

**Brandenburg Steel Mill Service 345 kV & 161 kV
Transmission Project**



Your Touchstone Energy® Cooperative 

**Big Rivers Electric Corporation
Kentucky 62**

12/17/2020

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LIST OF ABBREVIATIONS

<u>Abbreviation</u>	<u>Term/Phrase/Name</u>
AGL	above ground level
ACHP	Advisory Council on Historic Preservation
APE	Area of Potential Effect
Big Rivers Electric	Big Rivers Electric Corporation
BMP	Best Management Practice
BSM	Brandenburg Steel Mill
Burns & McDonnell	Burns & McDonnell Engineering Company, Inc.
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
EA	Environmental Assessment
EAF	electric arc furnace
EMF	electric and magnetic fields
EMR	electric and magnetic radiation
EPA	U.S. Environmental Protection Agency
EPRI	Electric Power Research Institute
FAA	Federal Aviation Administration
FIRM	Flood Insurance Rate Maps
FEMA	Federal Emergency Management Agency
FONSI	Finding of No Significant Impact
GHG	greenhouse gases
historic resources	historic-age non-archaeological resources

<u>Abbreviation</u>	<u>Term/Phrase/Name</u>
IEEE Standard	The Institute of Electrical and Electronics Engineers Standards
IPaC	Information for Planning and Consultation
KDFWR	Kentucky Department of Fish & Wildlife Resources
KGS	Kentucky Geological Survey
KHC	Kentucky Heritage Council
Km	kilometer
kV	kilovolt
KY-	Kentucky Route
LG&E	Louisville Gas & Electric
RECC	Rural Electric Cooperative Corporation
MISO	Midcontinent Independent System Operator
MW	megawatts
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NESC	National Electrical Safety Code
NHD	National Hydrography Dataset
NPA	Nationwide Programmatic Agreement
NHPA	National Historic Preservation Act
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRI	National Rivers Inventory
NRHP	National Register of Historic Places

<u>Abbreviation</u>	<u>Term/Phrase/Name</u>
NWI	National Wetland Inventory
Office of Kentucky Nature Preserves	Energy and Environment Cabinet Office of Kentucky Nature
OSA	Kentucky Office of State Archaeology
OSHA	Occupational Health and Safety Administration
PEM	palustrine emergent wetland
PFC	perfluorocarbons
PFO	palustrine forested wetland
PM _{2.5}	particulate matter less than 2.5 microns in diameter
PM ₁₀	particulate matter less than 10 microns in diameter
Project	Brandenburg Steel Mill 345 and 161 kilovolt (kV) Transmission Project
PUBH	freshwater pond
ROW	right-of-way
RUS	Rural Utilities Service
SF ₆	sulfur hexafluoride
SPCC	Spill Prevention Control and Countermeasure
SR	State Route
SWPPP	Stormwater Pollution Prevention Plan
THPOs	Tribal Historic Preservation Officers
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

1.0 INTRODUCTION

Big Rivers Electric Corporation (Big Rivers Electric) may request financial assistance from the U.S. Department of Agriculture's (USDA)'s Rural Utilities Service (RUS) for the Brandenburg Steel Mill (BSM) 345 and 161 kilovolt (kV) Transmission Project (Project) in Meade County, Kentucky. Big Rivers Electric is a member-owned, not-for-profit, generation and transmission cooperative headquartered in Henderson, Kentucky. They provide wholesale electric power and services to three distribution cooperative members across 22 counties in western Kentucky. Big Rivers Electric owns and operates 1,444 net megawatts (MW) of generating capacity from four power stations: Robert D. Green (454 MW), Robert A. Reid (130 MW), D.B Wilson (417 MW), and Kenneth C. Coleman (443 MW) for a total power capacity of 1,819 MW (Big Rivers Electric 2017). Big Rivers Electric is also part of Touchstone Energy Cooperatives, a nationwide alliance made up of 660 local, consumer-owned electric cooperatives in 46 states. Touchstone Energy cooperatives collectively deliver power and energy to more than 30 million members every day.

Big Rivers Electric may apply for a loan or loan guarantee from the USDA RUS to provide infrastructure and infrastructure improvements in the Brandenburg, Kentucky area to serve a new customer load. As the all-requirements wholesale supplier for Meade County Rural Electric Cooperative Corporation (Meade County RECC), one of Big Rivers Electric's three distribution cooperative members, Big Rivers Electric is obligated to provide Meade County RECC with transmission service. Seven proposed construction projects are needed to enable Big Rivers Electric to fulfill that obligation in light of projected load growth in the Meade County area, including the new \$1.35 billion steel plate manufacturing mill that Nucor Corporation is building near Brandenburg, in Meade County, and other load growth that is likely as a result of the new Nucor facility.

RUS, an agency that administers the USDA's Rural Development Mission Area, may consider financing the proposed Project through a loan or loan guarantee, thereby making the proposed Project a federal action subject to the National Environmental Policy Act of 1969 (NEPA), as amended (42 U.S.C. § 4321 et seq.), the Council on Environmental Quality's (CEQ)'s NEPA implementing regulations (40 CFR Parts 1500-1508), and Rural Development's NEPA implementing regulations, Environmental Policies and Procedures (7 CFR Part 1970). RUS must complete an environmental analysis and prepare an Environmental Assessment (EA) prior to taking a potential federal action.

The EA will serve as a detailed written record of the environmental analysis completed for the proposed Project. The EA incorporates a detailed description of the proposed Project and copies of portions of

maps locating the Project with a discussion of the purpose and need for the Project and of the alternatives considered reasonable and feasible to accomplish the proposed action. Discussions of the affected environment within the Project Study Area (Figure 1-1), the environmental consequences of the proposed action, and the mitigation of the potential environmental impacts are also included.

1.1 Project Description

Nucor Corporation is constructing a steel mill near Brandenburg, Meade County Kentucky that will add a 200 MW load to the Big Rivers Electric system. With this industrial expansion of approximately 200 MVA, additional transmission lines, substations and a switching station will be required to serve this new Meade County RECC industrial customer. Various service plans for the industrial load addition were evaluated. Power flow studies were completed with models obtained from the Midcontinent Independent System Operator (MISO). Models include a 2023 summer case and a 2023 winter case. Short circuit evaluations were completed with a SERC model. The selected service plan includes a new 345 kV/34.5 kV delivery point at the BSM (Figure 1-2), sourced from a new 345 kV/161 kV substation (Otter Creek; Figure 1-3). This substation would be connected to the existing Meade County Substation via a 161 kV connection and a 345 kV transmission connection to the Louisville Gas & Electric (LG&E) circuit. This interconnection will require an extra high voltage (EHV) switching station at the Redmon Road-US60 Area Switching Station (Figure 1-4).

More specifically, to support the new Big Rivers Electric transmission network, two new substations and one switching station will be constructed in Meade County. The new Otter Creek 345/161 kV Substation will be approximately 11.7 acres with an additional 1.7 acres of site storage, located to avoid environmentally sensitive areas. The second substation is the new BSM 345/34.5 kV Substation and will be approximately 7.4 acres located within the BSM project boundary¹. The new switching station will be the Redmon Road EHV Switching Station, approximately 3.4 acres in size. Additionally, the existing Meade County Substation will require another 161 kV transmission line terminal. The 161 kV line terminal will be built within the existing substation fence to terminate the proposed line (Figure 1-5).

¹ The portion of the BSM Substation and additional transmission line within the BSM project boundary is being assessed for this EA and is part of the RUS funding request; however, Nucor determined where this substation would be placed and all permits required for that work will be acquired by Nucor. For that purpose, total impact acreages and miles are broken by that which is within the Nucor BSM project boundary and that which is outside that boundary.

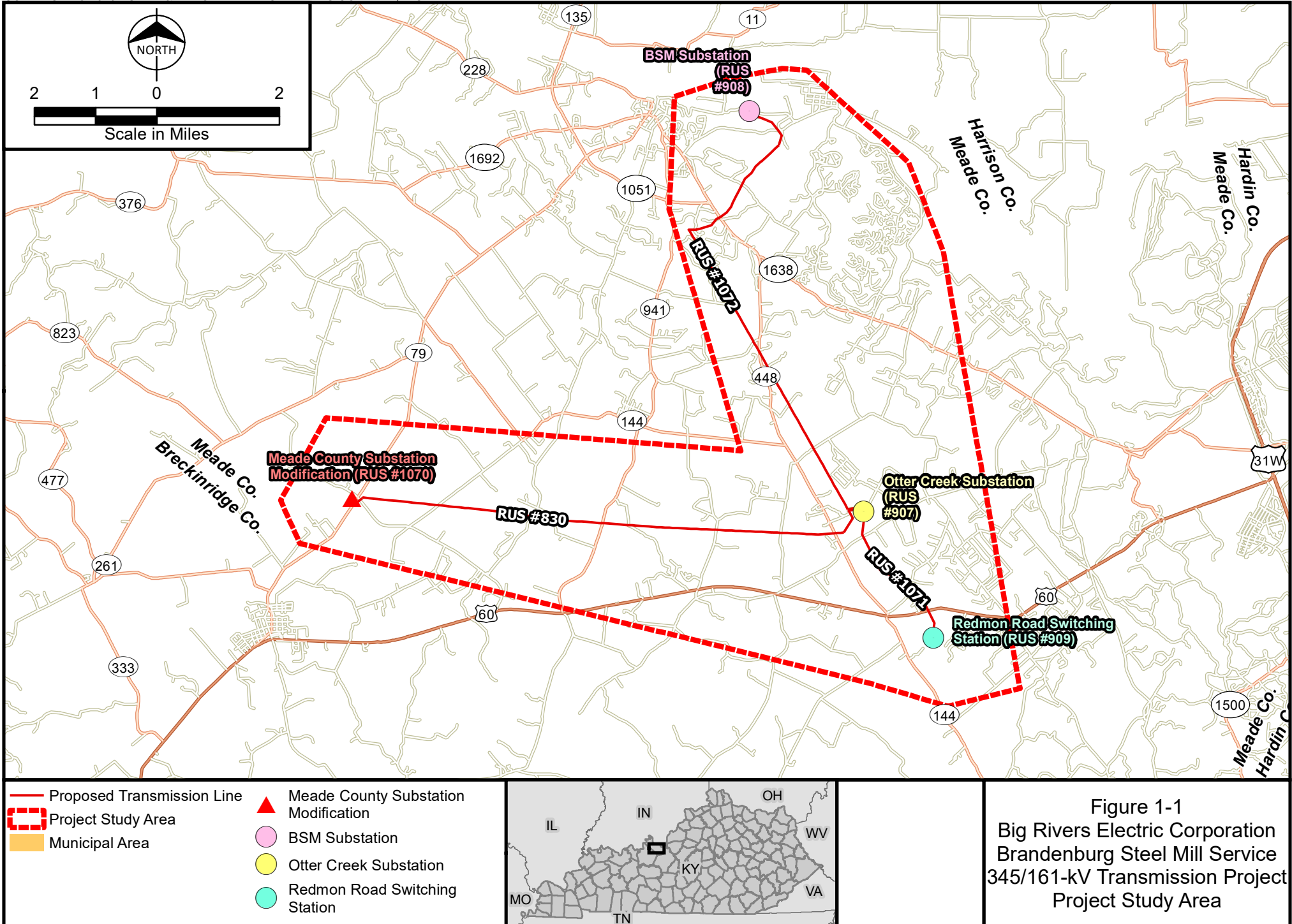
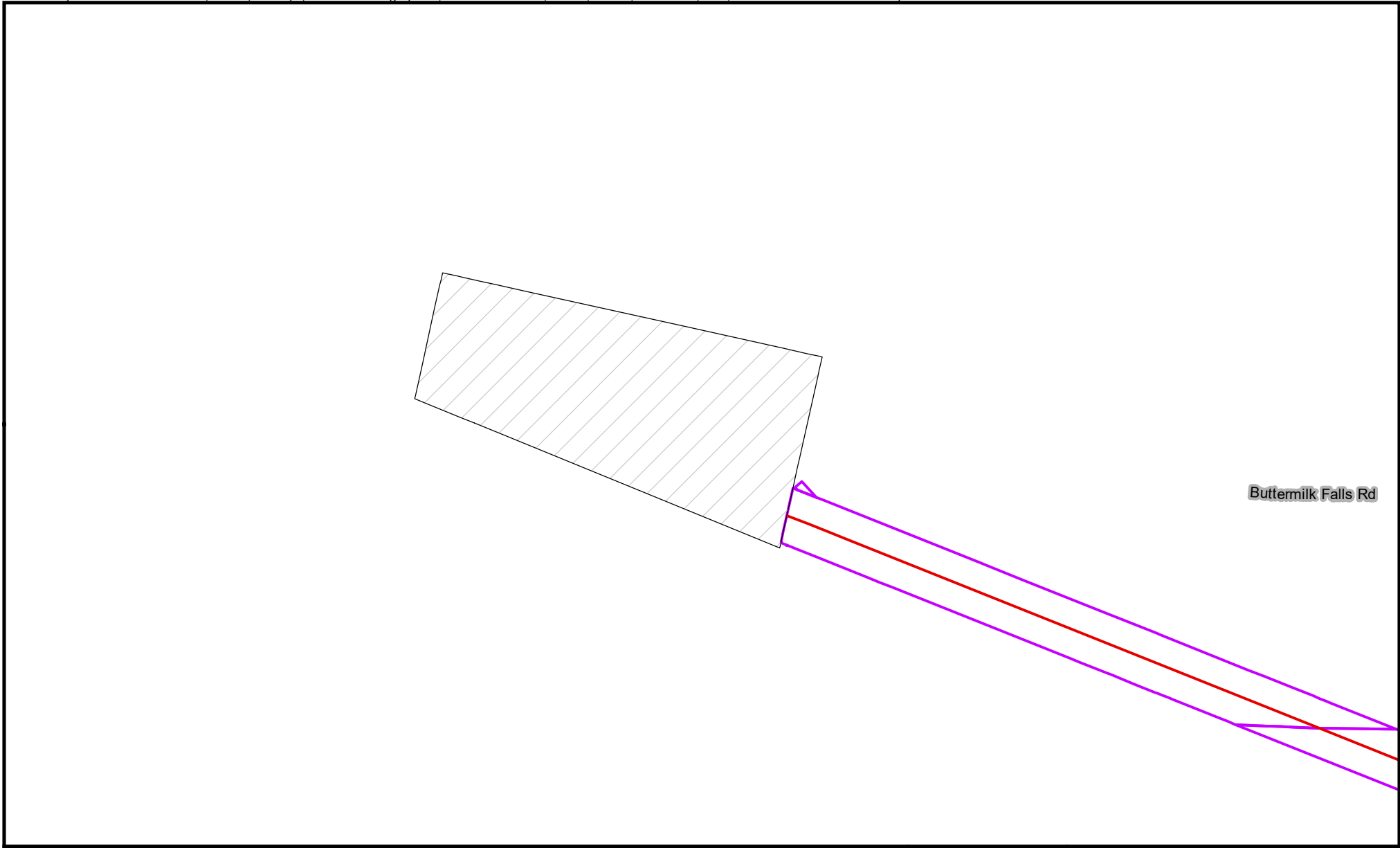


Figure 1-1
 Big Rivers Electric Corporation
 Brandenburg Steel Mill Service
 345/161-kV Transmission Project
 Project Study Area



- Proposed Transmission Line
- Proposed Substation Site
- ROW

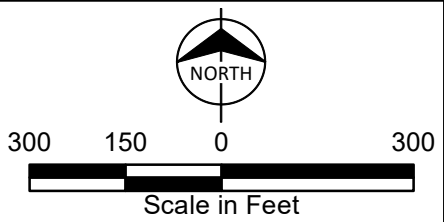
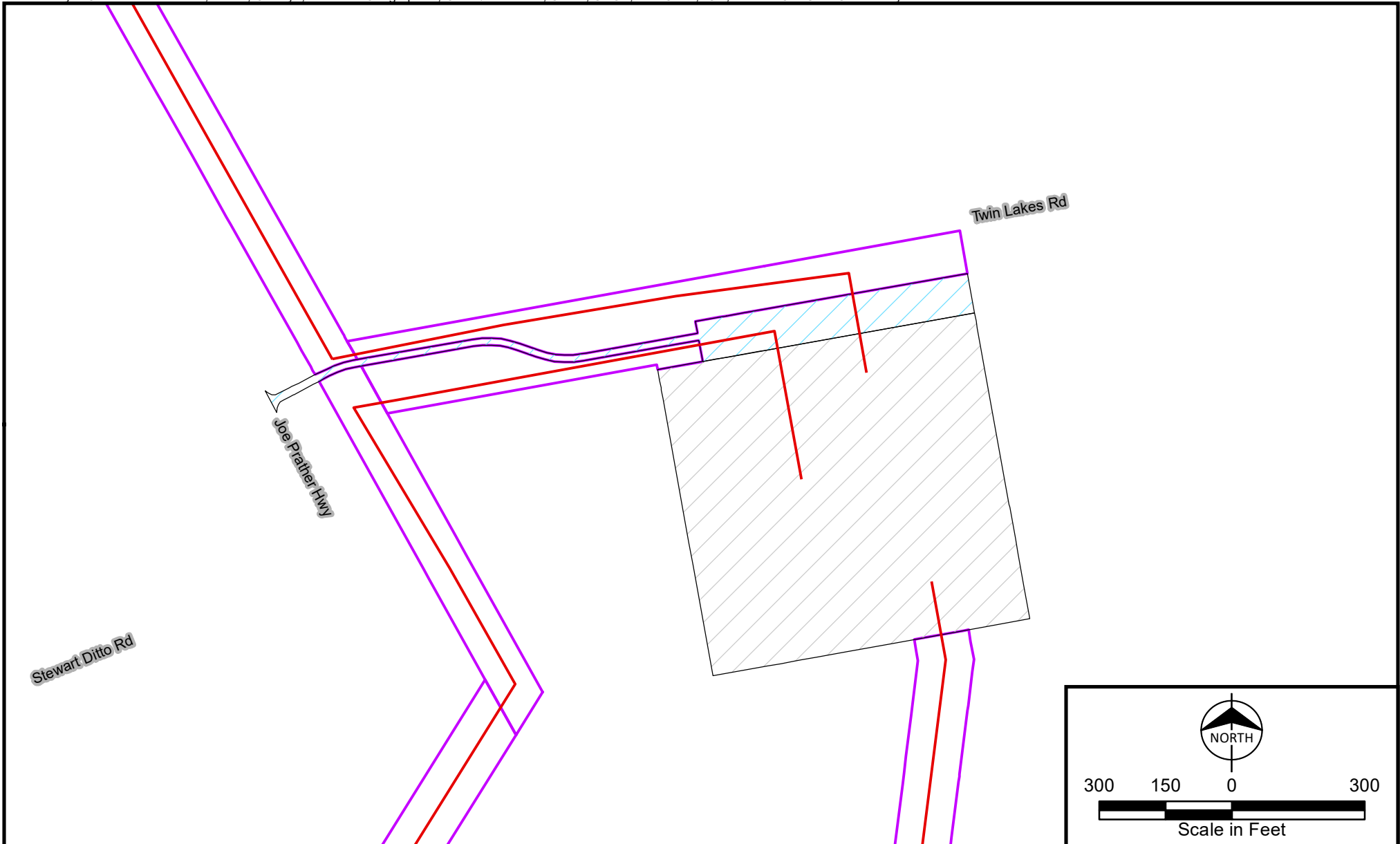
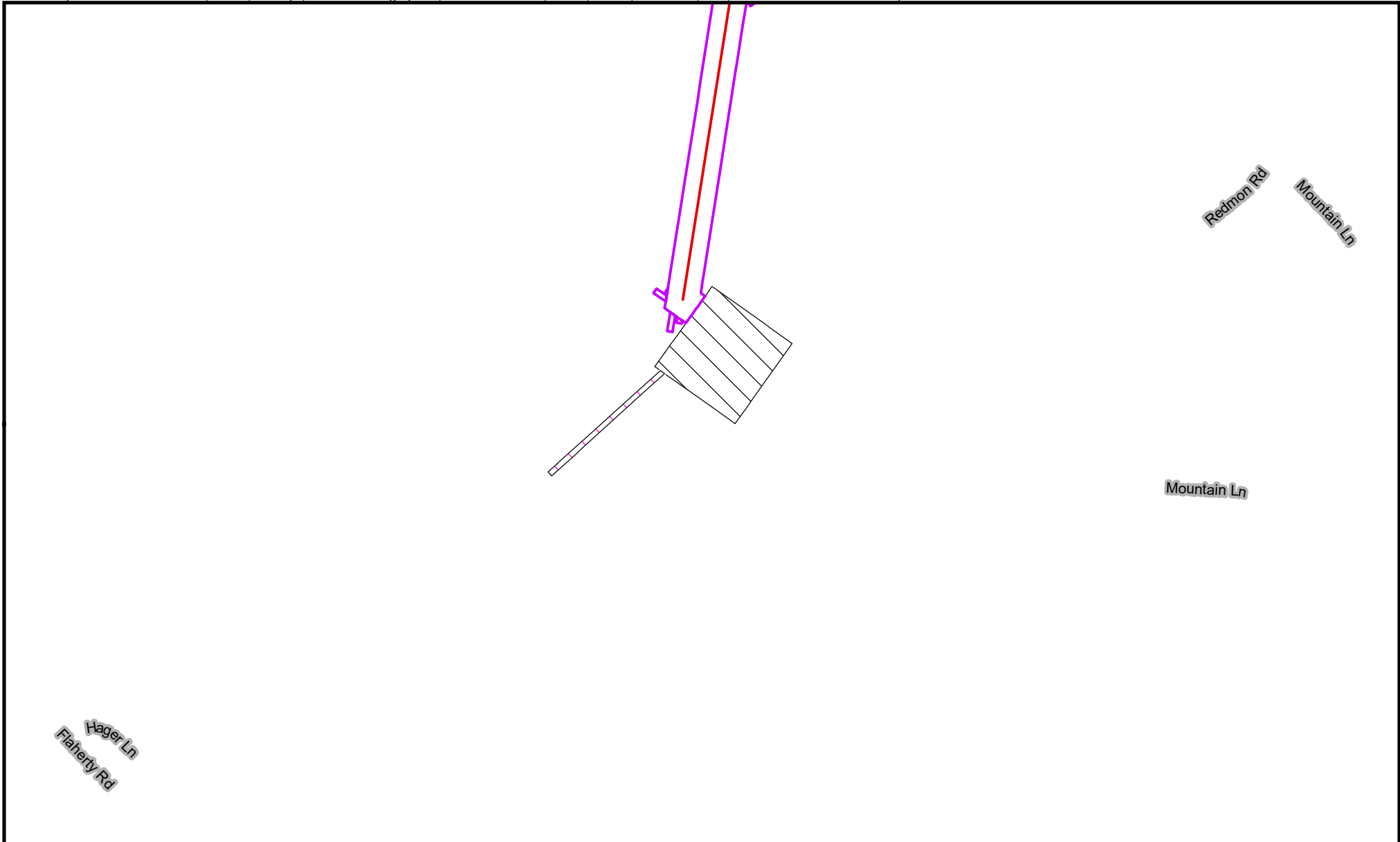






Figure 1-2
Big Rivers Electric Corporation
Brandenburg Steel Mill Service
345/161-kV Transmission Project
Brandenburg Substation



- Proposed Transmission Line
- Proposed Site Entrance Access Road & T-Lines
- ROW
- Proposed Substation Site

Figure 1-3
Big Rivers Electric Corporation
Brandenburg Steel Mill Service
345/161-kV Transmission Project
Otter Creek Substation



-  Proposed Transmission Line
-  Proposed Site Entrance
-  Proposed Switching Station Site
-  ROW

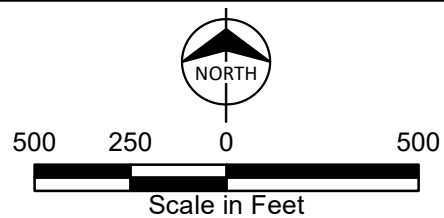
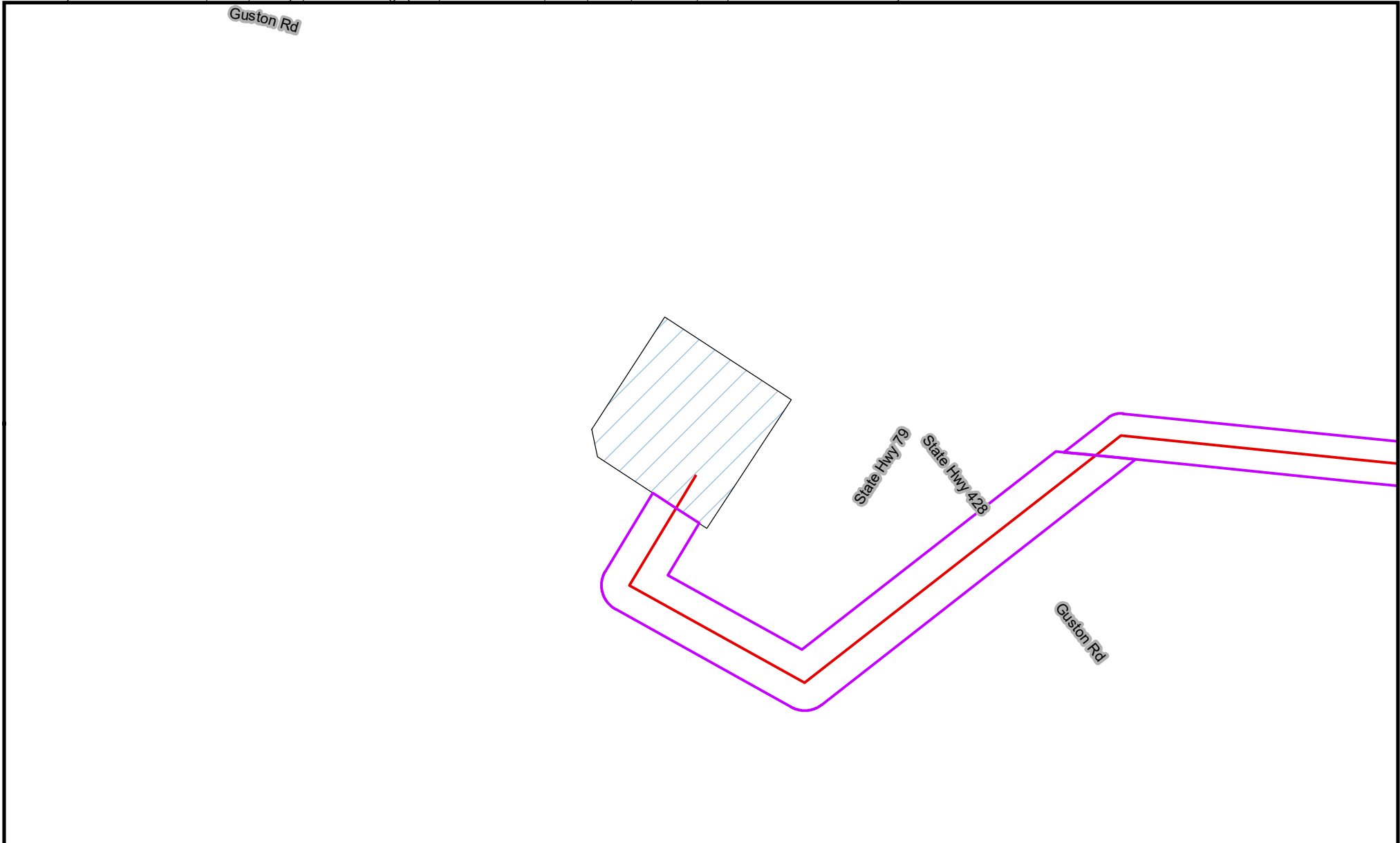





Figure 1-4
Big Rivers Electric Corporation
Brandenburg Steel Mill Service
345/161-kV Transmission Project
Redmon Road Switching Station



-  Proposed Transmission Line
-  Current Meade County Substation Site
-  ROW

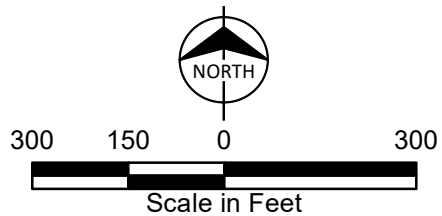


Figure 1-5
Big Rivers Electric Corporation
Brandenburg Steel Mill Service
345/161-kV Transmission Project
Meade County Substation Modification

Additionally, approximately 7.9 miles of existing 69 kV circuit will be rebuilt as double circuit 161/69 kV line between the Meade County Substation and the new Otter Creek Substation. The new double circuit line will be located entirely within the existing 100-foot right-of-way (ROW). The new 161 kV connection to the existing Meade County Substation and the proposed Otter Creek Substation will require an additional 1.0 miles of new 125-foot ROW to route the 161 kV line to the back (west) side of Meade County Substation and the north side of Otter Creek Substation. The Redmon Road Switching Station will require a new 345 kV transmission circuit to the new Otter Creek Substation. Approximately 2.5 miles of new transmission line within a new 125-foot wide ROW through largely rural areas would be part of this Project component. Lastly, the Project will require a new 345 kV transmission line from the new Otter Creek Substation to the BSM Substation. Approximately 7.4 miles of existing 69 kV line will be rebuilt to add a new 345 kV line within the existing 100-foot ROW. An additional 1.0 miles of new 345 kV line will connect the existing line to the BSM Substation and to the Otter Creek Substation. Of that 1.0 miles, 0.2 miles is located within the BSM project boundary and has a 150-foot ROW, and 0.8 miles outside that boundary with a 125-foot ROW. A number of alternative routes for these new lines were developed and evaluated that minimize clearing requirements and potential impacts to social and sensitive environmental resources in these rural areas.

1.2 Purpose and Need

The Project is needed to support the new Nucor Corporation steel mill near Brandenburg, Meade County Kentucky that will add a 200 MW load to Big Rivers Electric's system. In order to accommodate this new load, Big Rivers Electric has identified several projects that are necessary to provide reliable service to Nucor Corporation's new steel mill and the surrounding area (Figure 1-1). The new service plan would include the following project components:

Substations and Switching Stations: The stations will be fenced with a fence height of 8 feet and a 7-foot square mesh fabric with one foot of barbed wire. The equipment within the stations will have a maximum height of 95 feet above grade for the steel A-frames. The amount of new land disturbance required for each substation or switching station is provided below.

- **RUS #908: NEW: Brandenburg Steel Mill 345/34.5 kV Substation:** The new substation would be located within the limits of the new Nucor Brandenburg Steel Mill near KY 933 and Buttermilk Falls Rd and will require approximately 7.4 acres permitted under the Nucor Project (Figure 1-2). The substation will contain a 345/34.5 kV transformer, 345 kV line terminations, circuit breakers and associated bus work.

- RUS #907: NEW: Otter Creek 345/161 kV Substation: The new substation would be located at the intersection of KY 313 and KY 1238 and will be located on an approximately 11.7-acre parcel with an additional 1.7 acres of site storage associated with it (Figure 1-3). This substation will contain 345 and 161 kV line terminations, a 345/161 kV transformer, circuit breakers and associated bus work.
- RUS #1070: REBUILD: Meade County Substation 161 kV Terminal: The existing Meade County Substation, located at the intersection of KY 79 and Highway 428, will require the installation of a new 161 kV transmission line terminal within the fenced area; new land disturbance outside of previously disturbed area is not required (Figure 1-5).
- RUS #909: NEW: Redmon Road EHV Switching Station: The new switching station would be located southeast of KY 313 and US 60 and will require approximately 3.4 acres (Figure 1-4). The switching station will contain 345 kV line terminations, circuit breakers, bus work and power switches.

Transmission Lines: The new, 345 kV transmission line structures would be built of braced post tangent design using steel or concrete spun structures spaced approximately 500 feet apart. The new 161 kV transmission line structures would be built of braced post tangent design using steel or concrete spun structures spaced approximately 500 feet apart (Appendix A). The ROW width for each voltage of line would vary as described below.

- RUS #1072: REBUILD and NEW LINE: Otter Creek Substation to Brandenburg Steel Mill (BSM) Substation 345 kV Line Addition in Meade County, KY: Rebuild 7.4 miles of existing 69 kV line as 345/69 kV double circuit line within the existing 100-foot wide ROW. An additional 1.0 miles of new 345 kV line is needed to connect the existing line to the BSM Substation and the Otter Creek Substation. Approximately 0.2 miles of the new line would be located within Nucor Corporation's steel mill property and will have a new 150-foot wide ROW; the remaining 0.8 miles will be located on private easements and require a new 125-foot wide ROW.
- RUS #830: REBUILD and NEW LINE: Meade County Substation to Otter Creek Substation 161/69 kV Double Circuit Line Addition in Meade County, KY: Rebuild 7.9 miles of existing 69 kV line as 161/69 kV double circuit that will include pole for pole replacement of the entire line within its existing 100-foot ROW. An additional 1.0 miles of new, 125-foot ROW also is needed to

route the 161 kV line to the west side of the Meade County Substation and the north side of the Otter Creek Substation.

- RUS #1071: NEW LINE: Redmon Road EHV Switching Station to Otter Creek Substation 345 kV Line in Meade County, KY: Construct 2.5 miles of new 345 kV line requiring a new 125-foot wide ROW that will be located on private easements.

Nucor Corporation's Brandenburg Steel Mill (BSM) is projected to provide approximately 400 full-time positions to the Brandenburg, Kentucky area with an average annual salary of \$72,000. This will provide an economic boost to the city of Brandenburg and the Commonwealth of Kentucky (Spectrum 2019). Big Rivers Electric will be contributing to the economic growth of the area by supplying power to the steel mill.

Further, these projects will do more than just provide the transmission service to the 345 kV feed to the new BSM. They will provide a tie to an EHV source for the eastern third of the Big Rivers Electric transmission system. While not in the three-year work plan, additional transmission in the eastern portion of Meade County has been expected to be required in the long term. As far back as the 2000-2002 Construction Work Plan, Big Rivers Electric examined the possibility of building a 161-69 kV substation in eastern Meade County and looping a 161 kV transmission line in and out of that proposed substation. Due to the high cost of such an alternative, other less robust and less beneficial projects have been selected on multiple occasions. These projects, required as part of system upgrades to meet the power needs for the BSM, will also enable Big Rivers Electric to address these other long-term system needs.

The improvements and additional infrastructure would also improve service to the Buttermilk Falls Industrial Park and surrounding commercial and residential loads. Present day transmission service to the Meade County RECC Buttermilk Falls substation includes only a Big Rivers Electric 2.7-mile radial transmission line. Loss of this radial would result in power loss to the Buttermilk Falls substation and customers it serves. Facilities included as part of this overall project would incorporate facilities at BSM (adjacent to Buttermilk Falls substation) which will serve as a second source to this radial transmission line, increasing reliability for the Buttermilk Falls substation and surrounding area.

1.2.1 Overview of RUS and its Potential Federal Action

RUS is authorized to make grants, loans, and loan guarantees to finance the construction of electric distribution, transmission, and generation facilities, including system improvements and replacements required to furnish and improve electric service to rural areas, as well as demand side management,

energy conservation programs, and on-grid and off-grid renewable energy systems. ***RUS does not regulate the siting of utility infrastructure, which includes transmission lines.***

RUS' proposed federal action is to decide whether to provide financing assistance for the proposed Project. Completing the NEPA process is one requirement, along with other technical and financial considerations, in processing a financial assistance application. Issuance of this EA is not a decision on a financing application and therefore not an approval of the expenditure of federal funds. Legal challenges to the EA and any subsequent environmental findings may be filed in federal district court under the Administrative Procedures Act.

The Rural Electrification Act of 1936, as amended (7 USC §§ 901 et seq.), generally authorizes the Secretary of Agriculture to make rural electrification and telecommunication loans, including specifying eligible borrowers, references, purposes, terms and conditions, and security requirements. RUS' agency reviews typically include the following:

- Provide engineering reviews of the purpose and need, engineering feasibility, and cost of the proposed project;
- Concur that the proposed project meets the borrower's requirements and prudent utility practices;
- Evaluate the financial ability of the borrower to repay its potential financial obligations to RUS;
- Review and study the alternatives to mitigate and improve electric reliability issues;
- Concur that adequate transmission service and capacity are available to meet the proposed project's needs; and
- Ensure that NEPA and other environmental requirements and RUS environmental policies and procedures are satisfied prior to making a financing decision.

In addition to being a lender, RUS provides guidance to program applicants on how to design, maintain, and operate reliable electrical systems. These guidance documents are not regulation; however, they provide planning assistance and standards for reliable operation of rural electric systems. Documents used by borrowers may include but are not limited to:

- RUS Bulletin 1724D-101A, Electric System Long-Range Planning Guide
- RUS Bulletin 1724D-101B, System Planning Guide, Construction Work Plans
- RUS Bulletin 1724D-103, System Planning Guide, System Mapping Guide
- RUS Bulletin 1724E-200, Design Manual for High Voltage Transmission Lines
- RUS Bulletin 1724E- 203, Guide for Upgrading RUS Transmission Lines

- RUS Bulletin 1730-1, Electric System Operation and Maintenance

RUS Bulletins for the electric program that provide engineering planning standards are prepared and published by agency staff and produced in collaboration with a team of subject matter experts from designated committees within the National Rural Electric Cooperative Association (NRECA).

1.2.2 Limitations of RUS' Reviews

The Federal action that RUS is considering is potential approval of financing assistance. RUS' decision of whether or not to approve the request for financing assistance (i.e., the advancement of loan funds) will be informed by the environmental analysis detailed in this EA and the Agency's technical analysis indicating agreement with the project's need and the cooperative's selection of a preferred electrical solution.

Because of planning and lead time, utilities may try to obtain easement agreements in advance. Project construction cannot start until RUS concludes its environmental review process and the utility receives all relevant permits, authorizations, and easements. As a part of any easement negotiation process, an easement agreement will specify restricted uses on or across a right-of-way and any types of uses for which a utility's permission must be sought. The continuation of past agricultural uses and practices on or across the right-of-way typically are permitted. Special uses or activities that might have an impact on utility infrastructure will be negotiated with the utility to minimize future conflicts. Disputes over the wording of an easement agreement are subject to state law.

2.0 ALTERNATIVES EVALUATED

2.1 Proposed Action

Transmission system infrastructure within Meade County was determined to be insufficient to serve the power supply and reliability needs for the construction and operation of a new steel mill near Brandenburg. In reviewing its system, Big Rivers Electric identified the need to provide 345 kV service to the steel mill. Additional upgrades to the local transmission system were also identified to enable Big Rivers Electric to serve the mill and continue to also provide reliable service to the Meade County area. These upgrades included expansion of the Meade County Substation and construction of two new substations, a new switching station, and three new transmission lines. Big Rivers Electric has selected alignments for the construction of three transmission lines that connect the proposed BSM Substation, proposed Otter Creek Substation, proposed Redmon Road Switching Station and the Meade County Substation using a combination of new, greenfield transmission lines along with upgrades to their existing electrical transmission line system (Figure 1-1). The following sections include a description of the proposed actions and the selection process to identify a preferred alignment for each. A detailed discussion of the proposed actions evaluation and selection processes are detailed in the Project route study report (Appendix B).

Along with financing for the Project from RUS, Big Rivers Electric is seeking authority to construct and operate the identified transmission lines from the Kentucky Public Service Commission. As part of its application for this authority, Big Rivers Electric retained Team Spatial to conduct a route selection study to identify resources within the Project Study Area, develop suitable corridors for transmission line development and potential alignments, and identify a preferred route alignment for each line component project. Team Spatial utilized the Electric Power Research Institute (EPRI)/Georgia Transmission Corporation Siting Methodology and the Kentucky Siting Model to aid in the identification of alternative corridors for each portion of the proposed action. Following the identification of the alternative corridors, routing experts identified alternative routes. The alternative alignments were then ranked using an Alternative Route Evaluation Model, followed by an Expert Judgment Model to select the preferred route.

The models used to identify the suitable alternative corridors included input from subject matter experts as well as stakeholders in the area across three different groupings (built, engineering, and natural) considered in the model. Within these groupings, multiple layers were evaluated to further define the groups across the linear infrastructure. While additional layers were initially evaluated, layers that were ultimately included in the analysis were linear infrastructure, slope, floodplain, streams/wetlands, public lands, land cover, wildlife habitat, proximity to buildings, building density, spannable lakes and ponds,

land use, and proximity to eligible historic and archeological sites. These layers were further broken down into features. Features were ranked on a scale value of 1 to 9, with features more suitable to a potential transmission line receiving a 1, and those least suitable receiving a 9. Layers were then weighted. Weighting percentage of layers within one of the three perspectives are given a weight and all of the weights within that perspective needed to total 100 percent.

Following review of the corridor suitability models, alternative routes were developed. The following sections describe the review of the developed alternative and selected route by Project section as evaluated and presented in the Project Route Study (Appendix B).

2.1.1 Meade County Substation to proposed Otter Creek Substation (RUS #830)

Following the completion of the Corridor Suitability Models, only one distinct corridor was identified for location of the new 161 kV line from Meade County Substation to the proposed Otter Creek Substation (Figure 2-1). This corridor follows an existing 69 kV transmission line and ROW. As part of the evaluation, the study looked at various data criteria including built, engineered and natural criteria. The resulting analysis provided a Composite Alternate Corridor in which a transmission line could be located based on the evaluated constraints and opportunities. The model identified one Alternate Corridor predominantly following an existing 69 kV transmission line from east to west from the Meade County Substation to the Otter Creek Substation. Opportunities within the Alternate corridor focused primarily on rebuilding the existing 69 kV transmission line or paralleling it between the two substation connections. After additional review from system planners, it was determined that the existing 69 kV transmission line could be rebuilt and upgraded to a double-circuit 69/161 kV transmission line. This new double-circuit line could be built within the existing 100-foot-wide ROW without any additional ROW requirements for this portion of the Project.² Approximately 1.0 miles of additional 125-foot ROW would be required for new installation of a tie-in from the upgraded line to the proposed Otter Creek Substation and to the Meade County Substation.

Adding the 161 kV line to the existing 69 kV line by rebuilding within this existing ROW would considerably minimize project impacts as compared to development of a new route for the 161 kV line. Use of existing ROW, when practicable, is also considered good routing practice to minimize linear corridors across the landscape. Therefore, because it was recommended that the existing 69 kV line could be rebuilt within the existing ROW as a double-circuit 69/161 kV line to tie into the proposed Otter Creek

² During the route study, it was anticipated a small amount of additional ROW may be required for construction of the 161 kV line double circuit with the existing 69 kV line in the existing ROW.

Substation with very little new ROW acquisition, no other alternative route alignments were evaluated within this Alternate Corridor. Other alternatives would have required the project to be constructed and operated in some or all new ROW, creating more overall impacts than the rebuild option.

