laws and Regulations, and Good Utility Practice.

6.4.3 Modifications ordered by a Governmental Authority

Any modifications to the Project's facilities ordered by a Governmental Authority are not subject to Transmission Provider's approval. However, this approval exception shall not prejudice the rights of the Transmission Provider to conduct a Variance Analysis of the Project. The Selected Developer is required to notify the Transmission Provider within thirty (30) Calendar Days after the Governmental Authority has issued an order directing Project modifications.

6.5 Generator Interconnection Study Process

Any request(s) for generator interconnection to the Project and its Competitive Transmission Facilities submitted to the Selected Developer following the Effective Date of this Agreement shall be directed to the Transmission Provider's Generator Interconnection Procedures (GIP) as specified in Attachment X of the Tariff. The Selected Developer shall assume the functions of a Transmission Owner in accordance with Attachment X of the Tariff, including the performance of any analysis for generator interconnection requests requesting interconnection with the Project. The Selected Developer will be reimbursed the actual costs incurred for the analysis to the same extent a Transmission Owner or ITC through the Tariff.

Any Generator Interconnection Agreements for interconnection to the Project shall be executed consistent with the relevant terms and conditions of the Tariff.

6.6 Transmission Service Request Process

Any request(s) for Transmission Service utilizing the Project and its Competitive Transmission Facilities submitted to the Selected Developer following the Effective Date of this Agreement

shall be directed to the Transmission Provider's Transmission Service protocols as specified in Module B of the Tariff. The Selected Developer shall assume the obligations of a Transmission Owner in accordance with Module B of the Tariff, including the performance of any analysis for Transmission Service utilizing the Project. The Selected Developer will be reimbursed the actual costs incurred for the analysis to the same extent a Transmission Owner or ITC through the Tariff.

6.7 Tax Status

Each Party shall cooperate with the other to maintain the other Party's tax status. Nothing in this Agreement is intended to adversely affect the Transmission Provider's or the Selected Developer's tax exempt status with respect to the issuance of bonds, including Local Furnishing Bonds, if any.

ARTICLE 7. RIGHT TO INSPECT

The Transmission Provider shall have the right, but not the obligation, to inspect the Project for the purposes of assessing the progress of the Project and compliance with the terms of this Agreement and Agreement Documents at the Transmission Provider's expense. The Transmission Provider may exercise these rights from time-to-time, as it deems necessary upon reasonable advance notice to the Selected Developer. The exercise or non-exercise by the Transmission Provider of any such rights shall not be construed as an endorsement or approval by the Transmission Provider of any design, standards, construction practices, protective equipment or the operation thereof, used by the Selected Developer or the condition, fitness, safety, desirability, reliability, or warranty of the Project. Any information that Transmission Provider obtains through the exercise of any of its rights under this Article Article 7 ("*Right To Inspect*") shall be deemed Project Designated Confidential Information and treated pursuant to Article Article 16 ("*Project Confidential Information*") of this Agreement. The Transmission Provider agrees to indemnify the Selected Developer in accordance with Article 13.2 to the extent allowed by the Tariff for any claims arising from actions of the Transmission Provider, including its employees and agents, in completing such inspections.

ARTICLE 8. OPERATIONS

The Selected Developer shall not energize the Project with the Interconnecting Transmission Owner's or other entity's transmission system(s) until it has met the obligations detailed in the respective Transmission-to-Transmission Interconnection Agreement(s), the ISO Agreement, and any other similarly-executed agreements for entities outside the Transmission Provider's Transmission System unless prior written approval is given by each entity.

ARTICLE 9. COST RECOVERY, BILLING, AND PAYMENT

9.1 Cost Recovery

The ISO Agreement, Schedule 7 (“*Long-Term Firm and Short-Term Firm Point-To-Point Transmission Service*”), Schedule 8 (“*Non-Firm Point-To-Point Transmission Service*”), Schedule 9 (“*Network Integration Transmission Service*”), Schedule 26 (“*Network Upgrade Charge from Transmission Expansion Plan*”), Schedule 26A (“*Multi-Value Project Usage Rate*”), Attachment O (“*Rate Formulae*”), Attachment GG (“*Network Upgrade Charge*”), Attachment MM (“*MVP Charge*”) of the Tariff, including company-specific Schedules 7, 8, 9, 26, and 26A, and Attachments O, GG and MM, and any other provisions of the Tariff that become accepted by FERC shall govern the Selected Developer’s recovery of costs associated with the Project and its associated Competitive Transmission Facilities, including costs for interconnection and transmission service related studies.

The provisions of this Article Article 9 (“*Cost Recovery, Billing, And Payment*”) of this Agreement shall survive termination of this Agreement in accordance with Article 2.5 (“*Survival*”) of this Agreement.

9.2 Binding Cost Cap or Cost Containment Measures and Forgone Rate Incentives or Rate Recovery

If the Selected Developer submitted any binding cost cap or cost containment measures, or committed to forego any kind of rate incentives or rate recovery as part of the Proposal, such commitments shall be detailed in Appendix A of this Agreement.

- Selected Developer committed to some kind of binding cost cap or cost containment measures or to forego specific rate incentives or rate recovery.
- Selected Developer did not commit to any binding cost cap or cost containment measures or forego any kind of rate incentives or rate recovery.

If the Selected Developer has committed to binding cost cap or cost containment measures, the Selected Developer agrees that it shall not seek to recover, through its Transmission Revenue Requirement or through any other means, higher costs than the maximum costs specified in Appendix A to this Agreement, or determined in accordance with, any cost cap or other binding cost containment measures as specified in Appendix A to this Agreement except for costs incurred to comply with any additional specifications of the Transmission Provider or Interconnecting Transmission Owner(s) beyond the functional requirements for the Project as specified in Appendix F to this Agreement. The Selected Developer shall not seek recovery through its Transmission Revenue Requirement of any incentives or other costs that it has agreed to forego, as specified in Appendix A to this Agreement. The provisions of this Article 9.2

(“*Binding Cost Cap or Cost Containment Measures and Forgone Rate Incentives or Rate Recovery*”) of this Agreement shall survive termination of this Agreement in accordance with Article 2.5 (“Survival”) of this Agreement.

9.2.1 Approved Deviations from Binding Cost Cap or Cost Containment and Incentive Rate Commitments

Notwithstanding the provisions of Article 9.2 (“*Binding Cost Cap or Cost Containment Measures and Forgone Rate Incentives or Rate Recovery*”) of this Agreement, the Selected Developer shall be entitled to seek recovery for costs in excess of an agreed cost cap or that deviate from other agreed cost containment measures specified in Appendix A of this Agreement to the extent that such excess costs result from:

- A. A material change in the scope of Work, agreed to in writing by the Transmission Provider, for Work that: (1) was not contemplated by the RFP; and (2) is not made necessary by any failure to perform, negligent performance of, or inaccurate cost estimate of, the Work that the Selected Developer agreed to complete in its Proposal. In order to invoke the exception outlined in this Paragraph, the Selected Developer must obtain from the Transmission Provider a signed Change Order, stating the scope of the Work covered by said Change Order and the estimated or capped costs charged to accomplish the Work contemplated by the Change Order. The execution of a Change Order conforming to the requirements of this paragraph shall not authorize the receipt or retention of any excess recovery for elements of the Project not expressly covered by the executed Change Order;
- B. A requirement imposed by an Interconnecting Transmission Owner which was not foreseen at the time that the Selected Developer’s Proposal was submitted and which requirement increases Project costs, scope or schedule. In order to invoke the exception outlined in this paragraph, the Selected Developer must obtain from the Transmission Provider a signed Change Order describing the requirement imposed by the Interconnecting TO and stating the estimated costs of compliance with that requirement. The execution of a Change Order conforming to the requirements of this paragraph shall not authorize the receipt or retention of any excess recovery for elements of the Project not expressly covered by the executed Change Order; or
- C. An increase in an element of Project cost expressly authorized by or exempted from the terms of the Selected Developer’s agreed cost cap or cost containment proposal.

9.3 Tariff Billing and Payment Provisions

The Transmission Provider and Selected Developer shall comply with the billing and payment provisions set forth in the Tariff.

9.4 Refund Obligation

The Selected Developer, whether or not it is subject to FERC rate jurisdiction under Section 205 and Section 206 of the Federal Power Act, shall make all refunds, adjustments to its recovered costs from Attachment O ("*Rate Formulae*"), Attachment GG ("*Network Upgrade Charge*"), and Attachment MM ("*MVP Charge*") of the Tariff, including company-specific Attachments O, GG and MM, and do all other things required to implement any FERC order related to the Tariff, including any FERC order of which the implementation necessitates the Transmission Provider to make payment adjustments, issue refunds, or to receive prior period overpayments from, the Selected Developer. All such refunds and adjustments shall be made, and all other actions taken, in accordance with the Tariff, unless an applicable FERC order requires otherwise. These obligations under this Article 9.4 ("*Refund Obligation*") of this Agreement shall survive termination of this Agreement in accordance with Article 2.5 ("*Survival*") of this Agreement.

ARTICLE 10. VARIANCE ANALYSIS

Selected Developer acknowledges and agrees that it is subject to the Variance Analysis provisions specified in Attachment FF, Article IX of the Tariff ("*Variance Analysis*").

ARTICLE 11. FORCE MAJEURE EVENT

11.1 Force Majeure Events

"Force Majeure Events" shall refer to fire, flood, earthquake, other extreme elements of nature or acts of God, war, terrorism, riots, rebellions, revolutions, civil disturbances, court or agency ordered injunctions, industry-wide or national labor disputes, criminal acts, and any other cause beyond a party's control to the extent these events: (a) prevent a party from discharging its obligations under the Tariff or this, Agreement, or Agreement Documents or otherwise prevent all, or a portion of, the Project from being completed by the required in-service date; (b) are outside the control of the party whose performance is to be affected by the Force Majeure Event; and (c) could not reasonably be foreseen or prevented by the Party whose performance is to be affected by the Force Majeure Event.

11.2 No Default

Except for the payments of monies, a party shall not be considered to be in Default with respect to any obligation hereunder if: (1) the party experiences a Force Majeure Event as defined in this

Agreement and (2) the party experiencing the Force Majeure Event strictly follows the procedures set forth in this Article 11.

11.3 Initial Notice of Force Majeure

A Party that is unable to fulfill any obligation under this Agreement or whose performance will be delayed as a result of a Force Majeure Event shall notify the other Party by Written Notice or by telephone as soon as reasonably possible after the occurrence of the cause relied upon. Telephone notices, given pursuant to this Article 11.3 ("*Initial Notice of Force Majeure*"), shall be confirmed with Written Notice as soon as reasonably possible. Written Notices shall provide the following information, to the extent known: (1) the time and date when the Force Majeure Event occurred, (2) the nature of the Force Majeure Event; (3) the specific obligations that the Force Majeure Event is likely to impact and how those obligations will be impacted; (4) the steps that have or will be taken to mitigate the Force Majeure Event; and (5) the anticipated duration of the Force Majeure Event.

11.4 Status Reports

In addition to the initial notice required by Article 11.3 ("*Initial Notice of Force Majeure*"), the party declaring a Force Majeure Event shall provide a written status report at least every seven (7) Calendar Days for the duration of the Force Majeure Event and any applicable recovery period. The status report shall provide the latest available information regarding: (1) the specific obligations that the Force Majeure Event is likely to impact and how those obligations are being impacted; (2) the anticipated duration of the Force Majeure Event; (3) the steps that have or will be taken to mitigate the Force Majeure Event and the current status of those steps; and (4) the anticipated duration of the Force Majeure Event.

11.5 Duration of Force Majeure & Recovery Period

In the event that a Party declares a Force Majeure Event, such party shall be allowed a reasonable period of time, not to exceed three (3) months, after the Force Majeure Event ceases to recover and resume performance of its obligations. A Party shall be excused from whatever performance is affected only for the duration of the Force Majeure Event and while the Party exercises Reasonable Efforts to alleviate such situation. As soon as the non-performing Party is able to resume performance of its obligations excused because of the occurrence of the Force Majeure Event, such Party shall resume performance and give prompt Written Notice thereof to the other Party. The Transmission Provider and Selected Developer shall confer as soon as possible after a Force Majeure Event occurs to develop a mutually acceptable schedule for recommencing performance. The Party whose performance will be affected by a Force Majeure Event shall be obligated to use all commercially reasonable efforts to alleviate the impacts of the Force Majeure Event and to minimize disruptions to the development schedule.

11.6 Modification of Agreement due to a Force Majeure Event

If required, the Parties shall revise this Agreement following a Force Majeure Event including, but not limited to any Agreement Documents, appendices, attachment, or exhibit to this Agreement, to account for the Force Majeure Event.

11.7 Variance Analysis and Force Majeure Events

No provision of this Article Article 11 (“*Force Majeure*”) shall be construed to prejudice or interfere with Transmission Provider’s rights to conduct a Variance Analysis of the Project and/or a Selected Developer and to take any actions allowed under the provisions in Section IX of Attachment FF of the Tariff and MISO Business Practice Manual BPM-027. A termination or reassignment of this Project pursuant to the reevaluation provisions of the Tariff following a Force Majeure Event does not imply or depend upon any finding of fault, Breach, or Default by the Selected Developer. Nor shall the fact that Selected Developer is found not to be at fault, in Breach, or in Default of this Agreement following a Force Majeure Event: 1) operate to bar Transmission Provider from reassigning or cancelling the Project or 2) give rise to any claim of entitlement to compensation or damages against Transmission Provider flowing from such reassignment or cancellation. However, in the event the Transmission Provider takes any action pursuant to Section IX of Attachment FF of the Tariff based on the occurrence of a *Force Majeure* Event where the Selected Developer has not Defaulted under this Agreement, the Transmission Provider shall bear all such costs and shall not be entitled to draw upon the Irrevocable Standby Letter of Credit or Cash Deposit.

ARTICLE 12. DEFAULT

No Default shall exist where failure to discharge an obligation, other than the payment of money, is the result of a Force Majeure Event as defined in this Agreement or the result of an act or omission of the other Party.

12.1 Notice of Breach

Upon the occurrence of a Breach, the affected non-Breaching Party shall give Written Notice of such Breach to the Breaching Party. Provided the breach is curable, the Breaching Party shall have thirty (30) Calendar Days from receipt of the Written Notice of Breach within which to cure such Breach or provide the non-Breaching Party with a written cure plan. If the Breaching Party provides the non-Breaching Party with a written cure plan within thirty (30) Calendar Days from receipt of the Written Notice of Breach, the Breaching party shall have ninety (90) Calendar Days from receipt of the Written Notice of Breach to either cure the Breach or obtain the non-Breaching Party’s consent to a cure plan providing for a different deadline. The non-Breaching Party shall not unreasonably withhold, delay, or condition its acceptance of a cure plan. However, no provision of this Article shall be read to require the non-Breaching Party to accept a

written cure plan that (i) does not fully cure the Breach, (ii) materially alters Project, (iii) delays the completion of the Project past the scheduled In Service Date, or (iv) increases the total cost of the Project, provided that the non-Breaching Party shall not be permitted to consider cost increases as a factor in evaluating a cure plan to the extent that the Breaching Party has agreed to internally absorb such increases.