Figure 2-1: Meade County Substation to Otter Creek Preferred Route with the Alternate Corridors

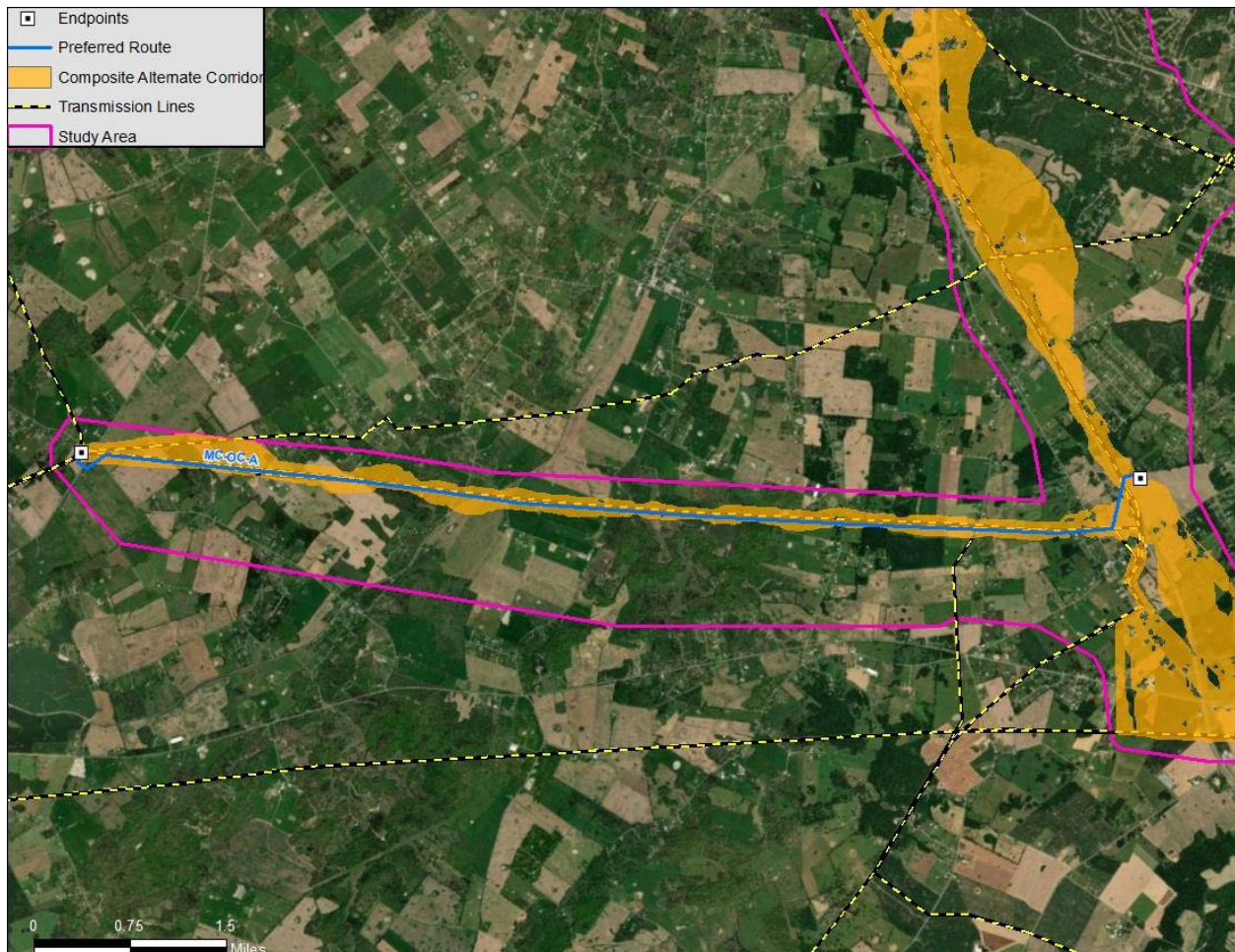


Figure Source: Team Spatial. 2019. *345 & 161 kV Transmission lines Brandenburg Steel Mill Routing Study*. Figure 38 Meade County to Otter Creek Preferred Route with the Alternate Corridors

The preferred route between the existing Meade County Substation and the proposed Otter Creek Substation would require rebuilding approximately 7.9 miles of Big Rivers Electric existing 69 kV transmission line as a double-circuited 69 kV and 161 kV line. The new 161 kV line will be constructed within the existing ROW. Existing structures would be removed, and new structures installed at the same locations to accommodate the new double circuit line. An additional approximately 1.0 miles of land easement for the 125-foot new ROW would be required (approximately 10.6 acres). This would extend

the new 161 kV line from the existing 69 kV ROW and tie-in to the Meade County Substation and into the Otter Creek Substation. In total, the proposed route is approximately nine miles long (Appendix B).

2.1.2 Brandenburg Steel Mill Substation to Proposed Otter Creek Substation (RUS #1072)

The Corridor Suitability Models identified two distinct corridors for location of the proposed 345 kV transmission line between the existing BSM Substation and the Proposed Otter Creek Substation (Figure 2-2). As part of the evaluation, the study looked at various data criteria including built, engineered and natural criteria. The resulting analysis provided a Composite Alternate Corridor in which a transmission line could be located based on the evaluated constraints and opportunities. The southern part of the Alternate Corridor is the same and follows an existing 69 kV transmission line north from near the proposed Otter Creek Substation site. One corridor, the northwest corridor, follows the existing 69 kV line to just south of the BSM where it then extends north into the facility property. The other, southeast corridor follows the existing 69 kV north of the Otter Creek Substation, but then turns northeast to connect to the BSM facilities, extending cross country along what would be new ROW. This corridor includes several corridor variations and makes much less use of existing ROW.

Following review of the Alternate Corridors, it was determined that the existing 69 kV transmission line along the northwest corridor could be rebuilt as a double-circuit 69/345 kV transmission line entirely within the existing 69 kV ROW. The northernmost portion of the proposed 345 kV transmission line would require a new 150-foot-wide ROW for approximately 1,400 feet (0.3 miles) to extend from the existing 69 kV ROW to connect to the new BSM Substation. However, much of this new ROW required would be located on Nucor Corporation's site property. A small portion of new ROW would be required between where the alignment turns north, to where it crosses State Route 933. Further north, the route alignment would be on Nucor Corporation's existing property. Ultimately, only one alternative route alignment was developed within the suitability corridors identified between Otter Creek and BSM Substation. It was determined that by maximizing the new 345 kV line within the existing 69 kV line, project-related impacts would be minimized, therefore the northwestern corridor and Route B-OC-A (from the Route Study – Appendix B) was identified and selected as the preferred route (Figure 2-2). Other alternatives would require much of the alignment to be in new ROW, resulting in additional impacts to the criteria evaluated. As such, no other specific alternative route alignments within the alternative corridors were evaluated following the Corridor Suitability model (Appendix B).

Figure 2-2: Brandenburg Steel Mill Substation to Otter Creek Substation Preferred Route with the Alternate Corridors

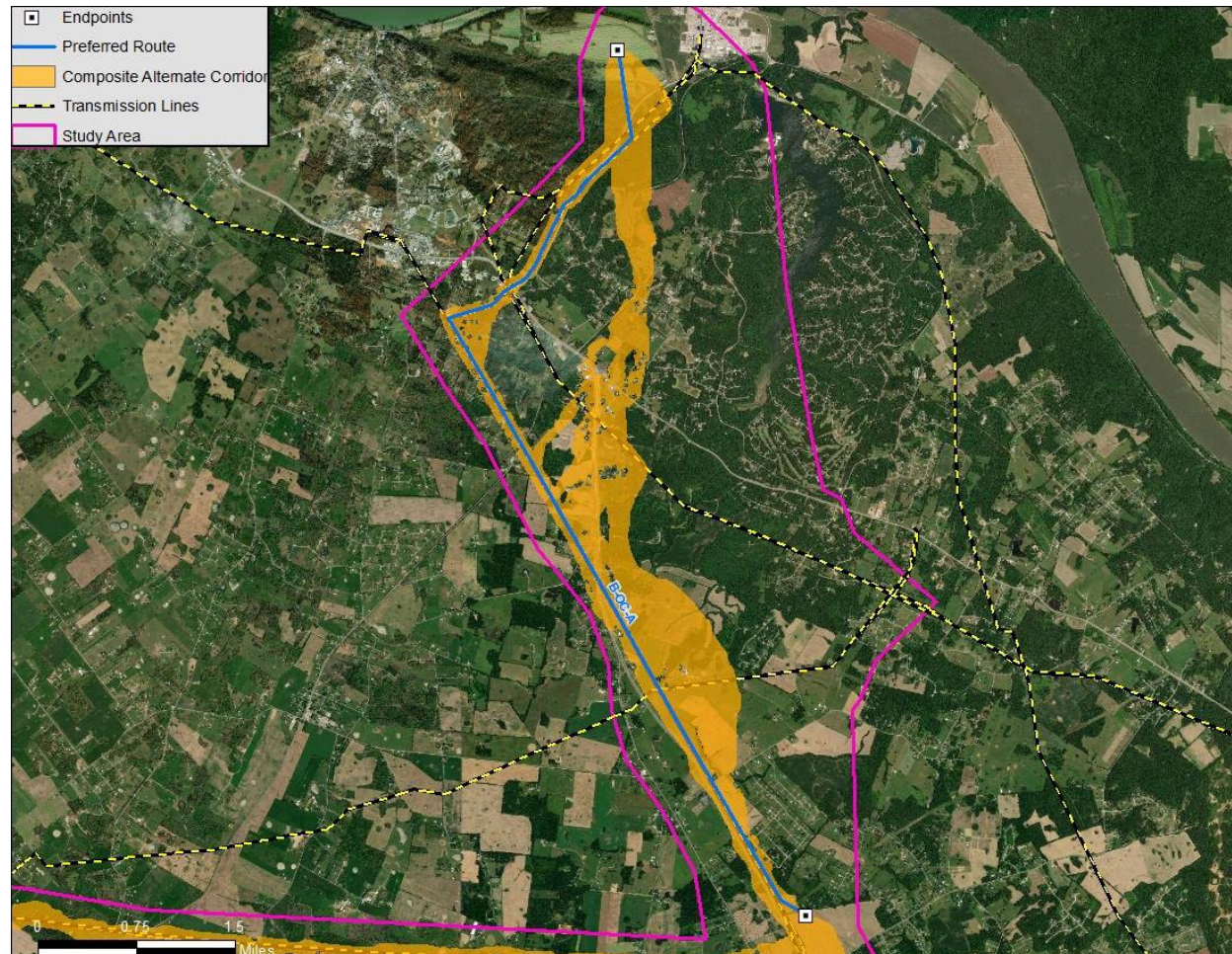


Figure Source: Team Spatial. 2019. *345 & 161 kV Transmission lines Brandenburg Steel Mill Routing Study*. Figure 37 Brandenburg Steel Mill to Otter Creek Preferred Route with the Alternate Corridors

The preferred route between the proposed BSM Substation and the proposed Otter Creek Substation will require rebuilding of approximately 7.3 miles of Big Rivers Electric existing 69 kV transmission line as double circuit 345/69 kV (Figure 2-2). The rebuilt 345/69 kV line would be constructed entirely within the existing ROW. The final 345/69 kV line will be approximately 8.4 miles in total length, with approximately 87 percent of the line consisting of the rebuilding of existing transmission lines. While the proposed line follows the existing facilities for much of its length, the construction of the new 345 kV line would still require an additional 15 acres of new ROW (approximately one mile in length including the 0.3 mile portion on Nucor's property) to connect to the BSM Substation to the north (Figure 1-2) as well as to connect to the new Otter Creek Substation (Figure 1-3). This new ROW would be required regardless of the overall route selected. Rebuilding of the existing 69 kV line would not require any

additional new ROW development which would be required for any alignments using other corridor options.

2.1.3 Proposed Otter Creek Substation to Proposed Redmon Road Switching Station (RUS #1071)

Similar to the other routes, a corridor suitability model was used to identify suitable areas between the Otter Creek Substation and the Redmon Road Switching Station (Figure 2-3). Two alternative routes were developed within the corridor for the Redmon Road to Otter Creek portion of the Project, designated as Route R-OC-A and Route R-OC-B (Figure 2-3) in the route study (Appendix B). The Alternate Corridor identified an area in which a transmission line could be located based on the evaluated constraints and opportunities. Several existing transmission lines were located within the Composite Alternate Corridor.

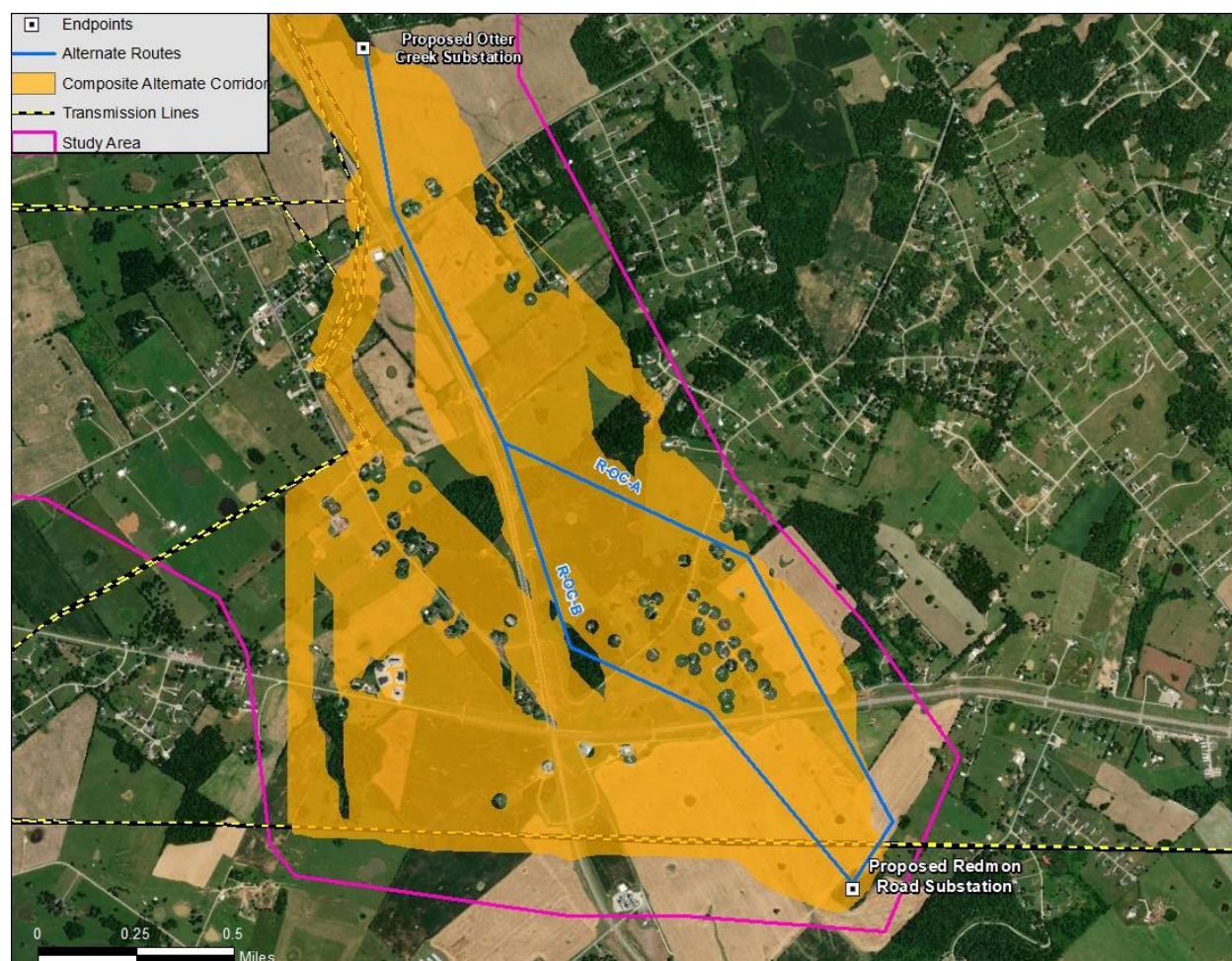
Review of the existing lines in the Alternate Corridor determined that alternatives along these existing facilities would not be feasible because of system planning, following these facilities would likely increase overall impacts due to increased length, would require two crossing of state highway 448 (two lane highway with central turn lane and wide shoulders), or would not extend for a direction and length that would materially reduce project impacts for a line between the two stations. Additionally, routes along these existing facilities would potentially impact a group of residences near the intersection of Brandenburg and Garrett Roads. Routes using those existing transmission facilities would then need to continue south along Brandenburg Road towards Redmon Road Switching Station and would likely result in additional residential impacts and tree clearing along Brandenburg Road. Therefore, no routes were developed along the existing transmission facilities.

Two alternative route alignments were developed within the suitability corridor (Figure 2-3). The short distance between the Otter Creek Substation and Redmon Road Switching Station and the constraints between them limited the opportunities for specific alignment alternatives within the corridor. These two alignments were determined to avoid crossings of Highway 448, minimize overall project length, as well as minimize residential proximity and clearing.

Since multiple routes were developed within the Alternate Corridor, the Alternate Route Evaluation model was used (Route Study; Appendix B). Data was compiled across three groups: Built, Natural, and Engineering resources. Data collected for this model was specific to an identified route alternative. The data for each route was normalized on a scale from 0 to 1, with 0 being more desirable and 1 being a less desirable location for the route alignment. Normalizing of the routes allows for the evaluation of different units of measurements such as feet, acres, or counts in one single statistical analysis. The criteria were

then assigned weights based on their importance in the siting process. As with the corridor analysis, all weights within a group need to total 100 percent. Three individual models were then created for each of the three group perspectives (Built, Natural, and Engineering) by using the Alternate Route Model. The Alternate Route model places five times the emphasis on each of the three individual group perspectives (Built, Natural, and Engineering) as part of three separate model analyses. Lastly, a Simple Average Model was used placing equal emphasis on all the three group perspectives. Because only two routes were identified, the models were not used to identify the selected route, but merely used as a tool to help evaluate the route alternatives.

Figure 2-3: Redmon Road Switching Station to Otter Creek Substation Alternate Routes with the Composite Corridors

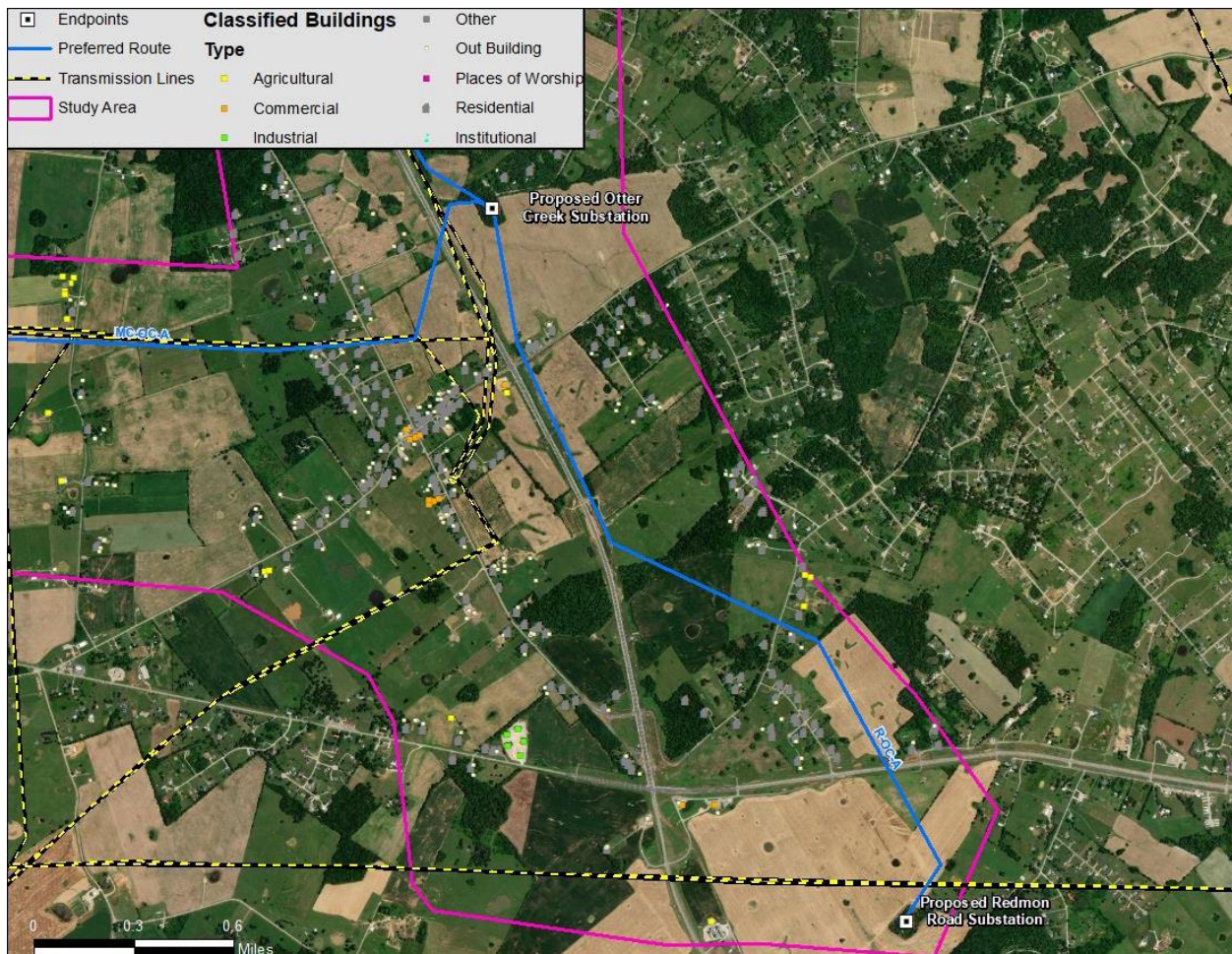


Source: Team Spatial. 2019. *345 & 161 kV Transmission lines Brandenburg Steel Mill Routing Study*. Figure 42 Redmon Road to Otter Creek Alternate Route with Composite Corridors

Overall, both route alignment alternatives would have minimal impacts to the natural and social resources of the area. As both alternatives are in generally the same area, the impacts from each were also seen to be

similar in nature and extent. Based on the Expert Judgement Model, Route R-OC-A was selected as the preferred route for the Redmon Road to Otter Creek portion. Route R-OC-A received the best score in Community Criteria as it avoided a potential new apartment complex, unlike Route R-OC-B. Route A scored better than Route R-OC-B in the Natural Environment considerations because it contained less tree clearing than Route R-OC-B. Additionally, Route R-OC-B was in proximity to a potential bat cave, making it less desirable. Accessibility across both routes ranked the same. Route R-OC-B ranked better than Route R-OC-A in Cost according to the Alternate Route Evaluation Model and was 0.1 miles shorter in length. Overall, Route R-OC-A ranked better than Route R-OC-B in the Expert Judgement model and was ultimately selected as the preferred route (Figure 2-4).

Figure 2-4: Redmon Road to Otter Creek Preferred Route



Source: Team Spatial. 2019. *345 & 161 kV Transmission lines Brandenburg Steel Mill Routing Study*. Figure 51 Redmon Road to Otter Creek Preferred Route

The preferred route (Route R-OC-A) between the proposed Otter Creek Substation and the Proposed Redmon Road Switching Station requires construction of approximately 2.5 miles of new 345 kV transmission line within a new 125-foot wide ROW. This new transmission line will extend southeast from the proposed Otter Creek Substation to parallel Joe Prather Highway and continue southeast until it heads east to avoid residential developments along Osborne Road. The route then continues south, crossing US 60, to the proposed Redmon Road Switching Station.

2.2 Other Alternatives Evaluated

Big Rivers Electric evaluated other system improvement Projects to meet the demands of the proposed Projects. Those alternatives included other line segments, different voltages, and substation upgrades. Ultimately Big Rivers Electric identified the projects addressed in this EA, including three new line Projects, as those that would minimize social and environmental impacts, control costs, and meet the system reliability needs for both Nucor Corporation and the region. As mentioned, Nucor Corporation has committed to construct a steel mill near Brandenburg, Meade County Kentucky that will add a 200 MW load to Big Rivers Electric's system. With this industrial expansion of approximately 200 MVA, the additional transmission lines, substations and transformation will be required to serve this new Meade County RECC industrial customer. While other alternatives were considered during the evaluation, no other alternatives were identified that would meet the demands of the system requirements while minimizing impacts to the existing social and environmental conditions.

2.3 No Action Alternative and No Build Alternatives

Under the No Action Alternative, RUS would not provide financing for the proposed Project. Big Rivers Electric would finance the Project using another method and the Project would be constructed.

Under the No Build Alternative, Big Rivers Electric would continue to maintain and operate its existing system. As indicated in Section 1.1, no existing resources are available to bring the requested power to the BSM facility. As such, a sufficient and reliable power delivery system would not be available to serve Nucor. Nucor would not be able to develop facilities for their proposed BSM without identifying and implementing another alternative to obtain power, such as on-site generation or a much lengthier transmission line connection to an electric power provider outside the region around the BSM.

3.0 AFFECTED ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

Chapter 3 provides descriptions of the existing environmental conditions of the areas that may be impacted by constructing and/or operating the Project. This chapter provides an understanding of the affected environment and potential environmental consequences of the Project for the following resources: aesthetics, air quality, historic and cultural resources, human health and safety, land use, noise, transportation, biological resources, socioeconomics and environmental justice, geology and soils, and water resources and wetlands. Federal, state, and local regulations that apply to managing these resources are also discussed in context of the existing environment.

3.1 Aesthetics

The visual characteristics of the Project Study Area are discussed in the following sections, as well as potential environmental consequences of the Project and proposed mitigation.

3.1.1 Affected Environment

The land use within the Project Study Area primarily consists of pasture/hay (34.6 percent), cultivated crops (33.6 percent), and deciduous forests (17.1 percent) with minimal rural developed areas spread throughout the area. The topography is gently rolling forested land and farmland, with ponds and riparian areas along nearby streams and the Ohio River. There are no parks, recreation, or designated natural areas within the Project Study Area. Otter Creek Park is located approximately 3.5 miles east of the Project Study Area (Figure 3-1). The existing facilities within the Project Study Area includes the Meade County Substation and several transmission lines. Distribution lines also occur throughout the area. These facilities are located primarily in cultivated crop or pasture areas or in cleared ROW through forest areas and are therefore unobstructed from most roadways. Existing security and safety lighting at the substation create a visual contrast at night. Man-made features in the Project Study Area include the existing facilities, scattered residences and farmsteads, overhead transmission lines, a water reservoir, a CSX railroad, and roads, including U.S. Highway 60. No visually sensitive or designated scenic areas are located within the Project Study Area.

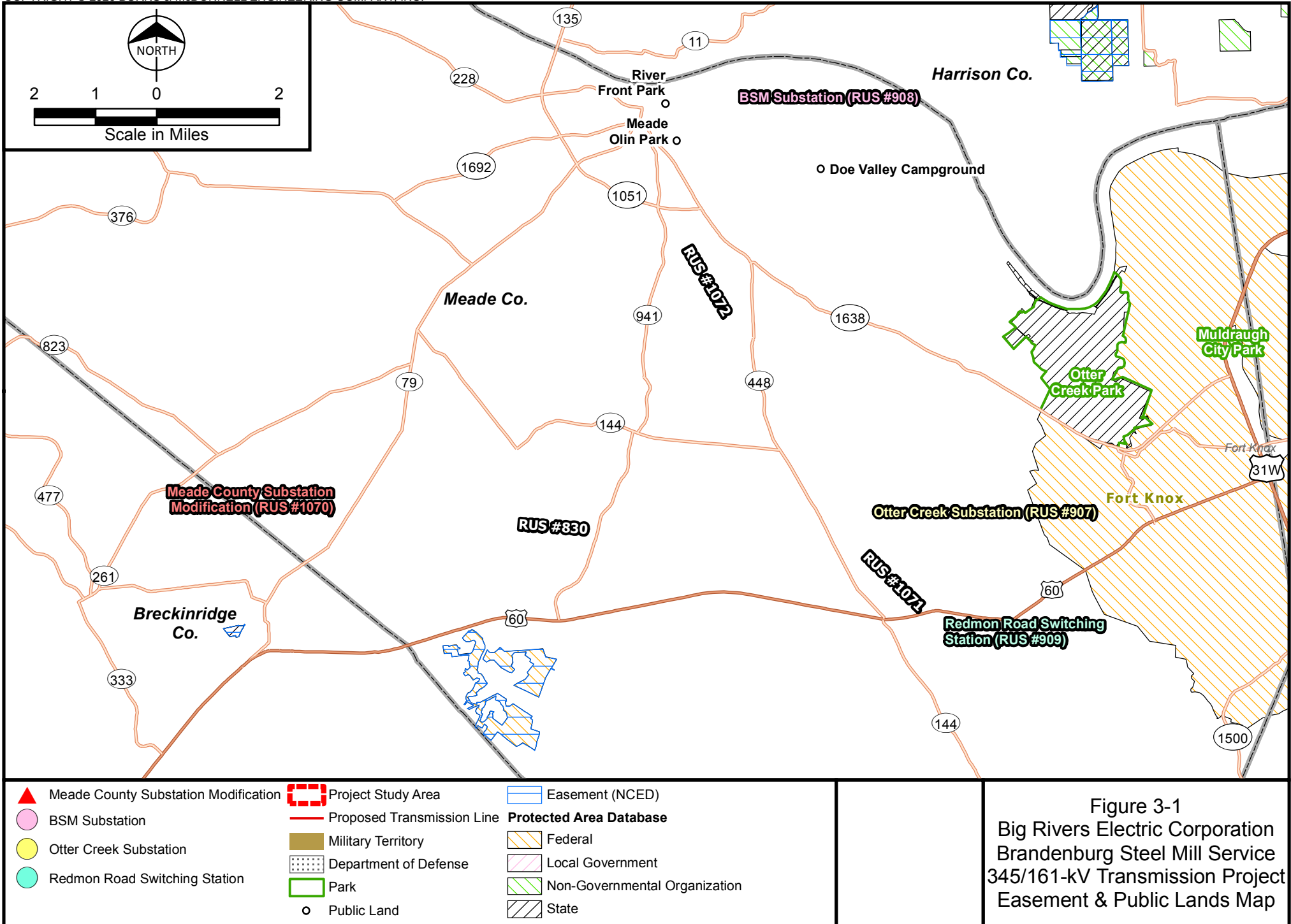


Figure 3-1
 Big Rivers Electric Corporation
 Brandenburg Steel Mill Service
 345/161-kV Transmission Project
 Easement & Public Lands Map

3.1.2 Environmental Consequences

The following sections provide potential environmental consequences of the Project and No Action Alternatives related to the aesthetics of the Project.

Potential Impact of the No Action Alternative

Under the No Action/No Build Alternative, no rebuilds would occur along existing transmission lines, no new transmission lines would be constructed, and the new substations or switchyard would not be constructed. Due to this, the No Action/No Build Alternative would not change the aesthetics to the transmission line corridor areas or the existing substation area and would therefore have no short- or long-term impacts on the existing visual environment. However, the existing substation and transmission lines would continue to exist as visual elements in the landscape.

Potential Impact of the Development Alternative

At the existing transmission structures and the Meade County Substation, the aesthetics of the area would largely remain the same since the work at these facilities would not significantly alter the visual landscape around these facilities. Rebuilding the existing 69 kV lines as a double circuit would be largely within established ROW corridors. The existing lines will be removed and the new structures placed in the same location as those removed. The structures are 50 to 60 feet above ground level. Design of the new replacement structures is still being finalized; an example rendering is attached in Appendix A. Current plans call for the new 345/69 kV transmission line structures to typically be 105 feet above ground level and built following braced post tangent design using steel or concrete spun structures spaced approximately 500 feet apart. The new 161/69 kV transmission line structures would be approximately 95 to 105 feet above ground level and would also be built of braced post tangent design using steel or concrete spun structures spaced approximately 500 feet apart. These new structures would need to be taller to provide for electrical clearance for the two circuits, but the ROW width would remain the same and no new clearing would be required. Impacts would be minimal and temporary for access and installation. Visually, the new poles would be taller and more visible, but create only minimal additional visual contrast from the existing facilities.

New equipment at the 161 kV Meade County Substation would be within the existing footprint and would be comparable in height to existing equipment which is also 161 kV. Lighting is currently in place at the existing substation. The Project would include additional lighting for maintenance, access, and egress in and around the new equipment as necessary. All lighting would utilize energy-efficient technology.

Outdoor lighting is switched on automatically at nighttime using photocells, and indoor lighting would be controlled manually using switches.

The new facilities to be constructed for the Project include two substations, a switching station, two 345 kV and one 161 kV electric transmission line segments. The three transmission line segments would integrate the new facilities into the local electrical grid (see Figure 1-1 for the location of the new transmission lines). Approximately 4.6 miles of the transmission line will require new ROW which would be constructed largely through cultivated crop or pasture/hay land. A total of 4.7 acres of tree clearing will be required, of which 4.2 acres is considered potentially suitable bat habitat³.

The new substations and switching stations would have outdoor lighting that would be switched on automatically at nighttime using photocells, and indoor lighting would be controlled manually using switches. Clearing ROWs and station sites, installing new and taller transmission line structures, and building electrical stations would introduce new features to the landscape. The new lines and stations would be visible at road crossings and where landscape is predominately cropland. The presence of existing facilities and areas of existing infrastructure minimizes the visual contrast of the new facilities to the landscape, which already contains all these types of visual elements. During construction, temporary visual features will likely include cranes and other heavy equipment and activity consistent with building a major industrial facility. While there will be additional visual contrast from the new facilities, the overall nature of the proposed Project will remain consistent with and compatible to the existing views in the area. Due to this, the new visual contrast, construction noise, and temporary increase in traffic is anticipated to be minor and would be a minor aspect of the overall viewshed of the area.

3.1.3 Mitigation

While construction will have temporary visual impacts, no long-term aesthetic changes will occur as a result of operations. Mitigation will include revegetating disturbed areas following construction as well as maintaining an organized construction site with implementation of a waste management plan to keep the Project clean and organized.

3.2 Air Quality

The impacts to air quality that this Project may have, and the steps that will be taken to mitigate those impacts, are discussed in this section.

³ An additional 5.8 acres of tree clearing will be required for the BSM Substation but will be permitted by Nucor Corporation under the at-large BSM project.

3.2.1 Affected Environment

This Project is in Meade County, Kentucky, which has a humid subtropical climate zone that receives rainfall throughout the year. Ambient air quality is protected by federal, state, and local regulations. The U.S. Environmental Protection Agency (EPA) has established National Ambient Air Quality Standards (NAAQS) for several criteria pollutants. These standards were implemented in order to protect human health, including health of defined sensitive populations, such as asthmatics, children, and the elderly. NAAQS have been established for nine criteria pollutants. Meade County is classified as attainment, meaning the area is in compliance with federal clean air standards. Meade County is designated as attainment or unclassifiable for all criteria pollutants.

The EPA established the Mandatory Reporting of Greenhouse Gases (GHG) rule to quantify emissions of GHG from certain source categories. Subpart DD of 40 CFR 98 requires mandatory reporting of GHG for certain electrical transmission and distribution equipment facilities. This rule does not limit or control emissions of GHG.

3.2.2 Environmental Consequences

Potential Impact of the No Action/No Build Alternative

Under the No Action Alternative, there would be no construction, ground disturbing activities, or work near power lines, as a result there would be no effects to air quality.

Potential Impact of the Development Alternative

Air emissions from the construction of the Project would occur due to 1) vehicular emissions from increased traffic from the construction work force and construction deliveries, 2) internal combustion engine emissions from construction equipment, and 3) fugitive dust (particulate matter less than 10 microns in diameter (PM₁₀) and particulate matter less than 2.5 microns in diameter (PM_{2.5})) emissions from excavating, site preparation, and construction. Emissions from construction activities can be difficult to quantify, as they are dependent on the number and type of construction vehicles in operation at any given point during construction, the number of construction workers driving to and from the site, and the type of construction activities occurring. In general, air emissions would be most concentrated at the substation and switching station sites. Construction of new and rebuilt lines would be confined to the ROW and move rapidly along the alignment versus at the station sites where grading and more extensive construction would be required.

Generally, air emissions from construction are low and temporary in nature, fall off rapidly with distance from the construction site, and would not result in long-term impacts.

Equipment used at the substations and switching stations may contain sulfur hexafluoride (SF₆) and perfluorocarbons (PFC) as insulators, which are GHGs. 40 CFR 98, Subpart DD specifies GHG reporting requirements for electrical transmission and distribution equipment. Electrical transmission and distribution facilities are subject to this rule if they contain equipment with an aggregate nameplate rating of 17,820 pounds of SF₆ or PFC (40 CFR 98.301). Should the substations meet the criteria specified in this rule, a mass balance will be performed to calculate and report the annual emissions of SF₆ and PFCs from the Project.

No stationary emissions units (e.g., emergency generators) are being constructed as part of this Project, and none of the facilities would generate any air emissions. No NAAQS permitting analysis or permitting would be required for project operation. Therefore, negligible impacts to air quality are expected from Project operation.

3.2.3 Mitigation

Air emissions from construction activities are expected to be the main effects to air quality from the Project. These effects would be largely within the project construction areas and be minimal outside of the Project site and ROW boundaries. Air emissions from construction activities would be temporary in nature. Emissions would be from fugitive sources (dust from grading and soil disturbance), fuel combustion from construction equipment, and fuel combustion from increased vehicular traffic. Construction equipment emissions would be controlled by use of properly maintained equipment. Vehicular emissions will be controlled by minimizing the time spent idling. Fugitive dust control mitigation measures could include, but are not limited to, the following:

- Applications of water;
- Watering of roadways after completion of grading;
- Reduction in speed on unpaved roadways;
- Use of sweepers or water trucks to remove mud at points of public street access; and
- Stabilization of dirt storage piles by seeding and mulching, tarps, or barrier fencing.

3.3 Historic and Cultural Resources

The National Historic Preservation Act (NHPA) of 1966, as amended, sets forth national policy and procedures regarding historic properties, defined as districts, sites, buildings, structures, and objects included on or eligible for listing on the National Register of Historic Places (NRHP). Section 106 of the

NHPA requires federal agencies to consider the effects of their undertakings on such properties and to allow the Advisory Council on Historic Preservation (ACHP) the opportunity to comment on those undertakings, following regulations issued by the ACHP (36 CFR 800). Due to RUS involvement, the Project will be subject to review under Section 106 of the NHPA.

RUS has chosen not to apply the *Nationwide Programmatic Agreement (NPA) among the U.S. Department of Agriculture Rural Development Programs, National Conference of State Historic Preservation Officers, Tribal Signatories, and The Advisory Council on historic Preservation for Sequencing Section 106* as executed on July 3, 2018. For the purposes of Section 106, Big Rivers Electric and Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell) have identified all project components, proposed an area of potential effect, and provided information to support a recommended finding of effect for those project components/activities. By letters dated November 11, 2020 and December 17, 2020, the KHC concurred with the recommended finding of no adverse effects to cultural resources and historic properties. The summary is provided below in Section 3.3.1. Additionally, copies of the Section 106 consultation letters sent to the Kentucky Heritage Council (KHC) and their responses area provided in Appendix C.

The KHC provided a list of Native American tribes with ancestral heritage in Meade County who may be interested in the Project. In December 2019, review letters were sent to these tribes to notify them about the Project and ask them to identify cultural and religious sites in the Project Study Area that may be of concern to them (Section 6.2 and Appendix D). The purpose of tribal outreach at this time is to document comments from the tribes for consideration and inclusion in this EA. Seven tribes have responded and their responses are detailed in Section 6.2. Of the seven tribes that responded, the Cherokee Nation and the Shawnee Tribe of Oklahoma requested further coordination. When consulting under RUS blanket delegation, to engage with consulting parties, Big Rivers Electric and its Consultant proposed an Area of Potential Effect (APE), submitted the results of a records search, and provided recommendations regarding an appropriate level of effort for conducting additional surveys. By letters dated October 15-16, 2020, Burns & McDonnell recommended a finding of no adverse effects to historic properties for surveys completed on the APE for each project component.

The Shawnee Tribe of Oklahoma responded on November 16, 2020 concurring that no known historic properties will be negatively affected by this Project. The Cherokee Nation responded on December 1, 2020 with no objection to the proposed Project.

3.3.1 Affected Environment

In evaluating the potential project-related impacts to cultural resources, an APE is established. Cultural resources within the identified APE are identified and the potential impacts of the project to these resources are considered. The APE may vary between types of cultural resources (historic and archaeological) and project components (new and existing substations, new and rebuilt transmission lines). RUS consulted with the KHC to determine the APE to be considered and surveyed for the various components of this project. The following summarizes the APE recommended by KHC and approved by RUS pursuant to 36 CFR § 800.4(a)(1) for the project components and different cultural resources potentially impacted by the project.

Substations and Switching Stations: The recommended physical APE for these project components consists of the locations of each substation and switching station. The stations will be bounded with a 7-foot-high chain-link fence surmounted by 1 foot of barbed wire. Equipment within each station will be a maximum height of approximately 105 feet above grade. The amount of land disturbance required for each station is provided below. The recommended APE for visual effects is the area within a 0.25-mile radius of each new substation or switching station.

- RUS #1070 (REBUILD), Meade County Substation 161 kV Terminal. The existing Meade County Substation will require the installation of a new 161 kV transmission line terminal within the fenced area; no new land disturbance is required.
- RUS #907 (NEW), Otter Creek 345/161 kV Substation. The new substation would be located on an approximately 11.7-acre parcel with an additional 1.7 acres of site storage.
- RUS #908 (NEW), Brandenburg Steel Mill (BSM) 345/34.5 kV Substation. This project component is part of the separate Nucor BSM project (LRL-2019-444-sea), and effects to historic properties at that location are currently under agency review. Because of the project context and conditions, Big Rivers Electric sent a summary memo to KHC of the surveys completed to date and recommends no further consideration of this component under Section 106 in connection with the current project.
- RUS #909 (NEW), Redmon Road EHV Switching Station. The new switching station will be located on a 3.4 acre parcel.

Transmission Lines: The recommended physical APE for the following project components consists of the locations of the ROW width and length as described below. Approximately 4.6 miles of the proposed Project ROW is new or greenfield, the rest of the Project (approximately 15.2 miles), is existing line ROW. The recommended APE for visual effects is the area within 0.25 mile of each transmission line's

centerline. Portions of the Project have been previously surveyed for cultural resources or overlap with areas that have been surveyed for different projects. As determined by KHC, the portions of the APE that have not been previously assessed for archaeological resources should be surveyed and identification of above-ground properties within the APE should be completed. Areas previously surveyed do not require a new survey.

- RUS #1072 (REBUILD and NEW LINE), Otter Creek Substation to BSM Substation 345 kV Line Addition. Rebuild 7.4 miles of existing 69 kV line as 345/69 kV double circuit line within an existing 100-foot wide ROW. An additional 1.0 miles of new 345 kV will also be built, of which 0.2 miles is located within Nucor Corporation's steel mill property, will have a 150-foot ROW and has been previously surveyed. The remaining 0.8 miles will be located on private easements and will require a new 125-foot wide ROW (Figure 2-2).
- RUS #830 (REBUILD and NEW LINE), Meade County Substation to Otter Creek Substation 161/69 kV Double Circuit Line Addition. Includes rebuilding 7.9 miles of existing 69 kV line as 161/69 kV double circuit within existing 100-foot ROW and an additional 1.0 miles of new 161 kV line with a 125-foot ROW (Figure 2-1).
- RUS #1071 (NEW LINE), Redmon Road EHV Switching Station to Otter Creek Substation 345 kV Line. Requires 2.5 miles of new 345 kV line with a new 125-foot wide ROW (Figure 2-3).

The Project Study Area has a long history of native American and Euro-American settlement and occupation. A records search of known cultural resources within the Project Study Area as provided by the Kentucky Office of State Archaeology (OSA) and the KHC, which operates as the State Historic Preservation Office, was conducted to obtain information on the presence and potential for cultural resources in the area. Several portions of the project have been previously surveyed for cultural resources or overlap with areas that were surveyed for different projects. These survey results and relevant aerial imagery and maps to identify potential cultural features such as cemeteries, railroads, and historic-age buildings were also reviewed. The locations, types, and significance of known cultural resources provides a partial understanding of the cultural landscape of the Project Study Area. A summary of the records review, previous cultural surveys results and associated details are provided below and in the Section 106 consultation letter sent to KHC on April 1, 2020 (Appendix C).

The Project was registered with the KHC and the OSA in November 2019 and received information about previously recorded archaeological sites, historic-age non-archaeological resources (historic resources), and resource surveys in the vicinity of the Project. Several parts of the Project overlap with the locations of previous cultural surveys (Appendix C). One of the investigations is under agency review (Kullen

2020), one was completed by Big Rivers Electric as due diligence for a previous project (Foster 2013) (Appendix C), and the rest were likely completed as part of state and/or federal environmental and cultural compliance laws.

Results show that two previously recorded archaeological sites, 15Md435 and 15Md450, are adjacent to the physical APE for components RUS #1071 and #1072, but do not intersect (Table 3-1). Four recorded archaeological sites intersect the Project and proposed physical APE at the following project components: RUS #908 and #1072. Resources MD-115 and MD-116 are twentieth century dwellings with undetermined NRHP status (Appendix C). Site 15Md7 on Nucor's property was previously reported as a "cemetery on the farm of Jonas Lyons" (Funkhauser and Webb 1932). The mapped location of the site has been recognized as unreliable by the OSA. Recent deed research and an investigation of the mapped site location suggest that the location was misreported and is actually at least 0.6-mile southeast of the current mapped location (Gottsfield et al. 2019). Sites 15Md459, 15Md598, and 15Md602 have been reviewed and determined not eligible for listing on the NRHP (Kullen 2020; Kullen and Latham 2019) (Table 3-1 and in Appendix C).

Table 3-1: Previously Recorded Archaeological Sites within or Adjacent to the Proposed Physical APE

Site Number	Age	Site Type	NRHP Status	Intersects Physical APE?
15Md7	Prehistoric	Cemetery; stone box grave	Undetermined	Yes; RUS #1072. Appears mapped location is incorrect
15Md435	Prehistoric	Open habitation without mounds	Undetermined	No
15Md450	Late Archaic-Early Woodland, historic	Open habitation without mounds	Presently not eligible	No
15Md459	Early Woodland, Middle Woodland	Open habitation without mounds	Determined not eligible	Yes; RUS #908
15Md598	Early Archaic, Late Archaic-Early Woodland; historic	Open habitation without mounds; razed farmstead	Determined not eligible	Yes; RUS #908 and #1072
15Md602	Historic	Razed outbuilding	Determined not eligible	Yes; RUS #1072

Source: Gottsfield et al. 2019; Kullen 2020; Kullen and Latham 2019; OSA 2019.

Additionally, letters were sent to the enclosed list of Indian tribes (Appendix D) to seek additional information about possibly affected historic properties in the APE. There are two previously recorded historic-age non-archaeological resources (historic resources) within the proposed APE for visual effects (RUS #830 and #1070).

Historic-Age Resources Surveys and Phase I Archaeological Surveys were completed for the APE of new lines and areas not previously surveyed in the summer of 2020 by Burns & McDonnell archaeological and historic resource staff. Results of the surveys show that 6 archaeological sites, 4 isolated finds and 142 historic sites were located within the APE. A table per project component of the identified sites and NRHP status is included in Appendix C.

3.3.2 Environmental Consequences

The following sections provide potential environmental consequences of the Project and No Action/No Build Alternative related to historic and cultural resources in the Project Study Area.

Potential Impact of the No Action Alternative

The No Action/No Build Alternative would have no short- or long-term impacts to cultural resources at or in the vicinity of the Project Study Area because no construction and associated ground disturbance would occur.

Potential Impact of the Development Alternative

In a response letter dated November 27, 2019, the KHC acknowledged that the proposed Project has the potential to affect historic properties (Appendix C). Portions of the Project include replacement of existing transmission lines. While these lines have not been fully surveyed for cultural resources, these ROWs have been previously disturbed during previous construction. Existing structures would be removed and replaced, requiring minimal additional excavation at existing structure holes. No grading or clearing would be required to rebuild the existing transmission lines so soil disturbance would be minimal and less than experienced during initial ROW development and line construction. Further impacts to cultural resources from line rebuild are not anticipated.

Cultural surveys were completed at the Otter Creek and Redmon Road substation/switching station and no cultural resources have yet been identified. Therefore, impacts to cultural resources are not expected at these locations.

Previous cultural resources surveys conducted for at least 21 other un-related projects overlap the records search of the Project Study Area. Most of the area previously surveyed was for linear projects such as roads and gas and water pipelines. The Otter Creek to BSM 69/345 kV rebuild closely parallels existing roads Kentucky Route (KY)-313 and KY-933, which have been previously surveyed for cultural resources.

Historic-Age Resources Surveys and Phase I Archaeological Surveys were completed for the APE of new line and areas not previously surveyed in the summer of 2020 by Burns & McDonnell archaeological and historic resource staff. Results are summarized below in Table 3-2 and concurrence of no effect to historic or cultural resources was received from RUS and KHC. Currently, none of the Project components overlap any known historic properties, or resources eligible for or listed on the NRHP. Doe Run Creek Historic District is about 0.5-mile northeast from the Otter Creek Substation to BSM Substation 345 kV transmission line ROW at its closest point. Most of the previously recorded archaeological sites within the Project Study Area are located in the northern part of the Project Study Area near the Ohio River, which is a very high probability area for cultural resources. Three previously recorded archaeological sites overlap the Project ROW (15Md7, 15Md434, and 15Md435). These areas will be spanned during

transmission line construction to avoid any disturbance. None of these sites are considered historic properties; however, their eligibility has not been fully evaluated. Site 15Md7 is recorded as a prehistoric burial site, but its current mapped location is unreliable according to the OSA. Recent coordination with KHC and the U.S. Army Corps of Engineers for the Nucor project determined 15Md7 was not within the Project area. A portion of this site may overlap the new ROW on Nucor Corporation's property extending northwest from BSM Substation. Both 15Md434 and 15Md435 overlap the ROW from Otter Creek to Redmon Road. Site 15Md434 presently is not recommended eligible for the NRHP, but the OSA recognizes not all parts or components of the site have been evaluated for their NRHP-eligibility. Site 15Md435 is unevaluated for listing on the NRHP. Two of the preliminary sites 15Md598 and 15Md602 are adjacent to the ROW on Nucor Corporation's property and their final boundaries could overlap into the final ROW. These two sites were determined to not be eligible for listing on the NRHP.

Table 3-2: Summary of 2020 Historic and Cultural Resource Survey Results by Project Component

RUS #830, Meade County to Otter Creek 161/69 kV line rebuild and new 161 kV line	RUS #1071, Redmon Road to Otter Creek new 345 kV line	RUS #1072, Otter Creek to BSM 69/345 kV line rebuild and new 345 kV line	RUS #907, Otter Creek Substation	RUS #909, Redmon Road Switching Station	RUS #908, BSM Substation	RUS #1070, Meade County Substation Modification
Five archaeological sites and 3 isolated finds were discovered in the APE; none of which are recommended eligible for NRHP listing. No further archaeological investigations recommended.	No cultural resources or cemeteries were found with the APE. No further archaeological investigations recommended.	One archaeological sites and 1 isolated find were discovered in the APE; none of which are recommended eligible for NRHP listing. Two cemeteries are within direct line of sight, but not within project footprint. Notification of earthmoving is recommended to these cemeteries. No further archaeological investigations recommended.	No cultural resources or cemeteries were found with the APE. No further archaeological investigations recommended.	No cultural resources or cemeteries were found with the APE. No further archaeological investigations recommended.	The BSM Substation was covered by archaeological and architectural survey and site work. No NRHP-eligible cultural resources were documented in the area of within a 0.25-mile buffer.	No cultural resources or cemeteries were found with the APE. No further archaeological investigations recommended.
68 historic age non-archaeological	12 historic age non-archaeological	58 historic age non-archaeological resources	No historic age non-	No historic age non-archaeological	No historic age non-archaeological	4 previously recorded historic-

RUS #830, Meade County to Otter Creek 161/69 kV line rebuild and new 161 kV line	RUS #1071, Redmon Road to Otter Creek new 345 kV line	RUS #1072, Otter Creek to BSM 69/345 kV line rebuild and new 345 kV line	RUS #907, Otter Creek Substation	RUS #909, Redmon Road Switching Station	RUS #908, BSM Substation	RUS #1070, Meade County Substation Modification
resources on 41 properties were recorded within Project APE. No NRHP-eligible or listed resources would be physically or adversely affected by project.	resources on 9 properties were recorded within Project APE. No NRHP-eligible or listed resources would be physically or adversely affected by project.	on 43 properties were recorded within Project APE. No NRHP-eligible or listed resources would be physically or adversely affected by project.	archaeological resources were recorded within Project APE.	resources were recorded within Project APE.	resources were recorded within Project APE.	age non-archaeological resources were recorded within Project APE. No NRHP-eligible or listed resources would be physically or adversely affected by project.

3.3.3 Mitigation

Big Rivers Electric has coordinated with the OSA and KHC to determine locations where surveys were required to identify and protect cultural resources prior to construction at these locations. It was established that the APE of any locations not previously surveyed for cultural or historic resources should be surveyed. Any identified sites would be evaluated for significance and considered as part of project engineering and construction planning.

Three previously recorded archaeological sites overlap the Project ROW (15Md7, 15Md434, and 15Md435). These areas will be spanned during transmission line construction to avoid any disturbance. None of these sites are considered historic properties; however, their eligibility has not been fully evaluated. There were no NRHP-eligible or listed historic resources, no NRHP-eligible cultural resources or cemeteries identified within the APE. Cultural and historic resources would not be physically or adversely affected by project. Two cemeteries are within direct line of sight of RUS#1072, but not within the project footprint. Courtesy notification to the cemeteries of earthmoving work is recommended.

If any unidentified sites are inadvertently discovered during the construction phase, construction will be halted immediately, and Big Rivers Electric will be notified in order to initiate the procedures outlined in 36 CRF Part 800. Procedures will include the evaluation of the find for NRHP eligibility and determining the appropriate treatment of the find with RUS, the KHC, the OSA, any interested tribes, and other consulting parties.

3.4 Human Health and Safety

Human health and safety information in the Project Study Area and environmental consequences of the Project are discussed in the following sections.

3.4.1 Affected Environment

This Project is located within Meade County. The nearest medical facility is KentuckyOne Health Jewish Hospital Health Center. KentuckyOne is 8.2 miles northwest from the proposed Otter Creek Substation, 4.0 miles west of the proposed BSM Substation, and 11.0 miles northwest of Redmon Road Switching Station. The nearest fire department to the BSM Substation is Muldraugh Fire Department, 3.4 miles west. The nearest fire department to the Otter Creek Substation is Wolf Creek Fire Department and Rescue, 9.0 miles northeast of the substation. The nearest fire department to the Redmon Road Switching Station is the Ekron Fire Department, 6.8 miles northwest.

Electric and magnetic fields (EMF) are a type of energy associated with low frequency, non-ionizing radiation that in this case is coming from a man-made source. Non-ionizing radiation has just enough energy to vibrate atoms in a molecule but not enough to remove electrons from an atom. The electric and magnetic radiation (EMR) waves emitted from powerlines is a much lower frequency than those emitted from microwaves, radio waves, or gamma rays. EMR associated with power lines is low frequency non-ionizing radiation. Electrical fields are produced by the electrical current through wires and electrical devices. The strength of the EMF is proportional to the amount of current passing through the power line, the field decreases in strength as you move away (EPA 2019b). There are no current studies confirming that high amounts of EMR is associated with health risks (EPA 2019b). It is assumed there is no health risk from working within electric and magnetic fields.

3.4.2 Environmental Consequences

Potential Impact of the No Action Alternative/No Build

Under the No Action Alternative/No Build, there would be no construction, ground disturbing activities, or work near power lines, as a result there would be no risk to human health and safety.

Potential Impact of the Development Alternative

Construction of the various components of this project will occur at several different locations throughout Meade County concurrently. Crews would likely range in size from 6-12 persons at any given location. Project construction poses risks for potential health and safety hazards for construction personnel through the operation of heavy equipment, the use of tools during construction, and working in an active construction site. These hazards would be mitigated by compliance with all applicable federal and state occupational safety and health standards, National Electric Safety Code (NESC) regulations (NESC 2017), Occupational Health and Safety Administration (OSHA) guidelines, and utility design and safety standards. Local emergency and health services would be called upon to provide first aid and assistance in the event of an accident or emergency. As the number of workers required for project construction would not be significant compared to the overall population of Meade County, local providers should be capable of providing any necessary services for Project work force.

Big Rivers Electric will develop a Health and Safety Plan to address public and worker safety during the construction and operation of the Project. This plan will identify requirements for minimum construction and operation distances from residences and businesses. In addition, it will address temporary fencing around the staging area, excavation, laydown areas during construction, and worker safety provisions required under OSHA CFR1926. During construction, all employees, contractors, and sub-contractors

will be required to adhere to OSHA safety procedures, which will be taught in a mandatory training for all construction works on site. All heavy equipment would be up to OSHA safety standards and personal safety equipment will be required for all workers on site. Any accidents or incidents will be reported to the designated safety officer.

During construction there is a risk of accidental fires being started by human activities such as refueling heavy equipment or the use of vehicles in dry vegetated areas. Big Rivers Electric will create a Health and Safety Plan outlining procedures to address and control the use of flammable materials and fire prevention and control measures and equipment on site. The Project will implement industry-approved design measures to reduce fire-related risks.

Construction and operation of the Project will include the storage and use of hazardous materials. All potentially hazardous material stored on site, shall be recycled by a licensed/permitted recycler. All materials shall be handled and stored using OSHA protocols, to reduce the risk of spills. In order to reduce the risk releasing hazardous materials during construction, all work would be in accordance with OSHA standards and protocols, along with any other applicable federal and state environmental regulations. If a hazardous material were to be accidentally released during construction, all activities involved with the cleanup, management, and disposal of contaminated soils would occur in conjunction with EPA and State standards, which reduces the potential for significant impacts resulting from the release of hazardous materials.

All construction sites will be managed to reduce risks to the public and workers in the area. The general public will not be allowed in any active construction sites. Traffic is predicted to temporarily increase on local roads during delivery of materials. This temporary increase in traffic on local roads during construction would slightly increase the risk of traffic accidents to the general public. Increased traffic is anticipated to be short-term in nature and will return to current levels during operation of the Project. During stringing of lines across roadways, temporary traffic control or land closures may be required to protect the traveling public.

After construction is complete, there will be more existing hazardous structures in Meade County. There is a risk of electrocution from the addition of the two substations, the switching station, and additional transmission lines. To mitigate risks to the public, access to the transmission line rights-of-ways, substations, and switching station will be restricted to authorized individuals. The substations and switching station will be fenced in with a locking gate and the transmission line ROWs will contain

locking gates at all entrances of the access roads. Facilities will be designed and constructed to limit exposure of the public to EMF/EMR.

3.4.3 Mitigation

Big Rivers Electric will comply with all applicable federal and state occupational safety and health standards, NESC regulations, utility design and safety standards. Big Rivers Electric will develop a Health and Safety Plan to address public and worker safety during the construction and operation of the Project. The Health and Safety Plan would identify any requirements for minimum construction or operation distances from residences or businesses, as well as requirements for temporary fencing around staging, excavation, and laydown areas during construction. The plan would also include provisions for worker protection as is required under OSHA CFR1926. During construction, all employees, contractors, and sub-contractors would be required to adhere to OSHA safety procedures, which will be taught in a mandatory training for all construction works on site. All heavy equipment would be maintained to OSHA safety standards and personal safety equipment would be required for all workers on site.

3.5 Land Use

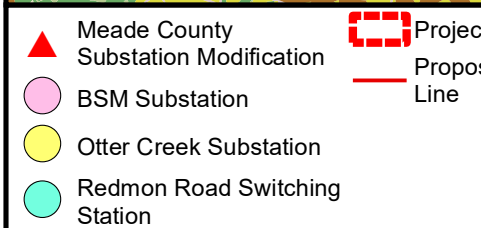
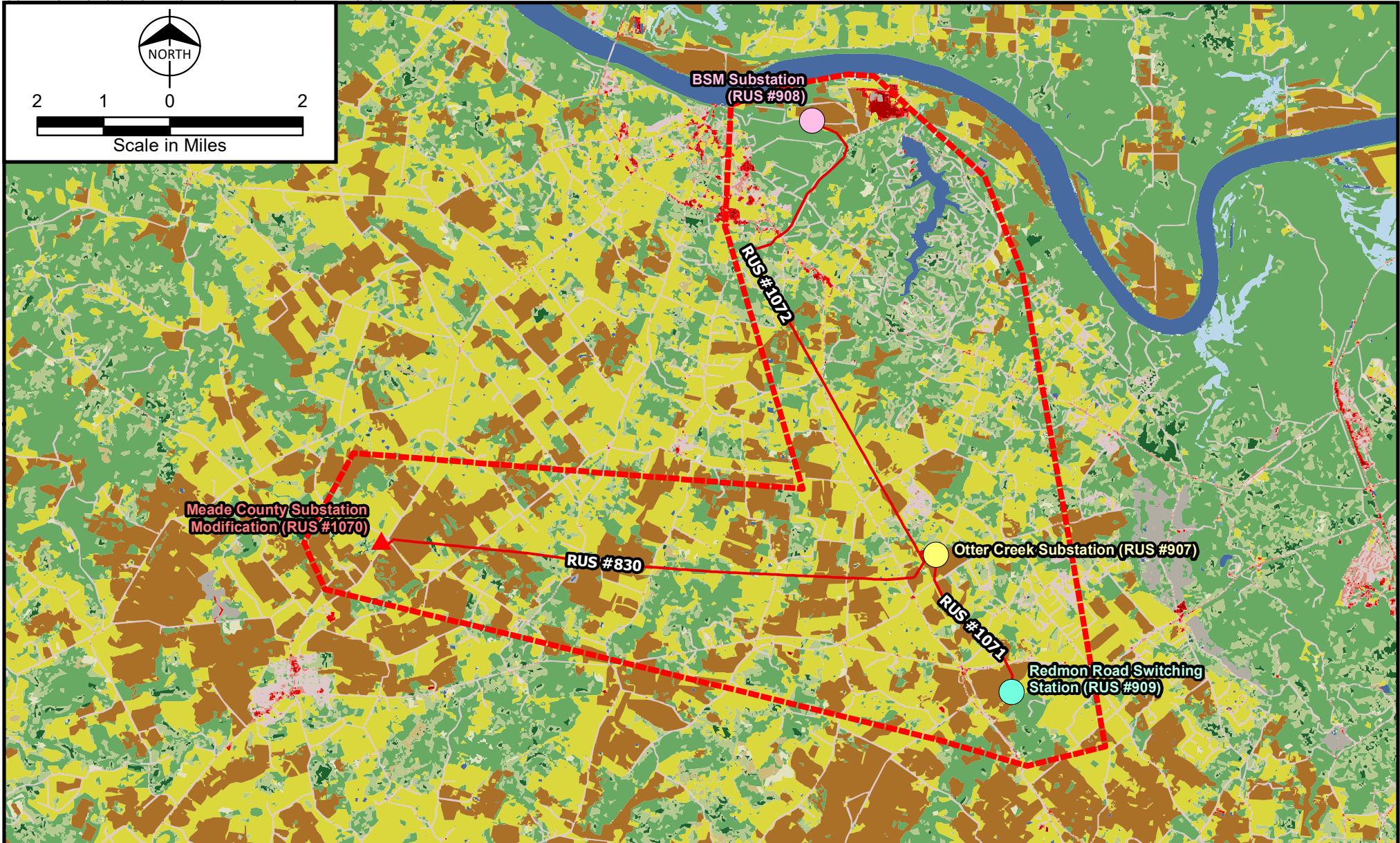
The land use in the Project Study Area and potential land use impacts as a result of the Project are discussed in the following sections.

3.5.1 Affected Environment

The Project is located in Meade County approximately one mile from Brandenburg, Kentucky, two miles from Irvington, Kentucky, and eight miles north of Radcliff, Kentucky. The current land use of the Project Study Area is predominately pasture/hay (34.6 percent), cultivated crops (33.6 percent), and deciduous forest (17.1 percent; Figure 3-2). Additional uses include developed land, evergreen forests, grasslands/herbaceous, mixed forests, shrub/scrub woods, and water. The USDA Natural Resources Conservation Service (NRCS) data shows that the Project does contain prime farmland and farmland of statewide importance (Figure 3-3).

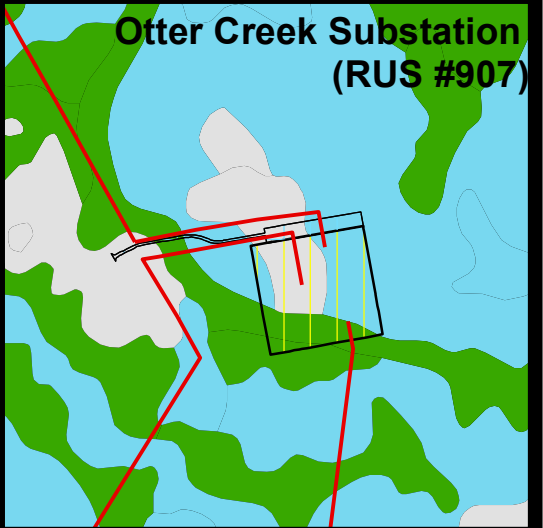
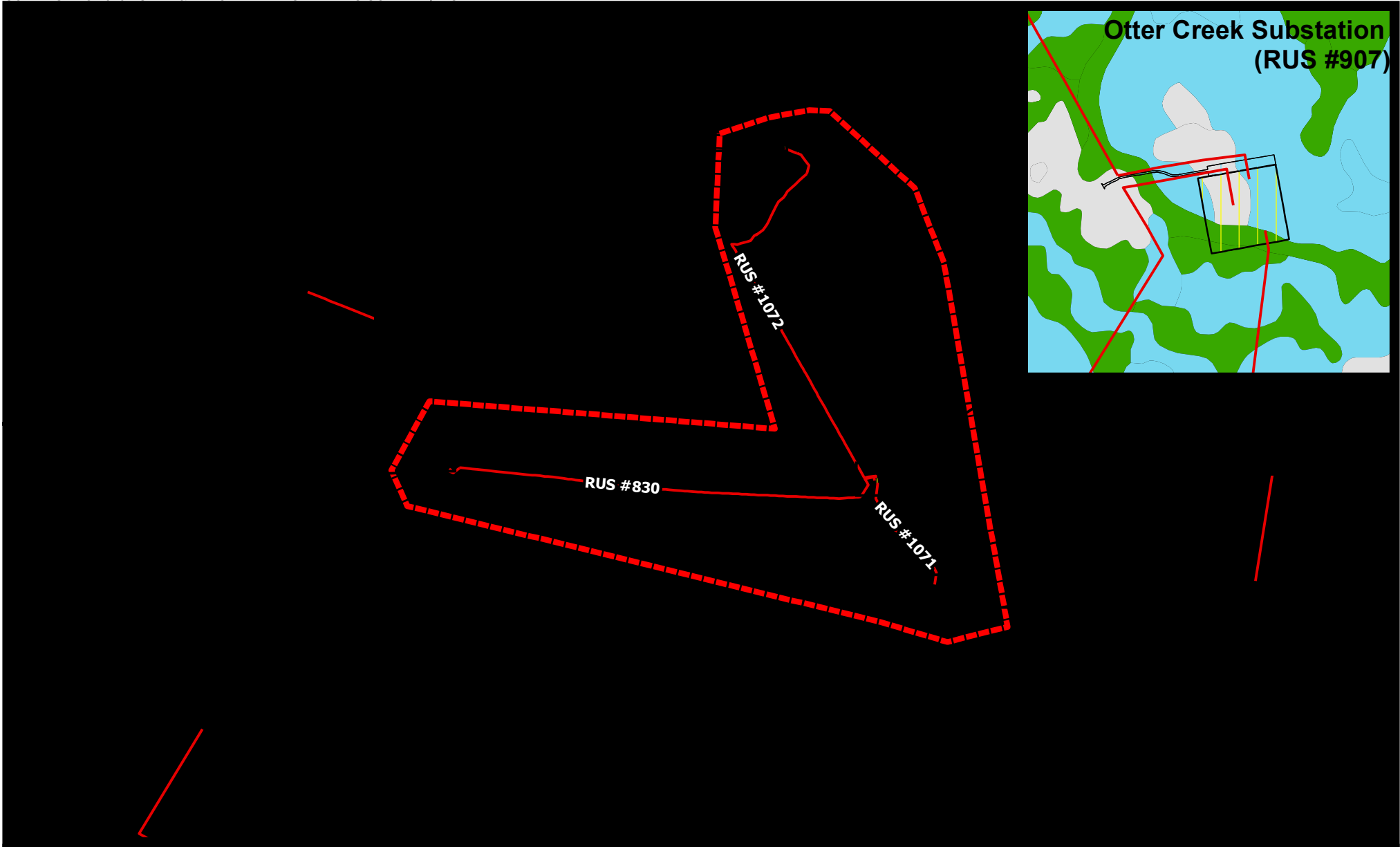
Review of federal and state databases indicate that no national wildlife refuges, state wildlife management areas, state game refuges, game management areas, nature preserves, or county parks are crossed by the Project. The closest federal land is the Fort Knox United States Army post, which is eight miles east of the Project Study Area. The closest Section 10 stream is the Ohio River approximately 0.8 mile north of the Project Study Area. Otter Creek, which is on the National River Inventory (NRI), is a swift and scenic Class II whitewater stream located 2.75 miles east of the Project Study Area (see Section 3.13 for more

information on water features in the Project Study Area). None of these features will be impacted by the Project. The Project is not located within any city limits.



▲ Meade County Substation Modification	▭ Project Study	National Land Cover Database (2016)	Evergreen Forest
● BSM Substation	— Proposed Transmission Line	Open Water	Mixed Forest
● Otter Creek Substation		Developed, Open Space	Shrub/Scrub
● Redmon Road Switching Station		Developed, Low Intensity	Grassland/Herbaceous
		Developed, Medium Intensity	Pasture/Hay
		Developed, High Intensity	Cultivated Crops
		Barren Land	Woody Wetlands
		Deciduous Forest	Emergent Herbaceous Wetlands

Figure 3-2
 Big Rivers Electric Corporation
 Brandenburg Steel Mill Service
 345/161-kV Transmission Project
 Land Use Map



Proposed Transmission Line	Current Substation Site	 0 1.3 2.6 Scale in Miles	<p align="center">Figure 3-3 Big Rivers Electric Corporation Brandenburg Steel Mill Service 345/161-kV Transmission Project Farmland Class Map</p>
Project Study Area	Proposed Site Entrance		
Not prime farmland	Proposed Site Entrance Access Road & T-Lines		
Farmland of statewide importance	Proposed Substation Site		
All areas are prime farmland	Proposed Switching Station Site		
Prime farmland if conditions are met*	Hydric Soil		

3.5.2 Environmental Consequences

The following sections provide potential environmental consequences of the Project and No Action Alternative related to land use in the Project Study Area.

Potential Impact of the No Action/No Build Alternative

The No Action Alternative/No Build would have no short- or long-term impacts on land use at or in the vicinity of the Project because no construction would occur, no facilities would be constructed and no project-related changes in land use would occur.

Potential Impact of the Development Alternative

The land use at the Meade County Substation and along the exiting transmission lines have already been altered by the construction of the existing Facilities. No considerable additional impacts to land use are anticipated within the Facility and along the existing transmission line footprints during the following:

- Rebuild from Meade County Substation to Otter Creek Substation (7.9-miles of existing 69 kV line rebuilt to a 161/69 kV double circuit) that will occur entirely within the existing 100-foot ROW
- Rebuild from the Otter Creek Substation to the BSM Substation (7.3 miles of existing 69 kV rebuilt to a 69/345 kV double circuit)
- Meade County Substation modification – all will occur within existing substation property fence

However, impacts to land use will occur at the following:

- An additional 1.0 miles of new 161 kV transmission line within a new 125-foot ROW to extend from the existing ROW to the Meade County Substation and to the new Otter Creek Substation
- An additional 2.5 miles of new 345 kV transmission within a new 125-foot ROW to extend the Redmon Road Switching Station to the Otter Creek Substation
- An additional 1.0 miles of new 345 kV line within a new 125-foot ROW to extend the Otter Creek Substation to the BSM Substation (0.2 miles within the BSM project boundary and that portion will have a 150-foot ROW)
- Otter Creek Substation (11.7 acres) and site storage (1.7 acres)
- Redmon Road Switching Station (3.4 acres)
- BSM Substation (7.4 acres), included in the future loan application but permitting and mitigation will be completed separately as part of the BSM project

There will be a total of 4.6 miles of new ROW and 24.2 acres for substations, switching station and access roads and storage. The new ROW and substation areas would be cleared for construction; however, after construction is complete, disturbed areas would be stabilized as appropriate, either revegetated or covered with gravel. There will be no conversion in land type at the new ROW, these areas will be allowed to revert back to previous use. These minor changes in overall land use would be insignificant within the Project Study Area. Due to this, substantial impacts to land use within the Project Study Area are not anticipated.

3.5.3 Mitigation

Impacts to land use include long-term impacts (removal of existing vegetation) and short-term impacts associated with construction. Construction impacts would be minimized with Best Management Practices (BMP)s to control and minimize erosion. After construction is complete, disturbed areas would be stabilized as appropriate, either revegetated or covered with gravel. Overall, the land use following construction would be consistent with the current land use in the area.

3.6 Noise

The existing noise environment in the Project Study Area and potential noise impacts as a result of the Project are discussed in the following sections.

3.6.1 Affected Environment

The Project is located in rural areas in Meade County, Kentucky. The Project transmission lines are proposed to run through agricultural areas, with scattered residential areas nearby. As the transmission line nears Brandenburg, the residential areas become denser and some commercial properties begin to line the proposed transmission line route. The primary noise sources along the transmission line are vehicular traffic on nearby roads, sounds from agricultural activities, insect noise (during some seasons), and rustling from wind in the crops, trees, and nearby grasses. Transmission lines do not have specific noise-emitting equipment associated with them, although under certain conditions a low crackling or humming noise can be created by the interaction of the line current and moisture in the air, or corona. As such, transmission lines contribute little if any noise to the Project Study Area. Therefore, the majority of the noise discussion will focus on the proposed substations that are a part of the Project.

The Meade County Substation is located approximately 2.25 miles northeast of Irvington, Kentucky. The site is surrounded by agricultural land and has scattered residential areas nearby. The closest residence is approximately 250 feet from the existing fence line. The Meade County Substation is already an

operational substation. The primary noise sources in the surrounding area include the substation, traffic on nearby roads, and agricultural activities.

The proposed Otter Creek Substation is located approximately four miles to the southeast of Ekron, Kentucky. The site is surrounded by agricultural land with a residential neighborhood just to the north of the proposed location. The closest residence is approximately 400 feet from the proposed substation fence line. Primary noise sources in the area include traffic on nearby roads.

The proposed Redmon Road Switching Station is located approximately six miles to the southeast of Ekron, Kentucky. The site is surrounded by agricultural land and has scattered residential areas nearby. The closest residence is approximately 0.25 miles from the proposed fence line. Primary noise sources are traffic on nearby roads.

The proposed BSM Substation is located approximately 1.5 miles to the east of Brandenburg, Kentucky. The proposed site is located in an agricultural area, with an industrial facility to the east, the Ohio River to the north, and scattered residences to the south and west. The nearest residence is approximately 0.75 miles from the fence line of the proposed substation. Primary noise sources at this location are traffic on nearby roads and the industrial facility to the east of the proposed steel mill location. Also, this substation will be located next to the future steel mill to which this Project is supplying electricity.

Noise regulations were reviewed for federal, Commonwealth of Kentucky, Meade County, and for the towns of Brandenburg and Ekron. During the review, only nuisance noise ordinances were found. Therefore, no numerical limits were identified for the Project.

3.6.2 Environmental Consequences

Potential Impact of the No Action/No Build Alternative

Under the No Action/No Build Alternative, there would be no construction, ground disturbing activities, or work near power lines, as a result there would be no effects to the noise environment.

Potential Impact of the Development Alternative

Construction of the Project will involve site preparation, excavation, placement of concrete, installation of structures and other equipment, stringing of conductor and shield wire, and other typical industrial construction practices. Construction schedules are anticipated to be on a 6-day per week schedule, generally during the hours of 7:00 a.m. to 6:00 p.m., in order to minimize the length of calendar time that temporary construction impacts affect the area. There are certain operations that, due to their nature or

scope, may need to be accomplished in part outside the specified working hours. Such work generally consists of activities that must occur continuously, once begun (such as pouring concrete foundations). These, however, are anticipated to be minimal.

Noise from construction is expected to be localized and temporary. The actual noise levels generated by construction will vary on a daily and hourly basis, depending on the activity that is occurring, and the types and number of pieces of equipment that are operating. Noise resulting from construction will vary with equipment type and age, type of work being done, distance from receptor, and meteorological conditions. Most activities will not occur at the same time. There will be periods when concrete needs to dry and no construction occurs. Sound levels are expected to be quieter for areas where activities are occurring at distances greater than 50 feet from the property line. It is expected that construction will be done during the daytime when the nearby residential receptors are less sensitive to noise and that the noise will be intermittent. Any excessive construction noise should be of short duration and have minimal adverse long-term effects on the residential or agricultural land uses or activities associated with the Project Study Area.

Operational sounds from the proposed transmission line will occur only during certain weather conditions. During these conditions, corona (electric partial discharge) can create a hissing or humming sound from the transmission line that is audible at varying distances. However, this is a temporary sound and is typically masked by the foul weather that creates conditions for corona to occur. Corona noise is generally low and requires close proximity to the facilities to be audible.

Switching stations do not have equipment that creates sound, beyond the transmission lines themselves. Therefore, the Redmon Road Switching Station is not expected to change the sound levels in the surrounding area.

The main source of noise at a substation is from the transformers onsite. According to The Institute of Electrical and Electronics Engineers Standards (IEEE Standard) C57.12.90 and C57.136, the principal sources of sound in transformers are the core sound, load current sound, and sound from cooling equipment (IEEE 2015). The core sound is caused by magnetostriction effects and inter-laminar magnetic forces. It is influenced by the flux density, core material, core geometry, and excitation voltage waveform. The load sound is caused by electromagnetic forces resulting from leakage fields. It is proportional to the load current and is predominately produced by the axial and radial vibrations of the windings. The sound from cooling equipment is generally caused by the cooling fans. The fan noise is influenced by the blade-tip speed, blade design, and the number of fans. Pump noise is typically

insignificant when fans are running. The sound levels that the nearest residences will experience from the proposed substations will depend on the number, size, and type of equipment installed at each of the substations, along with the location within the substation fence line, and the distance to the nearest residence. A desktop review was performed to determine which components of the Project are expected to create an audible sound increase.

Since the transmission line and switching station do not have any significant noise-emitting sources, neither of these components are expected to change ambient sound levels. The proposed modification at the Meade County Substation is expected to be on the eastern side of the substation. Because of the existing substation layout location of the proposed modification, the new noise sources will not be significantly closer to nearby residences, the proposed modification at the Meade County Substation is expected to create an increase in sound levels, at most locations directly adjacent to the site.

The proposed BSM Substation is expected to have a clearly audible impact directly adjacent to the site, with lesser impacts farther from the site. The proposed substation is approximately 0.75 miles from the nearest residence, which will also be buffered by a stand of trees. An existing industrial source is located 0.5 miles away and is expected to dominate sounds in that direction. The steel mill to which the Project will be supplying power is being constructed in this area and is expected to mask the substation sound levels.

The proposed Otter Creek Substation would create a new noise source at nearby residences. Otter Creek Substation is a greenfield site and the proposed substation is close to nearby houses with few other noise sources in the area. However, an existing grove of trees along the north side of Twin Lakes Drive are expected to reduce substation noise levels for the residences north of this road.

3.6.3 Mitigation

No numerical noise limits were identified during the regulatory review; therefore, no operational mitigation options are proposed for the Project. In order to reduce the impact of construction noise on nearby residences, the majority of construction activities will occur during the day, when people are less sensitive to noise. However, there are certain operations that, due to their nature or scope, must be accomplished in part outside the specified working hours. Such work generally consists of activities that must occur continuously, once begun (such as pouring concrete foundations). Additionally, construction equipment will be properly maintained and in good working order (e.g. fully functional mufflers on construction equipment, etc.). The rural nature of the Project Study Area generally limits the number of sensitive receptors that could be impacted from the Project facilities, while also maintaining a buffer

distance between the Project sound sources and these nearest sensitive receptors, reducing the noise exposure to receptors in the vicinity of the Project facilities. Should sensitive noise receptors be exposed to elevated noise levels for extended periods of time, other mitigation options (like sound dampening material) may be used.

3.7 Transportation

Existing transportation infrastructure near the Project and potential impacts to transportation are discussed in the following sections.

3.7.1 Affected Environment

The Project Study Area contains an existing network of paved and gravel roads. The Project Study Area covers a large portion of Meade County and crosses a substantial number of state roadways. State roadways in Meade County that cross the Project Study Area include; U.S. Highway 60, State Route (SR) 1051, SR 448, SR 1638, SR 941, SR 144, and SR 79. A railroad extends through the Project Study Area and crosses at two segments the Otter Creek to Brandenburg 69/345 kV Line rebuild as well as the Meade County to Otter Creek 161/69 kV Line rebuild (Figure 3-4).

The nearest public use airport to any part of the Project is the Addington Field – Elizabethtown Regional Airport, located approximately 15.8 miles southeast of the Redmon Road Switching Station. The Louisville International Airport is located approximately 24.3 miles north of the proposed BSM Substation. The private use air facilities near the Project Study Area include:

- Cedar Farm (2811) Private Airport: approximately 5 miles east of BSM Substation
- Russell (3KY6) Private Airport: approximately 5.8 miles west of BSM Substation
- Godman Army Airfield at Fort Knox: approximately 6.3 miles east of Redmon Road Switching Station
- Harrison County Hospital helipad: approximately 16 miles north of BSM Substation
- Hardin Memorial Hospital heliport: approximately 16.5 miles southeast of Redmon Road Switching Station
- Breckinridge Memorial Hospital heliport: approximately 14 miles southwest of Meade County Substation

None of these air facilities are located within the Project Study Area.

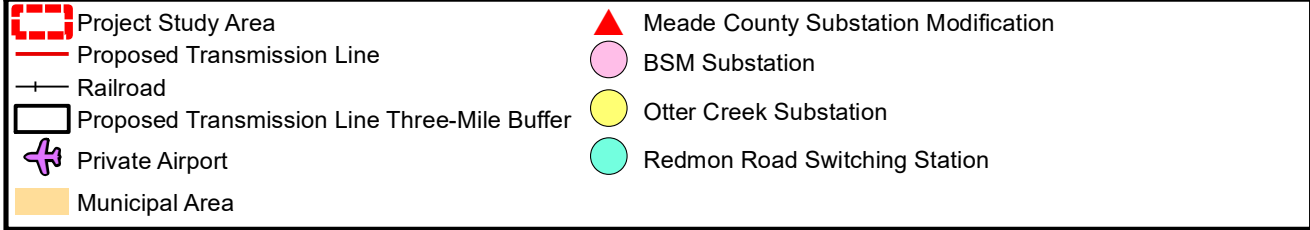
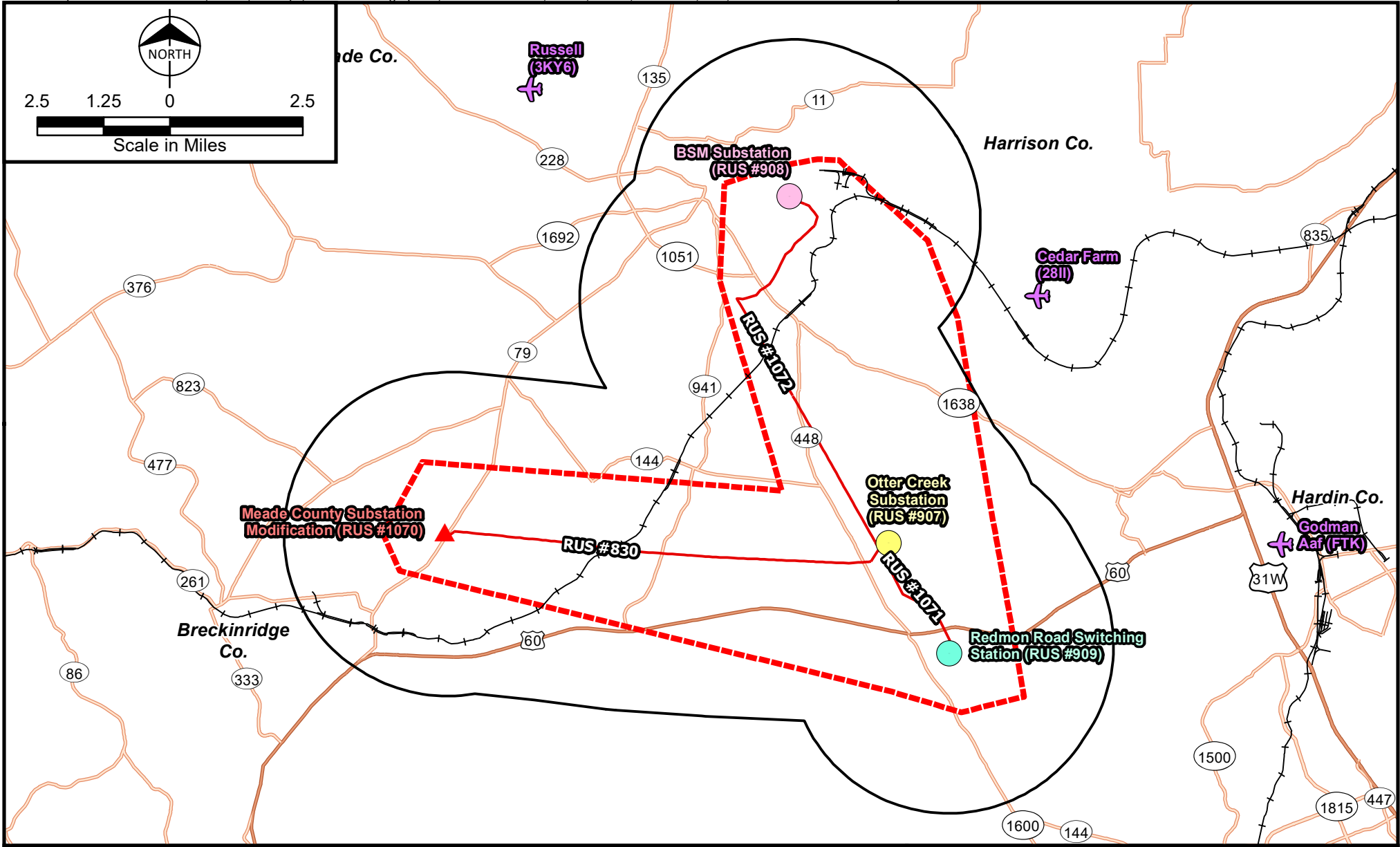


Figure 3-4
 Big Rivers Electric Corporation
 Brandenburg Steel Mill Service
 345/161-kV Transmission Project
 Transportation Map

The Federal Aviation Administration (FAA) conducts an aeronautical study or obstacle evaluation for proposed and existing structures for potential impacts to the navigable airspace of public use airports. The FAA does not typically include private use airports in their obstacle evaluation process unless it is owned by the United States military or has instrument procedures approved by the FAA. The FAA applies various imaginary obstruction identification surfaces to evaluate impacts to airports airspace. Structures that are greater than 500 feet above ground level (AGL) are considered an obstacle to airspace regardless of their proximity to an airport. Structures greater than 200 feet AGL and that are within 3 nautical miles of an airport with at least one runway more than 3,200 feet in length are considered an obstruction. Both such structures require extensive study by the FAA to determine if they would be a hazard to flight. The FAA will request that marking and lighting be added to any structure greater than 200 feet AGL to prevent it from being a hazard to flight. Structures that are located in close proximity to communication and navigation facilities, including radars and other equipment used for flight guidance, will require study by the FAA for potential electric or magnetic interference.