If a Breach is not cured within such ninety (90) Calendar Day period, but during such period the breaching Party and non-breaching Party have agreed to a written cure plan that (1) describes the actions the Breaching Party intends to take to effect the cure of the Breach, and (2) provides a timeline for curing the Breach, then the cure period shall be extended for such period as is provided in the agreed written cure plan and the Breaching Party shall not be held in Default provided it continuously and diligently works to complete such cure during the period provided in the written cure plan. In the event that the Breaching Party fails to timely perform all actions agreed to in the written cure plan, the non-Breaching Party may send a Written Notice informing the Breaching Party that it is in Default and that the Agreement shall be terminated. The Breaching Party shall not be entitled to any additional cure period to cure failures to perform under the written cure plan.

12.2 Notice to Financing Parties

If, as contemplated by Article 14.4.1 (“*Assignment to Project Finance Entity*”), the Selected Developer has provided notice to the Transmission Provider of an assignment of this Agreement for collateral security purposes to aid in providing financing for the Project, then: (a) if such notice of collateral assignment so indicates and contains notice information for the collateral assignee, the Transmission Provider shall provide a copy to collateral assignee identified in such notice of any notice of Breach given by the Transmission Provider to the Selected Developer; and (b) such collateral assignee shall have the right, but no obligation, to effect cure of the Breach on behalf of the Selected Developer within the original cure period, and any performance of any obligations under this Agreement by such collateral assignee shall be accepted by the Transmission Provider to the same extent as though the Selected Developer had directly performed such obligations. Nothing herein shall be construed to allow a Project Finance Entity to effect a cure outside of the cure period afforded to the Selected Developer.

12.3 Default & Right to Terminate

A Default may be declared immediately upon the occurrence of the following events:

- (1) The Breaching Party fails to cure its Breach or provide a written cure plan within thirty (30) Calendar Days from receipt of the Written Notice of Breach,
- (2) The Breaching Party submits a cure plan within thirty (30) Calendar Days from receipt of the Written Notice of Breach but fails to secure the non-breaching Party’s agreement

to a written cure plan within ninety (90) Calendar Days from receipt of the Written Notice of Breach,

- (3) The Breaching Party fails to timely perform any obligation set forth in the written cure plan; or
- (4) The Breaching Party sends Written Notice to the non-Breaching Party stating that it does not intend to cure the Breach or offer a written cure plan.

If a Breach is not cured as provided in this Article Article 12 (“*Default*”), or if a Breach is not capable of being cured within the period provided for herein, the affected non-Breaching Party shall have the right: (i) to declare a Default and terminate this Agreement by Written Notice in accordance with Section IX of Attachment X of the Tariff at any time until cure occurs and be relieved of any further obligation hereunder and, (ii) whether or not such Party terminates this Agreement, to recover from the Breaching Party all amounts due hereunder, plus all other damages and remedies to which it is entitled at law or in equity. Upon Default by Selected Developer, Transmission Provider may draw upon the Selected Developer’s Letter of Credit or retain the cash security. Nothing in this Article Article 12 (“*Default*”) is intended in any way to affect the rights of a third-party to seek any remedy it may have in equity or at law from the Selected Developer resulting from Selected Developer’s Default of this Agreement.

If the Breaching Party cures its Breach in accordance with the provisions of this this Article Article 12 (“*Default*”), then the Breach shall cease to exist. If the Breaching Party was the Selected Developer, successful cure of the Breach according to the provisions of this Article shall preclude the Transmission Provider from conducting a Variance Analysis based on the existence of such Breach.

The provisions of this Article Article 12 (“*Default*”) shall survive termination of this Agreement in accordance with Article 2.5 (“*Survival*”) of this Agreement.

12.4 Remedies Cumulative

No remedy conferred by any provision of this Agreement is intended to be exclusive of any other remedy and each and every remedy shall be cumulative and shall be in addition to every other remedy given hereunder or now or hereafter existing at law or in equity or by statute or otherwise. The election of any one or more remedies shall not constitute a waiver of the right to pursue other available remedies.

ARTICLE 13. LIMITATION OF LIABILITY, INDEMNITY, AND INSURANCE**13.1 Limitation of Liability**

Neither Party shall be liable to the other for any damages arising out of the performance of any obligation imposed by this Agreement, except as provided in the Tariff or this Agreement. The provisions set forth in the Tariff shall be additionally applicable to any Party acting in good faith to implement or comply with its obligations under this Agreement, regardless of whether the obligation is preceded by a specific directive.

13.2 Indemnity**13.2.1 Claims or Losses to the Transmission Provider to which Indemnity Applies**

To the extent permitted by law, the Selected Developer shall indemnify, defend and hold the Transmission Provider, including its employees and agents, harmless from all losses and claims that arise from:

- A. The Selected Developer's performance or failure to perform any obligation imposed by this Agreement or any subsequently executed agreement;
- B. Any claim by an employee or independent contractor of the Selected Developer for payment of monies for work or materials;
- C. Any claim by an employee, independent contractor or third party alleging harm or injuries as a result of the design or construction of the Project, including claims for personal injury or death;
- D. Any claim arising from the construction of the Project, maintenance of Project worksites and construction areas, and safety precautions of procedures, including claims alleging personal injury, property damage, or death;
- E. Any claims or losses resulting from Selected Developer's violations of any law or regulation applicable to the development, construction, or operation of the Project, including claims arising from obligations to obtain permits, licenses or approvals or comply with the terms of any permit license or approval;
- F. Any claim asserting vicarious liability against the Transmission Provider for the actions or inactions of the Selected Developer or any employee or independent contractor of the Selected Developer;

- G. Any claim alleging that the Transmission Provider improperly selected, supervised or monitored the Selected Developer, its employees or independent contractors, but only to the extent such claim is based on a negligent act or omission by the Selected Developer, its employees or independent contractors for which the Transmission Provider is alleged to be liable; and
- H. Any claims by the Selected Developer for monetary damages under this Agreement or relating to the Project except for claims that have been presented to and approved by FERC in accordance with the Tariff and this Agreement.

13.2.1.1 Claims or Losses to Selected Developer to which Indemnity Applies

The Transmission Provider shall indemnify, defend, and hold the Selected Developer, including its employees and agents, harmless from any losses or claims arising from the Transmission Provider's performance or failure to perform any of its obligations imposed by this Selected Developer Agreement due to gross negligence or intentional misconduct to the same extent as provided in Section 10.3(b) of the Tariff.

13.2.2 Extent of Indemnification

If a party (the "Indemnifying Party") is obligated to indemnify and hold the other Party ("Indemnified Party") harmless pursuant to Article 13.2.1 ("*Claims or Losses to the Transmission Provider to which Indemnity Applies*") or 13.2.1.1 ("*Claims or Losses to Selected Developer to which Indemnity Applies*"), the amount owing to the Indemnified Party shall be the amount of Indemnified Party's actual loss, reasonable legal costs and fees and the cost of complying with any equitable or non-monetary orders, directives, or judgments, net of any insurance or other recovery ("*Actual Loss*"). In the event that FERC or any other court or tribunal with jurisdiction over the dispute finally determines that the indemnities provided in Article 13.2.1 are unenforceable, the Indemnified Party shall be entitled to seek recovery of its Actual Loss through its Tariff.

13.2.3 Indemnification Procedure

Promptly after receipt by the Indemnified Party of any claim or notice of the commencement of any action or administrative or legal proceeding or investigation as to which the indemnity may apply, the Indemnified Party shall notify the Indemnifying Party of such fact. Any failure of or delay in such notification shall not affect the Indemnifying Party's indemnification obligation unless and except to the extent that such failure or delay is materially prejudicial to the Indemnifying Party.

13.2.4 Participation in Legal/Administrative Proceedings

13.2.4.1 Indemnifying Party Participation

The Indemnifying Party shall have the right to assume the defense thereof with counsel designated by such Indemnifying Party and reasonably satisfactory to the Indemnified Party. If the Indemnified Party and Indemnifying Party are both named as defendants in any such action and if the Indemnified Party concludes that there may be legal defenses available to it which are different from or additional to those available to the Indemnifying Party, the Indemnified Party shall have the right to select separate counsel to assert such legal defenses and to otherwise participate in the defense of such action on its own behalf. In such instances, the Indemnifying Party shall be required to pay the fees and expenses of such attorney(s) hired to represent the Indemnified Party.

13.2.4.2 Indemnified Party Participation

The Indemnified Party shall be entitled, at its own expense, to participate in any such action, suit or proceeding, the defense of which has been assumed by the Indemnifying Party. Notwithstanding the foregoing, the Indemnifying Party: (i) shall not be entitled to assume and control the defense of any such action, suit or proceedings if and to the extent that, in the reasonable opinion of the Indemnified Party and its counsel, such action, suit or proceeding involves the potential imposition of criminal liability on the Indemnified Party or any of its agents or employees, or there exists a conflict or adversity of interest between the Indemnifying Party and Indemnified Party, in such event the Indemnifying Party shall pay the reasonable expenses of the Indemnified Party; and (ii) shall not settle or consent to the entry of any judgment in any action, suit or proceeding without the consent of the Indemnified Party, which shall not be unreasonably withheld, conditioned or delayed.

13.2.4.3 Failure to Defend

If the Indemnified Party is entitled to indemnification under this Agreement as a result of a claim by a non-Party, and the Indemnifying Party fails, after notice and reasonable opportunity, to assume the defense of such claim, the Indemnified Party may, at the expense of the Indemnifying Party, contest, settle or consent to the entry of any judgment with respect to, or pay in full, such claim without further notice to, or the consent of, the Indemnifying Party.

13.3 Insurance

The Selected Developer shall obtain and maintain in full force and effect insurance for the Project, including the development and construction of the Project, in accordance with Good Utility Practice and this Article 13.3 ("*Insurance*"). Such insurance policies shall name the

Transmission Provider as an additional insured in accordance with the provisions of Article 13.3.1.5

13.3.1 Selected Developer Insurance

Subject to the provisions of Article 13.3.1.9 (“*Project Specific Insurance*”), the Selected Developer shall, at its own expense, obtain and maintain in full force and effect throughout the period of this Agreement, the following default minimum insurance coverages for the Project, with insurers authorized to do business or an approved surplus lines carrier in each state where the Competitive Transmission Facilities associated with the Project are located:

13.3.1.1 Employers’ Liability and Workers’ Compensation Insurance

Employers' Liability and Workers' Compensation Insurance providing statutory benefits in accordance with the laws and regulations of the state(s) in which the Competitive Transmission Facilities included in the Project is/are located.

13.3.1.2 Commercial General Liability Insurance

Commercial General Liability Insurance including premises and operations, personal injury, broad form property damage, broad form blanket contractual liability coverage (including coverage for the contractual indemnification) products and completed operations coverage, coverage for explosion, collapse and underground hazards, independent contractors coverage, and punitive damages to the extent normally available where allowed by law 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.

13.3.1.3 Comprehensive Automobile Liability Insurance

Comprehensive Automobile Liability Insurance, for coverage of owned and non-owned and hired vehicles, trailers or semi-trailers licensed for travel on public roads, with a minimum combined single limit of one million dollars (\$1,000,000) each occurrence for bodily injury, including death, and property damage.

13.3.1.4 Excess Public Liability Insurance

Excess Public Liability Insurance (also known as umbrella 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 twenty million dollars (\$20,000,000) per occurrence/twenty million dollars (\$20,000,000) aggregate.

13.3.1.5 Additional Insured

The Commercial General Liability Insurance, Comprehensive Automobile Liability Insurance, and Excess Public Liability Insurance (also known as umbrella liability insurance) policies shall name the Transmission Provider and the Transmission Provider's 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 and provide thirty (30) Calendar Days' advance written notice to the Other Party Group prior to anniversary date of cancellation.

13.3.1.6 Primary Provisions

The Commercial General Liability Insurance, Comprehensive Automobile Liability Insurance, and Excess Public 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 where allowed by law.

13.3.1.7 Tail Coverage and Extended Reporting Period Coverage

The Commercial General Liability Insurance, Comprehensive Automobile Liability Insurance, and Excess Public Liability Insurance policies, if written on a Claims 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 Transmission Provider and Selected Developer. The obligations under this Article 13.3.1.7 ("*Tail Coverage And Extended Reporting Period Coverage*") shall survive termination of this Agreement in accordance with Article 2.5 ("*Survival*") of this Agreement.

13.3.1.8 No Limitation or Excuse to Procure Necessary Insurance Coverage

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

this Agreement. Nor shall the listing of some types and limits of insurance coverage be read to excuse Selected Developer from obtaining any other types and limits of insurance coverage required by Good Utility Practices, Applicable Laws and Regulations, or by any other legal obligations, whether arising by contract, statute, or regulations.

13.3.1.9 Project Specific Insurance

If the Transmission Provider determines that different types of insurance, different coverage amounts, or additional insurance terms are desirable for a specific Competitive Transmission Project (“Project Specific Insurance”), the Transmission Provider may require that such insurance be procured by stating such requirements in the RFP for the Project. If such Project Specific Insurance is specified in the RFP for the Project, such requirements shall deemed incorporated into this Agreement and shall supersede the default terms provided in Articles 13.3.1.1 – 13.3.1.4 to the extent of any conflict.

- Project Specific Insurance is not required for this Project**
- Project Specific Insurance is required for this Project**

Additional Coverage Types, Amounts & Terms Applicable to Project

Not Applicable

13.3.1.10 Certification of Insurance

Within ten (10) Business Days following the Effective Date of this Agreement and, as soon as practicable after the end of each fiscal year thereafter or at the renewal of the insurance policy, and in any event within ninety (90) Calendar Days thereafter, Selected Developer shall provide certification of all insurance required in this Agreement, executed by each insurer or by an authorized representative of each insurer, to the Transmission Provider.

13.3.1.11 Self-Insurance

Notwithstanding the foregoing, the Selected Developer may self-insure to meet the minimum insurance requirements of Articles 13.3.1 (“*Selected Developer Insurance*”) through 13.3.1.9 (“*Project Specific Insurance No*”) of this Agreement, to the extent Selected Developer’s senior secured debt is rated at investment grade, or better, by Standard & Poor’s, Moody’s, or Fitch and that its self-insurance program meets minimum insurance requirements under Articles 13.3.1 (“*Selected Developer Insurance*”) through 13.3.1.9 (“*Project Specific Insurance*”) of this Agreement. If senior secured debt ratings are not available, the Transmission Provider may consider senior unsecured debt and issuer ratings.

For any period of time that a Selected Developer’s senior secured debt is unrated by Standard & Poor’s, Moody’s, or Fitch or is rated at less than investment grade by Standard & Poor’s, Moody’s, or Fitch, such Party shall comply with the insurance requirements applicable to it under Articles 13.3.1 (“*Selected Developer Insurance*”) through 13.3.1.10 (“*Certification of Insurance*”) of this Agreement.

In the event that a Selected Developer is permitted to self-insure pursuant to Article 13, it shall notify the Transmission Provider that it meets the requirements to self-insure and that its self-insurance program meets the minimum insurance requirements in a manner consistent with that specified in Article 13.3.1.10 (“*Certification of Insurance*”) of this Agreement.

13.3.1.12 Reporting of Accidents or Occurrence Resulting in Injuries

Selected Developer agrees to report to the Transmission Provider by Written Notice as soon as practical all accidents or occurrences resulting in injuries to any person, including death that are reportable under OSHA and to provide notice of any property damage in excess of \$50,000.00 arising out of this Agreement.

13.3.2 Contractor and Subcontractor Insurance Requirements

In accordance with Good Utility Practice, each Selected Developer shall require each of its contractors and subcontractors to maintain and, upon request, provide Selected Developer and Transmission Provider evidence of insurance coverage of types, and in amounts, commensurate with the risks associated with the services provided by the contractor or subcontractor. Bonding and hiring of contractors or subcontractors shall be at the Selected Developer’s sole discretion, but regardless of bonding or the existence or non-existence of insurance, the Selected Developer shall be responsible for the performance or non-performance of any contractor or subcontractors it hires.

13.4 Continuity of Obligations

Subject to Article 13.3.1, the obligations and liability limitations under this Article Article 13 (*“Limitation Of Liability, Indemnity, And Insurance”*) shall survive termination of the Agreement in accordance with Article 2.5 (*“Survival”*) of this Agreement.

ARTICLE 14. ASSIGNMENT

A Party may assign its rights, duties, and obligations under this Agreement to another entity in accordance with this Article Article 14 (*“Assignment”*). Prior to a successful assignment, the Selected Developer is responsible for all its rights, duties, and obligations under this Agreement, including but not limited to, all aspects and commitments contained in its Proposal.

14.1 Written Consent

No Party may assign this Agreement without prior written consent of the other Party, which consent shall not be unreasonably withheld, conditioned, or delayed. Any such assignment or delegation made without such written consent shall be null and void.

14.2 Partial Assignments

Except for assignments described in Article 14.4 (*“Project Finance Entity Assignments”*) of this Agreement that may not result in the assignment of all rights, duties, and obligations under this Agreement to a Project Finance Entity, no partial assignments will be permitted. However, the Selected Developer may make a complete assignment of all rights, duties, and obligations under this Agreement if such assignment is properly disclosed in Selected Developer’s accepted Proposal.

14.3 Selected Developer Assignments

The Transmission Provider’s express written consent to a proposed assignment by the Selected Developer (the “Assignor”) to another entity (the “Assignee”) will not be unreasonably withheld, conditioned, or delayed and shall be contingent upon, prior to the effective date of the desired assignment, the following conditions, except as provided in Article 14.4 (*“Project Finance Entity Assignments”*) of this Agreement:

- A. Assignee is a MISO Transmission Owner or Non-owner Member in good standing;
- B. Assignee is a Qualified Transmission Developer, as certified by the Transmission Provider, pursuant to the Tariff;
- C. Assignee shall demonstrate to the Transmission Provider’s reasonable satisfaction that:

- i. Assignee possesses sufficient financial, project implementation, operations and maintenance, and legal capabilities in order to comply with the terms of this Agreement and to construct the Project consistent with the Assignor's Proposal, cost estimates and schedule for the Project that are equal to or better than those possessed by the Assignor; and
- ii. Assignee possesses financial, project implementation, legal, and operations and maintenance capabilities that are equal to or better than those possessed by the Assignor. If a proposed Assignee cannot demonstrate to the satisfaction of the Transmission Provider that it independently possesses equal or greater financial, project implementation, operations and maintenance, and legal capabilities as compared to the Selected Developer, the Transmission Provider may approve the assignment subject to the imposition of reasonable conditions, such as guarantees or evidence of continuing support from the Assignor, in order to enable the Assignee to meet the requirements of this Article 14.3.C.ii ("*Selected Developer Assignments*") of this Agreement.

D. Assignee shall be an Affiliate of the Selected Developer;

E. Assignee shall assume this entire Agreement, including all Agreement Documents and any other agreements that Selected Developer has executed or is required to execute in connection with the Project and Proposal without material modification, including but not limited to any cost containment and cost-recovery provisions included in the Proposal, resulting in an assignment of all rights, duties, and obligations under this Agreement and related agreements. No partial assignments shall be allowed. Nor shall any novations be allowed, whether partial or full;

F. Assignee agrees to pay the Transmission Provider any actual, documented costs reasonably incurred by the Transmission Provider in evaluating the proposed assignment;

G. Assignee and Assignor execute the Transmission Provider's Consent to Assignment;

H. The Transmission Provider provides its express written consent of the assignment through the execution of a Consent to Assignment, which will not be unreasonably withheld, conditioned, or delayed;

Except as provided in Article 14.4 ("*Project Finance Entity Assignments*") of this Agreement, for all assignments by any Party, the Assignee must assume in a writing, to be provided to the other Party, all rights, duties, and obligations of the Assignor arising under this Agreement. Any

assignment described herein shall not relieve or discharge the Assignor from any of its obligations hereunder absent the written consent of the other Party, such consent shall not be unreasonably withheld, delayed or conditioned. In no circumstance, shall an assignment of this Agreement or any of the rights, duties, and obligations under this Agreement diminish the rights of the Transmission Provider under this Agreement, the Tariff, or the ISO Agreement. Any Assignees that will construct, maintain, or operate the Project shall be subject to, and comply with the terms of this Agreement, the Tariff and the ISO Agreement.

14.4 Project Finance Entity Assignments

14.4.1 Assignment to Project Finance Entity

If an arrangement between the Selected Developer and a Project Finance Entity provides that the Project Finance Entity may assume any of the rights, duties and obligations of the Selected Developer under this Agreement or otherwise provides that the Project Finance Entity may cure a Breach of this Agreement by the Selected Developer, the Project Finance Entity may be assigned this Agreement or any of the rights, duties, or obligations hereunder only upon written consent of the Transmission Provider, which consent shall not be unreasonably withheld, conditioned, or delayed. In no circumstance, shall an assignment of this Agreement or any of the rights, duties, and obligations under this Agreement diminish the rights of the Transmission Provider under this Agreement, the Tariff, or the ISO Agreement.

14.4.2 Assignment by Project Finance Entity

A Project Finance Entity that has been assigned this Agreement or any of the rights, duties, or obligations under this Agreement or otherwise is permitted to cure a Breach of this Agreement, as described pursuant to Article 14.4.1 (“*Assignment to Project Finance Entity*”) above, may assign this Agreement or any of the rights, duties or obligations under this Agreement to another entity not a Party to this Agreement only under the following conditions:

- A. Upon the Breach of this Agreement by the Selected Developer; and
- B. With the written consent of the Transmission Provider, which consent shall not be unreasonably withheld, conditioned, or delayed.

Any such assignment by a Project Finance Entity shall be subject to the requirements of Article 14.3 of this Agreement, except that Article 14.3D shall not apply. In no circumstance, shall an assignment of this Agreement or any of the rights, duties, and obligations under this Agreement alter or diminish the rights of the Transmission Provider under this Agreement, the Tariff, or the ISO Agreement. Any Assignees that

will construct, maintain, or operate the Project shall be subject to, and comply with this Agreement, the Tariff, and ISO Agreement.

14.5 Effect of Failure to Meet Assignment Requirements

If and to the extent that a Selected Developer's proposed assignment fails to meet all of the requirements of this Article Article 14 ("*Assignment*") and/or fails to receive written consent from the Transmission Provider, which consent shall not be unreasonably withheld, conditioned, or delayed, the Selected Developer remains responsible for all its rights, duties, and obligations under this Agreement.

14.6 Effect of Assignment

Any assignment under this Agreement shall not relieve a Party of its obligations, nor shall a Party's obligations be enlarged, in whole or in part, by reason thereof.

14.6.1 Effect of Improper Assignment

Any assignment in violation of Article Article 14 ("*Assignment*") is void and ineffective. At the Transmission Provider's election, an assignment in violation of Article 14 is grounds for conducting a Variance Analysis and potentially invoking the Transmission Provider's rights pursuant to Attachment FF of the Tariff.

ARTICLE 15. SEVERABILITY

If any provision in this Agreement is finally determined to be invalid, void, or unenforceable by any court or other Governmental Authority having jurisdiction, such determination shall not invalidate, void, or make unenforceable any other provision, agreement, or covenant of this Agreement.

ARTICLE 16. PROJECT CONFIDENTIAL INFORMATION

16.1 Definition of Project Confidential Information

"Project Confidential Information" shall mean: (1) the categories of information set forth in Section VIII.D.9.a ("*Confidential Information*") of Attachment FF of the Tariff regardless of whether such information is submitted in a Proposal or conveyed after execution of this Agreement, and (2) any amendments, revisions, or updates to the categories of information listed in Section VIII.D.9.a of Attachment FF of the Tariff to the extent not publically available. Project Confidential Information shall not include: (1) the categories of information set forth in Section VIII.D.9.b ("*Non-confidential Information*") of Attachment FF of the Tariff regardless of whether such information is submitted in a Proposal or conveyed after execution of this

Agreement; (2) any amendments, revisions, or updates to the categories of non-confidential information listed in Section VIII.D.9.b of Attachment FF of the Tariff; (3) any information specifically required to be disclosed by: (a) another provision of the Tariff, (b) by FERC order, or (c) by order of any other court, tribunal or agency with authority to compel such disclosure. The manner in which the Selected Developer communicates information to the Transmission Provider—whether orally, in writing, or by inspection—shall not affect the designation of such information as Project Confidential Information except as provided in Article 18.2 of this Agreement, below.

16.1.1 Procedure for Designating Certain Information as Project Confidential Information

If confidential information is communicated to the transmission provider orally or through inspection, the Selected Developer shall promptly submit to the Transmission Provider a written confirmation outlining the portions of such documents or elements of information for which that the Selected Developer seeks treatment as Project Confidential Information.

If the Selected Developer invokes Section VIII.D.9(a)(iv), regarding designation of information as confidential, of Attachment FF of the Tariff as the basis for asserting that information should be treated as Project Confidential Information, the Transmission Provider shall provide in writing the basis for asserting that such information warrants confidential treatment, and the Transmission Provider may shall disclose such writing to the appropriate Governmental Authority.

16.2 Term of Project Confidential Information

During the term of this Agreement, and for a period of three (3) years after the expiration or termination of this Agreement, except as otherwise provided in this Article Article 16 (“*Project Confidential Information*”), the Transmission Provider shall hold in confidence and shall not disclose Project Confidential Information to any person. Project Confidential Information shall be treated in accordance with FERC policy and regulations. The Transmission Provider shall return to the Selected Developer or destroy all Project Confidential Information at the expiration of three calendar years from the date that this Agreement expires or is terminated.

16.3 Release of Project Confidential Information

Except as provided below, the Transmission Provider shall not release or disclose Project Confidential Information to any other person, except to its employees, consultants, and subcontractors, on a need-to-know basis in connection with this Agreement, and then only after such person has first been advised of the confidentiality provisions of this Article Article 16 (“*Project Confidential Information*”) and has agreed to comply with such provisions. The

Transmission Provider shall protect Project Confidential Information from unauthorized disclosure using the same standard of care as it uses to protect its own confidential information.

Subject to the exceptions set forth in Articles 16.5 (“*Required Disclosure*”) and 16.6 (“*Disclosure to FERC, its Staff, or a State*”) of this Agreement, Project Confidential Information shall not be disclosed by the Transmission Provider to any person not employed or retained by the Transmission Provider, except to the extent disclosure is: (i) required by law; (ii) reasonably deemed by the Transmission Provider to be required to be disclosed in connection with a dispute between the Parties, or the defense of litigation or dispute; (iii) otherwise permitted by written consent of the Selected Developer, which consent not to be unreasonably withheld, conditioned, or delayed; or (iv) necessary to fulfill its obligations under this Agreement or as a transmission service provider or a Balancing Authority, including disclosing the Project Confidential Information to a regional or national reliability organization. Prior to any disclosures of another Party’s Project Confidential Information under this subparagraph, or if any third party or Governmental Authority makes any request or demand for any of the information described in this Article 16, the Transmission Provider shall promptly notify the other Party in writing and shall assert confidentiality and cooperate with the other Party in seeking to protect the Project Confidential Information from public disclosure by confidentiality agreement, protective order, or other reasonable measures.

16.4 Rights

The Selected Developer retains all rights, title, and interest in the Project Confidential Information disclosed to the Transmission Provider.

16.5 Required Disclosure

If a court or another Government Authority or entity with the right, power, and apparent authority to do so requests or requires the Transmission Provider, by subpoena, oral deposition, interrogatories, requests for production of documents, administrative order, or otherwise, to disclose Project Confidential Information, the Transmission Provider shall provide the Selected Developer with prompt notice of such request or requirement so that the Selected Developer may seek an appropriate protective order or waive compliance with the terms of this Agreement. Notwithstanding the absence of a protective order or waiver, the Transmission Provider may disclose such Project Confidential Information, which in the opinion of its counsel, the Transmission Provider is legally required to disclose. The Transmission Provider shall use Reasonable Efforts to obtain reliable assurance that confidential treatment will be accorded any Project Confidential Information so furnished.

16.7 Disclosure to FERC, its Staff, or a State

Notwithstanding anything in this Article Article 16 (“*Project Confidential Information*”) to the contrary, and pursuant to 18 C.F.R. Section 1b.20, if FERC or its staff, during the course of an investigation or otherwise, requests information from the Transmission Provider that is otherwise required to be maintained in confidence pursuant to this Agreement, the Transmission Provider shall provide the requested information to FERC or its staff, within the time provided for in the request for information. In providing the information to FERC or its staff, the Transmission Provider must, consistent with 18 C.F.R. Section 388.112, request that the information be treated as confidential and non-public by FERC and its staff and that the information be withheld from public disclosure. Unless the Transmission Provider is specifically prohibited by FERC from notifying the Selected Developer prior to the release of Project Confidential Information to FERC or its staff. The Transmission Provider shall notify the Selected Developer when it is notified by FERC or its staff that a request to release Project Confidential Information has been received by FERC, at which time any of the Parties may respond before such information would be made public, pursuant to 18 C.F.R. Section 388.112. Requests from a state regulatory body conducting a confidential investigation shall be treated in a similar manner if consistent with the applicable state rules and regulations.

16.8 Remedies

The Parties agree that monetary damages would be speculative and inappropriate to compensate the Selected Developer for the Transmission Provider’s breach of its obligations under this Article Article 16 (“*Project Confidential Information*”). The Parties therefore agree that the Selected Developer shall be entitled to seek equitable relief, by way of injunction or otherwise, if the Transmission Provider breaches or threatens to breach its obligations under this Article Article 16 (“*Project Confidential Information*”), which equitable relief shall be granted without bond or proof of damages. The Parties further acknowledge and agree that the covenants contained herein are necessary for the protection of legitimate business interests and are reasonable in scope. No Party, however, shall be liable for monetary damages, including direct, indirect, incidental, consequential or punitive damages of any nature or kind resulting from or arising in connection with this Article Article 16 (“*Project Confidential Information*”).