3.7.2 Environmental Consequences

The following sections provide potential environmental consequences of the Project and the No Action Alternative/No Build related to the transportation in the Project Study Area.

Potential Impact of the No Action/No Build Alternative

The No Action/No Build Alternative would have no short- or long-term impacts to transportation at or in the vicinity of the Project Study Area because no construction would occur.

Potential Impact of the Development Alternative

During construction of the Project, traffic within the immediate vicinity would be temporarily impacted. Travel by construction workers and transport of equipment and materials would add to the current traffic volumes on the surrounding roads. Local traffic will likely be impacted the most around the beginning and end of the workday. In a response letter dated December 17, 2019, the Kentucky Transportation Cabinet provided a map of potential future roadway project locations that are planned to occur within the vicinity of the Project (Appendix E). At the Meade County Substation, there are plans to reconstruct KY 79 from KY 428 to KY 144 and from KY 428 to KY 477. The Kentucky Transportation Cabinet and Meade County would be contacted regarding guidance on any notification or permits required for public road use and road crossings during the construction phase of the Project. Traffic control and temporary road or lane closures may be necessary during stringing of lines across roadways. There would be coordination with the railroad company to avoid conflicts between rail operations and construction to

provide safe rail and construction activities. Traffic is anticipated to return to levels similar to existing conditions after construction of the Project is complete as additional workers, and associated travel, are not anticipated during Project operation. No long-term impacts to vehicle traffic or rail are anticipated.

The Addington Field – Elizabethtown Regional and the Louisville International airports are both classified as public use facilities. The Godman Army Airfield is classified as private use facility but is owned by the United States military. The Hardin Memorial Hospital heliport and Breckinridge Memorial Hospital heliports are private use facilities but have instrument approach procedures approved by the FAA. All these facilities are therefore subject to the FAA obstruction evaluation process. The Harrison County Hospital helipad, Russell and Cedar Farm Airports are classified as private use facilities with no additional FAA involvement and are not subject to the obstruction evaluation process.

The new 161 kV line will be approximately 88 feet tall and the new 345 kV line approximately 101 feet tall. Since they are less than 200 feet, the structures themselves would not require FAA filing. Their heights will be comparable to surrounding forested areas. The new transmission lines are not located within 3 miles of an airport, but once final design is completed, it will be confirmed that the poles do not exceed the designated distance to height ratio from the nearest point of the nearest FAA designated runway. Once final pole design, pole locations and construction details are determined, FAA notification will be submitted as needed and any required follow up information required will be provided.

3.7.3 Mitigation

As construction and operation of the proposed Project will have only temporary impacts on transportation, no mitigation measures are planned. Any damage to existing roads due to construction traffic will be repaired once construction is complete.

Notice to the FAA will be provided for all structures (including permanent structures and temporary construction equipment) associated with the Project that exceed the FAA criteria for notification. Based on the distance between the Project and the nearest airports and the existing obstacles present, it is unlikely that the FAA will request a height restriction on any proposed structures.

3.8 Biological Resources

The following sections discuss information on potential vegetation, wildlife, and protected species within the Project Study Area.

3.8.1 Affected Environment

The Project is within the Mitchell Plain ecoregion of Kentucky (EPA 2019a). This plain is underlain by Mississippian limestones and is characterized by well-developed karst, low relief, and extensive agriculture. The region is known to contain sinkholes, ponds, springs, sinkhole wetlands, subterranean drainage, and dry valleys. Natural vegetation is a mosaic of bluestem prairie and oak-hickory forest. Today the region is known for extensive cropland and pastureland with mixed oak forests found on steep slopes, and pin oak, swamp oak, white oak, and sweetgum growing in poorly drained areas. Sinkhole wetlands are common in the region. Water quality has been degraded from municipal effluent, agricultural discharge, and bank erosion following riparian forest removal.

The land cover of the Project Study Area is primarily mixed oak-hickory stands with cropland and pastureland. Common wildlife species in the area include cooper's hawk (*Accipiter cooperii*), wood duck (*Aix sponsa*), eastern tiger salamander (*Ambystoma tigrinum tigrinum*), short eared owl (*Asio flammeus*), coyote (*Canis latrans*), painted turtle (*Chrysemys picta*), northern bobwhite (*Colinus virginianus*), and white-footed mouse (*Peromyscus leucopus*) (Kentucky Department of Fish & Wildlife Resources (KDFWR) 2019).

The U.S. Fish and Wildlife Service (USFWS) and the Energy and Environment Cabinet Office of Kentucky Nature Preserves (Office of Kentucky Nature Preserves) were contacted for information concerning threatened and endangered species of fauna and habitats known to occur in the vicinity of the Project (Appendix F). According to the USFWS online Information for Planning and Consultation (IPaC) tool, there are 13 threatened or endangered species likely to occur within the Project Study Area in Meade County Kentucky (Table 3-3). Eleven species are endangered and two are threatened. According to Office of Kentucky Nature Preserves Natural Heritage Program Database, there are 5 additional species that are listed as either state endangered or state threatened (Table 3-4).

Table 3-3: USFWS Project Study Area Threatened and Endangered Species

Common Name	Scientific Name	Federal Status
Gray bat	<i>Myotis grisescens</i>	Endangered
Indiana bat	<i>Myotis sodalis</i>	Endangered
Northern long-eared bat	<i>Myotis septentrionalis</i>	Threatened
Clubshell	<i>Pleurobema clava</i>	Endangered
Fanshell	<i>Cyprogenia stegaria</i>	Endangered
Northern riffleshell	<i>Epioblasma torulosa rangiana</i>	Endangered
Orangefoot pimpleback	<i>Plethobasus cooperianus</i>	Endangered
Purple cat's paw	<i>Epioblasma obliquata obliquata</i>	Endangered
Rabbitsfoot	<i>Quadrula cylindrica cylindrica</i>	Threatened
Ring pink	<i>Obovaria retusa</i>	Endangered
Rough pigtoe	<i>Pleurobema plenum</i>	Endangered
Sheepnose mussel	<i>Plethobasus cyphus</i>	Endangered
Spectaclecase (mussel)	<i>Cumberlandia monodonta</i>	Endangered

Source: USFWS IPaC Official Threatened and Endangered Species List (Appendix F)

Table 3-4: Office of Kentucky Nature Preserves State Endangered/Threatened Species

Common Name	Scientific Name	State Status
Lewis cave amphipod	<i>Crangonyx lewisi</i>	Threatened
Six-banded longhorn beetle	<i>Dryobius sexnotatus</i>	Threatened
Bousfield's amphipod	<i>Gammarus bousfieldi</i>	Endangered
American ginseng	<i>Panax quinquefolius</i>	Endangered
Wedge-leaf whitlow-grass	<i>Tomostima cuneifolia</i>	Endangered

Source: Office of Kentucky Nature Preserve State Species List (Appendix F)

The bald eagle (*Haliaeetus leucocephalus*) is a common inhabitant within Kentucky, and nesting sites can be found throughout the state, including Meade County. Bald eagles are protected under the Bald and Golden Eagle Protection Act, with enforcement under the USFWS. This act states that it is prohibited to take, possess, purchase, barter, offer to sell, transport, export or import, of any bald or golden eagle, alive

or dead, including any part, nest, or egg, unless allowed by permit (USFWS 1962). Information on each species identified in the USFWS IPaC online database follows.

Gray Bat

The gray bat (*Myotis grisescens*) is a long, glossy, light brown bat. Its ears are usually dark and longer than other *myotis*, it has a long and thin tragus, and it contains a keeled calcar (USFWS 2019a). With rare exceptions, this bat is known to live in caves year-round. In the winter, they hibernate in deep vertical caves, and in the summer, they roost in caves along rivers. They occupy a limited range of habitat within limestone karst areas in southeastern United States. The primary causes of why they are endangered include: human disturbance, habitat loss, and cave commercialization/improper gating. Grey bats are known to live together in large groupings. Waking large colonies can cause them to use up a lot of energy, and if their fat reserves are used up, they may leave the cave too soon and die from starvation (USFWS 2019b).

Indiana Bat

The Indiana bat (*Myotis sodalis*) is a medium sized *myotis*. It closely resembles the little brown bat but differs in coloration. Its fur is dull grayish chestnut rather than bronze with a basal portion of the hairs on the back of a dull-lead color. The bat's underparts are pinkish to cinnamon, its hind feet are smaller and more delicate than *Myotis lucifugus*, and their calcar is strongly keeled (USFWS 2019c). They are listed as endangered due to their same habitat conditions as grey bats. They hibernate in large numbers, which makes them susceptible to human disturbance, cave commercialization, and loss of habitat. Most recently, they have been in decline due to white nose syndrome, which is white fungus that grows on their face, causes them to use up their fat reserves fighting the infection, and then leave the cave early in search of food. They require cool humid caves with stable temperatures under 50° F but above freezing. During the summer, they roost under the peeling bark of dead or decaying trees (USFWS 2019d). The entire Project is within critical habitat for Indiana bat (*Myotis sodalis*). Critical habitat is a term defined by the USFWS to describe a specific geographic area that contain features essential to the conservation of an endangered or threatened species and that may require special management and protection.

Northern Long-Eared Bat

The northern long-eared bat (*Myotis septentrionalis*) is a medium sized bat about 3-7 inches in length with a wingspan of 9-10 inches. It is designated by its longer than normal ears within its genus. It is found along much the eastern and north central United States and all Canadian provinces from the Atlantic coast west to the southern Northwest Territories and eastern British Columbia. This species is in decline due to

white nose syndrome (USFWS 2019e). During the winter, this species hibernates in caves and mines with constant temperature, high humidity, and no air currents. During the summer, they roost in colonies or singly underneath bark and cavities in live and dead trees. This species is also vulnerable from cave commercialization, surface mining, wind facility construction, and highway construction (USFWS 2019f).

Various Clams

Endangered clams that were listed as potentially within the Project Study Area include clubshell (*Pleurobema clava*), fanshell (*Cyprogenia stegaria*), northern riffleshell (*Epioblasma torulosa rangiana*), orangefoot pimpleback (pearlymussel) (*Plethobasus cooperianus*), purple cat's paw (*Epioblasma obliquata obliquata*), rabbitfoot (*Quadrula cylindrica cylindrica*), ring pink (*Obovaria retusa*), rough pigtoe (*Pleurobema plenum*), sheepnose mussel (*Plethobasus cyphyus*), and spectaclecase (*Cumberlandia monodonta*). According to the USFWS, these species are all freshwater mussels that are known to reside in streams small to large and bury themselves at least halfway in the sand. They filter feed the water using their siphons to catch zooplankton and phytoplankton. Most of these mussels are threatened by severely altered or destroyed streams, siltation from agricultural runoff, chemical pollution from pesticides and industrial waste, effluent from strip-mining, and coal-washing operations. In addition, invasive zebra mussels have been taking over large amounts of habitat within this species' range.

Other

In addition to the threatened and endangered species listed by the USFWS, the Commonwealth of Kentucky has recorded five additional state endangered or threatened listed species as potentially present within the Project Study Area (KDFWR 2019b). The Lewis cave amphipod was last seen in 1961, six-banded longhorn beetle was last seen in 1940, Bousfield's Amphipod was last seen in 1989, American ginseng was last seen in 2015, and wedge-leaf whitlow grass was last seen in 1984 (Appendix F).

3.8.2 Environmental Consequences

Potential Impact of the No Action/No Build Alternative

Under the No Action/No Build Alternative, there would be no construction, ground disturbing activities, or change to the Project Study Area in Meade County, Kentucky. Therefore, threatened and endangered species and wildlife habitat would not be impacted.

Potential Impact of the Development Alternative

Out of the thirteen species identified by the USFWS, there is a potential for the Project to impact two of the listed bat species, the northern long-eared bat and Indiana bat. The other 11 species, including the gray bat, are not likely to have an adverse effect as a result of this Project. Gray bats require cave habitat, and no caves will be impacted as a result of this project. Additionally, with the spanning of streams and waterways and implementation of appropriate BMPs during construction, there will be no temporary or permanent impacts to streams where listed clam species could be found.

The northern long-eared bat is exempt from take under the USFWS Programmatic Biological Opinion. The USFWS Verification Letter received October 24, 2019 indicated that the Project may affect the northern long-eared bat; however, any take that may occur as a result of the proposed Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o) (Appendix F).

The Project Area primarily crosses cultivated crop fields and existing maintained right-of-way. The construction, operation, and maintenance occurring at the Otter Creek Substation, BSM Substation, Redmon Road Switching Station, and additional transmission lines would result in the total loss of vegetation and clearing of approximately 10.5 acres of forested habitat. Of that 10.5 acres, 5.8 acres are within the BSM project boundary and that acreage will be mitigated during permitting for that project by Nucor Corporation. Approximately 6.1 acres that appeared forested based on aerial imagery had been cleared by the landowners prior to the survey and was not included in the total. Additionally, 0.3 acres of trees were primarily small (less than 5 inches diameter at breast-height) trees, eastern red cedar (*Juniperus virginiana*), or other trees that would not be suitable for Indiana bats. Therefore, a total of approximately 4.2 acres of trees were determined to be potentially suitable as Indiana bat roosting habitat for this Project (after subtracting the 5.8 acres cleared for the BSM project). These areas were comprised primarily of black locust (*Robinia pseudoacacia*), black cherry (*Prunus serotina*), silver maple (*Acer saccharinum*), and various species of oak (*Quercus* sp.) and hickory (*Carya* sp.). The other re-build portions of the Project (transmission line rewiring) would not affect potential bat habitat as no additional tree clearing would be required. The agency finds that the Project may affect, but is not likely to adversely affect, both the Indiana bat, its critical habitat and the northern long-eared bat.

The ROW will be maintained with periodic herbicide use and brush/tree clearing to prevent trees from growing within the ROW. With the use of herbicide, non-targeted plants could be affected by over spraying, drift, or accidental discharge during the application process. However, training with the equipment and the proper technique of applying the herbicides would mediate any potential issues to non-target plants. Herbicide would not be applied in unfavorable weather conditions.

Temporary impacts for general wildlife species as a result of the Project could occur as a result of the increased presence of human and vehicle disturbance during construction. Temporary displacement of species might occur due to vehicle traffic and material transfer. Indirect impacts to wildlife as a result of vehicle collisions will also be an increased risk during construction. The majority of species affected will be mobile and able to move away from any impacts. Permanent impacts during the construction and maintenance of the Project will occur for wildlife currently utilizing the ROW and substation locations due to habitat loss. On March 26, 2020, Burns & McDonnell on behalf of RUS initiated Section 7 consultation with the USFWS for the Indiana bat and northern long-eared bat. The USFWS responded on April 15, 2020 that the Project may affect, but is not likely to adversely affect, both the Indiana bat and the northern long-eared bat. The USFWS final Section 7 consultation letter was received on April 21, 2020. They advised that payment could be made into the Imperiled Bat Conservation Fund as a conservation measure to offset effects to the Indiana bat. They also advised that the Project may affect the northern long-eared bat, but with no effects beyond those previously evaluated in the Service's programmatic biological opinion for the northern long-eared bat final 4(d) rule dated January 5, 2016.

3.8.3 Mitigation

Impacts to the northern long-eared bat are covered under the Section 4(d) rule. For loss of Indiana bat habitat, Big Rivers Electric will coordinate with the USFWS on potential mitigation requirements as a result of tree clearing. Typical mitigation includes contribution to the Imperiled Bat Conservation Fund at a ratio based on total acres of trees cleared and the time of year the clearing occurs. Appropriate BMPs to protect sensitive species would be implemented, monitored, and maintained during construction of the proposed Project.

Contractors would be required to train employees on the equipment and the proper technique of applying the herbicides to mediate any potential issues to non-target plants. Herbicide would not be applied in unfavorable weather conditions.

3.9 Socioeconomics and Environmental Justice

The following sections provide information on socioeconomics, environmental justice, and utilities in relation to the Project.

3.9.1 Affected Environment

The following sections provide information on population growth trends, population characteristics, employment and income, and environmental justice populations in Meade County and the Commonwealth of Kentucky.

3.9.1.1 Socioeconomics

The proposed Project is located in Meade County, Kentucky. This county is primarily rural and had a population of 28,452 in 2017 with a median age of 37.8. Between 2016 and 2017, the population of Meade County declined from 28,751 to 28,452, a 1.04 percent decrease (Data USA 2019). The population estimate in 2018 was 28,715 (Table 3-5).

Table 3-5: Population Trends

	Kentucky	Meade County
2010 Census estimate (population)	4,339,333	28,613
2018 Census estimate (population)	4,468,402	28,715
Percent Change 2010-2018	3.0 percent	0.4 percent
2017 Estimate (population)	4,424,376	28,452
Percent Change 2010-2017	1.9 percent	-0.6 percent

Source: U.S. Census Bureau 2018

Racial and Ethnic Characteristics

The U.S. Census Bureau has published demographic, housing, and employment estimates for 2018 for Meade County and Kentucky as a whole. These estimates, along with the 2018 Census Block data for the area immediately around the Project Study Area, are presented in Table 3-6: Racial Characteristics.

The most common race in Meade County in 2018 was white at 26,447, followed by African Americans at 1,120 and Hispanic at 1,080 (Table 3-6).

Table 3-6: Racial Characteristics

	Kentucky	Meade County
Total Population 2018	4,468,402	28,715
White	3,914,320	26,447
Black or African American	375,346	1,120
American Indian and Alaskan Native	13,405	201
Hispanic	169,799	1,062
Other	89,368	632

Source: U.S. Census Bureau 2018

Based on these estimates, the 2018 racial makeup of Meade County is composed of 92.1 percent white, 3.9 percent black or African American, 0.7 percent American Indian, 3.7 percent Hispanic, and 2.2 percent other races. According to the 2018 census estimates, the total population of Kentucky in 2018 was composed of 87.6 percent white, 8.4 percent black or African American, 0.3 percent American Indian or Alaskan Native, 3.8 percent Hispanic, and 2.0 percent other.

Employment and Income

In 2017, Meade County's resident labor force, defined as the population aged 16 and over, was 13,657 individuals, or 61.0 percent of the total population of ages 16 and over (22,396). Major industries in Meade County include manufacturing, educational services, health care and assistance, and construction (Data.U.S.A.2018). Table 3-7 provides the employment characteristics for the state and county.

Table 3-7: 2017 Employment Data

	Kentucky	Meade County
Population 16 years and over	3,526,066	22,396
In labor force	2,093,572	13,657
Employed (civilian labor force)	1,938,150	11,827
Unemployed (civilian labor force)	140,717	1,055
Armed forces	14,705	775
Not in labor force	1,432,494	8,739
Percent unemployed (civilian labor force)	6.8 percent	8.2 percent
Top occupation	Management, Business, Science, Arts	Management, Business, Science, Arts
Top industry	Education Services, Health Care, Social Assistance	Manufacturing Construction

Source: Data USA 2018

The poverty rate in Meade County is slightly lower than that of Kentucky as a whole. Table 3-8 shows income and poverty data for the state and county. In 2017, the total number of people living in poverty was 9.7 percent for Meade County and 13.8 percent for Kentucky. The median household income in Meade County \$53,732 is slightly higher than that of the state (\$46,535).

Table 3-8: Income and Poverty 2017

	Kentucky	Meade County
Median household income in 2017 dollars	\$46,535	\$53,732
Percentage of Families whose income in the past 12 months is below the poverty level	13.8 percent	9.7 percent

Source: U.S. Census Bureau 2013; American Community Survey 2017

Housing

Reports from the U.S. Census Bureau show that in 2017, Meade County had 12,336 housing units with 10,785 occupied housing units and 1,551 vacant housing units. Slightly over 71.6 percent of the occupied housing units are owner-occupied. The state-wide median value of owner-occupied housing was \$130,000, versus Meade County's \$140,800. Of the 11,762 housing units listed for Meade County in 2010, 10,471 were full-time occupied housing units, while 1,291 were vacant housing units with 168 seasonal, recreational, or occasional use dwellings (U.S Census Bureau 2013). Kentucky has 1,927,164 housing units with 1,719,965 occupied housing units and 207,199 vacant housing units. Sixty-eight point seven percent (68.7 percent) of the occupied housing units are owner-occupied. The median value of owner-occupied housing in Kentucky was \$130,000. Of the 1,927,164 housing units listed in Kentucky in 2010, 1,719,965 were full-time lodging, 207,199 were vacant with 38,616 being seasonal, recreational, occasional use, or other dwellings (U.S Census Bureau 2013).

3.9.1.2 Environmental Justice

According to Executive Order 12898, titled *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* and issued in 1994, federal agencies must take appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. For the purpose of this analysis, minority is defined as individuals who identify as a race other than white alone (single race) and/or identify their ethnicity as Hispanic or Latino. Low-income is defined as a household income less than or equal to twice the federal poverty level.

Environmental justice issues are identified by first determining whether minority or low-income populations are present. If so, then disproportionate effects on these populations would be considered.

The CEQ’s guidance states that minority populations should be identified when the percentage of minority residents in the affected area exceeds 50 percent or is meaningfully greater than the percentage of minority residents in the general population (CEQ 1997). If the percentage of minority residents of the population in the county exceeds the state level by more than 10 percent, it is considered to be “meaningfully greater” for the purposes of this analysis. The CEQ guidance also states that the low-income populations should be identified based on poverty thresholds as reported by the U.S. Census Bureau. If the poverty rate for the population of the area county exceeds the state poverty rate by more than 10 percent, it is considered an area of environmental justice concern for the purposes of this analysis.

Based on this methodology, the proposed Big Rivers Electric Transmission Lines *are not* considered to be an area of environmental justice concern. As identified in Table 3-9, the percentage of minority residents and families in in poverty within Meade County is lower than the percentage for Kentucky.

Table 3-9: Minority and Low-Income Populations within the Project

Geographic Area	Minority population (percent)	Families in Poverty (percent)
Kentucky	12.2	13.8
Meade County	7.6	9.7

Source: U.S. Census Bureau 2013

3.9.1.3 Utilities

Educational Facilities

Meade County has four elementary schools, one middle school, one high school, and two primary schools, according to the Meade County School Board. Brandenburg Primary School is the closest school (kindergarten to third grade), approximately 0.75 miles northeast of the transmission line in Meade County. It serves approximately 778 students. Stuart Pepper Middle School is adjacent to the primary school and 1 mile from the closet transmission line. Stuart Pepper Middle School serves 763 students in grades seven to eight, according to the Meade County School Board.

Medical Facilities

The closest medical facility to the Project Study Area is in Brandenburg, on the corner of Howard Drive and Old Ekron Road about 1.3 miles by car from the northern portion of the Project Study Area, providing primary care. The nearest emergency medical facility is KentuckyOne Health Jewish Hospital in Brandenburg. This facility offers a range of diagnostic, resonance imaging and 24-hour emergency services. The KentuckyOne Health page lists the services available. It offers services in radiology, cardiology, family medicine and neurology.

Fire Protection

Meade County has two Volunteer Fire Departments, the Meade County Fire Protection District Station 1 located at 1800 Armory Road and the Radcliff City Fire Department located at 604 S. Wilson Road, in Radcliff, Kentucky. The on-site substations will contain light fire suppression equipment such as fire extinguishers.

Police Protection

Brandenburg, Kentucky has its own police department, Brandenburg Police Department. It is located at 737 High St. Brandenburg, Kentucky, 3 miles from the BSM Substation. The police department is staffed with one sergeant, one chief, and two officers. The Meade County Sheriff's office is located in the courthouse at 516 Hillcrest Dr. in Brandenburg. The next closest police department is the Radcliff Police Department located at 220 Freedom Way, in Radcliff, approximately 11 miles from the Redmon Road Switching Station. The Radcliff Police Department is staffed with one chief of police, two captains, and 35 officers.

Recreation and Open Space

Public lands within the study area include Meade Olin Park, River Front Park, and Doe Valley Campground (Figure 3-1). Meade Olin Park is located at 187 Moremen Road, 2 miles west of the closest transmission line. River Front park is located at 146 Water Street, 3 miles from the transmission lines outside the proposed BSM Substation. Doe Valley Campground is located at 3137 Doe Valley Parkway, 2.20 miles from the transmission lines near the proposed BSM Substation.

Potable Water, Sanitary Sewer, Electricity, Gas, and Solid Waste

The Project facilities would be located in Meade County and use the Brandenburg Water Works System for potable water supply. Electricity in the area is supplied by Louisville Gas and Electric Company or Meade County Rural Electric, which is a wholesale customer of Big Rivers Electric. Gas is supplied by Louisville Gas and Electric Company. Solid waste will be disposed of by Meade County Solid Waste Department. The closest wastewater treatment plant is located outside of Meade County, in Breckinridge County, the Irvington Wastewater Treatment Plant.

3.9.2 Environmental Consequences

Potential Impact of the No Action/No Build Alternative

Under the No Action/No Build Alternative, there would be no construction or change to the Project Study Area within Meade County. This would result in no impacts to business, infrastructure, and economy in Meade County. Economically without the Project, it would be difficult for Nucor Corporation to have a

reliable power source for the facility which could impact the operations of the plant, reduce the number of jobs to the area and create other system reliability issues that could affect electricity service to customers in Meade County.

Potential Impact of the Development Alternative

The Project could produce additional jobs during construction, such as linemen, electricians, carpenters, iron workers, and pipe fitters. Labor for construction would typically be provided by contractors outside the area. These workers would likely commute to the Project site from larger communities nearby. However, some opportunities for construction employment of local workers would be available. Local businesses near the Project, such as gas stations, convenience stores, and restaurants, may experience increases in business during construction due to construction workers onsite. Local materials such as concrete, lumber, and general hardware may be purchased from local businesses, thus boosting the local economy. This increased demand would cease after construction is complete and would not add considerably to the demand on existing business, services, or community facilities. The Project is not anticipated to significantly increase the number of permanent residents in the area. Workers would be employed from a few weeks to over a year, depending on their assigned task. It is anticipated that no additional permanent staff would be required for the Project.

During construction, the roads near the Project may experience a temporary increase in traffic. This increase would typically occur during daytime hours. Traffic levels are anticipated to return to existing levels after completion of Project construction. Precautions such as speed limits and dust control would be used to avoid negative impacts to the public during construction.

The new transmission line ROW areas would need to be cleared of vegetation. Tree species would not be permitted in the ROW. This would reduce the amount of area available for logging operations in the vicinity. However, the woodland to be removed for the Project constitutes less than 1 percent of woodland in the county. Due to this, the Project is anticipated to create minor impacts to logging operations and would contribute to the local economy through jobs and electric infrastructure support. Overall, there will be no substantial impacts to existing infrastructure. The Project will provide a reliable power supply to Nucor Corporation and other areas of Meade County and would contribute to increased economic activity in the region by providing power to secure jobs and services provided by electricity customers. Due to the temporary nature of construction impacts and minor impacts to logging, the Project is not anticipated to create adverse socioeconomic consequences.

3.9.3 Mitigation

All impacts are expected to be insignificant, no mitigation measures are required for socioeconomic impacts.

3.10 Geology and Important Farmland Soils

The geology of the Project Study Area along with the impacts on the geologic conditions as a result of the Project are discussed in the following sections.

3.10.1 Affected Environment

3.10.1.1 Geology and Soils

Meade County Kentucky is found within the Mississippian Plateau Physiographic region, also known as the Pennyroyal Region. This region is characterized by karst terrain consisting of limestone plains containing, sink holes, sinking streams, streamless valleys, springs, and caverns. This region is considered karst because limestone is soluble under the right conditions and can be dissolved by water moving through the ground, creating underground passages that range from a few inches to large caverns (Kentucky Geological Survey (KGS) 2012). The bedrock in the area is Mississippian Age (330 million year old) and is chiefly limestone and shale. Soil overlying the bedrock is predominantly silt loam and is widely used for farming (NRCS 2001). Prior to modern agriculture, much of the region was grasslands and prairies. The northern portion of the Project at the BSM Substation will be in close proximity to Quaternary alluvium and terrace deposits associated with the Ohio River. Much of the Pennyroyal region is drained by the Green River and its tributaries. The Cumberland River flows into the Pennyroyal from the Cumberland Mountains in the eastern region of Kentucky. The Project Study Area itself is located near Brandenburg, Kentucky, near Salt River and Otter Creek. Due to proximity, these waterways have a greater role in draining the Project Study Area than the Green River (KDFWR 2019a). Additionally, a recent geotechnical report for the Otter Creek Substation has identified numerous sinkholes within the Project Area (Associated Engineers, Inc. 2019). Sinkholes have been identified and the Project was designed to avoid them.

Hydric soil and prime farmland are located within the Project Study Area. Hydric soil is defined as a soil that formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part. According to the USDA, prime farmland is defined as “land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is also available for these uses”.

3.10.1.2 Farm Policy Protection Act

The Farmland Policy Protection Act (FPPA) (7 U.S.C. 4201) was enacted in 1981 to address the conversion of farmland to non-agricultural uses for federally funded projects. The purpose of the FPPA is to “minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses, and to assure that Federal programs are administered in a manner that, to the extent practicable, will be compatible with State, unit of local government, and private programs and policies to protect farmland.” The program is administered by the Natural Resource Conservation Service (NRCS) through U.S. Department of Agriculture regulations 7 CFR 658 and protects prime and/or unique farmland as well as farmland of statewide importance.

To determine whether an effect is adverse, a Farmland Conversion Impact Rating Form (Form AD-1006) (Appendix G) was submitted to NRCS in July 2020. The form uses a scoring system to determine the relative value of the farmland that is proposed to be affected. Information on the form includes land use surrounding the Project, recent history of active farming, acreage that will be converted, farm investments that have been made, and other information. Scores under 160 (out of 260) are not given further consideration. Scores over 160 warrant the study of alternatives that would result in conversion of fewer acres.

The Project Study Area primarily consists of pasture/hay (34.6 percent), cultivated crops (33.6 percent), and deciduous forests (17.1 percent) with minimal rural developed areas spread throughout the area. There are areas of prime farmland, farmland of statewide importance, and prime farmland if conditions are met⁴ throughout the Project Study Area as shown on the figure provided in Appendix G.

3.10.2 Environmental Consequences

Potential Impact of the No Action/No Build Alternative

Under the No Action/No Build Alternative, there would be no construction or change to the Project Study Area within Meade County, Kentucky. This would result in no impacts or soil disturbance to the Mississippian Plateau or Project Study Area. The No Action/No Build Alternative would have no effect on prime or unique farmland or farmland of statewide importance.

⁴ Conditions are prime farmland if drained; prime farmland if drained and either protected from flooding or not frequently flooded during the growing season; and prime farmland if protected from flooding or not frequently flooded during the growing season.

Potential Impact of the Development Alternative

The physiography within the Big Rivers Electric Project Study Area has already been altered by the construction of existing facilities such as roads and other infrastructure as well as the existing transmission lines and the Meade County Substation. It is anticipated that there will be further impacts to physiographic features due to the construction of the Redmon Road Switching Station, Otter Creek Substation, and new transmission line segments from Otter Creek to BSM and from Otter Creek to Redmon Road as a result of minor grading required to prepare the sites for construction. The Brandenburg portion within Nucor Corporation's project limits will be permitted and mitigated as part of the Steel mill development. A geotechnical investigation will be completed to determine any geological hazards for construction such as sinkholes. There are sinkholes throughout the Project Study Area, but none have been identified within the current footprints of the substations or switching station (Appendix H). The geotechnical investigation will help to determine if any features would need to be avoided or redesigned to avoid any identified hazards.

The NRCS determined that the use of existing ROW and small new footprint of the transmission line portions of the Project negated the need to conduct a FPPA assessment. As such, an NRCS-CPA-106 form for corridor-type projects was not required for the Project (Appendix H). The NRCS completed an FPPA site assessment for the Otter Creek Substation and the Redmon Road Switching Station. These Project features were found to have the potential to impact prime and statewide important farmland.

The NRCS determined the Otter Creek Substation site has the potential to convert approximately 2.92 acres of prime farmland and approximately 5.94 acres of statewide important farmland (Appendix H). The percentage of Meade County farmland to be converted as a result of the construction of the Otter Creek Substation is 0.010 percent. The FPPA assessment resulted in a total score of 157. As mentioned in Section 3.10.1.2, scores under 160 (out of 260) are not given further consideration. Scores over 160 warrant the study of alternatives that would result in conversion of fewer acres.

The NRCS determined the Redmon Road Switching Station site has the potential to convert approximately 0.12 acre of prime farmland and approximately 2.70 acres of statewide important farmland (Appendix G). The percentage of Meade County farmland to be converted as a result of the construction of the Redmon Road Switching Station is 0.003 percent. The FPPA assessment resulted in a total score of 146. As mentioned in Section 3.10.1.2, scores under 160 (out of 260) are not given further consideration. Since the total FPPA assessment scores are below 160, no alternative actions to reduce adverse impacts due to the implementation of the Project need to be considered.

There will be a total of 4.6 miles of new ROW and 24.2 acres for substations, switching station and access roads and storage. The new ROW would be cleared for construction; however, after construction is complete, disturbed areas would be stabilized as appropriate, either revegetated or covered with gravel. There will be no conversion in land type for new ROW. Approximately 3.1 acres of prime farmland and 8.6 acres of farmland of statewide importance would be converted to utility use for substation and switching station construction. These soils would be converted to utility use and no longer available for agricultural purposes. Physiographic and geologic alterations would include vegetation removal, excavating, installation of temporary and permanent subsurface structures, grading, topsoil segregation, and backfilling. These activities may increase the potential for erosion within unpaved surfaces. With the exception of permanent subsurface structure installation, these impacts will be short term, shallow excavations and minimized with BMPs. Once construction is complete, disturbed areas will be stabilized with either vegetation, gravel, or solid pavement material. As a result of these restoration practices, the Project is anticipated to have minimal impacts on geologic resources and soils.

3.10.3 Mitigation

Impacts would be short-term in nature and minimized with BMPs to control and minimize erosion. Temporary disturbed areas will be revegetated to match the surrounding environment. The loss of 3.1 acres of prime farmland and 8.6 acres of farmland of statewide importance will not have any long-term effects on the surrounding area which is mostly pasture/hay and cultivated crops (68.2 percent; Figure 3-2). No mitigation measures are necessary.

3.11 Floodplains

The following sections provide information on floodplains within the Project Study Area.

3.11.1 Affected Environment

Floodplain permits are regulated through the Department for Environmental Protection Kentucky Division of Water Floodplain Management Section and the Planning and Zoning Department for Meade County. A KRS 151 state floodplain permit and Meade County Floodplain Permit are required for any development within a floodplain. The Flood Insurance Rate Maps (FIRM) panels 1163C0120C, 21163C0150C, 21163C0220C, 21163C0215C, 21163C0205C encompass the Project Study Area. The Federal Emergency Management Agency (FEMA) data indicates potential flood hazards within the area (Appendix I). In the northern and middle portions of the Project, the flood zones are considered Zone A and Zone AE. The Zone A flood zone are 'areas subject to inundation by the 1-percent-annual-chance flood, for which no base flood elevations have been determined', and Zone AE are

‘areas subject to inundation by the 1-percent-annual-chance flood, for which base flood elevations have been determined’. Pages 1, 4, 5, and 6 of the Big Rivers Electric Water Resources map (Appendix H) depict the areas within the ROW that cross Zone A and AE floodplains. The remainder of the Project is within Areas of Minimal Flood Hazard, Zone X (Appendix H).

3.11.2 Environmental Consequences

Potential Impact of the No Action/No Build Alternative

Under the No Action/No Build Alternative, there would be no construction or change to the Project Study Area in Meade County. This would result in no impacts to the floodplains located within the Project Study Area.

Potential Impact of the Development Alternative

There are no floodplains within the Meade County Substation Modification or Redmond Road Switching Station footprints. Both the BSM Substation and Otter Creek Substation are located within floodplains. A total of 1.95 acres are located within the BSM Substation footprint (and is permitted under the Nucor project) and 0.99 acres are located within the Otter Creek Substation footprint (Table 3-10). The Otter Creek Substation will be designed and constructed so equipment is elevated above the floodplain. In addition, a total of 8.56 acres of transmission line ROW are located within the floodplain (Table 3-9). Of this, only 1.88 acres are located within new ROW portions of the Project, the remaining 6.68 acres overlap portions of the ROW rebuild where the line will be replaced pole for pole (Appendix H).

Table 3-10: Summary of Floodplain Impacts by Project Component

RUS #830, Meade County to Otter Creek 161/69 kV line rebuild and new 161 kV line	RUS #1071, Redmon Road to Otter Creek new 345 kV line	RUS #1072, Otter Creek to BSM 69/345 kV line rebuild and new 345 kV line	RUS #907, Otter Creek Substation	RUS #909, Redmon Road Switching Station	RUS #908, BSM Substation	RUS #1070, Meade County Substation Modification
0.34 acres of floodplain	No Impacts	8.22 acres of floodplain	0.99 acres of floodplain	No Impacts	1.95 acres of floodplain	No Impacts

The location where poles will be installed or replaced will be evaluated on whether they can be located outside of the floodplain. Should any portions of the new ROW require construction within the

floodplain, General Permit KY FPGP AI No. 35050 covers any work for the transmission line located within a floodplain.

Additionally, the BSM Substation is within the floodplain of Flippins Run. The location for this substation was determined by Nucor and thus has been completed under Nucor's permitting effort for the BSM project and has a permit from Meade County and the Department for Environmental Protection Kentucky Division of Water Floodplain Management Section. Permits from Meade County and the Department of Environmental Protection, Kentucky Division of Water Floodplain Management were also approved for the Otter Creek Substation.

3.11.2.1 Alternatives Analysis

Executive Order 11988 requires federal agencies to evaluate alternatives to avoid long-term and short-term adverse impacts from the occupancy and modification of floodplains (FEMA 2015). Accordingly, alternatives to the locations of the Otter Creek and BSM substations have been evaluated as part of the determination of the selected sites for these substations.

Otter Creek Substation

The Otter Creek Substation will be a load serving substation for the Brandenburg Steel Mill, connected to the mill by the BSM substation. It will not be part of the bulk electric transmission critical infrastructure and while loss of the substation may impact the BSM, the regional transmission system will continue to operate. As such, in considering alternatives for the Otter Creek Substation, Big Rivers considered 100 year floodplain impacts.⁵

Alternatives for the Otter Creek Substation were evaluated during initial project design. Overall, Big Rivers worked to minimize the overall project impacts, particularly those associated from additional greenfield right-of-way needed for new line construction. Overbuilding existing 69-kV lines reduced the need for additional right-of-way, new or expanded existing, but required the Otter Creek Station to be located as close to the intersection of the two lines that terminate at the Garrett distribution substation. Locations were limited to parcels that were available for purchase and in close proximity to the existing Garrett Substation. The current Otter Creek substation location was determined to be the best available land in close proximity to the existing Garrett substation. The geotechnical report identified sinkholes in this location and the substation was sited to avoid the sinkholes. While 0.99 acres of floodplain would be

⁵ Consideration of 500-year floodplain impacts is required by RUS for critical bulk electric transmission facilities. No 500-year floodplains have been determined or mapped for the Otter Creek Substation location. Due to the substation not being critical system infrastructure and the lack of 500-year floodplain information, only the 100-year floodplain area was considered and evaluated.

potentially affected by the substation, the substation itself would be constructed so that no substation equipment would be within the floodplain. All substation equipment, including underground cable trenches and conduits would be designed and constructed to be above the flood elevation and outside the floodplain. Depending on final design and grading requirements, floodplain affects are anticipated to be reduced and will be covered under a Meade County floodplain permit and KRS 151 permit.

Brandenburg Steel Mill Substation

The BSM Substation will be a load service substation for the Brandenburg Steel Mill and not part of the bulk electric transmission system.⁶ Alternatives for the BSM Substation location were evaluated during the steel mill design analysis. Due to the acreage needed for the steel mill, a requirement for rail access, and constraints on the location boundaries, the main mill building was located as far south as possible. Additionally, the site is bordered to the west by a wastewater treatment plant. The only feasible rail access to the site is from the existing CSX lead on the adjacent property in the northeast corner of the site. Thus, the rail yard must be located on the north half of the site, dictating where the rest of the mill was to be built.

Another major factor in the evaluation was stormwater collection and discharge. Stormwater from the industrial areas must be collected, retained, and tested prior to discharge into natural drainage channels. The site is bordered by two waterways, Flippins Run and the Ohio River. Flippins Run is bordered by recreational trails and parks. Thus, it is preferable to discharge the majority of the stormwater into the Ohio River rather than to Flippins Run. To achieve this, the stormwater retention pond has been located on the northern side of the mill. In addition, the electric arc furnace (EAF) must be located on the west end of the mill. It is operationally imperative for the substation to be located as close to the EAF as physically feasible. All of these factors result in the need to locate the mill as far south as possible and to locate the substation on the south side of the mill. The proposed site fill results in a maximum flood rise of 0.23 feet in the 100-Yr Water Surface Elevation of Flippins Run, within Nucor's property limits. Though this stream is Zone A and a Floodway is technically not defined, this rise is below the one-foot rise that would indicate a Floodway Impact, per Kentucky Administrative Regulations (KAR) 4:060. Flood levels at upstream properties will be unaffected. All of the other alternatives considered for the overall site layout for the mill were determined to not be feasible.

⁶ As a load serving substation, consideration and evaluation of the 500-year floodplain for site alternatives is not required.