ARTICLE 17. PROJECT SAFETY

The Selected Developer shall take all reasonable precautions necessary to protect from personal injury, death, or occupational disease, all workers and all other persons who may be on or about that portion of the Project upon which the Work is being done. Selected Developer shall be responsible for ensuring that all Work done, materials used, and safeguards employed in connection with the Project shall be in compliance with the Safety and Health Standards

promulgated under the Occupational Safety and Health Act of 1970 as amended, 29 U.S.C. 651 et. seq. (“OSHA”) and all other applicable Federal, State, County, and Municipal laws, regulations, ordinances, and standards.

Selected Developer shall take all necessary precautions necessary to prevent harm and or damage to the property of any third party in its performance of the contract.

ARTICLE 18. INFORMATION ACCESS AND AUDIT RIGHTS

18.1 Information Access

Each Party (the “Disclosing Party”) shall make available to the other Party information that is in the possession of the Disclosing Party and is necessary in order for the other Party to: (i) verify the costs incurred by the Disclosing Party for which the other Party is responsible under this Agreement; and (ii) carry out its obligations and responsibilities under this Agreement. The Parties shall not use such information for purposes other than those set forth in this Article 18.1 (“*Information Access*”) and to enforce their rights under this Agreement. Nothing in this Article 18.1 (“*Information Access*”) shall obligate the Transmission Provider to make available to a Party any third party information in its possession or control if making such third party information available would violate a Tariff restriction on the use or disclosure of such third party information.

18.2 Reporting of Legal Violations and Non-Force Majeure Events

Each Party (the “Notifying Party”) shall notify the other Party when the Notifying Party becomes aware of its inability to comply with the provisions of this Agreement for a reason other than a Force Majeure Event. The Selected Developer further agrees to immediately inform the Transmission Provider if it receives any notice from a Governmental Authority regarding a violation of Applicable Laws and Regulations or safety standards or reports such a violation to a Governmental Authority. The Parties agree to cooperate with each other and provide necessary information regarding such inability to comply, including the date, duration, reason for the inability to comply, and corrective actions taken or planned to be taken with respect to such inability to comply. Notwithstanding the foregoing, notification, cooperation, or information provided under this Article 18.2 (“*Reporting of Legal Violations and Non-Force Majeure Events*”) shall not entitle the Party receiving such notification to allege a cause for anticipatory breach of this Agreement.

18.3 Audit Rights

Subject to the requirements of confidentiality under Article Article 16 (“*Project Confidential Information*”) of this Agreement, the Transmission Provider’s audit rights shall include

Transmission Provider's right to audit the Selected Developer's costs pertaining to performance or satisfaction of obligations under this Agreement.

18.3.1 Transmission Provider's Audit Rights

The Transmission Provider, or its duly authorized representative, shall have the right, but shall have no obligation, during normal business hours, and upon prior reasonable notice to the Selected Developer, to audit at its own expense the accounts and records pertaining to satisfaction of obligations under this Agreement. Such audit rights shall include, but are not limited to, the costs pertaining to performance or satisfaction of obligations under this Agreement.

Any audit authorized by this Article 18.3 ("*Audit Rights*") shall be performed at the offices where such accounts and records are maintained and shall be limited to those portions of such accounts and records that relate to performance and satisfaction of obligations under this Agreement. The Selected Developer shall keep such accounts and records for a period equivalent to the audit rights periods described in Article 18.4 ("*Audit Rights Period for Construction-Related Accounts and Records*") of this Agreement.

18.3.2 Selected Developer's Audit Rights

Notwithstanding anything to the contrary in this Agreement, the Selected Developer's rights to audit the Transmission Provider's accounts and records shall be as set forth in the Tariff.

18.4 Audit Rights Period for Construction-Related Accounts and Records

Accounts and records related to the design, engineering, procurement, and construction of the Project constructed by the Selected Developer shall be subject to audit and verification by the Transmission Provider for a period of twenty-four (24) months following the issuance of a final cost summary.

ARTICLE 19. SUBCONTRACTORS

19.1 General

Subject to the Variance Analysis and reevaluation provisions of Section IX of Attachment FF of the Tariff governing changes in the qualifications of the Selected Developer, nothing in this Agreement shall prevent a Party from utilizing the services of any subcontractor it deems appropriate to perform its obligations under this Agreement. To the extent the Selected Developer has committed to using a specific subcontractor or subcontractors in its Proposal, any change to that subcontractor must be approved pursuant to Article 6.4 ("*Modification*"). Each

Party shall require its subcontractors to comply with all applicable terms and conditions of this Agreement in providing such services, and each Party shall remain primarily liable to the other Party for the performance of such subcontractor.

19.2 Responsibility of Principal

The creation of any subcontract relationship shall not relieve a Party of any of its obligations under this Agreement. Each Party shall be fully responsible to the other Party for the acts or omissions of its subcontractors as if no subcontract had been made; provided, however, that in no event shall the Transmission Provider be liable for the actions or inactions of the Selected Developer or its subcontractors with respect to obligations of the Selected Developer under Article 5 ("*Scope Of Service*") of this Agreement. Any applicable obligation imposed by this Agreement upon a Party shall be equally binding upon, and shall be construed as having application to, any subcontractor of such Party.

19.3 Subcontractor Insurance

The Selected Developer shall require each of its subcontractors to maintain appropriate insurance coverage types and amounts in accordance with Good Utility Practice.

ARTICLE 20. NOTICES

Unless otherwise provided in this Agreement, any notice, demand, or request required or permitted to be given by a Party to another Party and any instrument required or permitted to be tendered or delivered by a Party in writing to another Party shall be effective when delivered and may be so given, tendered, or delivered by: (i) recognized national courier; (ii) depositing the same with the United States Postal Service with postage prepaid for delivery by certified or registered mail, addressed to the Party; or (iii) personal delivery to the Party, at the address set out in Article 20 ("*Notices*") to this Agreement. Notwithstanding the foregoing, notices of any dispute must be made as provided in Attachment HH of the Tariff.

Either Party may change their respective notice information as information changes. A Party may change their respective notice information by providing a Written Notice to the other Party at least five (5) Business Day prior to the effective date of the change. Such changes shall not constitute an amendment to this Agreement.



20.1 Transmission Provider Addresses for Delivery of Notices

Midcontinent Independent System Operator, Inc.

Attn: Sr. Manager, Competitive Transmission Administration
2985 Ames Crossing Rd.
Eagan, MN 55121

Primary Point of Contact:

Brian Pedersen, Sr. Manager
Competitive Transmission Administration
Telephone: (651) 632-8541
Email: bpedersen@misoenergy.org

20.2 Selected Developer Addresses for Delivery of Notices

Republic Transmission, LLC

Attn: Project Director
400 Chesterfield Center, Suite 110
St. Louis, MO 63017

Primary Point of Contact:

Adam Gassaway
Telephone: (636) 532-2200
Email: agassaway@lspower.com

20.3 Alternative Forms of Notice

Any notice or request required or permitted to be given by a Party to another and not required by this Agreement to be given using another method may be given by e-mail to the following:

Midcontinent Independent System Operator, Inc.

Christopher Supino, Sr. Corporate Counsel
Midcontinent Independent System Operator, Inc.
Telephone: (317) 249-5256
Email: csupino@misoenergy.org

Republic Transmission, LLC

Casey Brandt, Managing Counsel
Telephone: (636) 532-2200
Email: cbrandt@lspower.com

ARTICLE 21. DISPUTES

In the event any Party has a dispute, or asserts a claim, that arises out of or in connection with this Agreement or its performance, such Party (the "Disputing Party") shall provide the other Party (the "Non-Disputing Party") with Written Notice of the dispute or claim ("Notice of Dispute"). Such dispute or claim shall be referred to a designated senior representative of each Party for resolution on an informal basis as promptly as practicable after receipt of the Notice of Dispute by the Non-Disputing Party. In the event the designated representatives of each Party are unable to resolve the claim or dispute through unassisted or assisted negotiations within thirty (30) Calendar Days of the Non-Disputing Party's receipt of the Notice of Dispute, such claim or dispute shall be submitted for resolution in accordance with the dispute resolution procedures specified in Attachment HH ("*Dispute Resolution Procedures*") of the Tariff.

21.1 Disputes Regarding Indemnification

Disputes regarding indemnification shall be resolved pursuant to the procedures set forth in Attachment HH ("*Dispute Resolution Procedures*") ("*ADR Process*") of the Tariff. However, in the event that the Selected Developer invokes the ADR Process, the Selected Developer shall proceed as if required to indemnify the Transmission Provider until such time as it is finally determined that no such indemnification or defense was required. Upon such a finding, the

Selected Developer may seek to discontinue its involvement in any legal defense subject to applicable law and ethical rules. Upon a finding that indemnity was not required, the Transmission Provider shall be required to repay the Selected Developer for all funds reasonably expended and liability reasonably incurred, with interest calculated pursuant to 18 CFR § 35.19(a), as a result of the indemnification and defense.

ARTICLE 22. PROTECTION OF WORK AND PROPERTY

The Selected Developer at all times shall perform its Work in accordance with the Tariff and Good Utility Practice and shall assume the risk of loss or damage to real or personal property and to all Work.

ARTICLE 23. REGULATORY REQUIREMENTS AND GOVERNING LAWS

23.1 Regulatory Requirements

The Selected Developer shall seek and obtain all required authorizations or approvals from Governmental Authorities as soon as reasonably practicable, and by the dates set forth in Appendix A of this Agreement, as applicable.

Nothing in this Agreement shall require the Selected Developer to take any action that could result in its inability to obtain, or its loss of, status or exemption under the Federal Power Act or the Public Utility Holding Company Act of 1935, as amended, or the Public Utility Regulatory Policies Act of 1978, or the Energy Policy Act of 2005.

23.2 Governing Law

Each Party expressly reserves the right to seek changes in, appeal, or otherwise contest any laws, orders, rules, or regulations of a Governmental Authority.

23.2.1 Choice of Law

This Agreement shall be governed by, and interpreted in accordance with the laws of the State of Indiana, the Federal Power Act, and the laws, regulations, and decisions of the FERC without regard to its conflicts of law principles, as applicable.

23.2.2 Venue

Any dispute regarding the terms of this Agreement, the Work and/or the obligations of any Party or other interested entity arising under this Agreement, or otherwise pertaining to the Project must be brought before the FERC in accordance with all applicable rules and regulations of the FERC and the provisions of the Tariff.

However, in the event that a Party properly brings a dispute before the FERC and the FERC finally determines that it does not have jurisdiction over such dispute, the Party that originally brought the dispute before the FERC may initiate any legal action authorized by this Agreement in a judicial forum specified in Article 23.2.3 of this Agreement.

23.2.3 Non-FERC Jurisdictional Dispute Venue

Any claim that FERC finally determines must be made before a state or federal court shall be brought only in the Circuit or Superior Court for the County of Hamilton, Indiana or in the United States District Court for the Southern District of Indiana, applying Indiana law.

Failure to abide by this provision shall be grounds for a dismissal of the suit without prejudice. The Party breaching the provisions of this Article shall bear the other Party's costs in obtaining dismissal or transfer.

ARTICLE 24. REPRESENTATIONS, WARRANTIES, AND COVENANTS

Each Party makes the following representations, warranties, and covenants:

24.1 Good Standing

Such Party is duly organized, validly existing, and in good standing under the laws of the state in which it is organized, formed, or incorporated, as applicable; that it is qualified or will become qualified to do business in the state or states in which the Project and transmission facilities to be developed and owned by such Party, as applicable, are located; and that it has the corporate power and authority to own its properties, to carry on its business as now being conducted, and to enter into this Agreement and carry out the transactions contemplated hereby and perform and carry out all covenants and obligations on its part to be performed under and pursuant to this Agreement.

24.2 Authority

Such Party has the right, power, and authority to enter into this Agreement, to become a Party hereto, and to perform its obligations hereunder. This Agreement is a legal, valid, and binding obligation of such Party, enforceable against such Party in accordance with its terms, except as the enforceability thereof may be limited by applicable bankruptcy, insolvency, reorganization, or other similar laws affecting creditors' rights generally and by general equitable principles, regardless of whether enforceability is sought in a proceeding in equity or at law.

24.3 No Conflict

The execution, delivery, and performance of this Agreement does not violate or conflict with the organizational or formation documents, or bylaws or operating agreement, of such Party, or any judgment, license, permit, order, material agreement, or instrument applicable to or binding upon such Party or any of its assets.

24.4 Consent and Approval

Such Party has sought or obtained, or, in accordance with this Agreement, will seek or obtain, each consent, approval, authorization, order, or acceptance by any Governmental Authority in connection with the execution, delivery, and performance of this Agreement, and it will provide to any Governmental Authority notice of any actions under this Agreement that are required by Applicable Laws and Regulations.

24.5 Technical Specifications Accurate

All data, including drawings and technical specifications, provided by the Selected Developer to the Transmission Provider for the Project are accurate and complete as and when provided.

24.6 Selected Developer Representations

In signing this Agreement, the Selected Developer represents and warrants that it is not relying on any statements, promises, representations, or information provided from the Transmission Provider other than what is specifically stated or identified in writing within: (i) the RFP; (ii) this Agreement, including any and all Agreement Documents; (iii) the relevant portions of the Tariff; and (iv) the relevant portions of the Transmission Provider's Business Practice Manuals.

24.7 Compliance with All Applicable Laws, Regulations and Safety Standards

The Selected Developer shall have the sole responsibility for identifying and complying with all Applicable Laws and Regulations and all safety standards applicable to the Project. The Transmission Provider may from time to time identify specific legal requirements or standards applicable to the Project and communicate the same to the Selected Developer. Such lists are not exhaustive and shall not be relied on by the Selected Developer as legal advice. No communication of such information to the Selected Developer shall relieve the Selected Developer of its obligation to identify and comply with all Applicable Laws and Regulations and safety standards.

ARTICLE 25. MISCELLANEOUS**25.1 Binding Effect**

This Agreement and the rights and obligations hereof shall be binding upon and shall inure to the benefit of the successors and assigns of the Parties hereto.

25.2 Entire Agreement

This Agreement, including all Agreement Documents attached hereto, constitutes the entire agreement between the Parties with reference to the subject matter hereof.

25.3 No Third Party Beneficiaries

This Agreement is not intended to and does not create rights, remedies, or benefits of any character whatsoever in favor of any persons, corporations, associations, or entities other than the Parties, and the obligations herein assumed are solely for the use and benefit of the Parties, their successors in interest, and, where permitted, their assigns.

25.4 Waiver

The failure of a Party to this Agreement to insist, on any occasion, upon strict performance of any provision of this Agreement shall not be considered a waiver of any obligation, right, or duty of, or imposed upon, such Party. Any waiver at any time by either Party of its rights with respect to this Agreement shall not be deemed a continuing waiver or a waiver with respect to any other failure to comply with any other obligation, right, or duty of this Agreement.

25.5 Headings

The descriptive headings of the various Articles and Sections of this Agreement have been inserted for convenience of reference only and are of no significance in the interpretation or construction of this Agreement.

25.6 Multiple Counterparts

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

25.7 Amendment

By mutual agreement, the Parties may amend this Agreement by a written instrument duly executed by all of the Parties. Such amendment shall become effective and a part of this Agreement upon satisfaction of all Applicable Laws and Regulations. Any such amendment must be consistent with the then-effective Tariff.