A Meade County floodplain permit and KRS 151 permit was obtained for BSM Substation and Otter Creek Substation for construction within the floodplain. With the appropriate floodplain permits and mitigation controls in place no adverse impact to floodplains are expected.

3.11.3 Mitigation

Mitigation measures will be implemented during Project construction and operation to aid in minimizing potential environmental impacts. Potential mitigation measures include:

- Comply with the Meade County floodplain permit and KRS 151 permit for the BSM Substation and Otter Creek Substation.
- Engineering will design placement of new poles outside of the floodplain when possible to maintain flood storage and flow. Should any structure be required in floodplain areas, they will be designed to avoid accumulation of debris that could impede flood flow or lessen water storage.
- Any material excavated within floodplain areas will be removed to areas outside the floodplain.
- No equipment or material will be stored in floodplains and equipment refueling will occur in the uplands.

3.12 Wetlands

The following sections discuss information on waters of the U.S. and wetlands within the Project Study Area.

3.12.1 Affected Environment

Various surface water and groundwater resources flow through the Project Study Area (Appendix H). However, most of the new line will span over waterways and drainages and substations will be designed to avoid water resources. Most of Kentucky's wetlands are palustrine and include areas adjacent to rivers and lakes, such as bald cypress swamps, bottom-land hardwood forests, emergent wetlands, and small ponds. All rivers in Kentucky flow into the Mississippi River, nearly all by flowing into its major tributary, the Ohio River. Kentucky's regulation of waters of the U.S. is limited to those areas that are deemed to be jurisdictional by the U.S. Army Corps of Engineers (USACE). Kentucky Division of Water's Water Quality Certification Section regulates the 401 permitting process for the state.

3.12.2 Environmental Consequences

Potential Impact of the No Action/No Build Alternative

Under the No Action/No Build Alternative, there would be no construction or change to the Project Study Area in Meade County. This would result in no impacts to waters of the U.S. and wetlands located within the Project Study Area.

Potential Impact of the Development Alternative

There are no National Wetlands Inventory (NWI) wetlands or NHD streams within the Meade County Substation Modification, Otter Creek Substation, or Redmond Road Switching Station footprints (Appendix H). Within the new and rebuild portions of the transmission line ROW, there is a total of 2.21 acres of wetlands and nine NHD stream crossings. Additionally, there are 0.50 acres of wetlands and one stream crossing within the BSM Substation footprint.

Executive Order 11990 requires federal agencies to evaluate alternatives to avoid wetland sites and limit potential damage if wetlands cannot be avoided (FEMA 2019). As per Executive Order 11990, efforts to avoid wetland impacts have been evaluated as part of the preliminary design of the BSM Project. Measures to minimize impacts will include, but are not limited to, avoidance, various stormwater protections, erosion prevention, and sediment control measures. Although Big Rivers Electric is requesting RUS funding for this substation, the location of the substation was determined by Nucor; therefore, impacts are being mitigated through Nucor's permitting effort (Table 3-11; Appendix H. Refer to Section 3.11.2.1 for a discussion of the alternatives evaluation for the BSM substation.

Table 3-11: Summary of Wetland and Stream Impacts by Project Component

RUS #830, Meade County to Otter Creek 161/69 kV line rebuild and new 161 kV line	RUS #1071, Redmon Road to Otter Creek new 345 kV line	RUS #1072, Otter Creek to BSM 69/345 kV line rebuild and new 345 kV line	RUS #907, Otter Creek Substation	RUS #909, Redmon Road Switching Station	RUS #908, BSM Substation	RUS #1070, Meade County Substation Modification
0.63 acres of wetlands and two NHD stream crossings within ROW	0.13 acres of wetlands	1.46 acres of wetlands, seven NHD stream crossings within ROW	No Impacts	No Impacts	0.50 acres of wetlands, one stream crossing	No Impacts

Of the 2.21 acres of wetlands that overlap the ROW, there are only 0.33 acres of forested shrub wetland (PFO) within the new ROW from BSM Substation to Otter Creek and 0.13 acres of Pond wetland (PUBH) within the new ROW from Redmon Road to Otter Creek. The remaining wetlands are located in portions of the Project that will just be rebuild, pole for pole replacement. PFO wetlands (0.33 acres) within the new ROW would be subject to tree clearing/conversion to an emergent wetland type. There is a mapped NHD line and associated floodplain that cross portions of the new access road and transmission

line ROW to the Otter Creek Substation, plus through part of the substation footprint (Appendix H), however, a site visit confirmed there is no current stream within that area. These wetlands would be avoided and spanned during construction so no dredge, fill or loss of wetlands would occur due to construction and operation of the line.

Transmission line structures would be sited and constructed to span waterways and wetlands. Avoiding all direct impacts to wetlands and waterways and with the proper implementation of BMPs and erosion sediment controls required by the KPDES General Permit, and Erosion and Sediment Control Plans, no adverse impact to wetlands or surface water resources is expected. Should any dredge or fill be required, Big Rivers will coordinate appropriately for permits or mitigation as needed.

3.12.3 Mitigation

Mitigation measures will be implemented during Project construction and operation to aid in minimizing potential environmental impacts. There are no anticipated adverse impacts to waters or wetlands within the ROW or substations aside from the BSM Substation which are being permitted as part of the BSM Project. Work will be conducted to avoid direct impacts to waterways and wetlands. Potential mitigation measures include:

- Obtain all permits for wetland impacts and determine mitigation efforts for any conversion of forested or shrub/scrub wetlands to emergent wetlands
- The development and maintenance of BMPs described in the SWPPP will also help prevent or minimize any wetland and stream impacts. These include BMPs such as:
 - Provide and maintain a 50-foot buffer surrounding all water resources
 - Removal of soil and sediment tracked off the Project site by sweeping and/or shoveling
 - Silt fencing
 - Catch basins to filter sediment and other construction related pollutants
 - Check dams, constructed using compost filter sock, to slow the velocity of concentrated storm water flows and filter sediment
 - Water or other dust palliatives will be applied to areas of bare soil to limit wind erosion
 - Existing storm water control features will remain in place after construction is complete
 - Seeding and mulching for soil stabilization
 - Vegetative cover after removal of temporary structural BMPs
 - Periodic site visits to monitor revegetation and initiate additional restoration measures if necessary

3.13 Water Resources

The following sections discuss information on surface water, water supply and discharge, groundwater, and water quality within the Project Study Area.

3.13.1 Affected Environment

Surface Water, Water Supply, and Discharge

This Project Study Area is within the 12-Flippins Run-Ohio River unit within the 6-Lower Ohio-Salt watershed. Various surface waters are within the vicinity of the substation and switchyard facilities and/or crossed by the proposed transmission line ROW. A prominent water resource within the Project Study Area is Flippins Run at the northernmost end of the Project Study Area. Flippins Run feeds directly into the Ohio River. In addition, Doe Run River joins directly with Blue Spring Branch in the northern middle half of the Project Study Area. Doe Run also feeds directly into the Ohio River. Surface streams are the major source of Kentucky's water supply. Streams are primarily sustained during base flow by groundwater discharge from adjacent aquifers (University of Kentucky 2000).

Groundwater

The entire Project Study Area is within the Mississippian aquifer. Portions of this aquifer can be found in Iowa, Missouri, Illinois, Indiana, Kentucky, Tennessee, Alabama, West Virginia, Ohio, and Pennsylvania. The Mississippian aquifers are characterized by thick-bedded limestones and sandstones (U.S. Geological Survey (USGS) 2016). In Kentucky and Tennessee, water in the limestone bedrock moves through bedding planes and fractures are enlarged by the slightly acidic water. Water is held within the limestone layers, and it percolates in through the sandstone (USGS 2019). The rock type of the aquifer is described as sandstone and carbonate rock aquifers. Limestones in Meade County are of Early and Late Mississippian age and are comprised of St. Louis Limestone, St. Genevieve Limestone, and Salem Limestone all within the Meramec series (KGS 2019). There are also very isolated areas of Chester series limestone. These aquifers consist of interbedded sandstone and carbonate rocks; the carbonate rocks are the most productive aquifers, whereas the interbedded sandstones yield less water. These aquifers are recharged from sinkholes and openings within the sandstone cap. About half the area in Meade County, Kentucky contains mature, karst terrain with abundant sinkholes, springs, and caves (University of Kentucky 2000). Because of this karst terrain, groundwater is susceptible to rapid changes in water quality and contamination from human sources because of the lack of slow percolation (USGS 1989). Depth of the freshwater zone of the aquifer ranges from 25 to 2,000 feet below the land surface (USGS 1987).

Water Quality

Surface water is susceptible to contamination from a variety of activities at the land surface such as farming and industry operations. Once the surface water is contaminated, it can percolate to groundwater which is more difficult to remediate. In Meade County, water extracted from the groundwater aquifers is considered hard. Salt and hydrogen sulfide are often present in extracted water. Water present from wells and springs can easily be polluted and caution should be used when extracting it. Below the freshwater deposits within aquifers, lies saltwater 50 feet or less below the freshwater. These saltwater reserves can extend 2,000 feet below land in Kentucky. Groundwater within Meade County is known to be sensitive to pollution and care should be taken when performing deep drilling operations (University of Kentucky 2000).

3.13.2 Environmental Consequences

Potential Impact of the No Action/No Build Alternative

Under the No Action/No Build Alternative, there would be no construction or change to the Project Study Area in Meade County. This would result in no impacts to the water resources located within the Project Study Area.

Potential Impact of the Development Alternative

The Preferred Alternative areas for the substations and switching station are larger than one acre, Big Rivers Electric will apply for a construction general permit from the Kentucky Energy and Environment Cabinet under the Kentucky Stormwater Management Program prior to commencing any construction activities. Big Rivers Electric will also need to prepare a Stormwater Pollution Prevention Plan (SWPPP) in accordance with the general construction permit. There is a potential for soil erosion and runoff to indirectly affect groundwater and/or off-site surface water that flows into the Ohio River during construction activities for the two new substations and switching station. Compliance with the SWPPP and use of the appropriate BMPs would prevent future cumulative impacts to water resources. A Spill Prevention Control and Countermeasure (SPCC) plan from Kentucky Division of Water is required if the facility has an aggregated total of 1,320 gallons of oil or more. Spills and the proper storage and handling of liquids will be managed in accordance with the SPCC plan. Any construction work would be mitigated by Big Rivers Electric's fulfillment of permit conditions contained in their existing Industrial KPDES permit and any additional applicable Kentucky Stormwater Management Program requirements.

With the proper implementation of BMPs and erosion sediment controls required by the KPDES General Permit, and Erosion and Sediment Control Plans, no adverse impact to groundwater or surface water resources is expected.

3.13.3 Mitigation

Mitigation measures will be implemented during Project construction and operation to aid in minimizing potential environmental impacts. Potential mitigation measures include:

- Implementation of proper erosion control measures described by the Kentucky Energy and Environment Cabinet Division of Water in the National Pollutant Discharge Elimination System (NPDES) Permit to be obtained for the project
- The development and maintenance of BMPs described in the SWPPP developed and approved for the Project such as:
 - Use of silt fence and other erosion and sedimentation prevention measures, as needed
 - Temporary and permanent soil stabilization measures such as seeding and mulching
 - Temporary structural BMPs must be removed after the Project site is stabilized with a uniform perennial vegetative cover of 70 percent density or more of natural vegetation cover for all unpaved areas and areas not covered by permanent structures or equivalent stabilization measures

3.14 Summary of Quantifiable Impact by Project Component

The following Table 3-12 summarizes the potential impacts from each of the Project components to the resources throughout the study area.

Table 3-12: Impact Summary for each Project Component

Project Component	RUS #830, Meade County to Otter Creek 161/69 kV line rebuild and new 161 kV line	RUS #1071, Redmon Road to Otter Creek new 345 kV line	RUS #1072, Otter Creek to BSM 69/345 kV line rebuild and new 345 kV line	RUS #907, Otter Creek Substation	RUS #909, Redmon Road Switching Station	RUS #908, BSM Substation	RUS #1070, Meade County Substation Modification	Project Total
Aesthetics	No long-term impacts	No long-term impacts	No long-term impacts	No long-term impacts	No long-term impacts	No long-term impacts	No long-term impacts	No long-term impacts
Air Quality	No long-term impacts	No long-term impacts	No long-term impacts	No long-term impacts	No long-term impacts	No long-term impacts	No long-term impacts	No long-term impacts
Historic and Cultural Resources	No known NRHP-listed buildings, districts, sites, or objects identified or proposed to be impacted.	Archeological Sites 15Md434 and 15Md435 within the ROW. Not evaluated for NRHP eligibility. Will be spanned to	No known NRHP-listed buildings, districts, sites, or objects identified or proposed to be impacted.	No known NRHP-listed buildings, districts, sites, or objects identified or proposed to be impacted.	No known NRHP-listed buildings, districts, sites, or objects identified or proposed to be impacted.	No known NRHP-listed buildings, districts, sites, or objects identified or proposed to be impacted.	No known NRHP-listed buildings, districts, sites, or objects identified or proposed to be impacted.	No adverse impacts

Project Component	RUS #830, Meade County to Otter Creek 161/69 kV line rebuild and new 161 kV line	RUS #1071, Redmon Road to Otter Creek new 345 kV line	RUS #1072, Otter Creek to BSM 69/345 kV line rebuild and new 345 kV line	RUS #907, Otter Creek Substation	RUS #909, Redmon Road Switching Station	RUS #908, BSM Substation	RUS #1070, Meade County Substation Modification	Project Total
		avoid. No other known NRHP-listed buildings, districts, sites, or objects identified.						
Human Health and Safety	No long-term impacts	No long-term impacts	No long-term impacts	No long-term impacts	No long-term impacts	No long-term impacts	No long-term impacts	No long-term impacts
Land Use	No adverse impacts	No adverse impacts	No adverse impacts	No adverse impacts – 8.9 acres of land converted to utility use	No adverse impacts – 2.8 acres of land converted to utility use	No adverse impacts – 7.4 acres of land converted to utility use	No adverse impacts	No adverse impacts; total of 19.1 acres of land converted to utility use
Noise	No adverse impacts	No adverse impacts	No adverse impacts	No adverse impacts – nearest residence is 400 feet from the fence line	No adverse impacts – nearest residence is 0.25 mile from the fence line	No adverse impacts – nearest residence is 0.75 mile from the fence line	No adverse impacts – nearest residence is 250 feet from the fence line	No adverse impacts

Project Component	RUS #830, Meade County to Otter Creek 161/69 kV line rebuild and new 161 kV line	RUS #1071, Redmon Road to Otter Creek new 345 kV line	RUS #1072, Otter Creek to BSM 69/345 kV line rebuild and new 345 kV line	RUS #907, Otter Creek Substation	RUS #909, Redmon Road Switching Station	RUS #908, BSM Substation	RUS #1070, Meade County Substation Modification	Project Total
Transportation	No long-term impacts – crosses 1 local road, 6 SRs, and 1 unnamed road	No long-term impacts – crosses 1 local road and 2 SRs	No long-term impacts – crosses 10 local roads and 4 SRs	No long-term impacts	No long-term impacts	No long-term impacts	No long-term impacts	No long-term impacts
Biological Resources	No Impacts to Indiana bat and northern long-eared bat habitat	1.4 acres of tree clearing, impacts to Indiana bat and northern long-eared bat habitat	2.8 acres of tree loss, impacts to Indiana bat and northern long-eared bat habitat	No impacts to Indiana bat and northern long-eared bat habitat	No impacts to Indiana bat and northern long-eared bat habitat	5.8 acres of tree loss, impacts to Indiana bat covered under Nucor permitting; impacts to northern long-eared bat covered under the 4(d) rule.	No impacts to Indiana bat and northern long-eared bat habitat	
Socioeconomics and	No long-term impacts	No long-term impacts	No long-term impacts	No long-term impacts	No long-term impacts	No long-term impacts	No long-term impacts	No long-term impacts

Project Component	RUS #830, Meade County to Otter Creek 161/69 kV line rebuild and new 161 kV line	RUS #1071, Redmon Road to Otter Creek new 345 kV line	RUS #1072, Otter Creek to BSM 69/345 kV line rebuild and new 345 kV line	RUS #907, Otter Creek Substation	RUS #909, Redmon Road Switching Station	RUS #908, BSM Substation	RUS #1070, Meade County Substation Modification	Project Total
Environmental Justice								
Geology and Soils	No adverse impacts	No adverse impacts	No adverse impacts	Total of 2.92 acres of prime farmland conversion and 5.94 acres of statewide importance farmland conversion	Total of 0.12 acres of prime farmland conversion and 2.70 acres of statewide importance farmland conversion	No adverse impacts; mitigated by Nucor	No adverse impacts	
Floodplains	0.34 acres of floodplain within ROW; work will be completed in compliance with General Permit KY FPGP	No impacts	8.22 acres of floodplain within ROW; permit will be obtained for any structures required to be	0.99 acres of floodplain; work will be completed in compliance with the Meade County floodplain	No Impacts	1.95 acres of floodplain; permit will be obtained as part of Nucor project permitting	No impacts	Total of 9.47 acres of floodplain within Project ROW or footprints

Project Component	RUS #830, Meade County to Otter Creek 161/69 kV line rebuild and new 161 kV line	RUS #1071, Redmon Road to Otter Creek new 345 kV line	RUS #1072, Otter Creek to BSM 69/345 kV line rebuild and new 345 kV line	RUS #907, Otter Creek Substation	RUS #909, Redmon Road Switching Station	RUS #908, BSM Substation	RUS #1070, Meade County Substation Modification	Project Total
			located within the floodplain	permit and KRS 151 permit				
Wetlands	0.63 acres of wetlands and two NHD stream crossings within ROW; impacts will be avoided	0.13 acres of wetlands within ROW; impacts will be avoided	1.46 acres of wetlands, seven NHD stream crossings within ROW; impacts will be avoided	No Impacts	No Impacts	0.50 acres of wetlands, one stream crossing; impacts permitted under Nucor project	No Impacts	A total of 2.75 acres of wetlands and ten stream crossings within Project ROW or footprints
Water Resources	No adverse impacts	No adverse impacts	No adverse impacts	No adverse impacts	No adverse impacts	No adverse impacts	No adverse impacts	No adverse impacts

4.0 CUMULATIVE EFFECTS

4.1 Cumulative Impacts by Resource

This chapter lists the past, present, and reasonably foreseeable future actions in the Project Study Area that may affect the resources analyzed in this EA. An assessment of cumulative effects of the Project for each resource is provided as well. The CEQ regulations implementing NEPA defines cumulative impacts as, “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such action” (40 CFR §1508.7).

4.2 Past, Present, and Reasonably Foreseeable Future Actions

Past, present, and reasonably foreseeable future actions that have affected the resources of the Project Study Area include:

- Construction of the existing Meade County Substation and existing Big Rivers Electric transmission lines.
- Past residential and business development in the surrounding area
- Past road and railroad development
- Agriculture
- Forest management
- Gas and electric extraction and transmission
- Future development of the BSM

The current project that is most likely to contribute to cumulative impacts is the development of the new 460-acre BSM on the north end of the Project Study Area. This Big Rivers Electric Project is a direct tie to the Nucor Corporation facility, which began construction in early 2020. The BSM is projected to provide 400 full-time positions to the Brandenburg, Kentucky area with an average annual salary of \$72,000. This will provide an economic boost to the city of Brandenburg and the Commonwealth of Kentucky. Big Rivers Electric will be contributing to the economic growth of the area by supplying power to the steel mill. Cumulative impacts by resource type are described below.

4.2.1 Aesthetics

The Project Study Area consists primarily of pasture/hay, deciduous forests, and cultivated crops with minimal rural developed areas spread throughout the area. The Meade County to Otter Creek 161/69 kV and Otter Creek to BSM 69/345 kV line rebuilds will have minimal impacts to aesthetics. These new

structures would need to be taller to provide for electrical clearance for the two circuits, but the ROW width would remain the same, and no new clearing would be required. Project components outside the existing ROW including the new Otter Creek Substation, Redmon Road Switching Station, BSM Substation, and the 2.5-mile Redmon Road to Otter Creek 345 kV, 1.0-mile Meade County Substation to new Otter Creek Substation 161 kV line, and 1.1-mile Otter Creek to BSM 345 kV segment. Clearing ROWs and substation footprints, erecting transmission line structures, and building electrical stations would introduce new features to the landscape. The new features in the landscape would primarily be visible by the general public at road crossings, railroad crossings, and where no trees obstruct visibility. Clearing would be limited to only that required for construction and safe operation of the facilities. Limiting facility changes to the existing Project footprint and areas of existing infrastructure minimizes the visual contrast of the new facilities to the landscape, which already contains all these types of visual elements. The new BSM plant will alter the aesthetics in the area with the addition of this new facility. However, a portion of the Buttermilk Falls Trail along Flippins Run, which connects Brandenburg Riverfront Park to Kentucky State Route 933, is located along the southern boundary of the site and provides a buffer to this facility.

Overall, the new visual contrast is anticipated to be minor and would be a minor aspect of the overall vista of the area. The Project would not cumulatively adversely contribute to aesthetics of the Project Study Area.

4.2.2 Air Quality

Ambient air in the immediate area of the Project is in attainment for all criteria pollutants. Air emissions from any current or future proposed construction activities are minimal and temporary in nature, decrease rapidly with distance from the construction site and will not result in any long-term impacts. Once construction activities are complete, construction-related emissions will end. There are no stationary emissions units being installed as part of this project that will contribute to emissions after construction activities are completed. Therefore, there are minimal permanent or long-term cumulative impacts to air quality expected.

4.2.3 Human Health and Safety

It is anticipated that during Project construction, workers will be exposed to several health and safety risks and follow OSHA standards and protocols where applicable. It is anticipated that safety risks to workers and nearby public residences will be kept at a minimum. Anticipated safety hazards include EMR, EMF, operation and refueling of heavy equipment, storage and use of hazardous materials, electrical hazards, and increased traffic. Currently, there are no studies confirming that high amounts of

electromagnetic radiation are detrimental to human health, and it is assumed that there will be no negative impacts due to EMR and EMF. Regarding hazards from working with heavy equipment and refueling, workers will follow safety provisions OSHA CFR1926 and Big Rivers Electric will develop a Health and Safety Plan. When handling and storing hazardous materials, Big Rivers Electric will follow OSHA standards and protocols and all hazardous materials shall be recycled by a licensed/permitted recycler. There is a risk of electrocution from the addition of two substations, the switching station, and additional transmission lines. To mitigate risks to the public, access shall be restricted to authorized individuals and locking gates/fencings shall surround the areas. Overall, there are minimal permanent or long-term cumulative impacts to human health or safety expected.

4.2.1 Historic and Cultural Resources

As described in Section 3.3.2, three previously recorded archaeological sites overlap the Project ROW (15Md7, 15Md434, and 15Md435). These areas will be marked for avoidance and spanned during transmission line construction to avoid any disturbance. None of these sites are considered historic properties; however, their eligibility has not been fully evaluated. There were no NRHP-eligible or listed historic resources, no NRHP-eligible cultural resources or cemeteries identified within the APE. Cultural and historic resources would not be physically or adversely affected by project. Construction and maintenance of the existing transmission line, which will be rebuilt as part of the Project, has affected the vicinity of the Project physically and visually.

For many transmission line projects, archaeological sites can be avoided through minor adjustments of transmission structure locations and development of access routes around sites. If NRHP-eligible archaeological sites or other eligible cultural resources will be adversely affected by the Project, mitigation measures may be necessary. Mitigation plans will need to be developed in consultation with the lead federal agency, the KHC, OSA, any interested tribes, and other consulting parties.

If any sites are identified during the construction phase, construction will be halted immediately within a 100-foot radius of the discovery, and Big Rivers Electric and RUS will be notified in order to initiate the procedures outlined in 36 CRF Part 800. Procedures will include the evaluation of the find for NRHP eligibility and determining the appropriate treatment of the find with the lead federal agency, the KHC, the OSA, any interested tribes, and other consulting parties. The BSM Substation is part of the RUS funding request. Nucor has selected the location of the BSM Substation and is completing the required surveys, permits and mitigations for this facility. At this moment, no cumulative impacts are expected.

4.2.2 Land Use

No considerable additional impacts to land use are anticipated along the existing transmission line footprints as lines would be rebuilt within existing utility ROW. Only 24.2 acres would be converted to utility use for substation and switching station construction. These minor changes in overall land use would be insignificant within the study area. The proposed development of the BSM requires grading work on approximately 395 acres of land within the interior of the property to construct the facility and associated infrastructure. However, the project site is located in the Buttermilk Falls Industrial Park and is identified in the Meade County Comprehensive Plan (Meade County 2013) as an area encouraged for industrial development.

The current land use of the Project Study Area is predominately pasture/hay, cultivated crops, and deciduous forest. Additional uses include developed land, evergreen forests, grasslands/herbaceous, mixed forests, shrub/scrub woods, and water. The NRCS concluded that the Project does cross prime, unique, or statewide important farmland.

After construction is complete, disturbed areas would be stabilized as appropriate, either revegetated or covered with gravel or a solid pavement material. Impacts to land use include long-term impacts (removal of existing vegetation and conversion of farmland to the substations) and short-term impacts associated with construction. Construction impacts would be minimized with BMPs to control and minimize erosion. Therefore, there are minimal permanent or long-term cumulative impacts to land use expected.

4.2.3 Noise

The pre-existing substations and traffic all currently contribute to noise in the Project Study Area. Construction of the Project will involve site preparation, excavation, placement of concrete and other typical industrial construction practices resulting in temporary and minor noise impacts in the surrounding area. Construction-related sounds would vary in intensity and duration but would not be permanent. Minor temporary disturbances to wildlife and nearby residences or livestock could occur. The BSM will begin construction in 2020 and will follow their own noise mitigation measures as needed. The rural nature of the overall Project Study Area generally limits the number of sensitive receptors that could be impacted from the Project facilities, while also maintaining a buffer distance between the Project sound sources and these nearest sensitive receptors, reducing the noise exposure to receptors in the vicinity of the Project facilities.

Since the transmission line and switching station do not have any significant noise-emitting sources, neither of these components are expected to change ambient sound levels. Operational sounds at the

substations would occur while in operation and would fluctuate less than construction sound. Noise regulations were reviewed federally, for the Commonwealth of Kentucky, Meade County, and for the towns of Brandenburg and Ekron. During the review, only nuisance noise ordinances were found. Therefore, no numerical limits were identified for the Project and therefore, no operational mitigation options are proposed for the Project. Construction impacts are temporary and ongoing operational sounds would not negatively contribute to any overall noise impacts in the area as part of other development activities.

4.2.4 Transportation

The Project Study Area contains an existing network of paved and gravel roads consisting of many local roads and several State Routes. The Kentucky Transportation Cabinet and Meade County would be contacted regarding guidance on any notification or permits required for public road use and road crossings during the construction phase of the Project and to coordinate with other future planned projects including the BSM.

Construction and operation of the Project would have a minimal and short-term effect on the local transportation network. During construction of the Project, traffic within the immediate vicinity would be impacted. However, there will not be any ongoing traffic related to project operations except periodic inspections and maintenance. Traffic would be considerably less than the anticipated increase as part of employee and truck traffic to and from the BSM. Traffic is anticipated to return to levels similar to existing conditions after construction of the Project is complete as additional workers, and associated travel, are not anticipated during Project operation.

A railroad crosses the Otter Creek to BSM 69/345 kV line rebuild as well as the Meade County to Otter Creek 161-69 kV line rebuild. Additional coordination with the owner of rail lines would be initiated to avoid conflicts between rail operations and construction to provide safe rail and construction activities.

Big Rivers Electric will confirm that the poles do not exceed the designated distance to height ratio from the nearest point of the nearest FAA designated runway. Additionally, cranes used for constructions will need to be evaluated for their overall height and if an FAA filling is needed. Once final pole design, pole locations and construction details are determined, FAA notification will be submitted as needed and any required follow up information will be provided.

Construction and operation of the Project will have temporary impacts on transportation; therefore, implementation of the Project is not anticipated to contribute significantly to cumulative impacts to the region's transportation system.

4.2.5 Biological Resources

Other past, present, and future actions that may affect the biological resources in the region include residential, business, and industrial development (including the new BSM); transportation infrastructure and agriculture and forest management. The construction, operation, and maintenance for the Otter Creek Substation, BSM Substation, Redmon Road Switching Station, and additional transmission lines could result in the loss of vegetation and forested habitat. A total of 4.7 acres of tree clearing will be required, of which 4.2 acres are potentially suitable habitat for listed bats⁷.

The Office of Kentucky Nature Preserve and the U.S Fish and Wildlife Service were contacted during agency scoping. There will be temporary impacts as the result of increased human and vehicle disturbance during construction along with a small amount of permanent impacts from the construction of new ROW. Impacts to bat species have a potential to be impacted by this Project. The aquatic mussels will not have direct adverse impacts. No cave habitat will be impacted; therefore, the gray bat is not likely to be impacted as a result of this Project. The northern long-eared bat is exempt from take under the USFWS Programmatic Biological Opinion, Section 4(d) Rule. Additional coordination with the USFWS will be required for any potential take to the Indiana bat as a result of tree clearing. Typical mitigation includes contribution to the Imperiled Bat Conservation Fund at a ratio based on total acres of trees cleared and time of year restrictions on when the clearing occurs. Other past, present or future projects are subject to their own mitigation and permitting and the lead agency will ensure that impacts to listed species do not cause lasting cumulative effects. Overall, the limited clearing necessary for this Project, and this clearing consisting of small widely separated wooded areas associated with new substations would not materially contribute to the overall clearing in the area as part of other development and forestry production and management practices.

4.2.6 Socioeconomics and Environmental Justice

Other past, present, and future actions that may affect the socioeconomics and environmental justice in the region include residential, business, and industrial development (including the new BSM). The construction of this Project is not anticipated to negatively impact the economy of Meade County or disproportionately affect the livelihood of low-income families and minorities. The proposed Project is not considered to be in an area of environmental justice concern. Temporary jobs from Project construction would be created for local construction workers. In concerns to the impacts on local businesses, Project construction is predicted to temporarily bring in more business to the local area. This would include

⁷ An additional 5.8 acres of tree clearing will be required for the BSM Substation on the Nucor property project site and will be permitted under the Nucor project.

businesses such as gas stations, convenience stores, and restaurants. This increase in demand is expected to stop after Project completion. However, the BSM is expected to bring in 400 full-time positions to the Brandenburg, Kentucky area with an average annual salary of \$72,000. Big Rivers Electric will be contributing to the economic growth of the area by supplying electrical power to the steel mill creating an overall positive effect on the socioeconomics and environmental justice of the area. However, the Project would have insignificant socioeconomic impacts in the Project Area compared with those of the Nucor facility.

4.2.7 Geology and Important Farmland Soils

Other past, present, and future actions that may affect the geological and soil resources in the region include residential, business, and industrial development (including the new BSM); transportation infrastructure; and agriculture and forest management. The physiography of the area has already been altered by the construction of existing facilities such as roads and other infrastructure as well as the existing transmission lines and Meade County Substation. It is anticipated that there will be further impacts to physiographic features due to the construction of the Redmon Road Switching Station, Otter Creek Substation, and new transmission line segments from Otter Creek to BSM and from Otter Creek to Redmon Road as a result of minor grading required to prepare the station sites for construction. The BSM Substation and transmission line within Nucor's project limits will be permitted and mitigated as part of the steel mill development. As mentioned, the BSM requires grading work on approximately 395 acres of land; however, the project site is located in an area encouraged for industrial development.

There are sinkholes throughout the Project Study Area, but none have been identified within the footprint of the substations or switching station. Approximately 3.1 acres of prime farmland and 8.6 acres of farmland of statewide importance would be converted to utility use for substation and switching station construction. These soils would be converted to utility use and no longer available for agricultural purposes. Overall, the minimal loss of prime farmland and farmland of statewide importance will not have any long-term effects on the surrounding area which is mostly pasture/hay and cultivated crops (54 percent). With the exception of permanent subsurface structures, impacts are anticipated to be short term and minimized with BMPs and would not materially contribute to overall impacts in the area as part of other development and forestry production and management practices.

4.2.8 Floodplains

Other past, present, and future actions that may affect the floodplains in the region include residential, business, and industrial development (including the new BSM); transportation infrastructure; and agriculture and forest management. Portions of the Project Study Area with new substations, the

switching station, and transmission lines will include ground disturbance. The Meade County Substation and Redmon Road Switching Station are not located within a floodplain. A total of 1.95 acres of the BSM Substation footprint is located within Flood Zone AE and 0.99 acres of the Otter Creek Substation footprint is located within Zone A. There are 1.88 acres of new ROW and 6.68 acres of ROW rebuild located within the floodplain. Transmission line structures can generally be sited and constructed to span waterways and wetlands and their associated floodplains. The Otter Creek substation location was determined to be the best available land in close proximity to the existing Garrett Substation to provide access to the use of existing transmission line rights-of-way to minimize overall project impacts. The geotechnical report identified sinkholes in this location and the substation was sited to avoid the sinkholes. An NHD streamline is identified in this area but was not observed during a site visit. Floodplain impacts will be mitigated by obtaining the appropriate permit and designing to divert stormwater away from the new substation.

Although Big Rivers Electric is requesting RUS funding for the BSM Substation, the location of where the substation was needed was determined by Nucor. Impacts for this substation are being mitigated through Nucor's permitting effort. Floodwaters on the Nucor site will be diverted and controlled through designing new outfalls and retention basins. The final KRS 151 floodplain permit was obtained for BSM Substation for construction within the floodplain.

The Project will be designed to either avoid all direct impacts to floodplains within the ROW or designed and permitted to not impede flow or accumulate debris. Therefore, the limited placement of structures within the floodplain for this Project would not contribute adversely to flood storage or flow as part of other development in this area.

4.2.9 Wetlands

Other past, present, and future actions that may affect wetlands in the region include residential, business, and industrial development (including the new BSM); transportation infrastructure; and agriculture and forest management. Portions of the Project Study Area with new substations, the switching station, and transmission lines will sustain ground disturbance. The Meade County Substation, Redmon Road Switching Station and Otter Creek Substation are not located within wetlands or stream habitat. Within the new and rebuild portions of the transmission line ROW, there is a total of 2.21 acres of wetlands and nine NHD stream crossings. Transmission line structures can be sited and constructed to span waterways and wetlands. Additionally, there are 0.50 acres of wetlands and one stream crossing within the BSM Substation footprint. Although Big Rivers Electric is requesting RUS funding for this substation, the location of where the substation was needed was determined by Nucor. Therefore, impacts are being

mitigated through Nucor's permitting effort. The loss of wetlands at this location will be mitigated through purchasing wetland credits from a mitigation bank and the loss of streams through the In-Lieu Fee program. The final Section 404 and Section 401 Permit is still in review with the U.S. Army Corps of Engineers. Through minimizing direct impacts to wetlands and waters and with the proper implementation of BMPs for erosion and sediment control required by the KPDES General Permit Erosion and Sediment Control Plans, no adverse impacts to wetlands or waters of the U.S. are anticipated for the rest of the Project components. The remaining portion of the Project, outside of the Nucor project area, will not contribute to loss of wetlands due to spanning and limited conversion of forested wetland to emergent. Overall, the limited loss of stream and wetland habitat for this Project within the Nucor project area would not significantly contribute to loss of water resources as part of other development in this area.

4.2.1 Water Resources

Other past, present, and future actions that may affect the water resources in the region include residential, business, and industrial development (including the new BSM); transportation infrastructure; and agriculture and forest management. Portions of the Project Study Area with new substations, the switching station, and transmission lines will require ground disturbance. Soil erosion and potential runoff will be controlled through the use of BMPs in accordance with the SWPPP and Kentucky Pollutant Discharge Elimination System (KPDES) permit as needed. Avoiding all direct impacts to wetlands and waters and with the proper implementation of BMPs and erosion sediment controls required by the KPDES General Permit, and Erosion and Sediment Control Plans, no permanent impacts to groundwater or surface water resources are expected and this Project would not significantly contribute to loss of water resources as part of other development in this area.

5.0 SUMMARY OF MITIGATION

The following Table 5-1 is a summary of mitigation proposed for the Project by resource.

Table 5-1: Summary of Mitigation

Resource	Potential Environmental Consequences	Mitigation Measures Required	Intensity of Residual Effects
Aesthetics	While there may be additional visual contrast from the new facilities, the overall nature of the proposed Project will remain consistent and compatible with the existing views in the area.	No mitigation measures are anticipated.	None
Air Quality	Air emissions from construction are low and temporary in nature, fall off rapidly with distance from the construction site, and will not result in any long-term impacts.	Fugitive dust control measures may include, but are not limited to, the following: <ul style="list-style-type: none"> • Applications of water; • Watering of roadways after completion of grading; • Reduction in speed on unpaved roadways; • Use of sweepers or water trucks to remove mud at points of public street access; and • Stabilization of dirt storage piles by seeding and mulching, tarps, or barrier fencing. 	Minimal
Historic and Cultural Resources	The Project does not cross any known historic properties, or resources eligible for or listed on the NRHP.	Consultation with the KHC was initiated and it was established that the APE of any locations not previously surveyed for cultural or historic resources would be surveyed. Concurrence from KHC was received on November 11, 2020 and December 17, 2020 that there are no effects to historic or cultural resources as a result of this project.	None
Human Health and Safety	EMF will be strongest directly under the transmission line and decreases with increasing distance from the transmission line ROW. Transmission lines and substations will be designed to NESC standards.	No mitigation necessary.	None

Resource	Potential Environmental Consequences	Mitigation Measures Required	Intensity of Residual Effects
Human Health and Safety	There are a number of risks to human health and safety possible for construction personnel on Project construction through the operation of heavy equipment, the use of tools during construction, and working in an active construction site. Additionally, hazardous substances or wastes may be released, generated, or required for construction and operation of the Facility.	Mitigation measures include compliance with all applicable federal and state occupational safety and health standards, National Electric Safety Code (NESC) regulations (NESC 2017), Occupational Health and Safety Administration (OSHA) guidelines, and utility design and safety standards. Additionally, Big Rivers Electric will develop a Health and Safety Plan to address public and worker safety during the construction and operation of the Project. Local emergency and health services would be called upon to provide first aid and assistance in the event of an accident or emergency.	Minimal
Human Health and Safety	During construction there is a risk of accidental fires being started by human activities such as refueling heavy equipment or the use of vehicles in dry vegetated areas.	Big Rivers Electric will create a Health and Safety Plan outlining procedures to address and control the use of flammable materials in accordance with industry-approved design measures to reduce fire-related risks.	Minimal
Human Health and Safety	Construction and operation of the proposed Project will also involve the use and storage of regulated and hazardous materials. During construction, diesel fuel, gasoline, and lubricating oils from heavy equipment and vehicles may be accidentally leaked or spilled. Hydraulic fluid, paints, and solvents will likely be used during the construction phase as well. Additionally, the presence of aboveground fuel storage tanks and oil-filled equipment present the potential to release into the environment.	Risk management associated with hazardous materials is an additional human health and safety concern. To reduce the potential for a release of regulated or hazardous materials during the construction phase of the proposed Project, work will be planned and performed in accordance with OSHA standards and protocols addressing the use of potentially hazardous materials and applicable federal and state environmental regulations. If a hazardous release were to occur, emergency response, cleanup, management, and disposal of contaminated soils will be conducted according to EPA and State standards. Conformance to these standards and procedures will reduce the potential for significant impacts resulting from the release of hazardous materials during the construction phase.	Minimal

Resource	Potential Environmental Consequences	Mitigation Measures Required	Intensity of Residual Effects
Human Health and Safety	During construction, the site will be managed to prevent harm to the general public. The general public will not be allowed to enter any construction areas associated with the proposed Project. The major risk to the general public will be from an increase in traffic volume, and potentially traffic accidents, on the roadways near the proposed Project as a result of commuting construction workers and transportation of equipment and materials.	Perimeter fences and controlled access will remain in place throughout the construction and future operation of the Project. Increases in traffic will be temporary in nature and following construction will decrease to current levels.	Minimal
Land Use	Changes to land use will occur at the BSM (~7.4 acres) and Otter Creek Substations (~8.9 acres), and the Redmon Road Switching Station (~2.8 acres) through vegetation clearing and conversion to utility use.	Construction impacts would be minimized with BMPs to control and minimize erosion. After construction is complete, disturbed areas would be stabilized as appropriate, either revegetated or covered with gravel.	Minimal
Noise	Noise will be produced from the construction equipment and activities. Actual noise levels generated by construction will vary on a daily and hourly basis, depending on the activity that is occurring, and the types and number of pieces of equipment that are operating.	Noise from construction is expected to be localized and temporary. Any excessive construction noise should be of short duration and have minimal adverse long-term effects on land uses or activities associated with the Project Study Area. Construction equipment will be required to have properly functioning mufflers. Construction activities will typically occur during daytime hours (7:00 A.M. to 6:00 P.M.).	Minimal
Noise	No significant noise will be produced from the operation of the Project.	No numerical noise limits were identified during the regulatory review. No noise ordinances are expected to be exceeded by Project operation; therefore, no mitigation measures are anticipated.	Not Applicable

Resource	Potential Environmental Consequences	Mitigation Measures Required	Intensity of Residual Effects
Transportation	Construction of the Project will cause increased traffic in the area surrounding the Project. Temporary road or lane closures may be necessary during stringing of lines across roadways. Traffic increase from construction workers, equipment and material delivery will be minimal compared to existing traffic levels in the area.	As construction and operation of the proposed Project will have only temporary impacts on transportation, no mitigation measures are anticipated.	Minimal
Transportation	Damage to existing roads during construction.	Roadways will not be purposefully damaged. In the event this does occur, repairs for damage caused by construction activities will be made when appropriate.	Minimal
Transportation	Notice to the FAA will be required should any poles exceed the designated distance to height ratio from the nearest point of an FAA designated runway or if any cranes used for construction will require filing.	Based on the distance between the Project and the nearest airports and the existing obstacles present, it is unlikely that the FAA will request a height restriction on any proposed structures, therefore no mitigation measures are anticipated.	Not Applicable
Biological Resources	Habitat loss for the northern long-eared bat and the Indiana bat is present in the Project. A total of 10.5 acres of suitable habitat may need to be cleared, of which 5.8 acres will be permitted under Nucor’s BSM project; 47 acres will need to be cleared for this Project (of which, 4.2 acres are considered potentially suitable habitat).	The USFWS Verification Letter received October 24, 2019 indicated that the Project may affect the northern long-eared bat; however, any take that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). A letter was sent to the USFWS on March 26, 2020 to initiate Section 7 consultation. Coordination on potential mitigation requirements for loss of Indiana bat habitat as a result of tree clearing. USFWS provided a response on April 21, 2020 and advised that payment could be made into the Imperiled Bat Conservation Fund as a conservation measure to offset effects to the Indiana bat. They also advised that the Project may affect the northern long-eared bat, but with no effects beyond those previously evaluated in the Service’s programmatic biological opinion for the northern long-eared bat final 4(d) rule dated January 5, 2016.	Minimal

Resource	Potential Environmental Consequences	Mitigation Measures Required	Intensity of Residual Effects
Biological Resources	Herbicide and brush/tree clearing will be periodically necessary to maintain the ROW.	Contractors would be required to train employees on the equipment and the proper technique of applying the herbicides to mediate any potential issues to non-target plants. Herbicide would not be applied in unfavorable weather conditions.	Minimal
Biological Resources	During construction, noise and activity may drive wildlife out of the area immediately surrounding the Project.	No mitigation is needed, construction impacts are temporary.	Minimal
Socioeconomics and Environmental Justice	Project is not anticipated to negatively impact the economy of Meade County or disproportionately affect the livelihood of low-income families and minorities. Project is not located in an environmental justice area.	No mitigation measures are anticipated.	Not Applicable
Geology and Soils	Physiographic and geologic alterations will be required in some facility installation and would include vegetation removal, excavating, installation of temporary and permanent subsurface structures, grading, topsoil segregation, and backfilling.	These physiographic and geologic impacts will be short term and minimized with BMPs. Once construction is complete, disturbed areas will be stabilized with either vegetation, or gravel.	Minimal
Geology and Soils	Hydric soil and prime farmland have been identified within the Project Study Area. There will be a total of 3.1 acres of prime farmland and 8.6 acres of farmland of statewide importance converted to utility use and no longer available for agricultural purposes.	The loss of prime farmland will not have any long-term effects on the surrounding area which is mostly pasture/hay and cultivated crops. No mitigation is needed.	Minimal

Resource	Potential Environmental Consequences	Mitigation Measures Required	Intensity of Residual Effects
Floodplain	There are 2.94 acres of floodplains present within the substation footprints, 1.88 acres within the new ROW portions of the Project and 6.68 acres within rebuild portions of the ROW.	Within Nucor property, floodwaters will be diverted and controlled through new outfalls and retention basin. Outside of Nucor property, impacts to floodplains at the Otter Creek Substation are permitted under a Meade County floodplain permit and KRS 151 permit and impacts within the ROW are likely avoidable. Any direct impacts will be mitigated through the appropriate permits. Additionally, equipment and material will be staged outside of the floodplain and equipment refueling will occur in the uplands.	Minimal
Wetlands	There are 9 NHD stream crossings and 2.21 acres of wetlands present within the new construction and rebuild portions of the Project footprint.	Within Nucor property, impacts are being mitigated through mitigation bank credits and In-Lieu fee. Outside of Nucor property, most of the ground disturbance for new pole and substation construction is limited to a small overall footprint with impacts that are likely avoidable with minor re-siting as needed. No permanent impacts are anticipated.	Minimal

Resource	Potential Environmental Consequences	Mitigation Measures Required	Intensity of Residual Effects
Water Resources	Soil erosion and stormwater runoff into nearby streams and rivers may impact waterways during construction.	<p>Before construction activities commence, Big Rivers Electric will apply for the appropriate Kentucky Energy and Environment Cabinet under the Kentucky Stormwater Management Program. Any construction work would be mitigated by Big Rivers Electric’s fulfillment of permit conditions contained in their existing Industrial KPDES permit and any additional applicable Kentucky Stormwater Management Program requirements that will describe the BMPs to be implemented during construction. Potential BMP measures may include, but are not limited to, the following:</p> <ul style="list-style-type: none"> • Removal of soil and sediment tracked off the Project site by sweeping and/or shoveling • Silt fencing • Catch basins to filter sediment and other construction related pollutants • Check dams, constructed using compost filter sock, to slow the velocity of concentrated storm water flows and filter sediment • Water or other dust palliatives will be applied to areas of bare soil to limit wind erosion • Existing storm water control features will remain in place after construction is complete • Seeding and mulching • Vegetative cover after removal of temporary structural BMPs • Periodic site visits to monitor revegetation and initiate additional restoration measures if necessary • Provide and maintain a 50-foot buffer surrounding all water resources 	Minimal

6.0 COORDINATION, CONSULTATION, AND CORRESPONDENCE

The following sections provide information on the consultation and coordination conducted with the public, government agencies, and Native American Tribes during the preparation of this EA. This section describes the steps taken to inform these groups of the Projects, summarizes comments received, and outlines further coordination and consultation with the public and other interested parties.

6.1 Agency Coordination

Federal, state, and local government agencies were sent a scoping letter on November 4, 2019 with information related to the Project. The letter included an overview of the Project and a location map of the Project that displays the proposed transmission lines and substations. The letter requested assistance in identifying specific resource issues that should be investigated during the environmental review for the Project. Appendix J contains a copy of the scoping letter and the attachments included, as well as a list of agencies contacted. The following is a brief overview of responses:

- The USFWS Verification Letter received October 24, 2019 indicated that the Project may affect the northern long-eared bat; however, any take that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). USFWS responded to the scoping letter on November 12th and in email on November 19th, 2019 requesting information to be submitted and reviewed using their online IPaC tool (Appendix F).
- U.S. Army Corps of Engineers (USACE) letter received November 21, 2019 stated that portions of the Project Study Area may be in or near waters of the U.S. If the Project involves the discharge of dredged or fill material into waters of the U.S., then Department of the Army authorization pursuant to Section 404 of the Clean Water Act is required prior to the commencement of work (Appendix H).
- Kentucky Department of Fish & Wildlife Resources (KDFWR) letter received November 21, 2019 provided information on protected species and recommends coordination with USFWS for tree clearing for federally listed bats. The proposed Project is located in the Kentucky State Wildlife Action Plan Priority Conservation Area for grassland birds and amphibians. KDFWR identified several species that are in Kentucky's State Wildlife Action Plan that are known to occur within the limits of the Project. KDFWR recommends avoiding direct impacts to permanent and seasonal ponds, woodlots and tree-lined fencerows to minimize impacts to these species. KDFWR also recommends the use of erosion control measures to minimize direct impacts to aquatic resources and aquatic species (Appendix F).

- KHC letter received November 27, 2019 stated that the Project has the potential to affect historic properties. KHC requested additional consultation (Appendix C).
- Kentucky Energy and Environmental Cabinet replied on November 27, 2019 in an email and stated that there are no Purchase of Agricultural Conservation Easements properties within the study area (Figure 3-1). Meade County Substation is near one of Meade County's agricultural districts, 082-03, however the proposed upgrade work should not impose any lasting negative impacts (Appendix E).
- Kentucky Transportation Cabinet letter received December 17, 2019 provided a map of potential future roadway project locations that are planned to occur within the vicinity of the Project (Appendix E).
- USFWS provided a response on April 21, 2020 to the Section 7 consultation letter. They advised that payment could be made into the Imperiled Bat Conservation Fund as a conservation measure to offset effects to the Indiana bat. They also advised that the Project may affect the northern long-eared bat, but with no effects beyond those previously evaluated in the Service's programmatic biological opinion for the northern long-eared bat final 4(d) rule dated January 5, 2016 (Appendix F).
- Conference call on May 11, 2020 with RUS, KHC, and Burns & McDonnell regarding Section 106 compliance, proposed survey areas for additional surveys, the APE and the potential for the Project to affect historic and cultural resources.
- KHC sent an email reply on May 29, 2020 and again on June 2, 2020 with the proposed APE and request for additional surveys (Appendix C).
- Historic-Age Resources Surveys and Phase I Archaeological Survey Reports were sent to the KHC for concurrence on October 15, 2020.
- KHC responded on November 11, 2020 providing finalized concurrence letters for the BSM substation and Meade County substation with a finding of No Effect to Historic Properties; the remaining five Project components required additional information to complete their review.
- Revised Historic-Age Resources Surveys and Phase I Archaeological Survey Reports were sent to the KHC on November 20, 2020.
- The KHC requested an individual Determination of Effect letter for the remaining five Project components (i.e., RUS #907, RUS #908, RUS #830, RUS #1071 and RUS #1072).
- Revised Determination of Effect Letters for the five Project components were sent to KHC on December 14, 2020.

- KHC responded on December 17, 2020 providing finalized concurrence letters for the Otter Creek Substation, Redmon Road EHV Switching Station, Otter Creek Substation to BSM Substation, Meade County Substation to Otter Creek Substation Line, and Redmon Road EHV Switching Station to Otter Creek Substation Line with findings of No Effect to Historic Properties.

6.2 Tribal Coordination

On December 4, 2019, Big Rivers Electric sent scoping letters to THPOs and other tribal officials of the following:

- Absentee-Shawnee Tribe of Oklahoma
- Eastern Shawnee Tribe of Oklahoma
- Shawnee Tribe of Oklahoma
- Cherokee Nation of Oklahoma
- United Keetoowah Band of Indians in Oklahoma
- Eastern Band of Cherokee Indians
- Citizen Potawatomi Nation
- Forest County Potawatomi
- Hannahville Indian Community
- Gun Lake Tribe
- Nottawaseppi Huron Band of Potawatomi
- Prairie Band of Potawatomi
- Pokagon Band of Potawatomi
- Kickapoo Traditional Tribe of Texas
- Kickapoo Tribe of Kansas
- Kickapoo Tribe of Oklahoma
- Miami Tribe of Oklahoma
- Saginaw Chippewa Indian Tribe of Michigan
- Lac Vieux Desert Band of Lake Superior
- Lac du Flambeau Band of Lake Superior
- Sault Ste Marie Tribe of Chippewa
- Bad River Band of Lake Superior Chippewa
- Keweenaw Bay Indian Community
- Lac Courte Oreilles Band of Chippewa
- Red Cliff Band of Lake Superior Chippewa
- Red Lake Chippewa
- Sokaogon Chippewa
- St. Croix Chippewa Community
- Turtle Mountain Band of Chippewa
- Fon du lac Band of Lake Superior
- Bois Forte Band of Chippewa
- Grand Portage Band of Lake Superior Chippewa
- Leech Lake Band of Ojibwe
- Mille Lacs Band of Ojibwe
- Grand Traverse Band of Ottawa and Chippewa
- Little River Band of Ottawa
- Ottawa Tribe of Oklahoma
- Little Traverse Bay Band of Odawa
- Peoria Tribe of Oklahoma
- Sac and Fox Tribe of Mississippi in Iowa
- Sac and Fox Nation of Missouri in Kansas and Nebraska
- Sac and Fox Nation of Oklahoma
- Cayuga Nation of New York
- Oneida Nation of New York
- Oneida Nation of Wisconsin
- Onondaga Nation of New York
- Seneca Nation of Indians of New York
- Seneca-Cayuga of Oklahoma
- St. Regis Mohawk Tribe
- Tonawanda Seneca Nation
- Tuscarora Nation of New York
- Chickasaw Nation
- Choctaw Nation of Oklahoma
- Quapaw
- Osage Nation of Oklahoma
- Delaware Nation of Oklahoma
- Delaware Tribe of Indians Oklahoma
- Wyandotte Nation of Oklahoma
- Muscogee Creek Nation

Copies of the tribal coordination letters and tribal responses are located in Appendix D. Seven tribal responses have been received to date. The Nottawaseppi Huron Band of the Potawatomi responded and stated that they have no objection to the Project. The Cherokee Nation requested an initiation of consultation for the Project. The Quapaw Nation responded that the project is outside their current area of interest and they do not desire to comment at this time. The Chickasaw Nation and Choctaw Nation of Oklahoma also responded that the project is outside their area of interest. The Miami Tribe of Oklahoma responded and stated that they offer no objection to the Project and requested immediate consultation if any human remains or Native American cultural items falling under the Native American Graves Protection and Repatriation Act or archaeological evidence is discovered. The Shawnee Tribe of Oklahoma responded and stated that the Project is currently in their Active Review Files and requested EIS, KMZ, and/or Shape Files as they become available. Pursuant to 36 CFR § 800.2(c)(4), and 7 CFR § 1970.5(b)(2), RUS has issued a blanket delegation for its applicants to initiate and proceed through Section 106 review. In accordance with this blanket delegation, Big Rivers Electric is completing Section 106 review on behalf of RUS. Results of the completed Phase I archaeological survey and historic-age resource reconnaissance survey were sent to the two tribes requesting survey results on October 16, 2020. The Shawnee Tribe of Oklahoma responded on November 16, 2020 concurring that no known historic properties will be negatively affected by this Project. The Cherokee Nation responded on December 1, 2020 with no objection to the proposed Project.

6.3 Public Involvement

This EA was made available to the public for a 14-day public review and comment period. Availability of the document for review and comment was noticed in a local newspaper. Copies of the EA were made available for public review at the headquarters of Big Rivers Electric at 201 Third Street, Henderson, KY 42420 and at the Meade County Public Library at 996 Old Ekron Road, Brandenburg, KY 40108.

All comments should be addressed to:

Suzanne Kopich
Environmental Protection Specialist
suzanne.kopich@usda.gov

Once RUS has reviewed and evaluated all substantive comments received by the close of the comment period, it will issue an environmental finding related to the Project. Should RUS choose to issue a Finding of No Significant Impact (FONSI) for the Project, a newspaper notice will be published informing the public of the RUS finding and the availability of the EA and FONSI. The notice shall be prepared in accordance with RUS guidance.

7.0 LIST OF PREPARERS

The EA for the Projects was prepared by RUS in coordination with Big Rivers Electric and Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell). The following is a list of preparers of this document.

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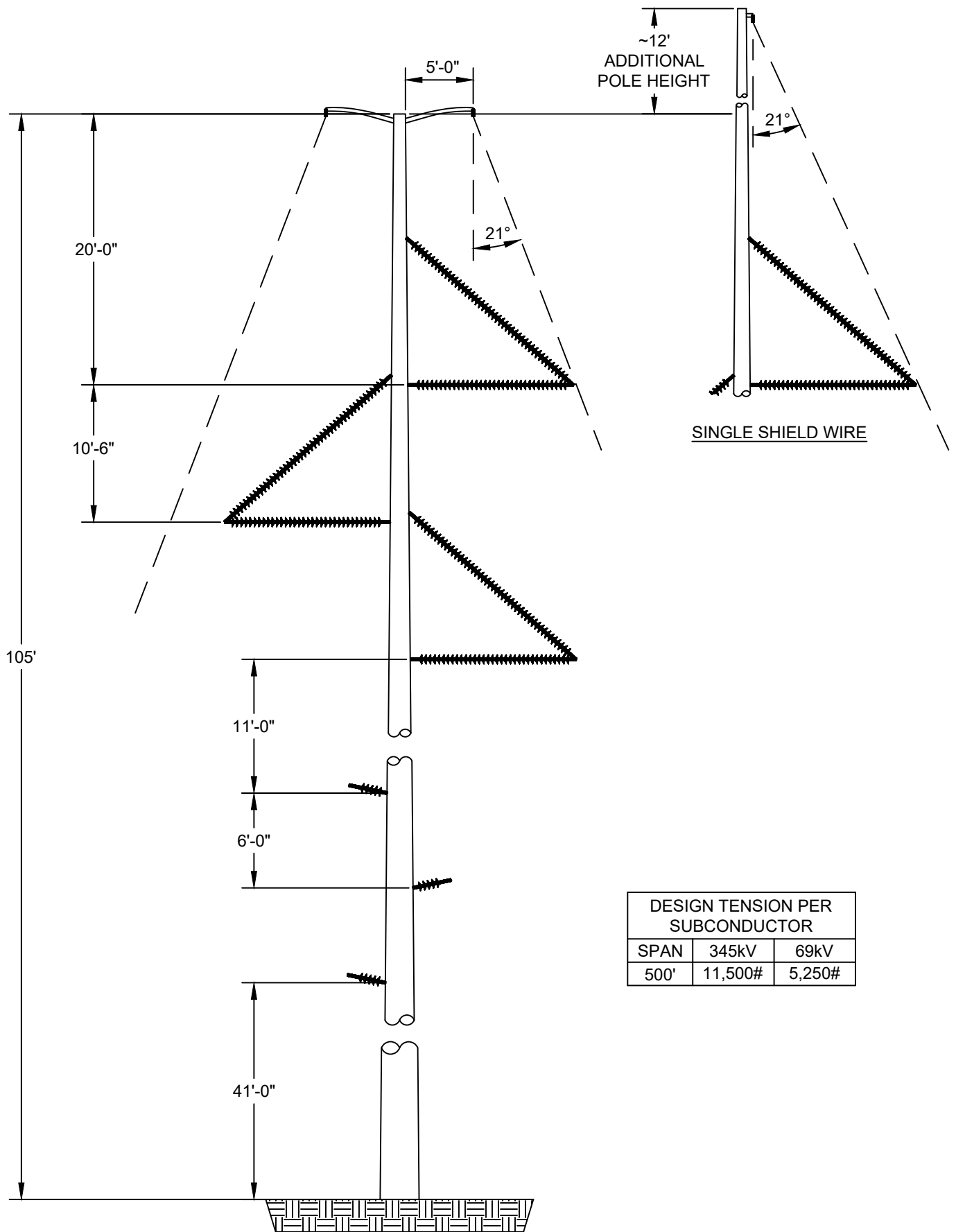
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APPENDIX A – TYPICAL 345/69 KV TANGENT STRUCTUE DESIGN



850 Center Way | Norcross, GA 30071
 (770) 453-1410 | pdengineers.com
 Engineers - Surveyors - Construction Management

345kV/69kV TRANSMISSION LINE
 TANGENT - COMPACT

DATE: 03-20-20

SCALE: NONE

BIG RIVERS ELECTRIC
 CORPORATION
 HENDERSON, KENTUCKY

SPC_TP-345AS
 _TP-69G

APPENDIX B – PROJECT ROUTING STUDY



345 & 161 kV Transmission Lines Brandenburg Steel Mill Routing Study

Project Report

Prepared by: Jesse Glasgow and Nicholas Arjona, Team Spatial
Date: July 24, 2019



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Project Overview

Big Rivers Electric Corporation plans to construct three transmission lines that connect the proposed Brandenburg Steel Mill Substation, proposed Otter Creek Substation, proposed Redmon Road Substation, and Meade County Substation.

The project involves constructing one 2.58 mile 345 kV transmission line northwestward out of the proposed Redmon Road Substation. The northwestern end point for this proposed transmission line will terminate at the proposed Otter Creek Substation.

From the proposed Otter Creek Substation, a second 345 kV line will extend to the north approximately 8.79 miles to the proposed steel mill.

A 161 kV transmission line will extend 8.52 miles eastward from the existing Meade County Substation at the intersection of KY-79 and Guston Road. The eastern terminal will be the proposed Otter Creek Substation.

In support of this project, Team Spatial performed a siting study to help the Big Rivers team identify the preferred routes to construct the new lines. The siting study considered the natural environment and people as well as cost and engineering concerns. The route selection process is described in this report.

Study Area Description

The Brandenburg Steel Mill project is in Meade County, Kentucky. Meade County is home to about 28,000 residents and has a population density of about 85 people per square mile.

The study area is mainly agricultural with some forested land in the northwest and an urban portion in the center. The terrain is relatively flat with the Ohio River serving as a northern border to the county. There is a park in the southern center of the study area with special areas such as schools and churches near the urban portion.

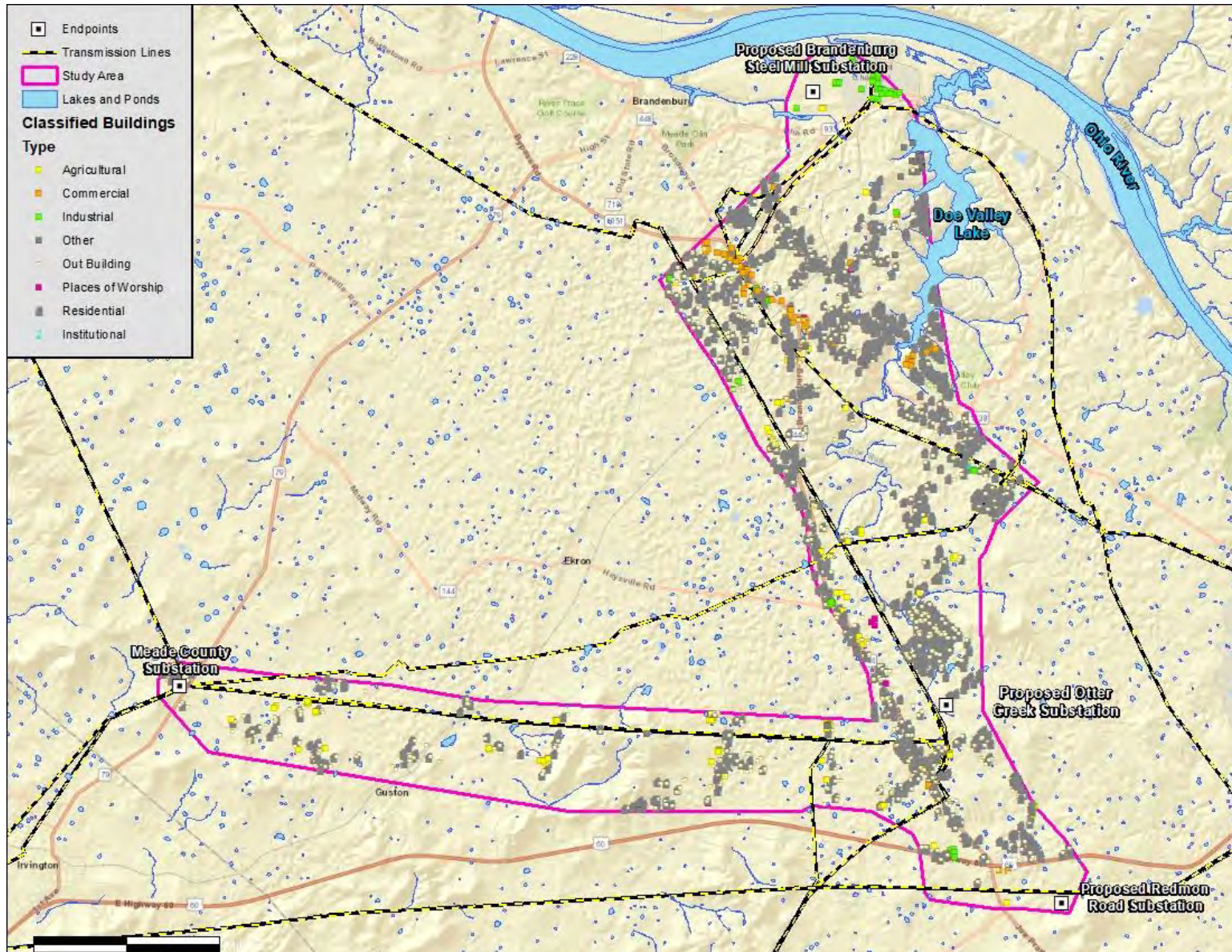


Figure 1 Study Area Map

Siting Methodology Overview

The EPRI (Electric Power Research Institute) - GTC (Georgia Transmission Corporation) Siting Methodology¹ and the Kentucky Siting Model² was used on this project. The methodology uses a data driven objective process that leverages external stakeholder input from representative organizations to help calibrate the Alternative Corridor model using the Analytical Hierarchy and the Modified Delphi processes. It relies on routing experts to identify alternate routes using the Alternative Corridors as a guide. The method leverages internal experts to calibrate the Alternative Route Evaluation Model and uses the Alternative Route Evaluation Model to help identify the top routes. Finally, the Expert Judgment Model is used to select the preferred route.

The Methodology is analogous to a funnel used to process information. Into the funnel goes geographic information which is calibrated with community concerns, natural concerns, and engineering considerations. Each phase of the process is like a filter in the funnel which is used to reduce the area of consideration. As the area of focus is reduced, users are able to invest more effort into studying the area at a greater level of detail. More detailed information are collected as one proceeds through the funnel. The bottom of the funnel results a preferred route for the transmission line.



Figure 2 Funnel Analogy

¹ <https://www.epri.com/#/pages/product/1013080/?lang=en-US>

² <https://www.epri.com/#/pages/product/1016198/?lang=en-US>



Alternative Corridors

Engineering Environment		Natural Environment		Built Environment			
Linear Infrastructure	86.2%	Floodplain	5.6%	Proximity to Buildings	17.5%	Land Use	37.3%
Parallel Existing Transmission Lines	1.0	Background	1.0	Background	1.0	Commercial/Industrial	1.0
Rebuild Existing Transmission Lines (good)	2.3	100 Year Floodplain	9.0	900-1200	3.4	Agriculture (crops)	3.5
Background	4.6	Streams/Wetlands	35.4%	600-900	5.7	Agriculture (other livestock)	4.6
Parallel Interstates ROW	-	Background	1.0	300-600	8.0	Silviculture	-
Parallel Roads ROW	5.6	Streams < 5cf+Regulatory Buffer	6.2	0-300	9.0	Other (forest)	6.7
Parallel Pipelines	5.8	Streams > 5cf+Regulatory Buffer	-	Building Density	8.7%	Equine Agri-Tourism	-
Future DOT Plans	-	Wetlands + 30'Buffer	8.7	0 - 0.05 Buildings/Acre	1.0	Residential	9.0
Parallel Railway ROW	6.4	Outstanding State Resource Waters	9.0	0.05 - 0.2 Buildings/Acre	3.1	Proximity to Eligible Historic and Archeological Sites	32.3%
Road ROW	7.5	Public Lands	-	0.2 - 1 Buildings/Acre	5.9	Background	1.0
Rebuild Existing Transmission Lines (bad)	9.0	Background	-	1 - 4 Buildings/Acre	9.0	900-1200	4.6
Scenic Highways ROW	-	WMA + Not State Owned	-	>4 Buildings/Acre	-	600-900	7.9
Slope	13.8%	USFS (proclamation area)	-	Proposed Development	-	0-300	8.6
Slope 0-15%	1.0	Other Conservation Land	-	Background	-	300-600	9.0
Slope 15-30%	4.0	USFS (actually owned)	-	Proposed Development	-	Areas of Least Preference	
Slope 30-40%	6.7	State Owned Conservation Land	-	Spannable Lakes and Ponds	4.2%	Listed Archaeology Sites and Districts	
Slope >40%	9.0	Land Cover	24.1%	Background	1.0	Listed NRHP Districts and Buildings	
Areas of Least Preference		Developed Land	1.0	Spannable Lakes and Ponds	9.0	Day Care Parcels	
Non-Spannable Waterbodies		Agriculture	4.6			City and County Parcels	
Mines and Quarries (Active)		Forests	9.0			Cemetery Parcels	
Buildings		Wildlife Habitat	34.9%			School Parcels (K-12)	
Airports		Background	1.0			Church Parcels	
Military Facilities		Species of Concern Habitat	9.0				
Center Pivot Irrigation		Areas of Least Preference					
		EPA Superfund Sites					
		State and National Parks					
		USFS Wilderness Area					
		Wild/Scenic Rivers					
		Wildlife Refuge					
		State Nature Preserves					
		Designated Critical Habitat					

Figure 3 Alternate Corridor Model

The above model is the Kentucky Siting Model that was developed with input from subject-matter experts and stakeholders. Each perspective (Built, Engineering, and Natural) represent the three groupings of considerations in the model. Within the perspectives, there are layers like Linear Infrastructure that further specify the groups. Finally, there are features that lie in the layers that tie to specific features such as Road ROW.

Each feature is given a value 1-9 depending on the relative suitability for a potential transmission line to intersect with said feature. 1 being the most suitable and 9 being the least. At the layer level, all of the layers within a perspective are given a weight and all of the weights have to equal 100%. The features and layers that are not present in this project are grayed out in the table above.

Areas of Least Preference

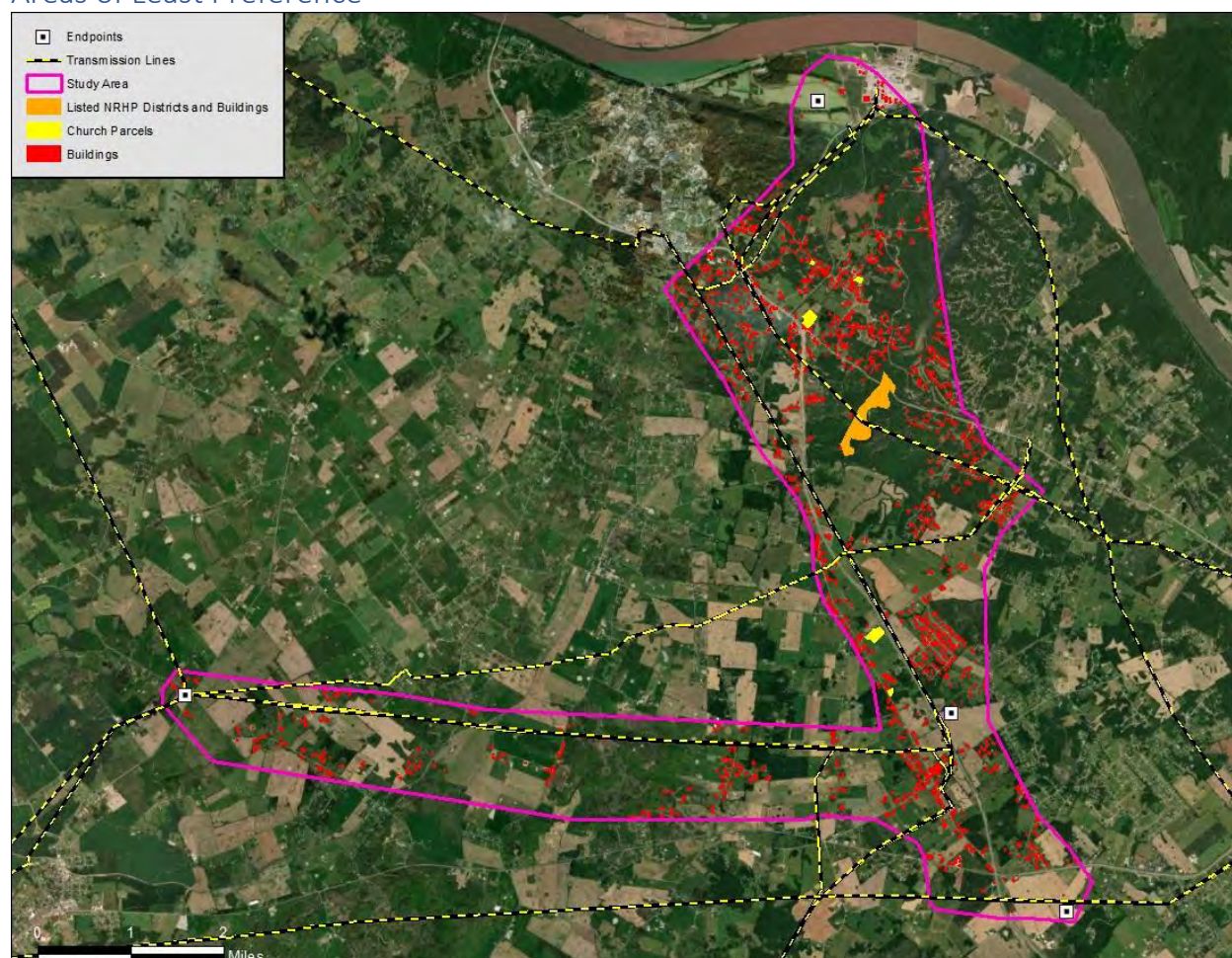


Figure 4 Areas of Least Preference

Built Criteria

The Built portion of the Alternate Corridor Model considers places where people live, work, and play. The Built Environment contains six layers: Building Density, Building Proximity, Proposed Development, Spannable Lakes and Ponds, Land Use, and Proximity to Eligible Historic and Archaeological Sites.

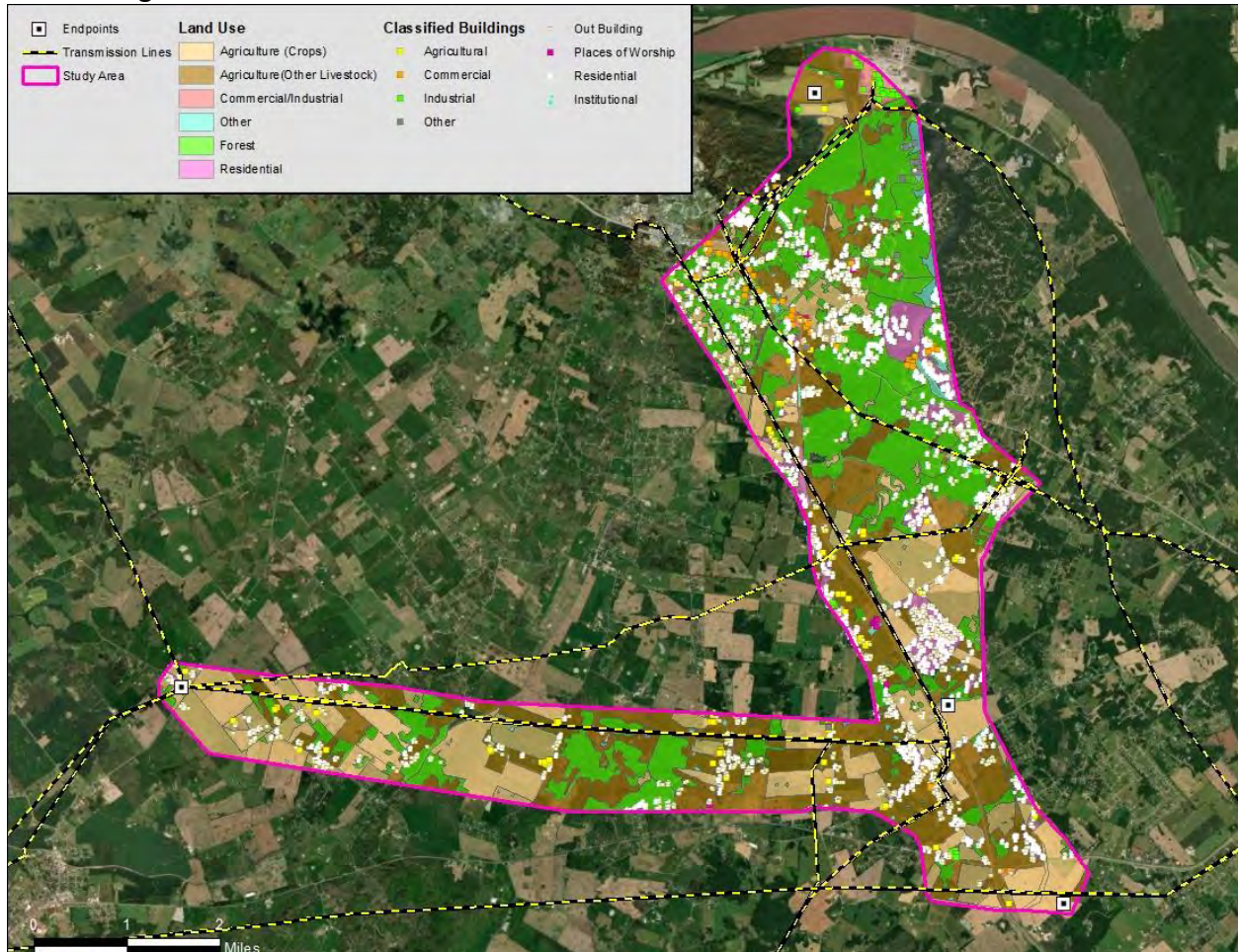


Figure 5 Built Source Data

The above map shows the source data in the Built Environment. We aren't aware of proposed developments within the study area.

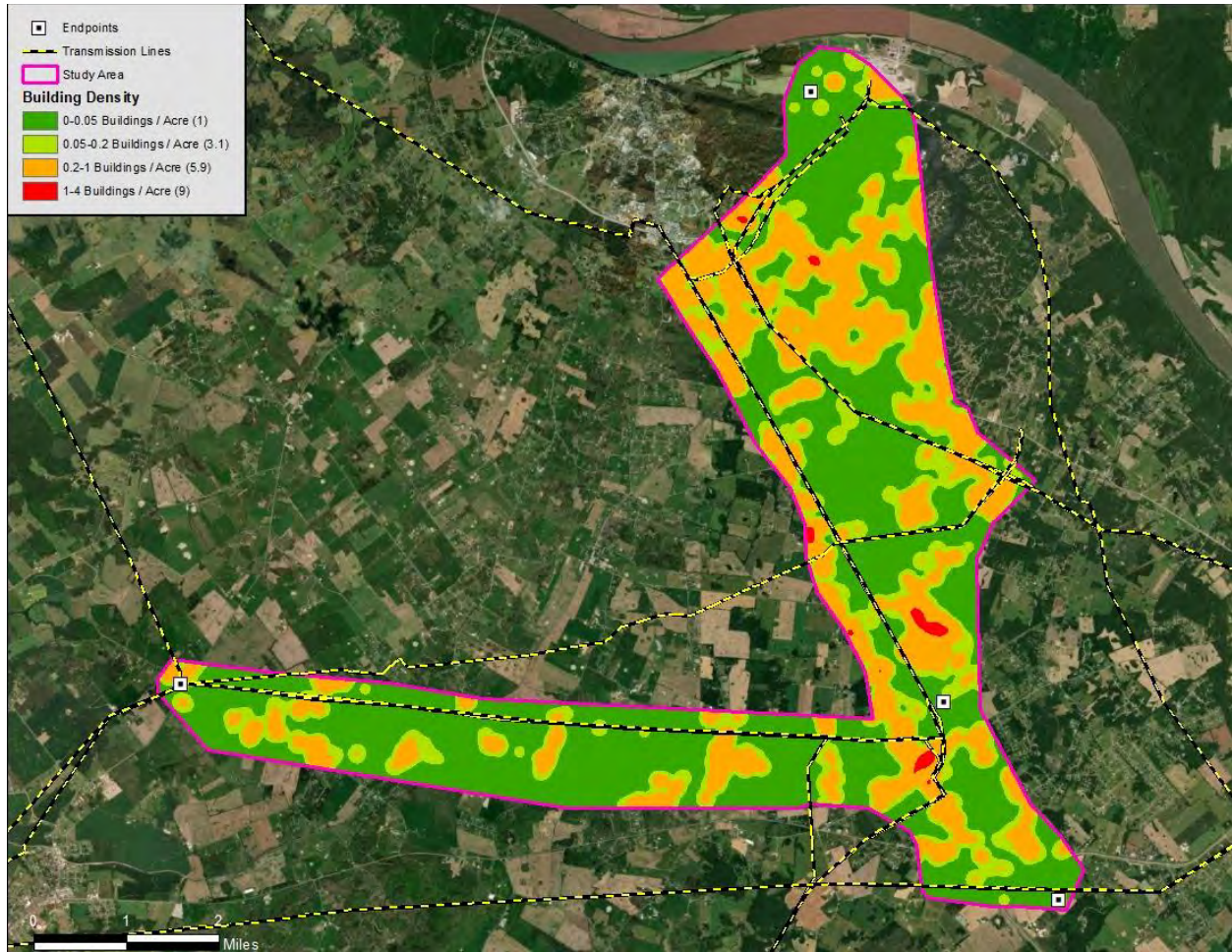


Figure 6 Building Density Suitability Grid

The Building Density layer is classified by the number of buildings per acre. The higher the density, the less suitable that location is for a potential transmission line. *Note: The legend of the following maps illustrate the categories from the Kentucky model, and the relative suitability values. Within each layer the number 1 represents the most suitable place for a transmission line (in that layer) and the number 9 represents the least suitable place.*

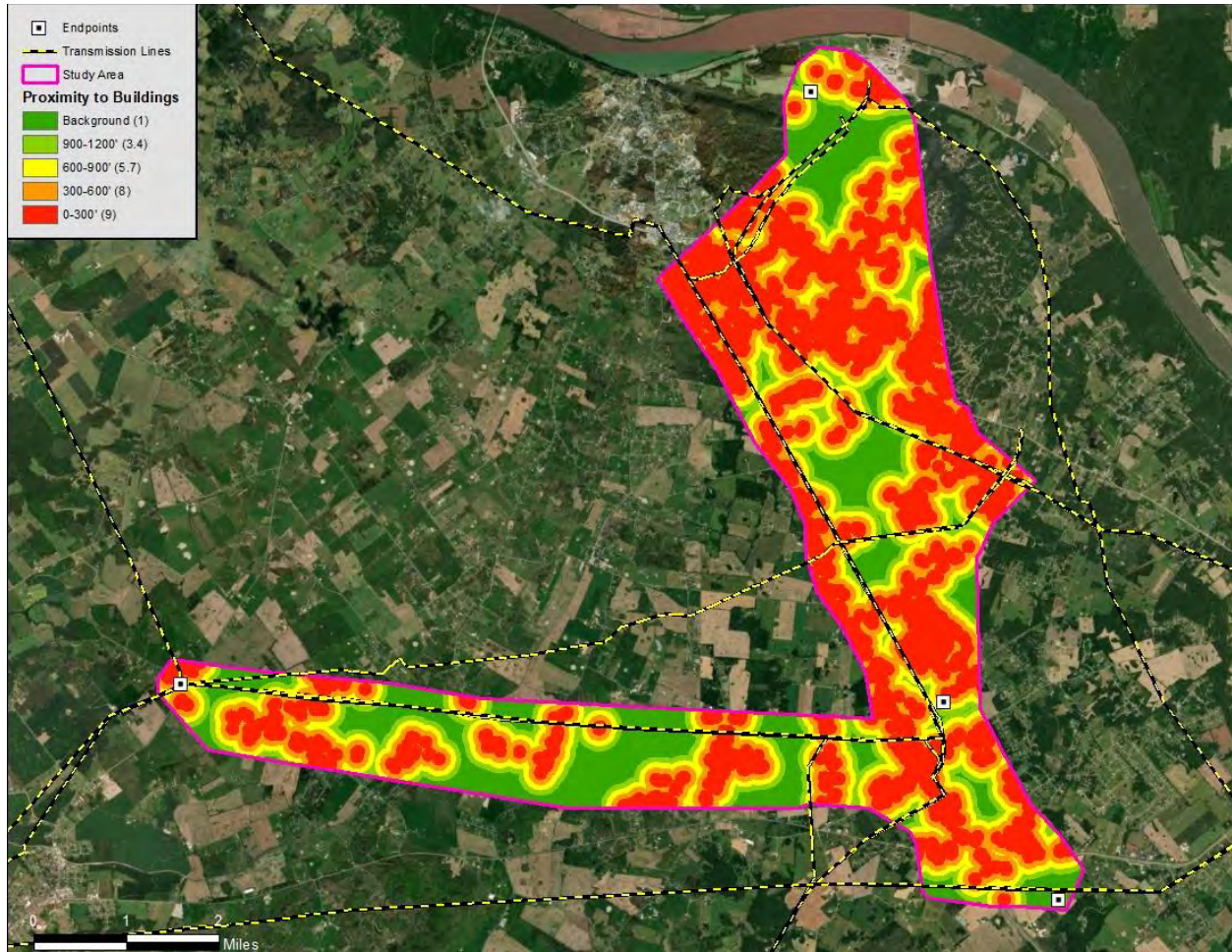


Figure 7 Building Proximity Suitability Grid

For the Building Proximity layer, the most suitable location for a potential transmission line is beyond 1,200 feet from a building. These areas are shown in dark green in the map above. The least suitable areas are within 300 feet of a building.