25.8 Modification of Appendices by the Parties

Except as described in Appendices B and C to this Agreement, the Parties may by mutual agreement amend the Appendices to this Agreement by a written instrument duly executed by all of the Parties; provided, however, that such modification is consistent with the then-effective Tariff.

25.9 Reservation of Rights

The Transmission Provider has the right to make a unilateral filing with FERC to modify this Agreement pursuant to Section 205 or any other applicable provision of the Federal Power Act and FERC's rules and regulations thereunder with respect to any rates, terms and conditions, charges, classifications of service, rule, or regulation. The Selected Developer shall have the right to make a unilateral filing with FERC to modify this Agreement pursuant to Section 206 or any other applicable provision of the Federal Power Act and FERC's rules and regulations. Each Party shall have the right to protest any such filing by another Party and to participate fully in any proceeding before FERC in which such modifications may be considered.

25.10 No Partnership

This Agreement shall not be interpreted or construed to create an association, joint venture, agency relationship, or partnership among or between the Parties or to impose any partnership obligation or partnership liability upon any Party. No Party shall have any right, power, or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind, the other Parties.

25.11 Joint and Several Obligations

Except as otherwise provided in this Agreement, the obligations of the Transmission Provider and the Selected Developer are several, and are neither joint nor joint and several.

25.12 Nature of the Transmission Provider's Rights

The rights and remedies reserved by the Transmission Provider in this Agreement shall be cumulative and in addition to any other rights or remedies to which the Transmission Provider may be entitled to, and the exercise of any such rights or remedies shall not exclude the exercise of any other rights or remedies to which the Transmission Provider may be entitled. Neither the exercise of the Transmission Provider's rights or remedies, nor the failure to exercise any such rights or remedies, shall create in any manner any obligation to any third person or entity.

25.13 Advertising and Use of Transmission Provider's Facilities

Neither Party nor its employees, agents, contractors, or sub-contractors shall use the other Party's photographs, logo, trademark, or other identifying characteristics without such other Party's prior written approval. The provisions of this Article 25.13 shall not be construed to prevent the Transmission Provider from identifying the Selected Developer or the Project in any report, presentation or filing.



IN WITNESS WHEREOF, the Parties have executed this Agreement in multiple originals,
each of which shall constitute and be an original effective agreement between the Parties.

Republic Transmission, LLC

Name of authorized corporate officer or equivalent official (print):

Paul Thessen

Title of authorized corporate officer or equivalent official (print):

President

Company name (print):

Republic Transmission, LLC

Signature of authorized corporate officer or equivalent official:

A handwritten signature in blue ink that reads "Paul Thessen".

Date: 6/28/17

Midcontinent Independent System Operator, Inc.

Name of authorized corporate officer or equivalent official (print):

Jennifer Curran

Title of authorized corporate officer or equivalent official (print):

Vice President, Systems Planning

Company name (print):

Midcontinent Independent System Operator, Inc.

Signature of authorized corporate officer or equivalent official:

A handwritten signature in blue ink that reads "Jennifer Curran".

Date: 6/29/17



APPENDICES TO THE SELECTED DEVELOPER AGREEMENT

Appendix A – Project Details, Implementation Schedule, & Costs

Appendix B – Change Request Form

Appendix C – Change Order Form

Appendix D – Irrevocable Standby Letter of Credit Template

Appendix E – Cash Deposit Agreement

Appendix F – Interconnection Requirements and Standards

Appendix G - Project Construction Completion Notice

Appendix A – Project Details, Schedule, & Costs

The Selected Proposal (including all attachments) is incorporated by reference into this Agreement and, together with the other Agreement Documents and the Tariff, states the Selected Developer's obligations with respect to the Project. This Appendix A contains certain non-confidential details, obligations, representations, and terms of the Selected Proposal but does not purport to recite all details of the Selected Proposal, which includes confidential and commercially sensitive information. The complete Selected Proposal is on file with MISO and may be made available to regulatory authorities and other authorized parties as necessary and only in accordance with the Tariff and this Agreement's confidentiality and disclosure provisions.

A.1 – Project Details

1. Description:

On December 10, 2015, the MISO Board of Directors approved the 2015 MISO Transmission Expansion Plan, which included the Duff-Coleman expansion project (the "Project"). The Project consists of a new single-circuit 345 kV transmission line to be constructed, owned and operated between the Duff substation located in Dubois County, Indiana (the "Duff Substation"), and the Coleman Extra High Voltage ("EHV") substation located in Hancock County, Kentucky (the "Coleman EHV Substation"). The Project is scheduled to be in service no later than January 1, 2021. The Project will be physically located in Dubois County, Indiana, Spencer County, Indiana and Hancock County, Kentucky with a crossing over the Ohio River (the "Ohio River Crossing").

The Project will interconnect to Southern Indiana Gas & Electric Company d/b/a Vectren Energy Delivery of Indiana Inc. ("Vectren") through the Duff Substation at the first transmission line structure located outside the Duff Substation fence. Vectren will design, engineer, install, own, operate and maintain the necessary equipment additions within the Duff Substation.

The Project will also interconnect to Big Rivers Electric Corporation ("Big Rivers") through the Coleman EHV Substation at the first transmission line structure located outside the Coleman EHV Substation fence. Big Rivers will design, engineer, install, own, operate and maintain the necessary equipment additions within the Coleman EHV Substation.

The Selected Proposal meets the requirements of the Project as set forth in the 2015 MISO Transmission Expansion Plan and does not deviate in project components from the specifications set forth in the 2015 MISO Transmission Expansion Plan and as detailed in the Duff-Coleman EHV 345 kV Competitive Transmission Project Request for Proposals (as revised through October 3, 2016).

2. Transmission Facilities:

The Selected Developer will construct a new single circuit, 345 kV transmission line. The transmission line will connect the Duff Substation to the Coleman EHV Substation.

New right-of-way ("ROW") will be required to construct, operate and maintain the new transmission line. The majority of ROW for the Project will have a width of 175 feet. The route length of the preferred route is approximately 33 miles, which will be subject to refinement after completing public engagement.

The Selected Developer will construct, own, operate and maintain all transmission line facilities including conductors, wires, structures, hardware and easements. The Selected Developer will not install, own or operate any station equipment at either the Duff Substation or the Coleman EHV Substation.

The Selected Developer will use 1,590 kcmil Lapwing 45/7 ACSS (Aluminum Conductor Steel Supported) conductors for the majority of the route and ACSS Lapwing HS-285 (high strength) conductor at the Ohio River Crossing. The conductor design emergency summer rating will be 3,896 amps at 347°F (175°C) maximum conductor temperature, calculated with absorptivity of 0.5 and emissivity of 0.5. The conductors will be installed on structures manufactured from galvanized steel consisting of H-frame tangent structures, H-frame running angle structures, three-pole running angle structures, and three-pole dead-end structures, subject to refinement after completing public engagement and design. At the Ohio River Crossing, the support structures will include galvanized steel H-frame tangent structures on each side of the river, subject to refinement after completing final design activities, supporting a span across the river that maintains a clearance of at least 123 feet. The conductor at the river crossing will be supported by double insulator strings.

Duff Substation Tie In:

The new single circuit, 345 kV transmission line will terminate at the 345 kV ring bus in Duff Substation. The interconnection point between the single circuit, 345 kV transmission line and the existing Duff Substation will be the first transmission line structure located outside of the Duff Substation fence. This structure (including foundations and grounding) will be provided by the Selected Developer. All insulators and hardware required to dead-end the transmission circuit conductors and OPGW (Optical Ground Wire) shield wires on the line-side of the first transmission line structure will be provided by the Selected Developer. The conductor and OPGW shield wire span located between the first transmission line structure and the substation structure inside Duff Substation will be provided by Vectren. At the first transmission line structure, all insulators and hardware required solely to dead-end the conductor and shield wire span located between the first transmission line structure and the substation structure inside Duff Substation will be provided by Vectren. The Selected Developer will provide all connectors and jumpers required to physically interconnect the transmission circuit

conductors and shield wires to the substation conductors and OPGW shield wires at the first transmission line structure.

The entry point of the new 345 kV transmission line terminating at Duff Substation will be from the east side of Duff Substation just south of the entry point of the existing Duff-Ramsey 345 kV transmission line owned by Duke Energy Indiana Inc. The first structure external to Duff Substation on the new 345 kV transmission line will be located east of the existing Duff Substation footprint approximately 200' to 300' to the south of the Duke Energy Indiana Inc. 345 kV transmission circuit. The conductors will dead-end within the substation on a structure to be located inside the substation, approximately 125' west of the east-side fence and centered approximately 115' north of the south-side fence. The phase-to-phase horizontal conductor spacing at the dead-end structure within the substation will be approximately 20' (subject to change pending the final substation design). The attachment height of the conductors will be approximately 50' (subject to change pending the final substation design). The dead-end structure will facilitate attachment points for two OPGW shield wires approximately 70' above the ground. The horizontal spacing of the attachment points for the OPGW shield wires will be approximately 60' (centered on the middle phase conductor attachment point) at a location 125' west of the east-side substation fence (subject to change pending the final substation design). Existing 138 kV and 69 kV transmission circuits run in a north-south orientation approximately 200' east of the east-side substation fence. The proposed 345 kV transmission line shall be designed to adequately clear the existing 138 kV and 69 kV lines upon entering the substation in accordance with National Electric Safety Code and other applicable clearance requirements.

Coleman EHV Substation Tie In:

The new single circuit, 345 kV transmission line will terminate at a new 345 kV ring bus in Coleman EHV Substation. The interconnection point between the new single circuit, 345 kV transmission line and the existing Coleman EHV Substation will be the first transmission line structure located outside of the Coleman EHV Substation fence. This structure (including foundations and grounding) will be provided by the Selected Developer. All insulators and hardware required to dead-end the transmission circuit conductors and shield wires on the line-side of the first transmission line structure will be provided by the Selected Developer. The conductor and shield wire span located between the first transmission line structure and the substation structure inside Coleman EHV Substation will be provided by Big Rivers. At the first transmission line structure, all insulators and hardware required solely to dead-end the conductor and shield wire span located between the first transmission line structure and the substation structure inside Coleman EHV Substation will be provided by Big Rivers. The Selected Developer will provide all connectors and jumpers required to physically interconnect the transmission circuit conductors and shield wires to the substation conductors and shield wires at the first transmission line structure.

The entry point of the Project's transmission line terminating in the Coleman EHV Substation will be from the northeast side of the Coleman EHV Substation; approximately 60' measured along the fence from the northern corner of the substation footprint and northwest of the 161 kV right of way into the substation. The first structure located outside the Coleman EHV Substation fence will be located northeast of the existing Coleman EHV Substation footprint. The conductors will dead-end within the substation in a horizontal configuration on a structure to be located inside the substation approximately 280' southwest of the northeast-side fence and centered approximately 60' southeast of the northwest-side fence. The phase-to-phase horizontal conductor spacing at the dead-end structure within the substation will be approximately 20' (subject to change pending the final substation design). The approximate attachment height of the conductors will be 66' (subject to change pending the final substation design). The dead-end structure will facilitate attachment points for two shield wires approximately 80' above the ground. The horizontal spacing of the attachment points for the shield wires will be approximately 60' (centered on the middle phase conductor attachment point) at a location 280' southwest of the northeast-side substation fence (subject to change pending the final substation design).

Notwithstanding anything to the contrary in this Section A.1.2, the interconnection requirements, interconnection points, points of entry, changes of ownership, and substation tie-in details, are subject to change pending final design and upon mutual agreement of the Selected Developer and the applicable Interconnecting Transmission Owner.

3. Network Upgrades:

Excluded from scope of Project.

4. System Protection Facilities:

Excluded from scope of Project.

5. Distribution Upgrades:

Excluded from scope of Project.

6. Affected System Upgrades:

Excluded from scope of Project.

7. Diagram of Project:

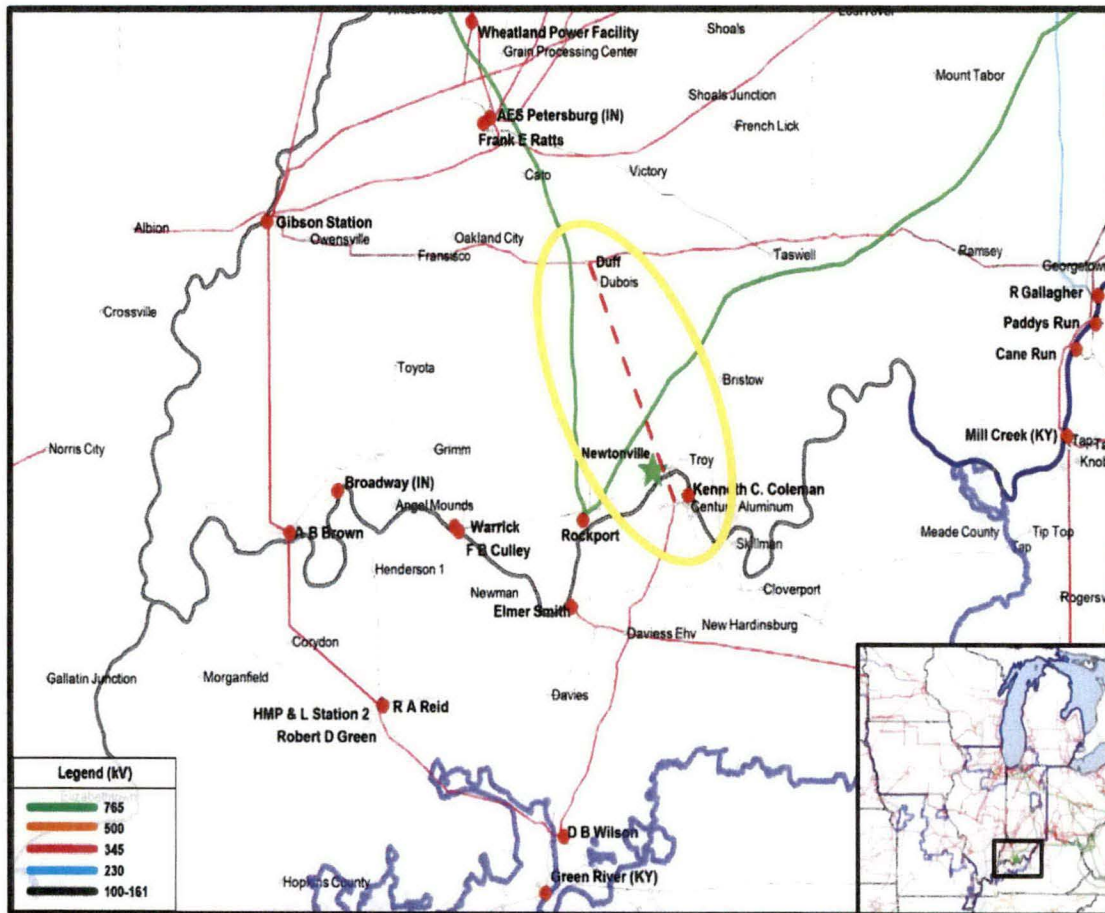


Figure A.1-1: Duff-Rockport-Coleman 345 kV Project Depiction

A.2 – Project Implementation Schedule

1. Project Implementation Schedule:

Activity	Target Start Date	Target Finish Date
Project Status Reporting (per Article 6.2 and BPM-020)	Quarterly (as of Effective Date of this Agreement)	May 2020
Route and Site Evaluation	July 2016	July 2017
Regulatory Permitting	July 2016	November 2018
Right of Way and Land Acquisition	July 2016	November 2018
Engineering and Surveying	July 2016	October 2018
Material Procurement	May 2018	October 2019
Construction	July 2018	May 2020
Energization	May 2020	No later than January 1, 2021

A.3 – Project Costs & Cost Cap / Cost Containment Commitments

1. Selected Developer’s estimated Project costs:

The cost estimate contained herein represents the Selected Developer’s estimate as of the date of the Selected Proposal based on information available to the Selected Developer at such time.

Project Costs	Nominal Dollars (\$)
Project Management	\$ REDACTED
Route & Site Evaluation	\$ REDACTED
Regulatory Permitting	\$ REDACTED
Right-of-Way & Land Acquisition	\$ REDACTED
Engineering & Surveying	\$ REDACTED
Structure Material Costs	\$ REDACTED
Conductor Material Costs	\$ REDACTED
Other Material Costs	\$ REDACTED
Structure Construction Labor Costs	\$ REDACTED
Conductor Construction Labor Costs	\$ REDACTED
Other Construction Labor Costs	\$ REDACTED
Commissioning & Energization	\$ REDACTED
Total Allowance for Contingencies	\$ REDACTED
Administrative & General Overhead	\$ REDACTED
Miscellaneous and Other Expenses	\$ REDACTED
Cumulative Project Specific AFUDC	\$ REDACTED
Total:	\$ 53,848,417

In accordance with Article 6.2 and BPM-020, the Selected Developer shall provide MISO with regular project status updates regarding cost estimates and the final cost of construction of the Project.

2. Selected Proposal estimated Annual Transmission Revenue Requirement

The estimated Annual Transmission Revenue Requirements (“ATRR”) contained herein represent the Selected Developer’s estimate as of the date of the Selected Proposal based on information available to the Selected Developer at such time.

Estimate	Project ATRR <i>(Nominal \$)</i>
CWIP - 2017	\$ -
CWIP - 2018	\$ -
CWIP - 2019	\$ -
CWIP - 2020	\$ -
2021	\$ 5,912,698
2022	\$ 5,962,896
2023	\$ 6,193,513
2024	\$ 6,051,582
2025	\$ 5,914,404
2026	\$ 5,781,568
2027	\$ 5,648,912
2028	\$ 5,514,455
2029	\$ 5,379,929
2030	\$ 5,245,640
2031	\$ 5,111,228
2032	\$ 5,000,004
2033	\$ 4,905,186
2034	\$ 4,810,675
2035	\$ 4,715,979
2036	\$ 4,657,925
2037	\$ 4,600,689
2038	\$ 4,507,188
2039	\$ 4,413,753
2040	\$ 4,320,386
2041	\$ 4,227,087
2042	\$ 4,133,859
2043	\$ 4,040,703
2044	\$ 3,947,620
2045	\$ 3,854,610
2046	\$ 3,761,677
2047	\$ 3,668,820
2048	\$ 3,576,042
2049	\$ 3,483,344
2050	\$ 3,390,727

2051	\$	3,298,193
2052	\$	3,205,743
2053	\$	3,113,379
2054	\$	3,021,103
2055	\$	2,928,916
2056	\$	2,836,820
2057	\$	2,744,817
2058	\$	2,652,908
2059	\$	2,561,094
2060	\$	2,469,379

3. Selected Developer's cost cap / cost containment & rate commitments:

The Selected Developer commits to the cost cap / cost containment and rate-recovery commitments (e.g. specific forgone rate incentives) for the Project as follows:

a. Total Rate Base Cap

- i. Except in accordance with Section 9.2.1 of this Agreement, Selected Developer agrees that it will not seek, through its Annual Transmission Revenue Requirement or through any other means, recovery of or any return on any Project Costs in excess of an amount equal to the lesser 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").
- ii. In the event the Project is impacted by an Uncontrollable Force (as defined below), and without limiting Selected Developer's obligations under Article 11 of this Agreement upon the occurrence of a Force Majeure Event, Selected Developer shall use commercially reasonable efforts to mitigate such impact. Selected Developer shall notify MISO within a reasonable time after the occurrence of an Uncontrollable Force, which notice shall describe, in reasonable detail, the actions Selected Developer plans to take to mitigate the impact of same.
- iii. As used herein, the following terms have the following meanings:
 1. "Annual Transmission Revenue Requirement" means the rate determined by FERC following a filing by Selected Developer 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.
 2. "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.

3. "Project Costs" means any and all costs and expenses directly or indirectly incurred by Selected Developer 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 Selected Developer 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 Selected Developer or by one or more third parties retained by Selected Developer (without regard to whether such third parties are affiliated or non-affiliated), but excluding in all cases Excluded Costs.
4. "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.
5. "Total Rate Base Cap Amount" means \$58.1 million.
6. "Uncontrollable Force" means (i) any destruction of or damage to any portion of the Project, or any interruption, suspension or interference with Selected Developer'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 Selected Developer (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 Transmission Provider of its obligations under this Agreement or any request by Transmission Provider to delay or suspend any activities associated with the Project.

b. Return On Equity (“ROE”) Cap

- i. Selected Developer agrees that it will not seek through its Annual Transmission Revenue Requirement 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.

c. Equity Percentage Cap

- i. With respect to its actual or hypothetical capital structure, Selected Developer agrees to limit equity as a percentage of the overall capital structure to be no more than forty-five percent (45%) of the Applicable Base Rate Amount (the “Equity Percentage Cap”). The Equity Percentage Cap will apply to the Project as a whole, such that the aggregate amount of equity for the Project (including any portion of the Project that has been assigned, transferred or conveyed to any entity other than the Selected Developer) will not exceed forty-five percent (45%) of the Applicable Base Rate Amount.

d. Foregone Construction Work in Progress

- i. Selected Developer agrees not to seek construction work in progress (“CWIP”) as part of its Annual Transmission Revenue Requirement.

e. Schedule Guarantee

- i. Selected Developer confirms that it can meet an in-service date of January 1, 2021 (as permissibly adjusted, the “Guaranteed Completion

Date”). Selected Developer agrees to a reduction in the 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. The Guaranteed Completion Date is subject to extension due to a Force Majeure Event (regardless of whether such event could have been reasonably foreseen by the Selected Developer), if the critical path progress of the Work is negatively impacted as a result of such Force Majeure Event. In the event the critical path progress of the Work is negatively impacted by a Force Majeure Event, Selected Developer shall use commercially reasonable efforts to mitigate such impact. Selected Developer shall notify MISO within a reasonable time after the occurrence of a Force Majeure Event, which notice shall describe, in reasonable detail, the nature of the event and the actions Selected Developer plans to take to mitigate the impact of the same. Once Selected Developer determines the length of any delay to the critical path progress of the Work, it shall notify MISO of the same, and MISO shall issue an appropriate Change Order extending the Guaranteed Completion Date as equitably required to mitigate the impact of such a Force Majeure Event on Selected Developer.

f. Priority

- i. In the event of any conflict between the terms and conditions contained in this Appendix A or elsewhere in the Selected Developer Agreement and the terms and conditions of the Selected Proposal, the terms and conditions contained in the Selected Developer Agreement, including this Appendix A, shall prevail. In the event of any conflict between the language of the Selected Proposal and the Tariff, the Tariff shall prevail.

g. Inflation

- i. The Total Rate Base Cap Amount is not subject to adjustment for inflation.
4. Selected Developer may use its discretion in allocating Project Costs to particular cost categories as needed during the term of this Agreement, and Selected Developer may adjust the amounts in each Project cost category as needed during the term of this Agreement, provided that the total Project Costs does not exceed the Total Rate Base Cap Amount.
5. After the Project has been placed into service, the Selected Developer shall provide to MISO the information required by Attachment FF Section I.C.11(a) to the Tariff in the timeframe described therein.



Appendix B – Change Request Form

Date: [Click here to enter a date.](#)

Request #:

Midcontinent Independent System Operator, Inc.
Attn: Sr. Manager, Competitive Transmission Administration
2985 Ames Crossing Rd.
Eagan, MN 55121

RE: [ENTER PROJECT NAME] Competitive Transmission Project

The following, including the attached supporting documentation, is a Change Request proposing to change the Project and/or the Proposal under the [ENTER PROJECT NAME] Selected Developer Agreement executed on [Publish Date] between [Enter Company Name] and the Transmission Provider (the "Agreement"). Capitalized terms used herein and not defined are defined in the Agreement.

Description of change requested and its effect on the Project Details: *(If none, so state.)*

Effect of this Change on the Project Implementation Schedule: *(If none, so state.)*

Effect of this Change on Project Cost and Cost Cap / Cost Containment: *(If none, so state.)*

Attachments: *(List any supporting documentation attached; if none, so state.)*

[Enter Company Name]

Name of authorized corporate officer or equivalent official (print):

Title of authorized corporate officer or equivalent official (print):

Signature of authorized corporate officer or equivalent official:

Date: [Click here to enter a date.](#)



Appendix C – Change Order

Change Order Date: Click here to enter a date.

Change Order #: __

Reference is made to the [ENTER PROJECT NAME] Selected Developer Agreement executed on [Publish Date] between [Enter Company Name] and the Transmission Provider, as amended as of the date hereof (the “Agreement”). Capitalized terms used herein and not defined are defined in the Agreement.

Summary description of Change: _____

Detailed description of approved Change:

Description of approved Project cost and/or cost cap / cost containment Change:

Attachments: *(List any supporting documentation attached; if none, so state.)*

[Enter Company Name]

Signature of authorized corporate officer or equivalent official:

Name of authorized corporate officer or equivalent official (print):

Title of authorized corporate officer or equivalent official (print):

Date: Click here to enter a date.

Midcontinent Independent System Operator, Inc.

Signature of authorized corporate officer or equivalent official:

Name of authorized corporate officer or equivalent official (print):

Title of authorized corporate officer or equivalent official (print):

Date: Click here to enter a date.



Appendix D – Irrevocable Standby Letter of Credit Template

(See Attached)



[TO BE ON LETTERHEAD OF THE ISSUING BANK]

IRREVOCABLE STANDBY LETTER OF CREDIT

Irrevocable Standby Letter of Credit No. _____

Issued: [Date]

Expires at our counter (unless evergreen): [Date]

Midcontinent Independent System Operator, Inc.
720 City Center Drive
Carmel, IN 46032
Attn: Manager, Credit & Risk Management

Applicant/Account Party [INSERT NAME OF SELECTED DEVELOPER OR ITS PARENT GUARANTOR]:

Ladies and Gentlemen:

We, _____ [Fill in name of Bank] _____ (“Issuer”) do hereby issue this Irrevocable Non-Transferable Standby Letter of Credit No. _____ by order of, for the account of, and on behalf of _____ (“Account Party”) and in favor of the Midcontinent Independent System Operator, Inc. (“Beneficiary”). The term “Beneficiary” includes any successor by operation of law of the named beneficiary including without limitation any liquidator, receiver or conservator.

This Letter of Credit is issued, presentable and payable and we guaranty to the drawers, endorsers and bona fide holders of this Letter of Credit that drafts under and in compliance with the terms of this Letter of Credit will be honored on presentation and surrender of certain documents pursuant to the terms of this Letter of Credit.

This Letter of Credit is issued to secure all of the obligations of Account Party to Beneficiary arising from Account Party’s acceptance of its designation as the Selected Developer (“SD”) for a Competitive Transmission Project designated as Project No. _____ (the “Project”), for which Beneficiary and Account Party have executed a Selected Developer Agreement (“SDA”). The obligations secured by this Letter of Credit include each and every obligation of the Account Party imposed by the SDA, as supplemented or amended; each provision of Beneficiary’s Open Access Transmission, Energy and Operating Reserve Markets Tariff (“Tariff”) applicable to the Project, as amended; and pursuant to any further agreement, commitment, obligation or undertaking that Account Party has made or is

required to make by the SDA and/or Tariff (collectively the "Tariff and Agreement Documents").

This Letter of Credit is available in one or more drafts and may be drawn hereunder for the account of _____ up to an aggregate amount not exceeding \$ _____ .00 (United States Dollars _____ and 00/100).

This Letter of Credit is drawn against by presentation to us at our office located at _____ of a drawing certificate: (i) signed by an officer or authorized agent of the Beneficiary; (ii) dated the date of presentation; and (iii) containing one (1) of the following statements:

1. "The undersigned hereby certifies to _____ ("Issuer"), with reference to its Irrevocable Non-Transferable Standby Letter of Credit No. _____, dated _____, issued on behalf of _____ ("Account Party") and in favor of the Midcontinent Independent System Operator, Inc. ("Beneficiary") that it has determined that said Account Party has failed to perform an obligation under, or make a payment in accordance with, the terms and provisions of the Tariff and/or Agreement Documents including all modifications, change orders, and any other documents forming a part of the Agreement Documents or required to be executed by the Tariff or Agreement Documents whether now or hereafter executed, and any replacements or substitutions thereof. The Beneficiary hereby draws upon the Letter of Credit in an amount equal to \$ _____ (United States Dollars _____ and 00/100)"; or
2. "As of the close of business on _____, 20__ (fill in date which is less than one hundred ten (110) Calendar Days before the expiration date of the Letter of Credit), Account Party has failed to renew, replace or amend the Letter of Credit in a manner acceptable to the Midcontinent Independent System Operator, Inc. ("Beneficiary"); or
3. "As of the close of business on _____, 20__ (fill in date which is more than ten (10) Business Days after the Beneficiary has requested that Account Party replace the Letter of Credit because the Issuer's corporate debt is rated less than "A-" by S&P, "A3" by Moody's, "A-" by Duff & Phelps, or "A-" by Fitch or an equivalent short-term debt rating), Account Party has failed to replace the Letter of Credit in a manner acceptable to the Midcontinent Independent System Operator, Inc. ("Beneficiary").

Beneficiary shall have the right, in the event of a draw pursuant to subparagraph (2) or (3) of the immediately preceding paragraph, to draw down the entire face value of the Letter of Credit.

If presentation of any drawing certificate is made on a Business Day and such presentation is made on or before 10:00 a.m. _____ Time, Issuer shall satisfy such drawing request on the same Business Day. If the drawing certificate is received after 10:00 a.m. _____ Time, Issuer will satisfy such drawing request on the next Business Day.

It is a condition of this Letter of Credit that it will be automatically extended without amendment for one (1) year from the expiration date hereof, or any future expiration date, unless at least one hundred twenty (120) Calendar Days prior to any expiration date Issuer sends notice to Beneficiary and Account Party at the above address by registered mail that Issuer elects not to consider this Letter of Credit renewed for any such period.