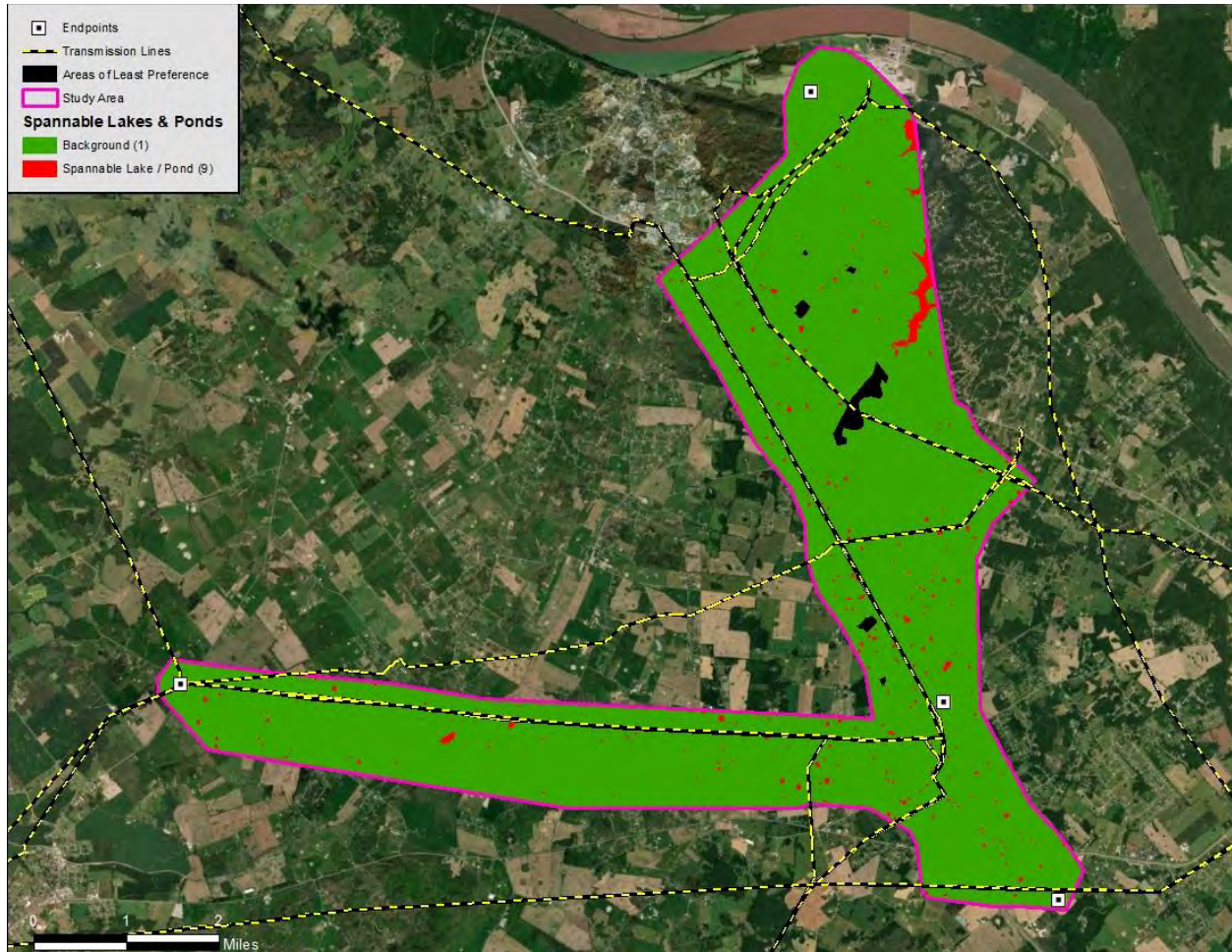


Figure 8 Spannable Lakes and Ponds Suitability Grid

The Spannable Lakes and Ponds suitability grid is characterized by two options, either the location is within a spannable lake and pond or the location is not. The areas that are not in a spannable lake or pond are more suitable for a potential transmission line. A maximum span distance of 800' was used for this analysis

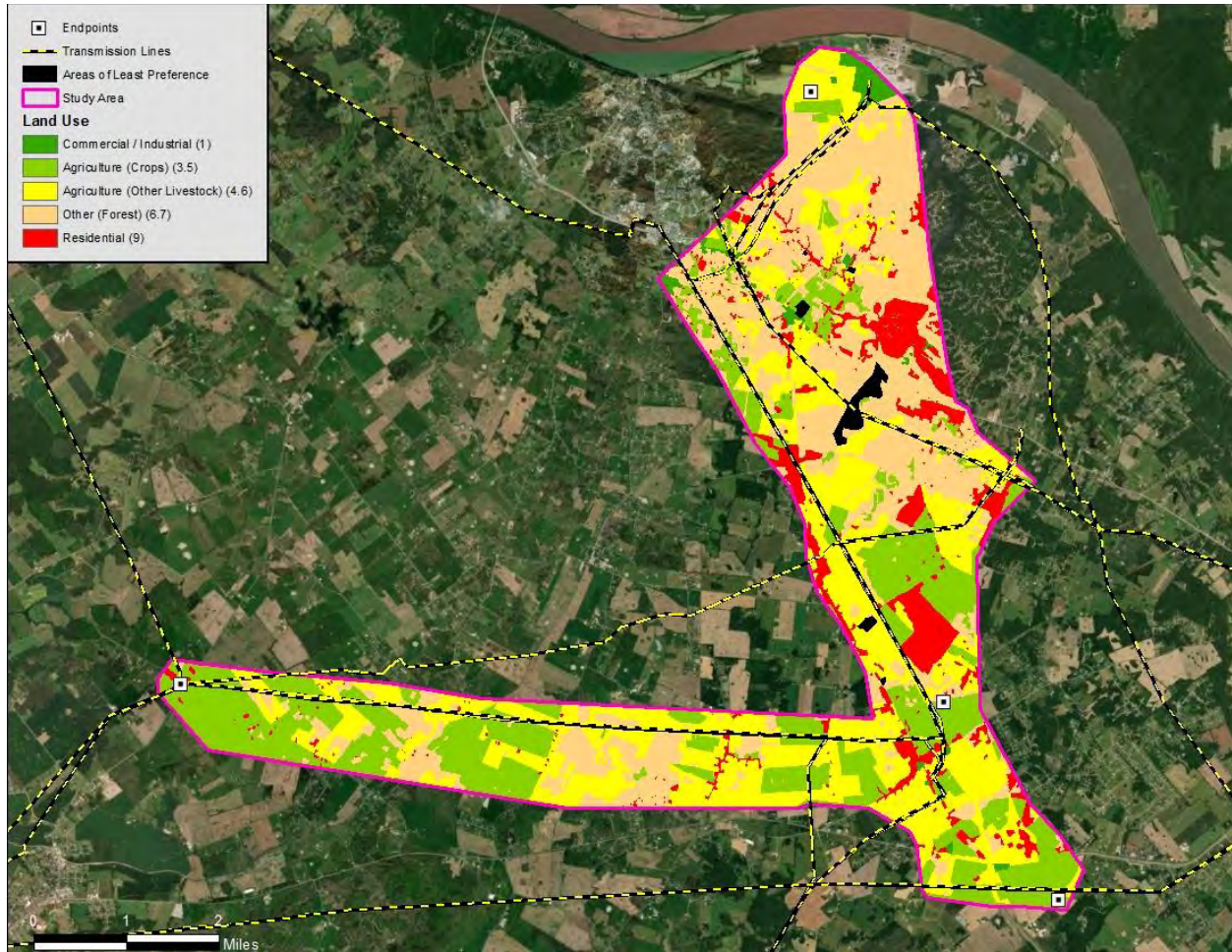


Figure 9 Land Use Suitability Grid

According to the Kentucky Model, from a Built Perspective the most suitable land use classification for a potential transmission line is an area with a commercial or industrial land use. While the least suitable classification is residential areas. An area with an Agricultural land use classification is the second most suitable, while any other land use classification would be the third most suitable area. In this case “other” consist of areas with trees.

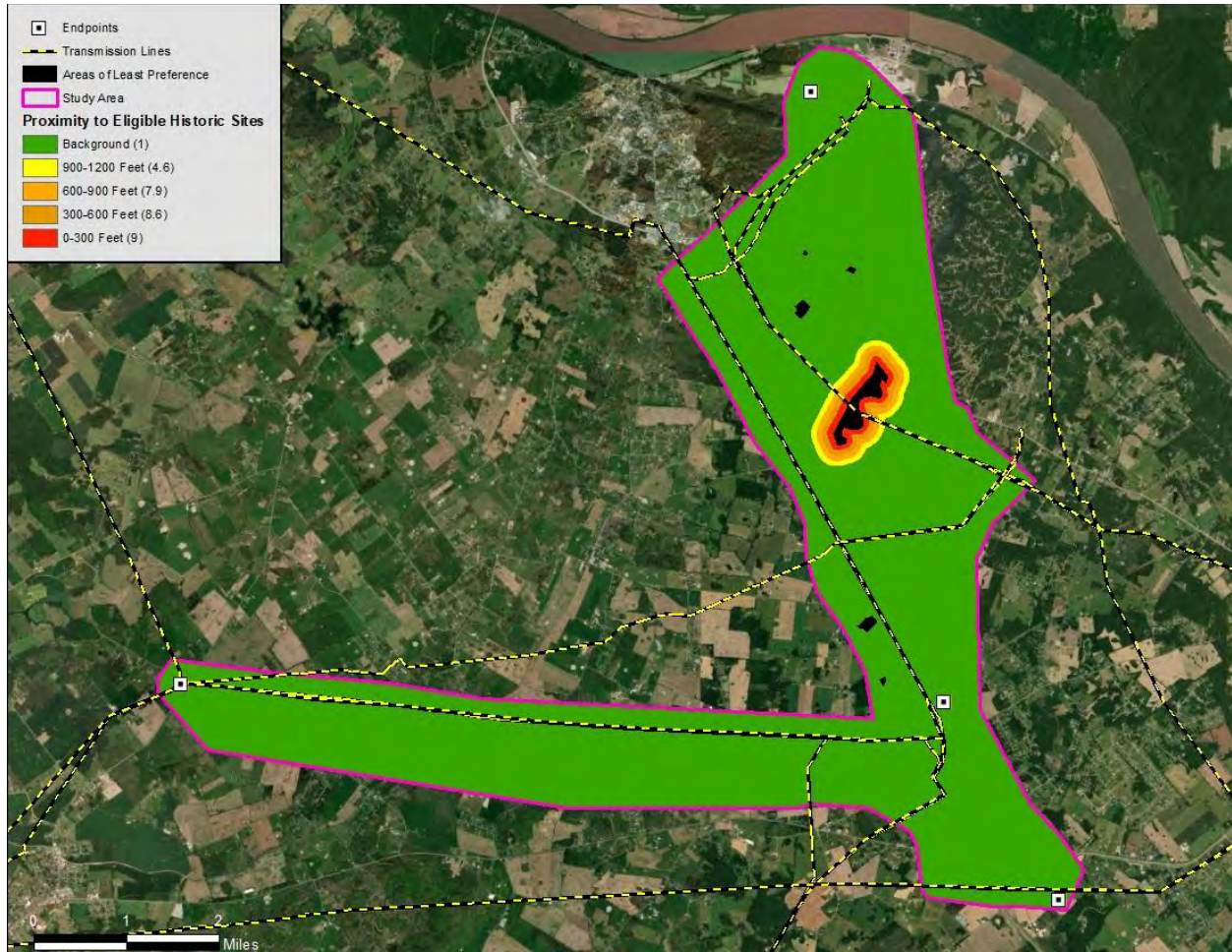


Figure 10 Proximity to Historic Sites Suitability Grid

The Proximity to Historic Sites and Archaeological layer is meant to protect the Historic and Archaeological sites in or near the study area. This is done by making the areas near the sites to be the least suitable, while the farthest away from the sites is the most suitable location for a potential transmission line. There was no Archaeological sites within the study area that were classified as “eligible” in their status.

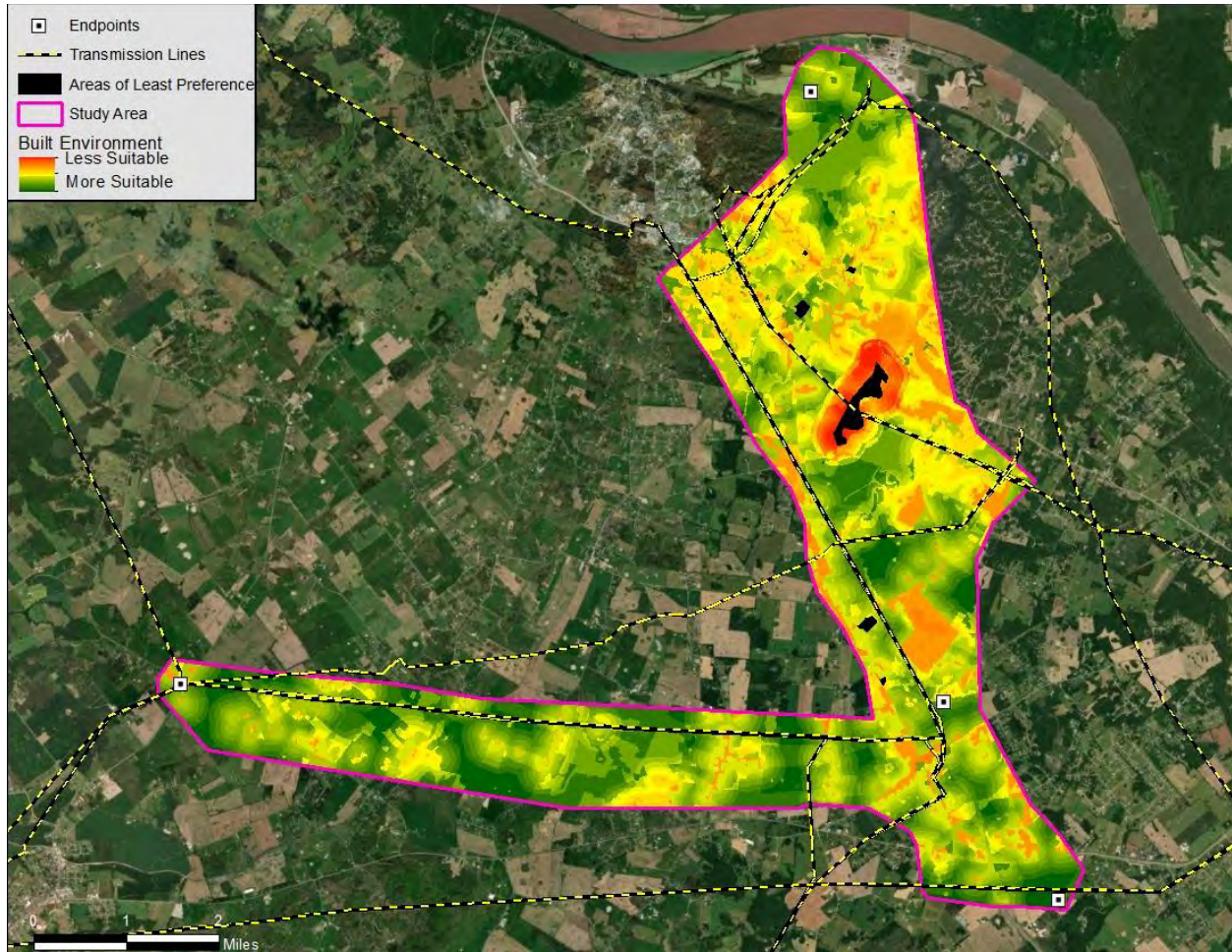


Figure 11 Built Suitability Grid

The suitability grids for each perspective are created by multiplying the values of the individual layer grids by the weights in the model and combining to create a weighted average suitability grid.

Natural Criteria

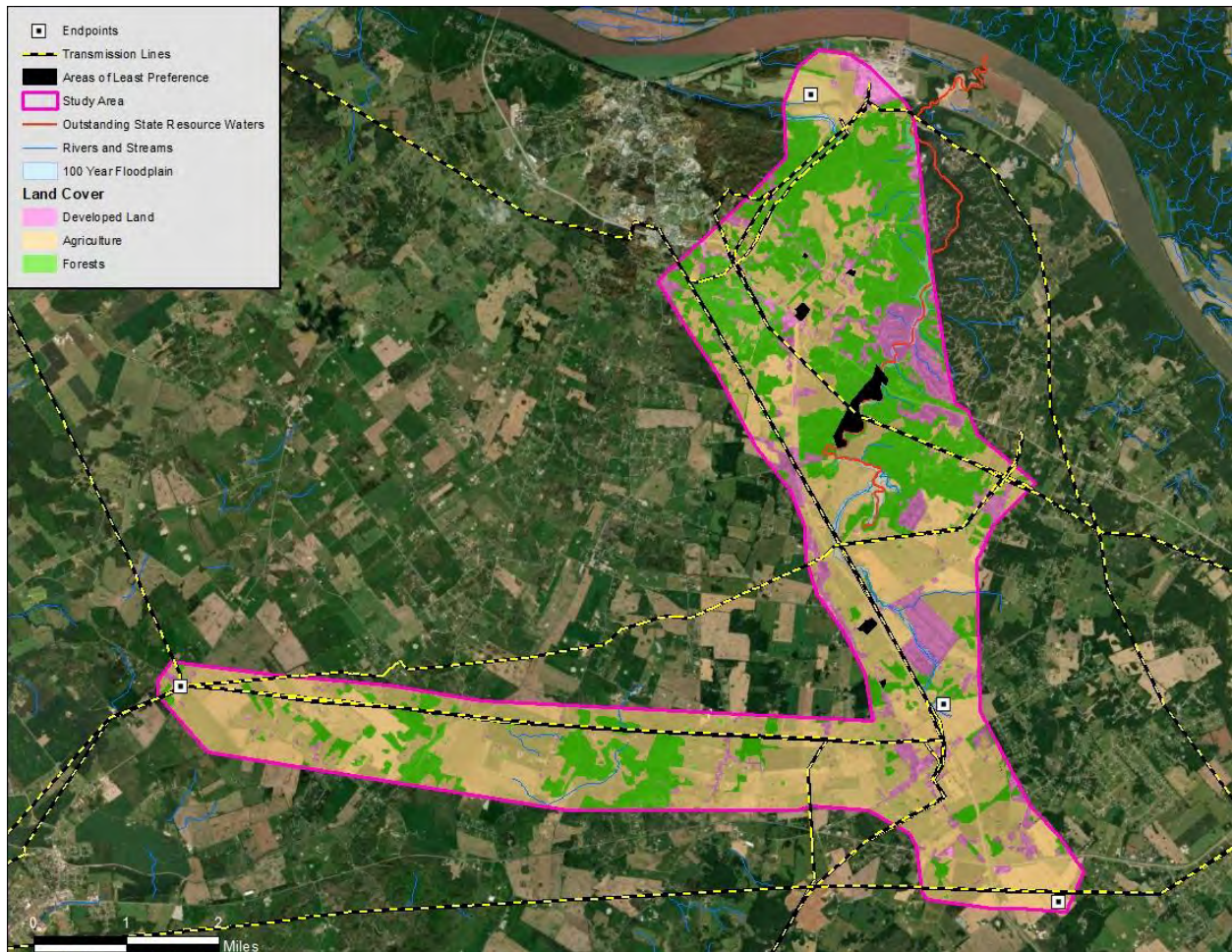


Figure 12 Source Data for the Natural Perspective

The Natural Perspective considers rivers and streams throughout the study area with a 100-year floodplain near an Outstanding State Resource Water in the eastern portion of the study area. The land cover is also considered when assessing the natural suitability of a potential transmission line in the area. The Wildlife Habitat was modeled utilizing a combination of forested lands and rivers. Public Lands were also considered with the Natural Perspective, however, none are present in the study area.

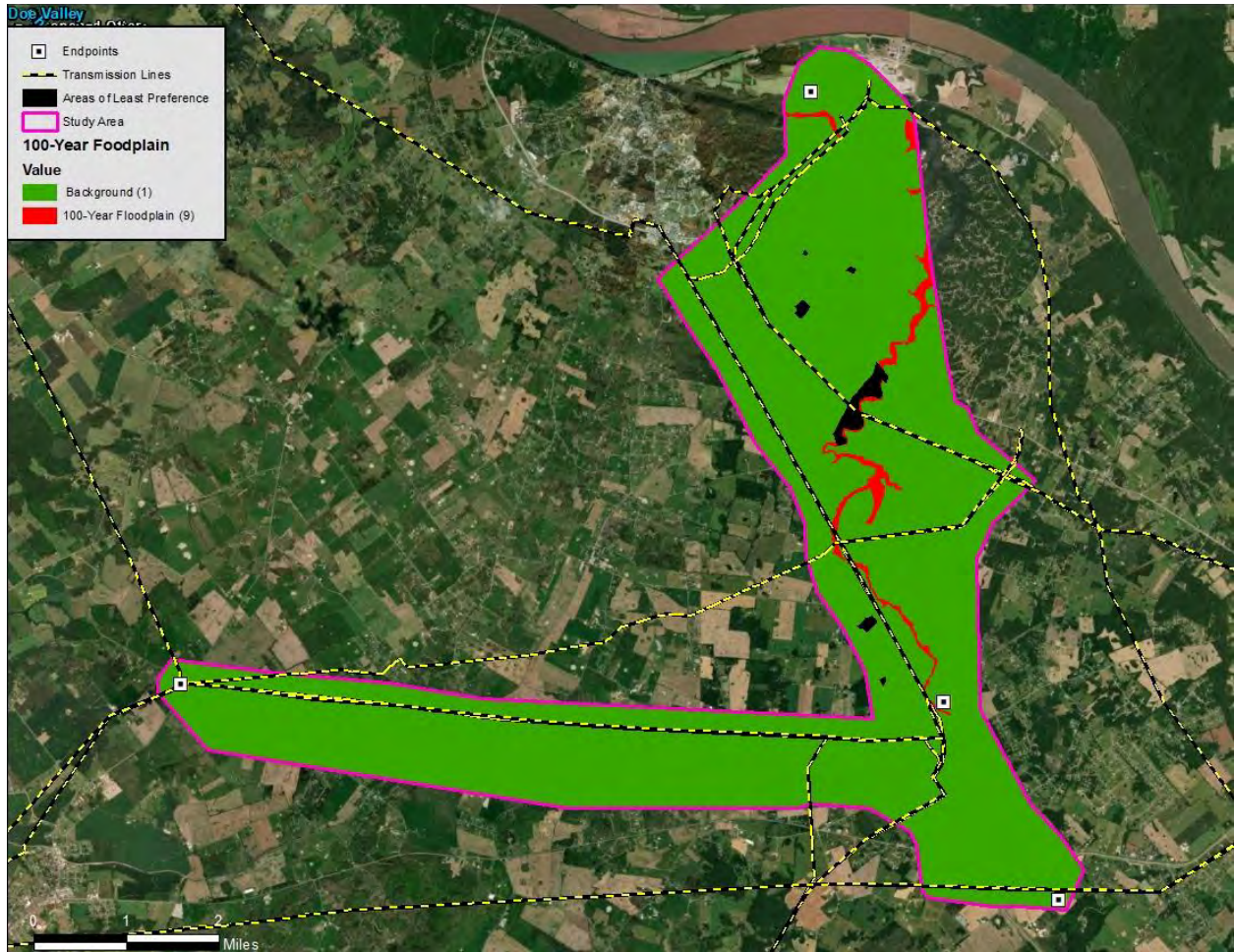


Figure 13 Floodplain Suitability Grid

The most suitable areas are not within a 100-year floodplain.

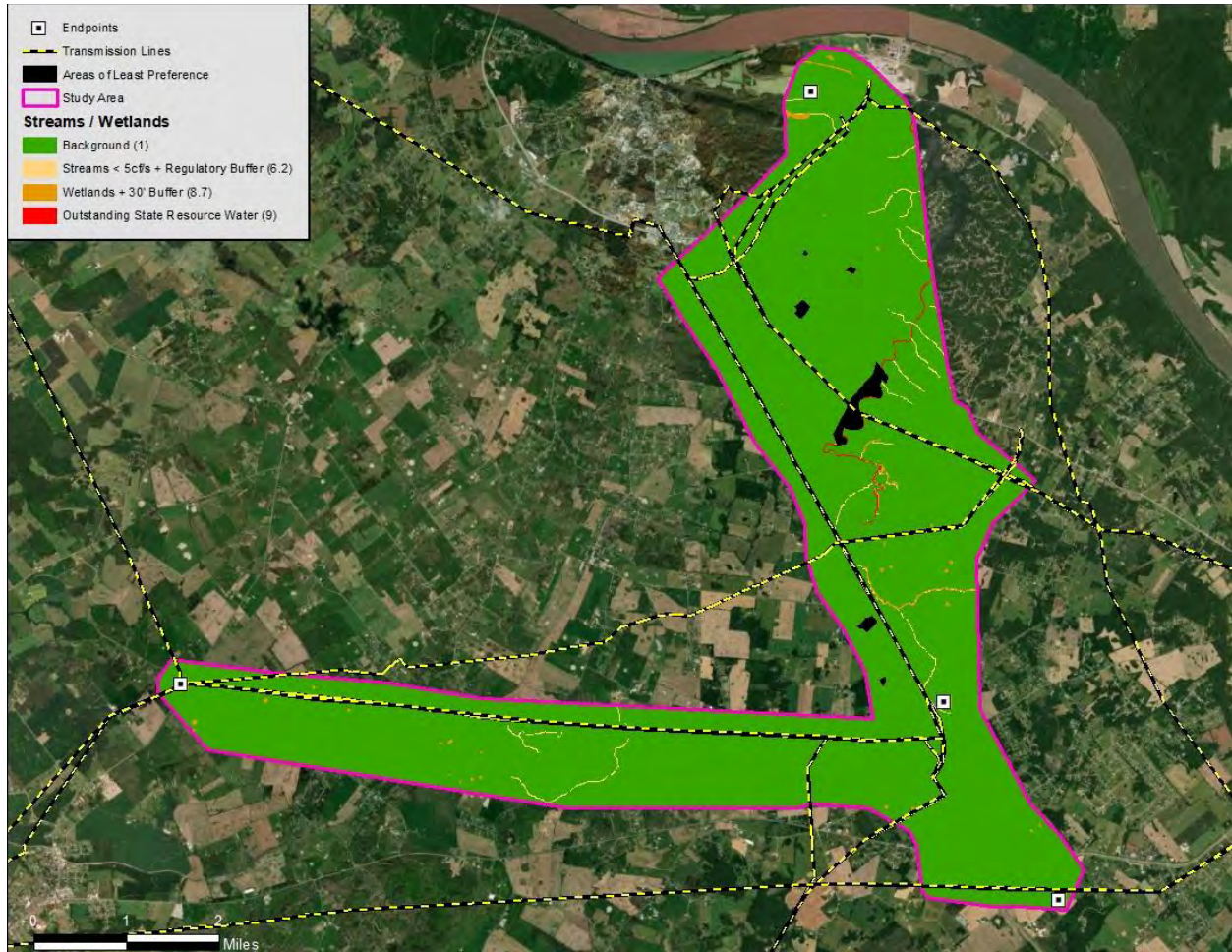


Figure 14 Streams and Wetlands Suitability Grid

Outstanding State Resource Waters, plus a 30-foot buffer, are the least suitable area within the Streams and Wetlands layer. Wetlands are the next least suitable location for a potential transmission line. The most suitable areas do not contain wetlands or streams/ivers.

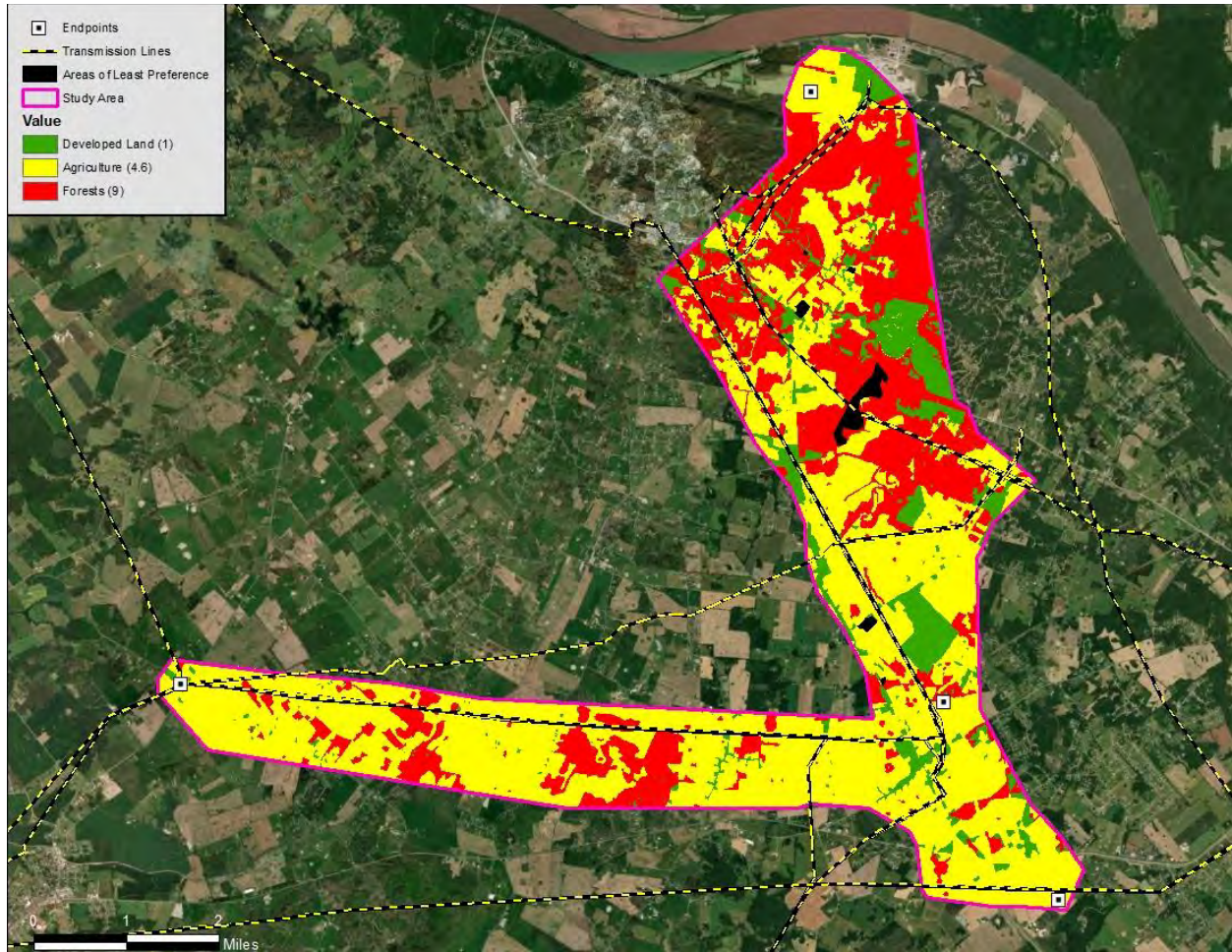


Figure 15 Land Cover Suitability Grid

The land cover is classified by developed land, agriculture, and forest. From a Natural Perspective, forested land is the least suitable area for a potential transmission line. Developed land is the most suitable area and agriculture land is rated near the middle.

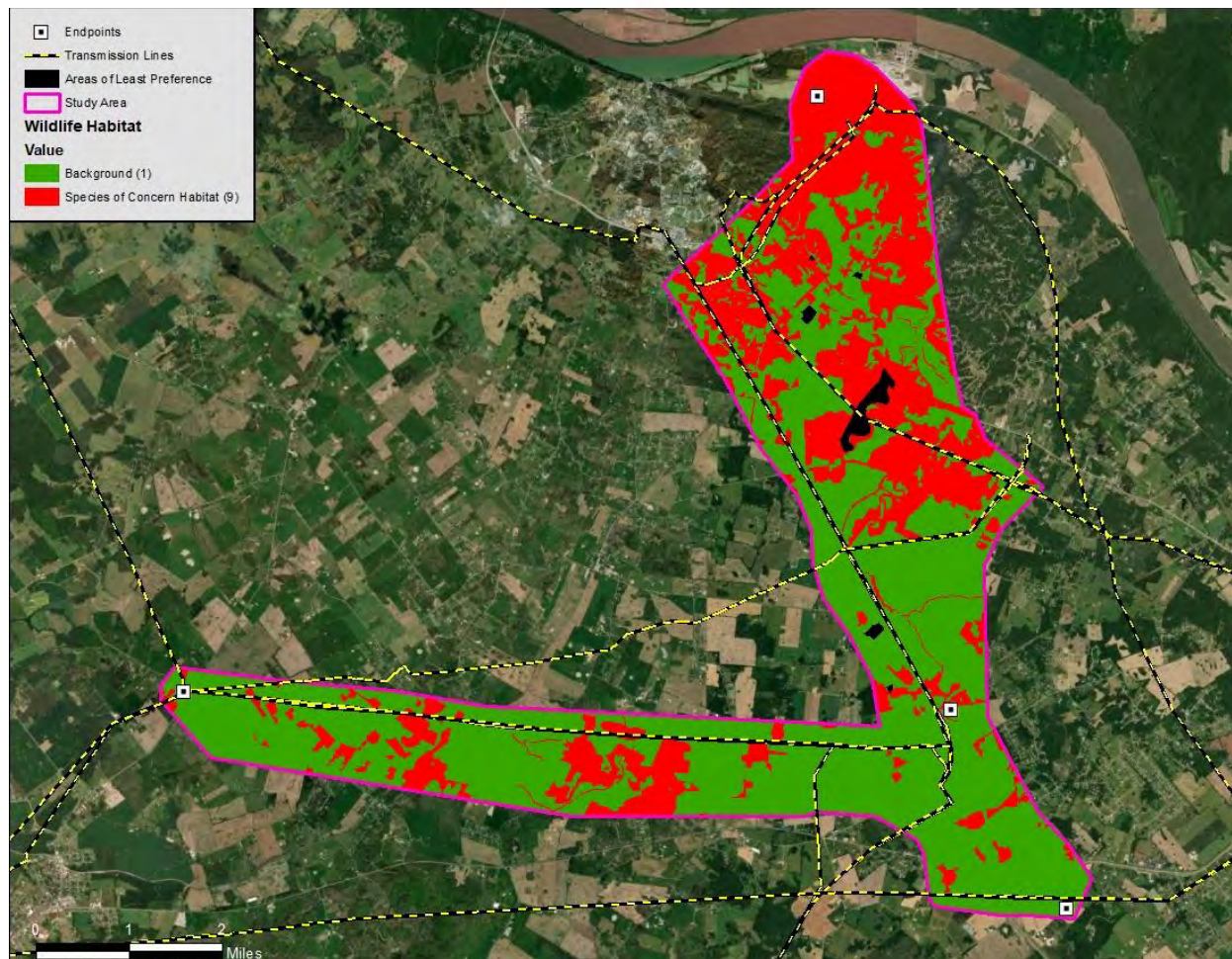


Figure 16 Wildlife Habitat Suitability Grid

The wildlife habitat within the study area considered the following species: Northern Long-Eared Bat, Clubshell, Gray Bat, Indiana Bat, Ring Pink, and Rough Pigtoe. The habitats for these species are modeled based off the U.S Forest and Wildlife descriptions of their habitats. The Northern Long-Eared Bats and Indiana Bats are found in forested areas. The Clubshell and Rough Pigtoe species are found in rivers and streams. The Gray Bat is found near the Ohio River, so the Ohio River was buffered by one mile to model the potential habitat. The Ring Pink species are found in open waterbody coastlines, therefore the boundaries of the Doe Valley Lake were buffered by 30 feet and other waterbodies modeled as the habitat. Forested land, open water, and surrounding areas, were used to model potential wildlife habitat of the threatened and endangered species.

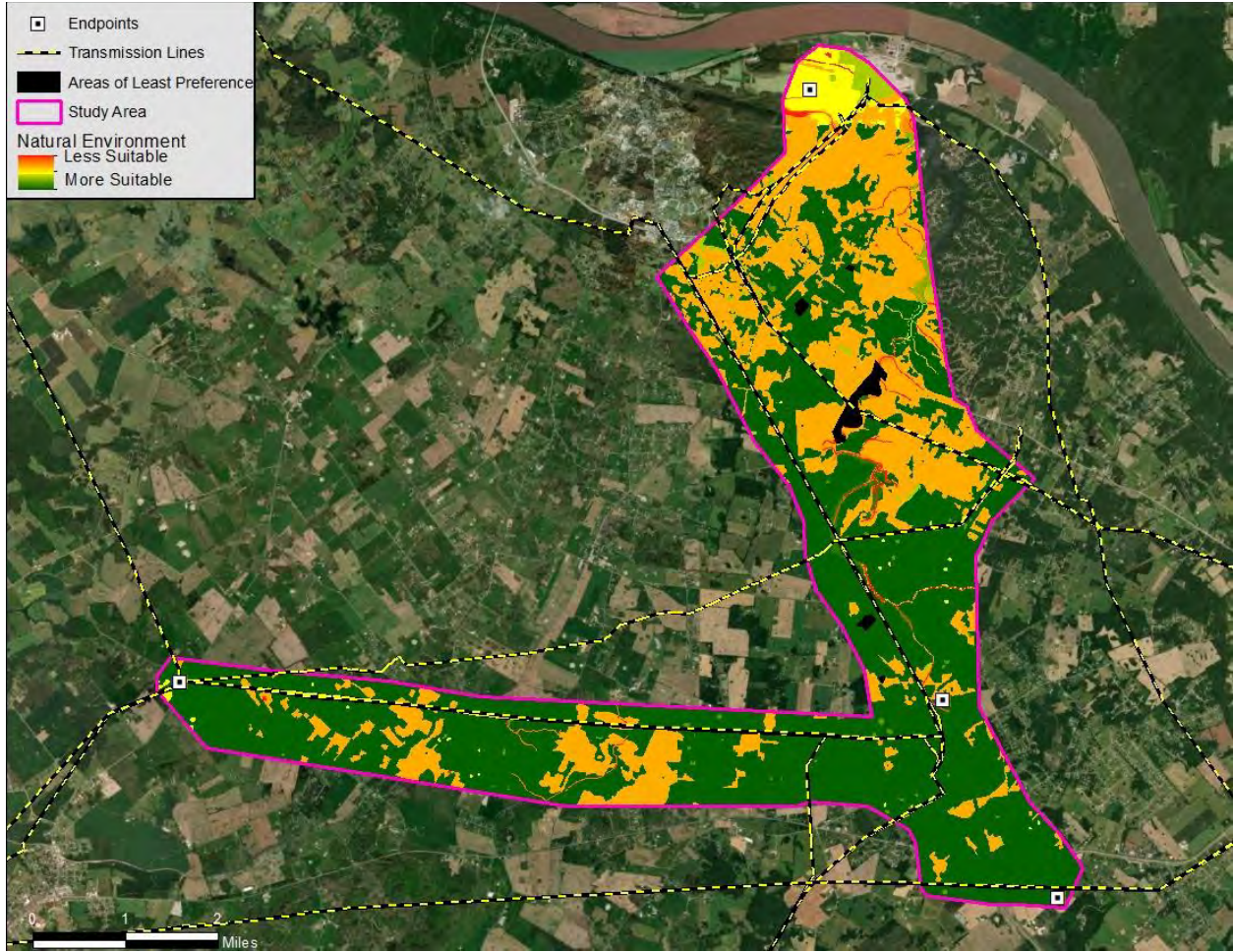


Figure 17 Overall Natural Suitability Grid

Engineering Criteria



Figure 18 Engineering Perspective Source Data

The Engineering Perspective of the Alternate Corridor Model considers existing linear infrastructure and slope.

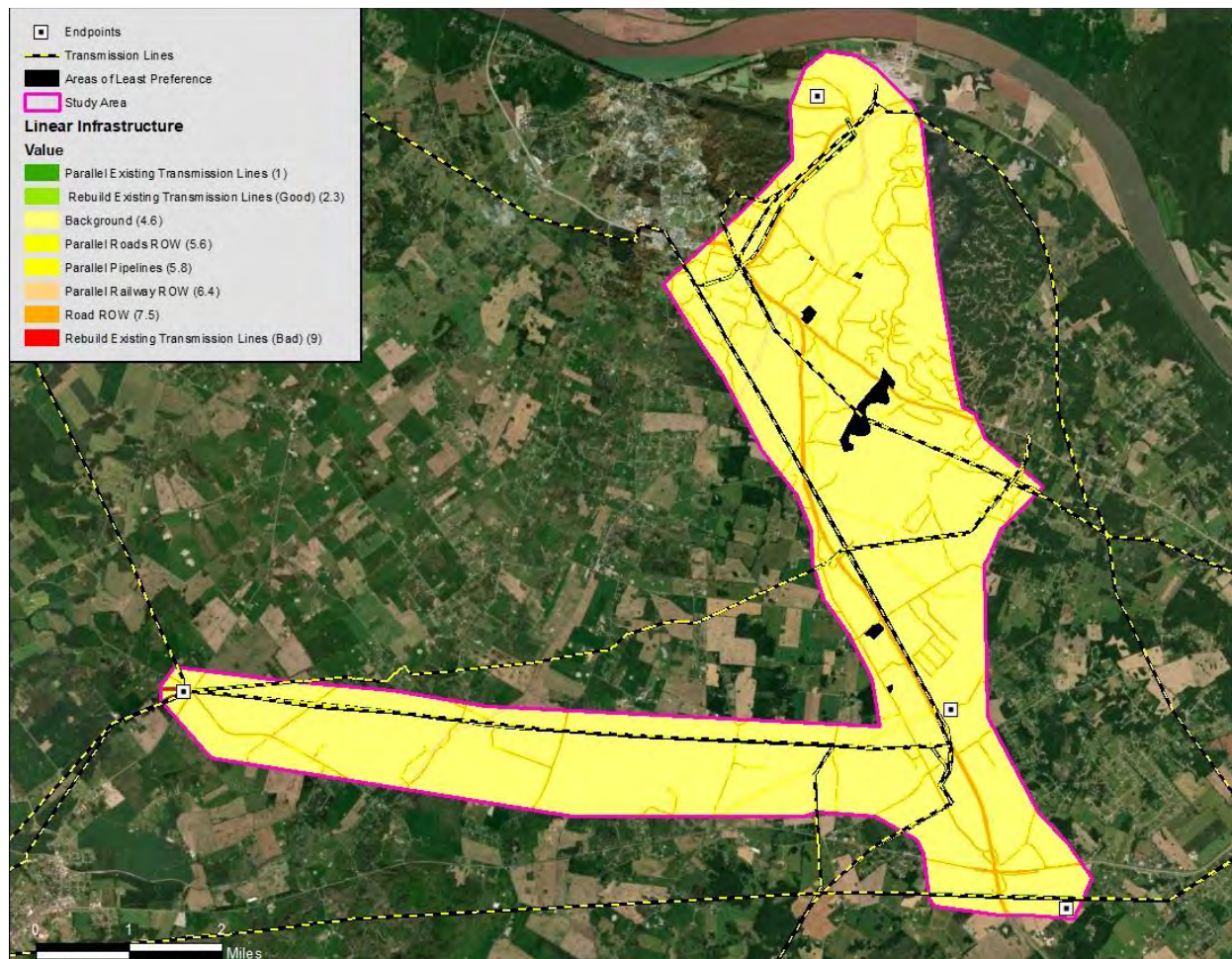


Figure 19 Linear Infrastructure Suitability Grid

The Linear Infrastructure layer considers co locating with roads, railroads, and transmission lines. The least suitable is an existing transmission line ROW which can not be leveraged for this new line construction (AKA rebuild existing transmission line bad). Parallel or rebuilding existing transmission lines are considered the most suitable areas within this layer. The existing 69kV line owned by Big Rivers and running from Brandenburg Substation to Garrett Substation was considered as an opportunity for rebuilding with a new double circuit line. Also, the existing 2.7-mile 69 kV transmission line running radially into Buttermilk Falls Substation was considered as an opportunity for rebuilding with a new double circuit line, as well as, the existing 69kV line owned by Big Rivers and running from Meade County Substation to Garrett Substation was considered an opportunity for rebuilding with a double circuit line.