This Letter of Credit may be terminated only upon Issuer's receipt of a written release from the Beneficiary releasing the Issuer from its obligations under this Letter of Credit, which Beneficiary shall provide: (a) upon full and complete performance by the Account Party of all of its obligations under the Tariff, and Agreement Documents, or (b) upon receipt by Beneficiary of a substitute or replacement letter credit for the Project in a form acceptable to Beneficiary.

Disbursements under the Letter of Credit shall be in accordance with the following terms and conditions:

1. All commissions and charges will be borne by the Account Party.
2. This Letter of Credit may not be transferred or assigned by the Issuer.
3. This Letter of Credit is irrevocable.
4. This Letter of Credit shall be governed by the International Standby Practices Publication No. 590 of the International Chamber of Commerce, including any amendments, modifications or revisions thereof (the "ISP"), except to the extent that terms hereof are inconsistent with the provisions of the ISP, in which case the terms of the Letter of Credit shall govern. This Letter of Credit shall be governed by the internal laws of the State of Indiana to the extent that the terms of the ISP are not applicable. In the event of any conflict between the ISP and such Indiana laws, the ISP shall control.
5. This Letter of Credit may not be amended, changed or modified without the express written consent of the Beneficiary and the Issuer.
6. The Beneficiary shall not be deemed to have waived any rights under this Letter of Credit, unless the Beneficiary or an authorized agent of the Beneficiary shall have signed a written waiver.

No such waiver, unless expressly so stated therein, shall be effective as to any transaction that occurs subsequent to the date of the waiver, nor as to any continuance of a breach after the waiver.

7. Except as expressly stated herein, this undertaking is not subject to any agreement, condition or qualification.



8. A failure to make any partial drawings at any time shall not impair or reduce the availability of this Letter of Credit in any subsequent period or our obligation to honor your subsequent demands for payment made in accordance with the terms of this Letter of Credit.

[Authorized Signature]

[Date]

Name: _____

Title: _____

Appendix E – Cash Deposit Agreement

CASH DEPOSIT AGREEMENT

_____ (“x”) has agreed to deliver a cash deposit in the amount of _____ to the Midcontinent Independent System Operator, Inc. (“Transmission Provider”) to secure Selected Developer’s performance of its obligations arising from Selected Developer’s acceptance of its designation as the Selected Developer for a Competitive Transmission Project designated as Project No. _____ (the “Project”), for which the Transmission Provider and Selected Developer have executed a Selected Developer Agreement (“SDA”). The obligations secured by this Cash Deposit Agreement include each and every obligation of the Selected Developer imposed by the SDA, as supplemented or amended; each provision of Transmission Provider’s Open Access Transmission, Energy and Operating Reserve Markets Tariff (“Tariff”) applicable to the Project, as amended; and pursuant to any further agreement, commitment, obligation or undertaking that the Selected Developer has made or is required to make by the SDA and/or Tariff (collectively the “Tariff and Agreement Documents”), together with the Transmission Provider’s actual and reasonable costs, including reasonable attorneys’ fees and expert witness fees incurred in conducting reevaluation and/or reassigning the Project pursuant to Section XI of Attachment FF of the Tariff.

Selected Developer agrees to deliver _____, which amount represents three percent (3.0%) of the total estimated cost of the Project, to Transmission Provider (the “Project Deposit”) by wire transfer to a segregated account designated by Transmission Provider in a written notice to Selected Developer. Such account (the “Account”) shall be with a Qualified Institution (the “Custodian”) and registered in the name of Transmission Provider for the benefit of Selected Developer. Transmission Provider shall have complete and total control over the Account and the Project Deposit, provided that the Selected Developer has certain contract rights to the Project Deposit as provided under the Tariff and/or this Agreement. Qualified Institution means a commercial bank or trust company organized under the law of the United States or a political subdivision thereof, with a Credit Rating of at least “A-” by S&P or “A3” in the case of Moody’s. The Project Deposit, together with any additional amounts deposited by or at the direction of Selected Developer in the Account and any and all interest, shall be referred to herein as the “Total Project Deposit.” Transmission Provider agrees that Selected Developer shall earn interest on the Total Project Deposit at the Transmission Provider’s overnight bank rate from and including the date of deposit to, but excluding, the date such Total Project Deposit is returned (or applied as described below).

To secure its obligations under this Cash Deposit Agreement, and the Tariff and Agreement Documents, the Selected Developer hereby grants to Transmission Provider a present and continuing first-priority security interest in, and lien on and right of offset against, all of the undersigned's right, title, and interest in the Account and the Total Project Deposit (including all interest thereon), including all products and proceeds of the foregoing, any and all renewals, extensions, replacements, modifications, additions, and substitutions of the foregoing, and all rights, remedies, claims and demands under or in connection with the foregoing. Selected Developer agrees to take such action as Transmission Provider reasonably requires in order to perfect Transmission Provider's first-priority continuing security interest in, and lien on and right of offset against the Account and Total Project Deposit, including, without limitation entering into a control agreement, in form and substance acceptable to Transmission Provider to give Transmission Provider control of the Account and Total Project Deposit.

The Transmission provider shall have the right to draw upon the Account for any portion or all of the Total Project Deposit upon making a determination, pursuant to the Tariff and Agreement Documents, that Selected Developer has failed to perform an obligation under, or make a payment in accordance with, the terms and provisions of the Tariff and/or Agreement Documents including all modifications, change orders, and any other documents forming a part of the Agreement Documents or required to be executed by the Tariff or Agreement Documents whether now or hereafter executed, and any replacements or substitutions thereof ("Default Determination").

Transmission Provider agrees that it shall not have the right to sell, pledge, assign, invest, use, commingle or otherwise dispose of, or otherwise use in its business the Total Project Deposit unless and until a Default Determination has been made, provided that Transmission Provider shall have all the rights of a secured party as contemplated by the UCC. Transmission Provider further agrees that it shall be entitled to draw on all or any portion of the Total Project Deposit upon making a Default Determination and may apply such funds for any purpose authorized by the Tariff and Agreement Documents.

If additional cash deposit is required by the Tariff or Agreement Documents, and Selected Developer adds such additional cash deposit, then such cash deposit shall be added to the existing Total Project Deposit under this Cash Deposit Agreement and the security interest granted under this Agreement shall attach to such additional cash deposit.

Selected Developer hereby constitutes and appoints Transmission Provider, through any of its officers, as its true and lawful attorney-in-fact, with full power of substitution and authority in the place and stead of Selected Developer and in the name of Selected Developer or in its own name, from time to time, for the purpose of carrying out the terms of this Agreement from and after the occurrence of a Default Determination, to take any and all appropriate action and to

execute any and all documents and instruments which may be necessary or desirable to accomplish the purposes of this Agreement. Such power of attorney is coupled with an interest and shall be irrevocable until such time as all of the Selected Developer's obligations under the Tariff and Agreement Documents are fully and finally performed, all of the Agreements (other than the Tariff and this Cash Deposit Agreement) have terminated and the facilities that are the subject of the SDA have been placed under the functional control of the Transmission Provider. Selected Developer hereby ratifies and approves all acts of such attorneys.

Neither Transmission Provider nor any attorney will be liable for any acts or omissions nor for any error of judgment or mistake of fact or law, absent gross negligence, bad faith or willful misconduct and subject to the limitations on liability set forth in the Tariff.

Until such time as Transmission Provider exercises its remedies hereunder, all income, earnings and profits with respect to the Account (and Total Project Deposit) shall be reported for state and federal income tax purposes as attributable to Selected Developer and not Transmission Provider; and Selected Developer hereby instructs Transmission Provider (and any other person authorized to report taxable income distributions) to issue, or cause to be issued, IRS Form 1099 indicating Selected Developer as the recipient of such income, earnings and profits.

Subject to the approval of Transmission Provider, the Selected Developer may substitute any portion of the Total Project Deposit deposited hereunder with a letter of credit issued by a Qualified Institution in form and substance acceptable to Transmission Provider or other form of financial security acceptable to Transmission Provider, in Transmission Provider's sole discretion.

Selected Developer hereby expressly acknowledges and agrees that this Cash Deposit Agreement shall be in effect as of the date the cash deposit is delivered to Transmission Provider and shall govern the period of time during which funds are held by Transmission Provider in the Account.

This Agreement shall terminate and any remaining portion of the Total Project Deposit shall be returned to the Selected Developer within sixty (60) days following the date of termination of the SDA to secure the performance of any surviving obligations in accordance with the SDA.



Please acknowledge your agreement to the terms hereof by signing the acknowledgement set forth below.

Very truly yours,

By: _____

Name:

Title:

ACKNOWLEDGED AND AGREED:

MIDCONTINENT INDEPENDENT SYSTEM OPERATOR, INC.

By: _____

Name

Title:

Appendix F – Interconnection Requirements and Standards

Interconnection Requirements and Standards

This Appendix to the Agreement contains the list of current transmission facility interconnection standards and requirements, established by the Transmission Owner(s) or ITC(s) to which the Competitive Transmission Facilities associated with the Competitive Transmission Project will interconnect to as provided by the interconnecting Transmission Owners.

1. Big Rivers Electric Corporation

See RFP, Attachment A – *Facility Interconnection Requirements, CMP-FAC-01*

<https://www.misoenergy.org/Planning/Pages/TransDevQualSel.aspx>

2. Vectren Energy Delivery of Indiana, Inc.

See RFP, Attachment B – *Requirements for Transmission and End-User Facilities Interconnection to the Vectren Electric Transmission System*

<https://www.misoenergy.org/Planning/Pages/TransDevQualSel.aspx>



Appendix G – Project Construction Completion Notice

[Date]

Midcontinent Independent System Operator, Inc.

Attn: Sr. Manager, Competitive Transmission Administration
2985 Ames Crossing Rd.
Eagan, MN 55121

Re: [ENTER PROJECT NAME] Construction Completion

Dear _____:

This letter confirms that on [Date] [Enter Company Name] has completed construction of the [ENTER PROJECT NAME] Competitive Transmission Project.

Thank you.

Signature of authorized corporate officer or equivalent official:

Name of authorized corporate officer or equivalent official (print):

Title of authorized corporate officer or equivalent official (print):

Date: [Click here to enter a date.](#)

cc: Transmission Owner

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**

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May 14, 2018

1 **Item 6)** *Refer to the APA, page 16, regarding Big Rivers' right under the*
2 *APA to inspect that portion of the proposed transmission line facilities*
3 *located in Kentucky during all stages of the development and construction of*
4 *the project. Provide in detail how Big Rivers intends to exercise this*
5 *contractual right.*

6

7 **Response)** Big Rivers' staff will review design specifications and the plan and
8 profile sheets as they are developed. Big Rivers will inspect the transmission line
9 and right-of-way before, during, and after construction. This staff includes one
10 transmission line engineer, one real estate agent, and their supervisor, a Kentucky
11 licensed professional engineer.

12

13

14 **Witness)** Michael W. Chambliss

15

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1 **Item 7) Refer to the Testimony of Michael W. Chambliss ("Chambliss**
2 **Testimony"), page 3, lines 19-21. Identify what all is needed with respect to**
3 **the "necessary equipment additions within the Coleman EHV substation,**
4 **which are not a part of the MISO Project" and provide an itemized cost of**
5 **each of these necessary additions.**

6

7 **Response)** The 345-kV line terminal at Big Rivers' Coleman EHV substation
8 referenced in the Chambliss Testimony as well as Big Rivers' CPCN Application, page
9 4, lines 12-15, is necessary to provide a source of interconnect for the "MISO Project."
10 The line terminal requires that Big Rivers expand the existing 345 kV bus into a ring
11 to allow the interconnection of the new line. The table on the following page provides
12 an itemized estimated cost of each of the necessary components to allow the line
13 terminal addition within the Coleman EHV Substation:

14

15

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1

Big Rivers Electric Corporation Estimate Cost of Components for Terminal Addition within Coleman EHV Substation	
Description	Estimated Cost
Equipment Foundations	\$ 500,000
Power Circuit Breakers, 345 kV	800,000
Control and Relay Panels	170,000
Metering Accuracy Potential Transformers, 345 kV	80,000
Capacitive Coupled Voltage Transformers, 345 kV	20,000
Switches, 345 kV	180,000
Substation Steel and Materials	700,000
Contract Labor	1,800,000
Big Rivers Labor	300,000
Big Rivers Engineering	150,000
Contingency & Capital Labor Overhead Allocation	400,000
Capitalized Interest	100,000
Total	\$ 5,200,000

2

3

4 **Witness Michael W. Chambliss**

5

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1 **Item 8)** *Refer to the Chambliss Testimony, page 8, lines 7-10. Identify and*
2 *explain those requirements imposed by the Midcontinent Independent System*
3 *Operator upon Republic Transmission, LLC under the MISO Selected*
4 *Developer Agreement as well as the relevant North American Energy*
5 *Reliability Corporation reporting requirement associated with the proposed*
6 *transmission project.*

7

8 **Response)** The Project Ownership and Operations Agreement was developed to
9 establish certain MISO Selected Developer Agreement (“SDA”) requirements that
10 Republic has committed to, which Big Rivers will be obligated to continue to conform
11 to once Big Rivers purchases the Kentucky portion of the MISO Project. Specifically,
12 Big Rivers agrees to comply with the MISO Project cost cap, prescribed ROE, and the
13 debt/equity ratios prescribed in the SDA, for purposes of calculating the Annual
14 Transmission Revenue Requirement. Big Rives also agrees to perform maintenance
15 on the portion of the MISO Project that Big Rivers will own in accordance with good
16 utility practice. Big Rivers will be responsible for complying with NERC Standards
17 relating to ratings methodology; TADS reporting; misoperation reporting; protection
18 system coordination, maintenance, and testing; and vegetation management on the
19 portion of the MISO Project that Big Rivers will own.

20

21 **Witness)** Michael W. Chambliss

22

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1 **Item 9)** *Refer to the Chambliss Testimony, page 9, lines 8-15. Identify the*
2 *estimated rate impact to the two Century smelters and Domtar as a result of*
3 *the proposed transmission project.*

4

5 **Response)** The estimated Schedule 26 rate impact is approximately \$500 per MW-
6 Year for each of the two Century smelters and Domtar. This estimate is based on
7 Schedule 26 Indicative Annual Charges supplied by MISO as of November 9, 2017,
8 located on the MISO website: <https://www.misoenergy.org>, following this path:
9 Planning/ Transmission Planning Studies and Reports/MTEP/MTEP Studies/Indicative Rate
10 Reports.

11

12

13 **Witness** Michael W. Chambliss

14

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1 **Item 10) Refer to the Chambliss Testimony, page 9, lines 21-22, and page**
2 **10, line 1. Provide in detail the financial incentives and penalties contained**
3 **in the Selected Developer Agreement governing the construction and of the**
4 **proposed transmission project.**

5

6 **Response)** The incentives and penalties included in the Selected Developer
7 Agreement were also included in the Project Ownership and Operations Agreement
8 (“POOA”). Specifically, see Article VIII, pages 7-10 of the POOA. The POOA is
9 Exhibit D to the Asset Purchase Agreement, which is Exhibit A to Big Rivers’ CPCN
10 Application.

11

12

13 **Witness Michael W. Chambliss**

14

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1 **Item 11)** *Refer to the Chambliss Testimony, page 10, lines 1-11. Provide a*
2 *copy of the risk management plan that is to be implemented by Big Rivers*
3 *and Republic Transmission, LLC to identify, assess, mitigate, and monitor*
4 *risks associated with the proposed transmission project.*

5

6 **Response)** Republic Transmission and Big Rivers do not have a documented risk
7 management plan, but rather a robust risk management process. Republic has a
8 dedicated project director for this project. In addition to the project director, Republic
9 has a team of transmission development professionals that monitor the progress of
10 the proposed project and any risks associated with the proposed project. Big Rivers
11 and Hoosier Energy also each have a team of utility professionals involved with the
12 proposed project. Republic has primary responsibility for monitoring and mitigating
13 risks associated with the proposed project. A quarterly meeting is held and members
14 each of the teams attend. The meetings include a review of the budget, schedule, and
15 progress to-date, which are compared to the project plan. Any deviations from the
16 project plan are discussed, and mitigation opportunities are proposed to correct any
17 deviations. Risks to schedule such as ROW acquisition issues, environmental issues,
18 geological concerns, and permitting concerns are discussed. Potential solutions to
19 those issues are proposed and available alternatives are evaluated. Cost risks such
20 as steel prices, conductor prices, or contractor issues are discussed, and proposed risk
21 mitigation alternatives are discussed. Consensus is gained within the teams as to
22 the correct resolution to any identified potential risks, and those solutions are

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1 implemented and then are monitored to verify those solutions achieve the desired
2 results. Currently the project is ahead of schedule and on budget.

3

4

5 **Witness)** Michael W. Chambliss

6

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1 **Item 12)** *Refer to the Chambliss Testimony, page 10, lines 14-22.*

2

3 *a. Quantify the benefits to the Century Aluminum Hawesville smelter*
4 *resulting from the proposed transmission project.*

5 *b. Identify the benefits that will inure to the Big Rivers system as a*
6 *whole associated with the proposed transmission project.*

7

8 **Response)**

9 a. Please see the response provided for Item 13 of the Commission's Initial
10 Request for Information.

11 b. The proposed transmission project provides an EHV connection to a very
12 large industrial load pocket in the Big Rivers system (Century Aluminum,
13 Domtar, Aleris). The proposed project will significantly stiffen the
14 transmission system against voltage excursions due to deployment of large
15 blocks of static VARs (capacitors located at Century Aluminum, Coleman
16 Switchyard, and Coleman EHV Substation) and large swings in load such
17 as potline interruptions, and will provide a robust path to import power
18 whenever such power is competitively priced. The proposed project will also
19 mitigate operational issues that sometimes occur when congestion is heavy
20 and contingent overloads are identified.

21

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1 Also, please see Big Rivers' responses to Item 4b and Item 4c of the Attorney
2 General's Initial Request for Information.

3

4

5 **Witness)** Michael W. Chambliss

6

BIG RIVERS ELECTRIC CORPORATION

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1 **Item 13) Refer to the Chambliss Testimony, page 11, lines 1-4. State**
2 **whether transmission congestion has been an issue in the past with respect**
3 **to Big Rivers' economic development efforts, either in attracting large**
4 **commercial or industrial customers to locate within Big Rivers' service**
5 **territory or with respect to current customers wanting to expand their**
6 **operations.**

7

8 **Response) Century Aluminum cited the transmission congestion relief provided by**
9 **the Duff-to-Coleman EHV 345 kV project as a significant factor in the decision to**
10 **restart idled potlines at its Hawesville smelter. Century has publically stated that it**
11 **is investing approximately \$116 million in the Hawesville facility and creating**
12 **approximately 250-300 new jobs. In the absence of the proposed circuit, the continued**
13 **use of a special protection system (SPS) will be necessary to manage transmission**
14 **congestion. More specifically, transmission constraints resulting from predefined**
15 **events will be alleviated by automatically tripping potlines in order to reduce Century**
16 **Aluminum Hawesville load. The addition of any load in Hancock County and the**
17 **surrounding area increases the likelihood and magnitude of the SPS load reductions.**

18 **Big Rivers, in support of its Member Owners, has responded to requests**
19 **for information from many other potential economic development projects. The**
20 **potential customers typically seek information related to transmission system**
21 **capacity, reliability and member rates; natural gas supplies; river, rail, and road**
22 **transportation options; available labor; required state and local permitting; and**

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1 various other items. While robust infrastructure does appear critical to economic
2 development, the determining factor(s) for unsuccessful projects have not been
3 provided to Big Rivers.

4

5

6 **Witness)** Michael W. Chambliss

7

BIG RIVERS ELECTRIC CORPORATION

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1 **Item 14)** *Refer to the Chambliss Testimony, page 11 lines 20-22. Provide*
2 *an updated status of Rural Utilities Service's review of the APA.*

3

4 **Response)** Big Rivers requested the United States Department of Agriculture's
5 Rural Utilities Service's ("RUS") approval on May 8, 2018. The RUS typically will
6 grant approval within 60 days of the request.

7

8

9 **Witness)** Michael W. Chambliss

10

BIG RIVERS ELECTRIC CORPORATION

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1 *Item 15) Refer to the Electric Transmission Line Route Selection,*
2 *Technical Report, by Quantum Spatial ("Quantum Spatial Technical*
3 *Report"), pages 23, 25, and 33. Confirm the references to either East Kentucky*
4 *Power Cooperative or EKPC in these pages are correct.*

5

6 **Response)** Big Rivers has confirmed through Quantum Spatial that the references
7 to East Kentucky Power Cooperative and EKPC on pages 23, 25 & 33 of the Quantum
8 Spatial Electric Transmission Line Route Selection Technical Report are correct.

9

10

11 **Witness)** Michael W. Chambliss

12

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1 **Item 16)** *Refer to the Quantum Spatial Technical Report, page 41, Table*
2 *3. Confirm that the relative suitability value for "Rebuild Existing*
3 *Transmission Lines (good)" should be 2.2 rather than 2.3 as indicated in the*
4 *table.*

5

6 **Response)** Big Rivers has confirmed through Quantum Spatial that the relative
7 suitability value for "Rebuild Existing Transmission Lines (good)" should be 2.2
8 rather than 2.3. This typographical error was in Table 3 of page 41. The value of 2.2
9 is correctly reported in Table 2 of page 22, and Figure 2 of page 7.

10

11

12 **Witness)** Michael W. Chambliss

13

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1 **Item 17) Refer to the Quantum Spatial Technical Report, page 105, under**
2 **the third numbered topic labeled Project Management.**

3

4 **a. The first bullet point states that "Route A is slightly longer than**
5 **Route B, which results in a significantly higher construction cost."**
6 **On page 94 of the Quantum Spatial Technical Report, the total**
7 **project costs for Route A and Route B are \$9,278,855 and \$9,135,994,**
8 **respectively. Explain how a cost difference of \$142,861 can be**
9 **considered significant.**

10 **b. The second bullet point states that "Both Route A and Route B**
11 **require purchasing four easements, but Route A requires acquiring**
12 **a little more land than Route A." Confirm that the last reference to**
13 **Route A should be Route B.**

14 **c. The third bullet point states "Though Route B comes closer to an**
15 **occupied house, the difference in baseline cost and the resulting**
16 **project management costs of a shorter line make this the more**
17 **desirable route." Fully explain what is meant by "the resulting**
18 **project management costs of a shorter line."**

19

20 **Response)**

21 **a. When \$142,861 is considered as a portion of an approximate \$9,000,000**
22 **project, a 1.56% difference is not significant. However, as a not-for-profit**
23 **cooperative, Big Rivers has a responsibility to its Member Owners to look**

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1 for cost savings in all aspects of this project, or any project. With this in
2 mind, Big Rivers and its consultant view an additional cost of \$142,861 as
3 significant.

4 b. Big Rivers confirms that the last reference to Route A should be Route B.

5 c. Project Management concerns are defined to include those considerations
6 with the potential to increase project cost. Overall line length and total
7 project cost are minimized by using Route B instead of Route A.

8

9

10 **Witness)** Michael W. Chambliss

11

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1 **Item 18)** *Refer to the Quantum Spatial Technical Report, page 106, under*
2 *the Maintenance Cost section. Fully explain why an additional angle*
3 *structure would result in a higher maintenance cost for Route B.*

4

5 **Response)** An angle structure has guys and anchors which require additional
6 maintenance when compared to a tangent structure. Also an angle structure is more
7 labor intensive to replace since the tension on the conductors must be maintained as
8 the conductors and guys are transferred to the replacement structure.

9

10

11 **Witness)** Michael W. Chambliss

12

BIG RIVERS ELECTRIC CORPORATION

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1 **Item 19) Refer to the Quantum Spatial Technical Report, page 107, Table**
2 **19. Fully explain why Project Management, Reliability, and Maintenance**
3 **Cost were weighted differently for Route A and Route B.**

4

5 **Response) Project Management concerns are defined to include those**
6 **considerations with the potential to increase project cost. Overall line length and**
7 **total project cost are minimized by using Route B instead of Route A.**

8 **Reliability may be slightly better on Route A since it would have one less**
9 **angle structure. Guy wires associated with angle structures can sometimes snap up**
10 **into the electrical space causing a fault. Also during an extreme wind, guy wire**
11 **anchors may fail causing a structure to collapse. Route A would pass through slightly**
12 **less wooded acreage where trees may at times impact reliability.**

13 **Maintenance Cost are slightly minimized on Route A as it has a slightly**
14 **less non-tillable acreage requiring less vegetation management costs. Also, using one**
15 **more tangent structure on Route A would require less maintenance when compared**
16 **to one more angle structure on Route B due to the maintenance requirements of guys**
17 **and anchors. Also a tangent structure is less labor intensive to replace since the**
18 **tension on the conductors is maintained by the adjacent structures as the conductors**
19 **are transferred to the replacement structure.**

20

21 **Witness) Michael W. Chambliss**

22

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1 **Item 20)** *According to the Quantum Spatial Technical Report, the*
2 *estimated total cost of Route B, which is the preferred route, is \$9,135,994.*
3 *The Application, however, states that the estimated cost of Kentucky portion*
4 *of the proposed transmission project is approximately \$6 million. Explain*
5 *and reconcile this discrepancy.*

6

7 **Response)** When Quantum Spatial performed the route study, detailed design
8 information including structures, conductor, static, number and type of foundations,
9 and river crossing means had not been completed. Because that information was not
10 available at the time of the Technical Report, Quantum Spatial used the best
11 information available to develop estimates. Because the consultant used the same
12 information to evaluate all alternatives, the ultimate outcome was not skewed by the
13 difference in assumed costs in the study versus using the current estimated costs.

14

15

16 **Witness)** Michael W. Chambliss

17

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1 **Item 21)** *Provide the estimated total cost of the entire MISO transmission*
2 *project, including the segment located in Indiana.*

3

4 **Response)** Please see the attached quarterly report Republic Transmission
5 provides to MISO. The report includes the total cost and the estimated completion
6 date of the MISO Project. The report can also be found on MISO's website at the
7 following address:

8

9 https://cdn.misoenergy.org/20180425_Republic%20Reporting%20Duff%20Coleman
10 [Line Q1185014.pdf](#)

11

12

13 **Witness)** Michael W. Chambliss

14



PUBLIC REPORTING
PROJECT SUMMARY REPORT

Regionally Cost Shared Project Reporting Analysis Quarterly Status Report

Revision: 4
Rep. Date: 18-Sep-18
MISO User: CEA
Period Ending Date: 25-Apr-18

Project Information	
Developer	Republic Transmission, LLC
Facility	Duff to Coleman EHV 345 kV Transmission Line Project
State(s)	Indiana, Kentucky

Original Est. Project Cost
000 \$ (Nominal)
\$ 53,848

Forecasted Est. Project Cost
000 \$ (Nominal)
\$ 53,848

Variance
000 \$ (Nominal)
\$ -

Original ISD
Date
1/1/2021

Forecasted ISD
Month / Year
6/1/2020

Variance
months
-7.0

Expenditures to Date	
% Total / 000 USD	
13.2%	\$ 7,100

Forecasted Expenditures to Date	
000 USD (Originally Proposed)	
\$	5,489

Project Development Status	
Item	Planned

Milestone	
Item	Developer Selection

Construction Project Reporting				
Activity	ROW Acquisition	Foundation	Structure Setting	Conductor Installed
Total (Project)		323	151	97554
Completed to date	In Progress			
% Complete				

Rate Filings (this Period)			
No.	Docket No.	Date	Description
1	EL17-52	3/15/2017	Incentive Rate Filing
2			
3			
4			
5			

Regulatory Status
Indiana Utility Regulatory Commission: Authority to operate as a public utility granted on July 26, 2017.
Kentucky Certificate of Public Convenience and Necessity: application filed on March 16, 2018.
FERC: Incentive rates granted on 10/6/2017.

Explanation of Variance in Estimated Project Cost (since last update)
No cost variances at this time.

Explanation of Schedule Variance / Change in ISD
No schedule variances at this time.

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1 **Item 22)** *Provide a detailed cost breakdown of the items that are included*
2 *in the estimated annual operating costs of \$18,000.*

3

4 **Response)** The estimated annual operating cost is based on a five-year average
5 (2010-2014) of actual Big Rivers operation and maintenance costs for transmission
6 lines. Expenses for labor, insurance, and taxes are included. The resulting average
7 per mile cost of \$5,439 was multiplied by the expected 3.3 mile circuit length and
8 resulted in an estimated annual operating cost of approximately \$18,000.

9

10

11 **Witness)** Michael W. Chambliss

12

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CASE NO. 2018-00004**

**Response to Commission Staff's Initial Request for Information
dated April 27, 2018**

May 14, 2018

1 **Item 23)** *Provide the time estimate required to complete the construction*
2 *of the MISO transmission project, including that portion of the transmission*
3 *line located in Kentucky.*

4
5 **Response)** Please see the response provided for Item 21 of the Commission's Initial
6 Request for Information.

7

8

9 **Witness)** Michael W. Chambliss

10

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**

**Response to Commission Staff's Initial Request for Information
dated April 27, 2018**

May 14, 2018

1 **Item 24)** *Would the 150 to 210 feet right-of-way provide adequate*
2 *clearances to potential obstruction at the edge of the right-of-way even under*
3 *extreme wind conditions?*

4

5 **Response)** While the majority of the right-of-way is 150 to 210 feet wide, the right-
6 of-way on the second parcel outside of Coleman EHV Substation needed to be 225 feet
7 wide and an easement has been acquired for this width. With this one change, Big
8 Rivers can confirm that the right-of-way provides adequate clearances to potential
9 obstructions at the edge of the right-of-way even under extreme wind conditions.

10

11

12 **Witness)** Michael W. Chambliss

13

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**

**Response to Commission Staff's Initial Request for Information
dated April 27, 2018**

May 14, 2018

1 **Item 25)** *Confirm that the acquisition of all necessary easements for the*
2 *proposed transmission line route has been completed.*

3

4 **Response)** Big Rivers can confirm that all necessary easements in Kentucky have
5 been acquired.

6

7

8 **Witness)** Michael W. Chambliss

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