Figure 20 Linear Infrastructure Suitability Grid

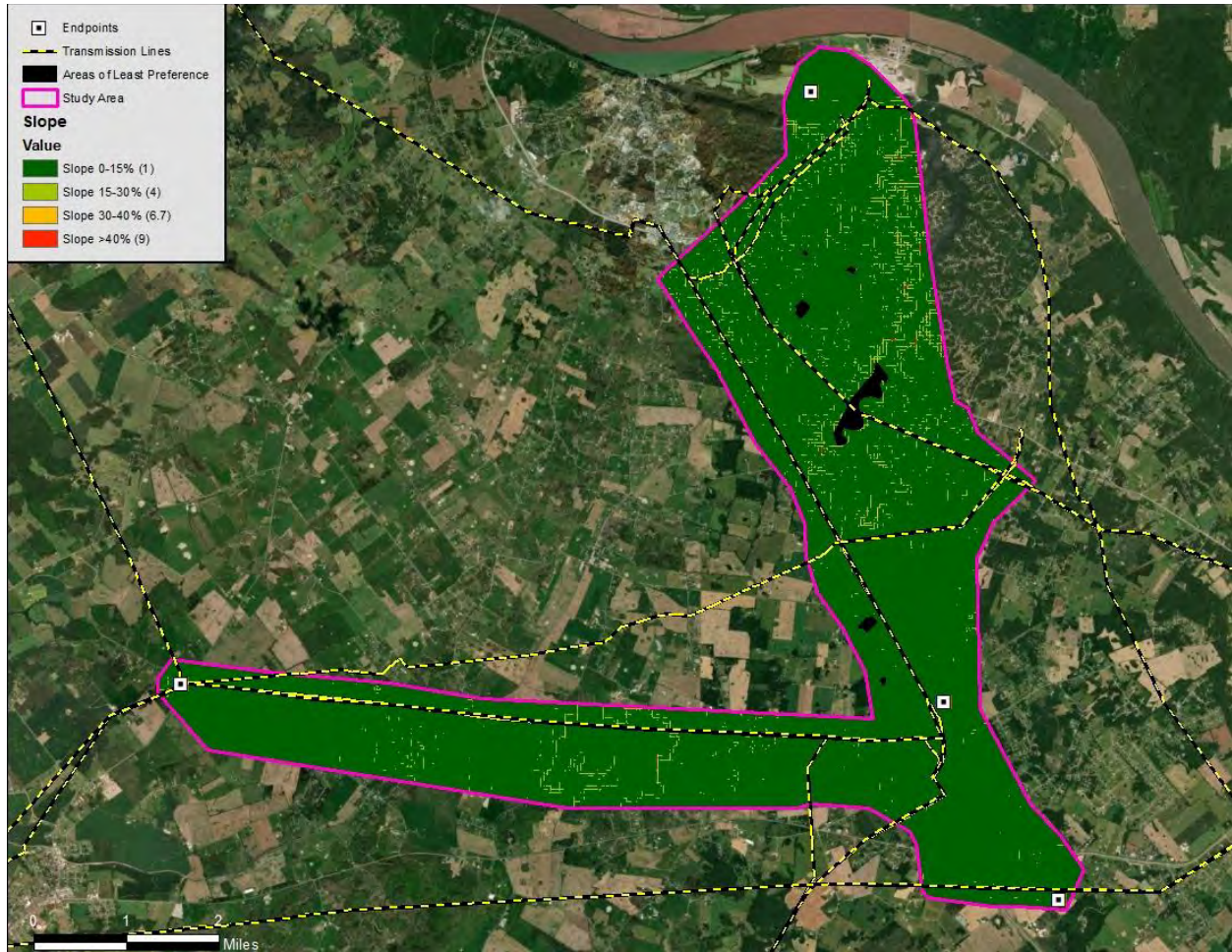


Figure 21 Slope Suitability Grid

The slope layer assesses the suitability in regards to the degree slope of the land with the higher the slope being the least suitable location. Most of the study area has a slope less than 15%, which is the most suitable location for a transmission line.

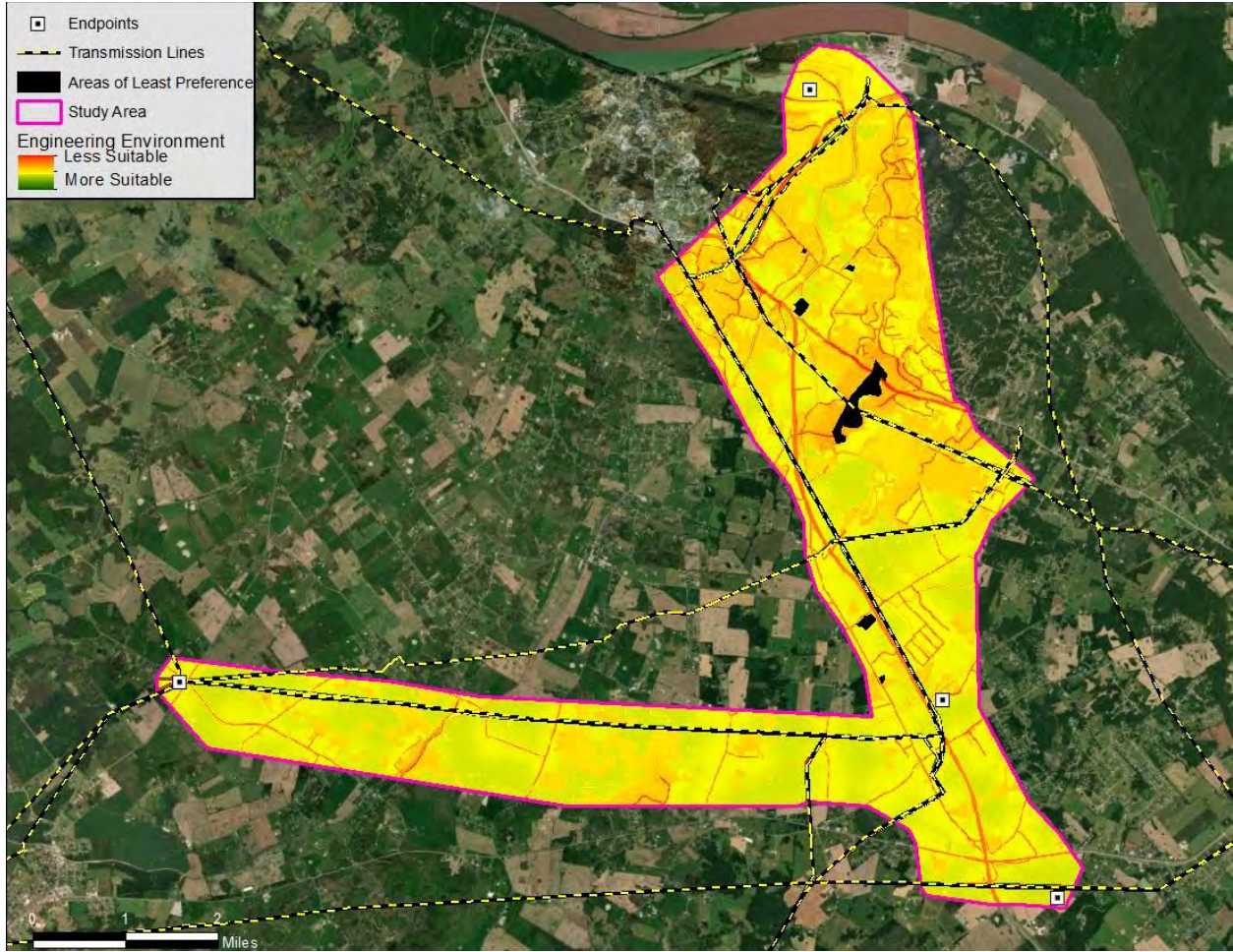


Figure 22 Engineering Suitability Grid

Built Emphasis Corridor

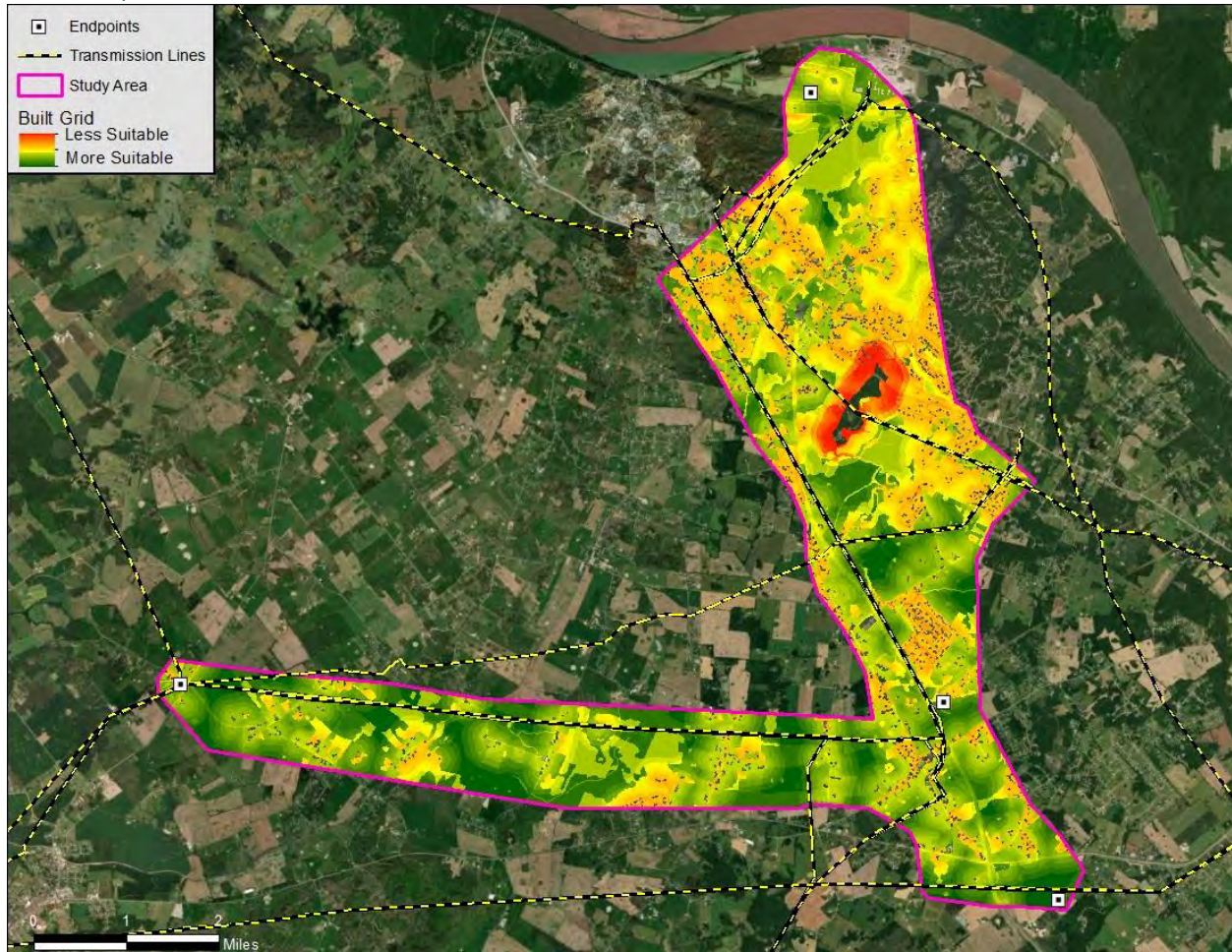


Figure 23 Built Suitability Grid

The Built suitability grid is created by putting emphasis (5x) on the built perspective while taking into consideration the other two perspectives (1x).

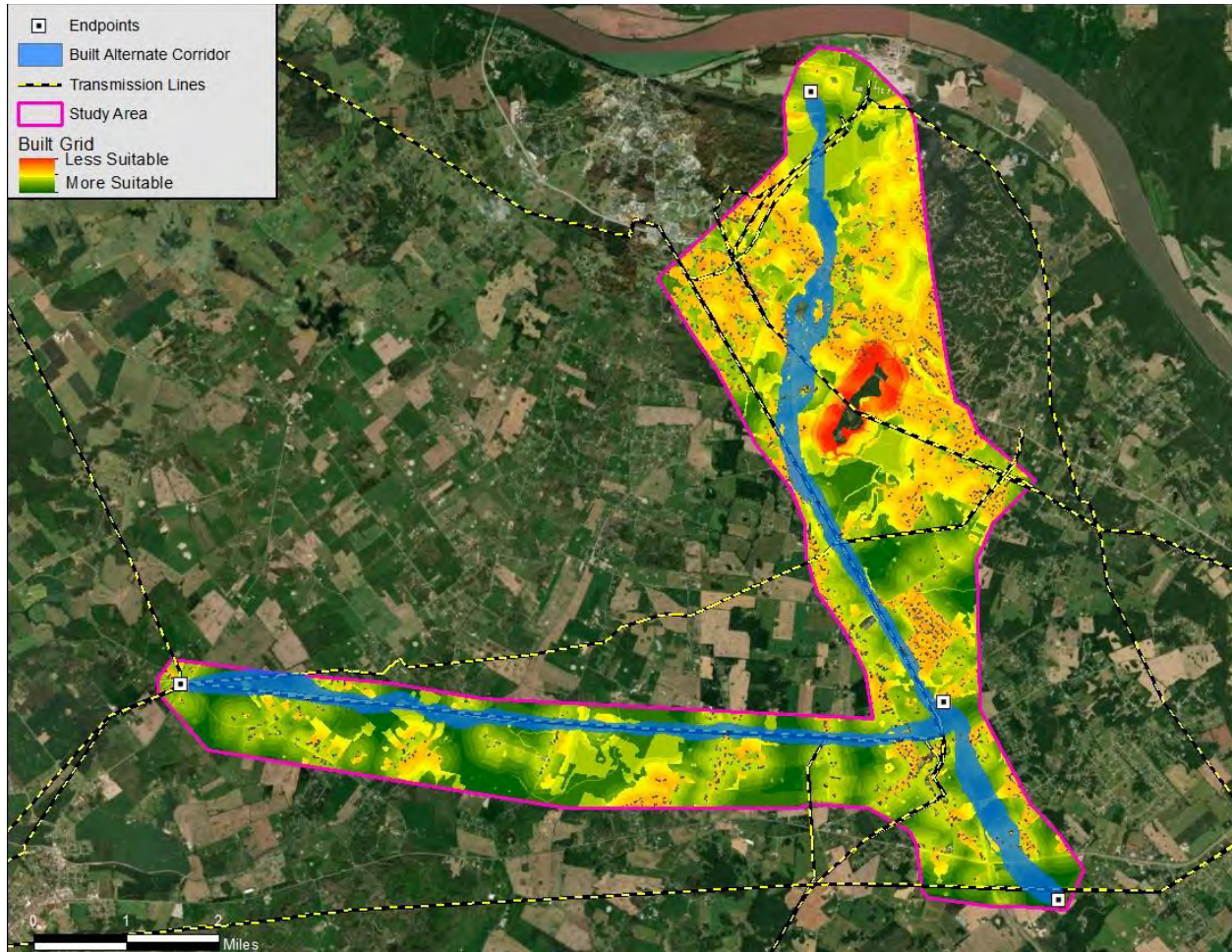


Figure 24 Built Suitability Grid with the Alternate Corridor

The Built Alternate Corridor was created by calculating the top 3% of routes between the Meade County Substation, Proposed Otter Creek Substation, Brandenburg Steel Mill Substation, and Proposed Redmon Road Substation.

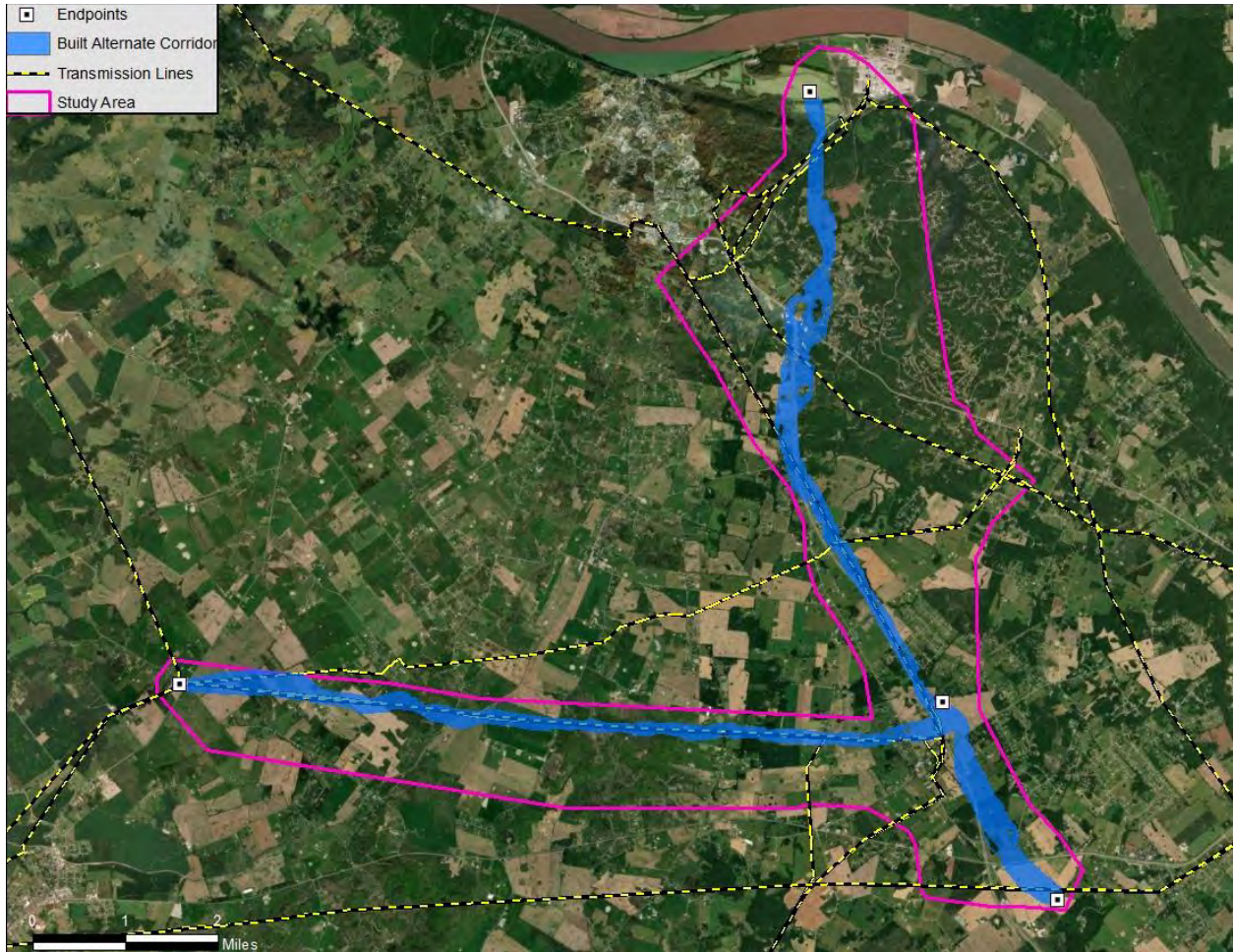


Figure 25 Built Alternate Corridor

Natural Emphasis Corridor

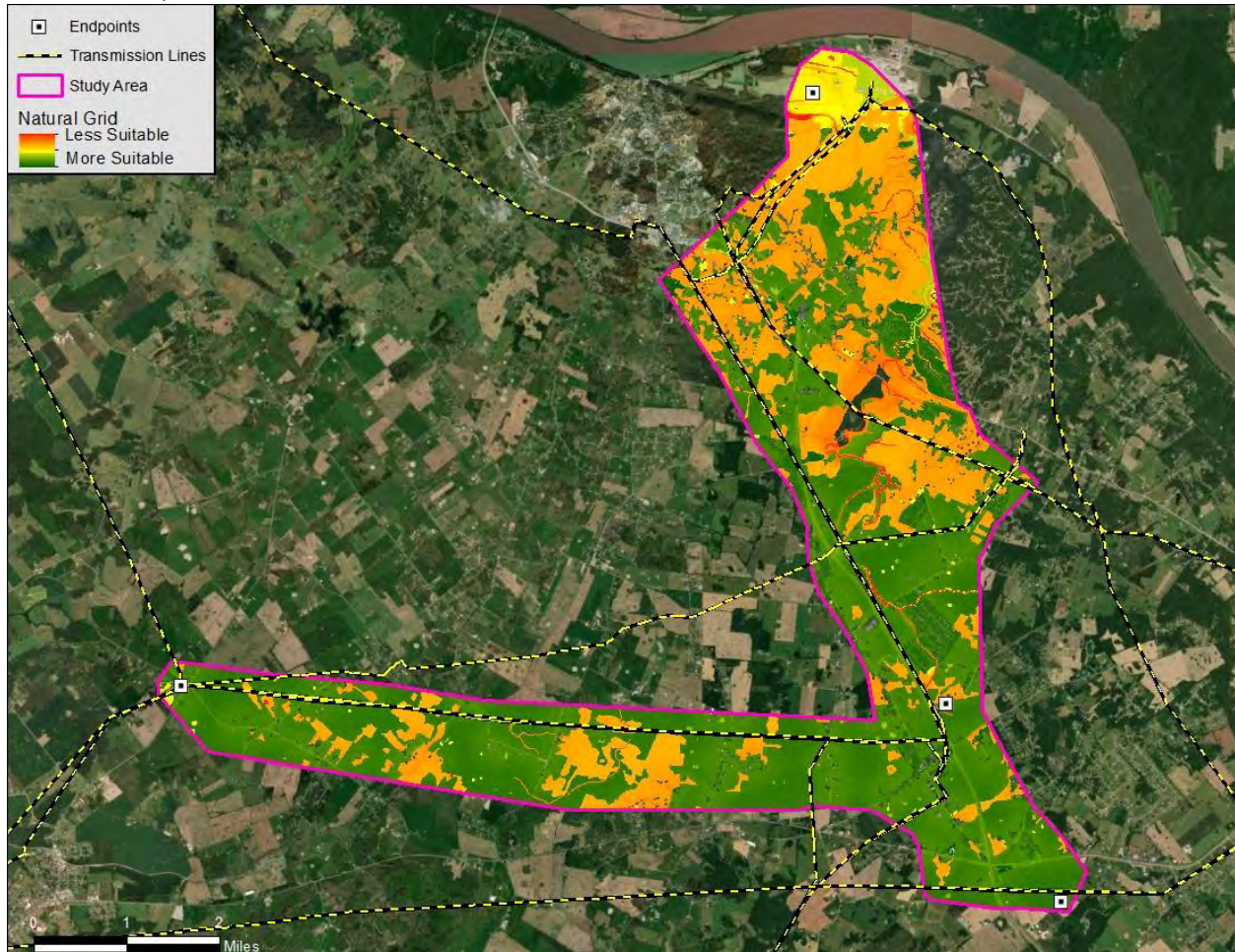


Figure 26 Natural Suitability Grid

The Natural suitability grid is created by putting emphasis (5x) on the natural perspective while taking into consideration the other two perspectives (1x).

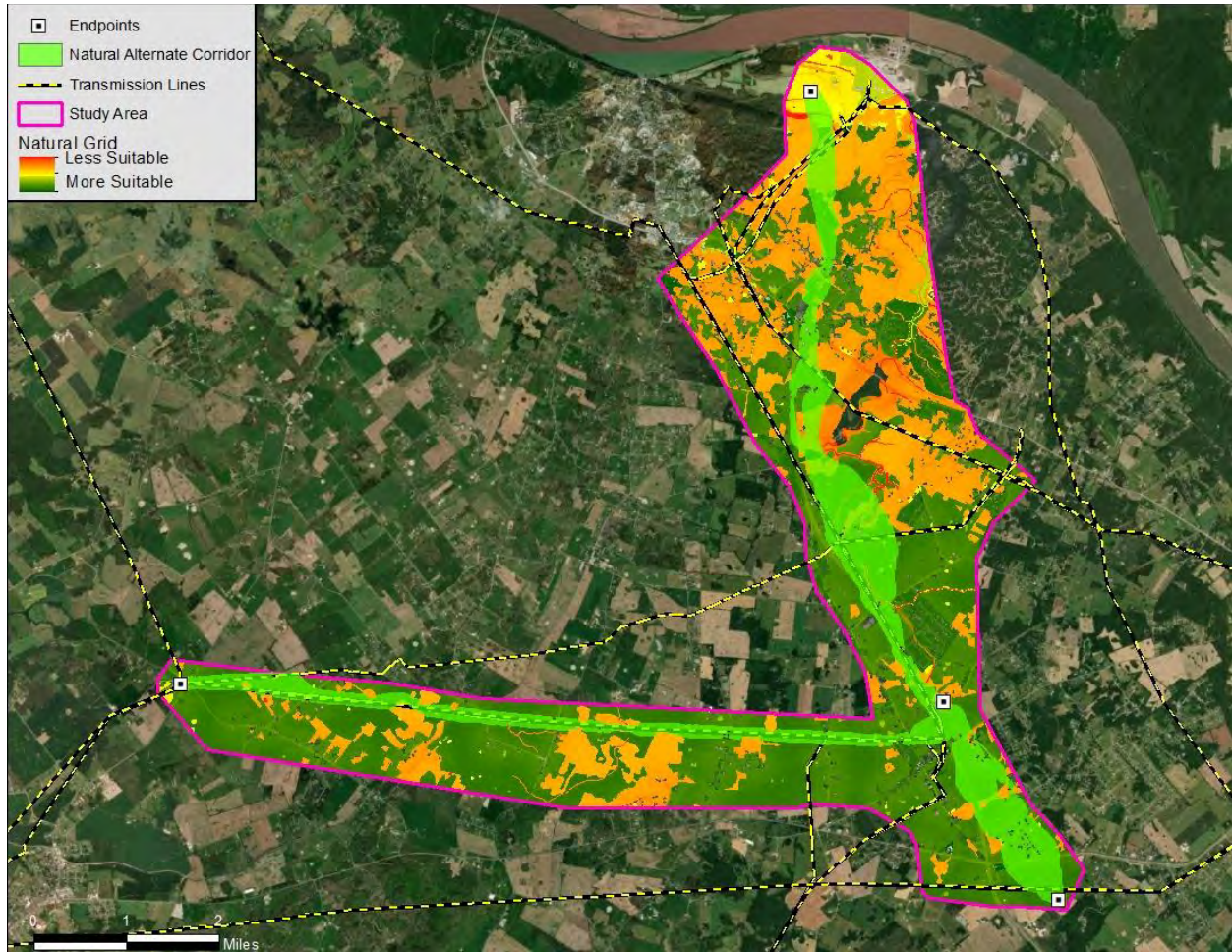


Figure 27 Natural Suitability Grid with the Alternate Corridor

The Natural Alternate Corridor was created by calculating the top 3% of routes between the Meade County Substation, Proposed Otter Creek Substation, Brandenburg Steel Mill Substation, and Proposed Redmon Road Substation.

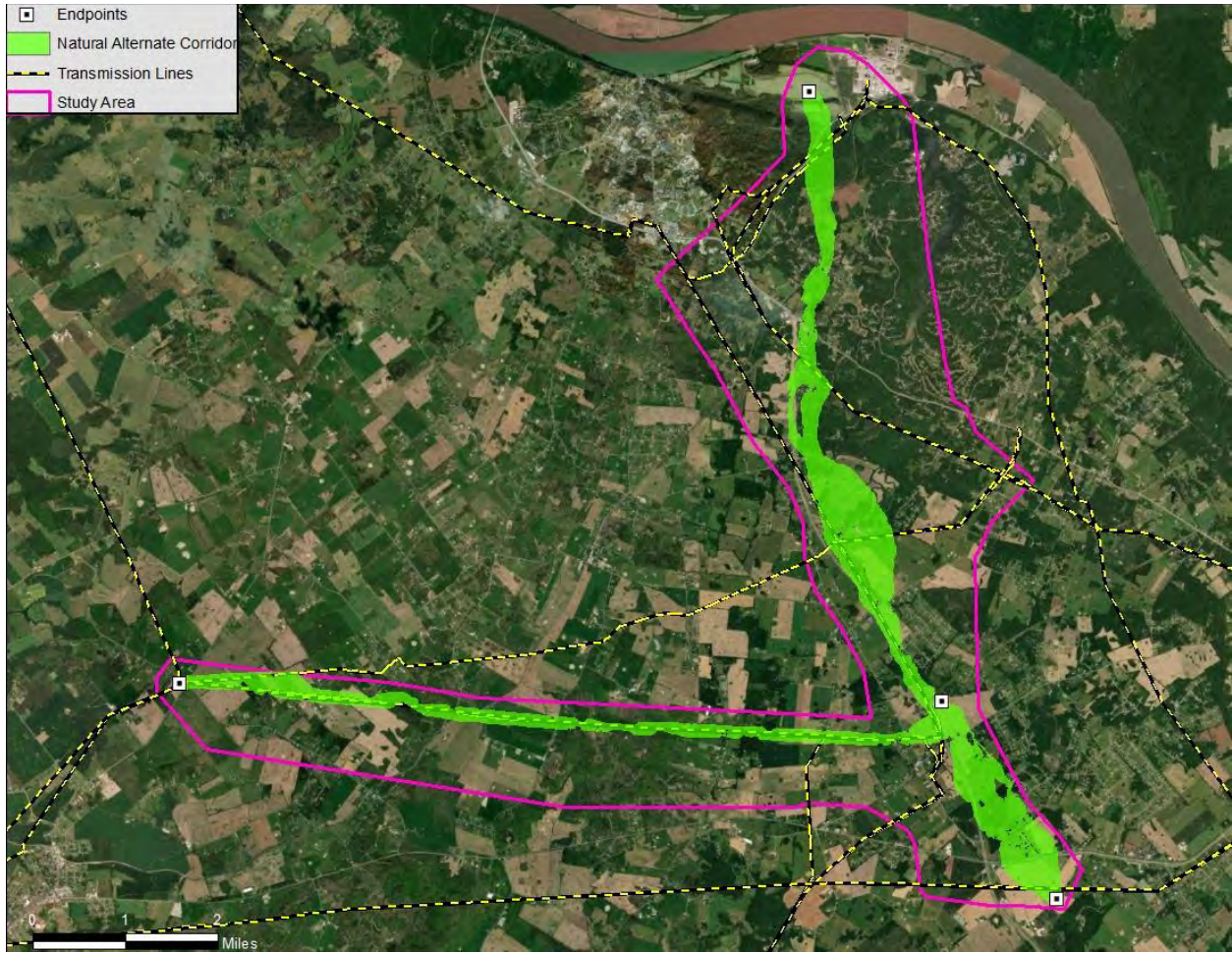


Figure 28 The Natural Alternate Corridor

Engineering Emphasis Corridor

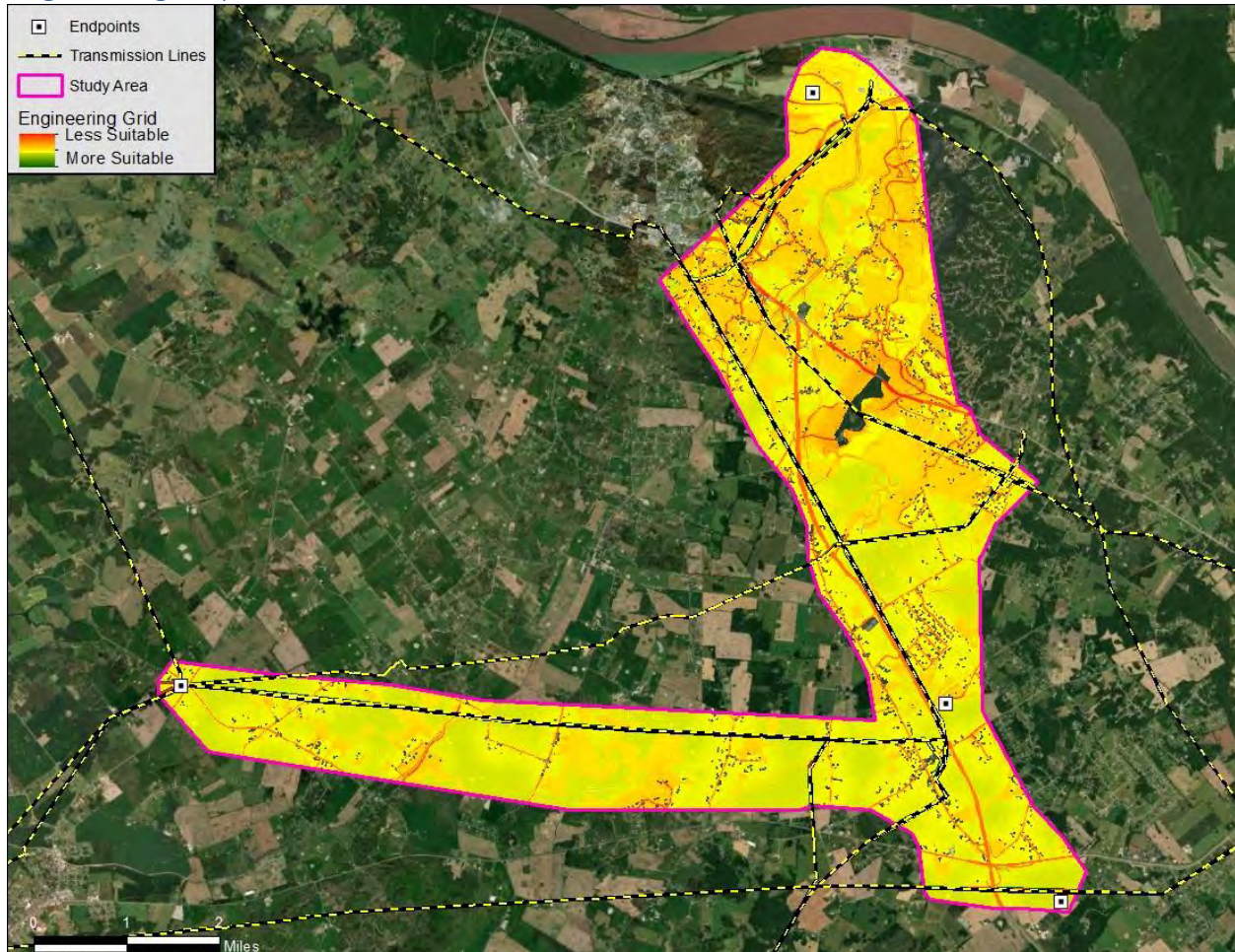


Figure 29 Engineering Suitability Grid

The Engineering suitability grid is created by putting emphasis (5x) on the engineering perspective while taking into consideration the other two perspectives (1x).

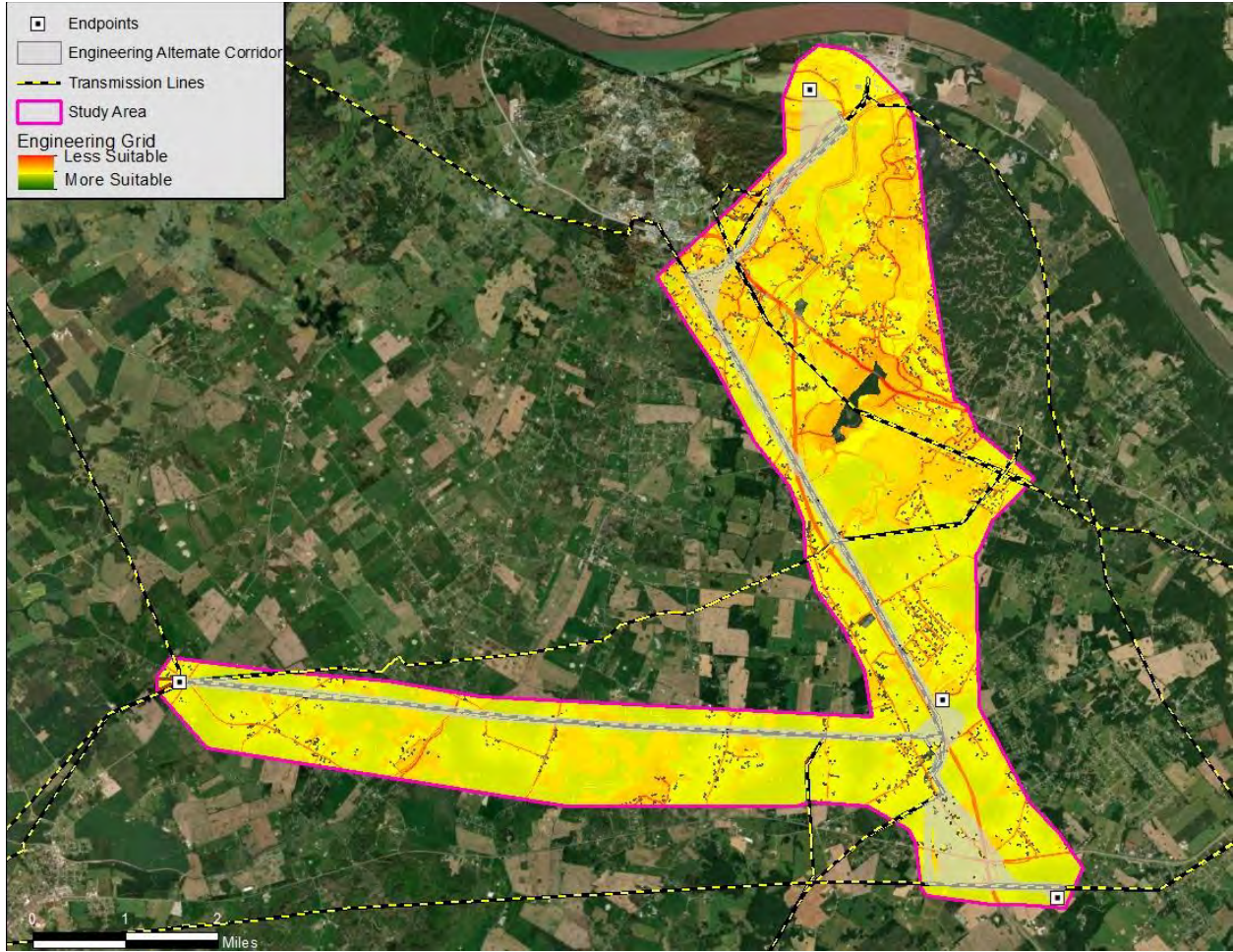


Figure 30 Engineering Suitability Grid with the Alternate Corridor

The Engineering Alternate Corridor was then created by calculating the top 3% of routes between the Meade County Substation, Proposed Otter Creek Substation, Brandenburg Steel Mill Substation, and Proposed Redmon Road Substation.

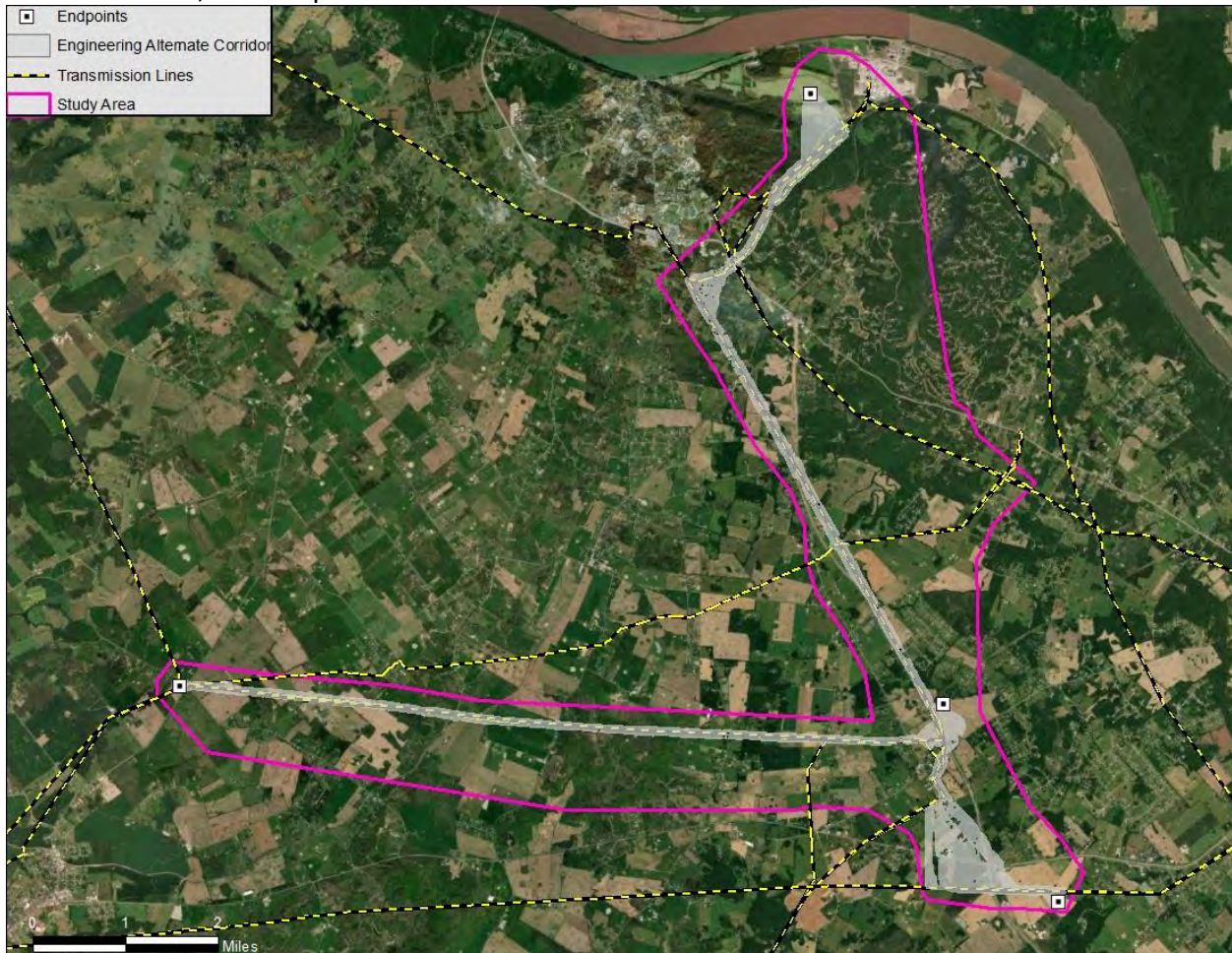


Figure 31 Engineering Alternate Corridor

Simple Emphasis Corridor

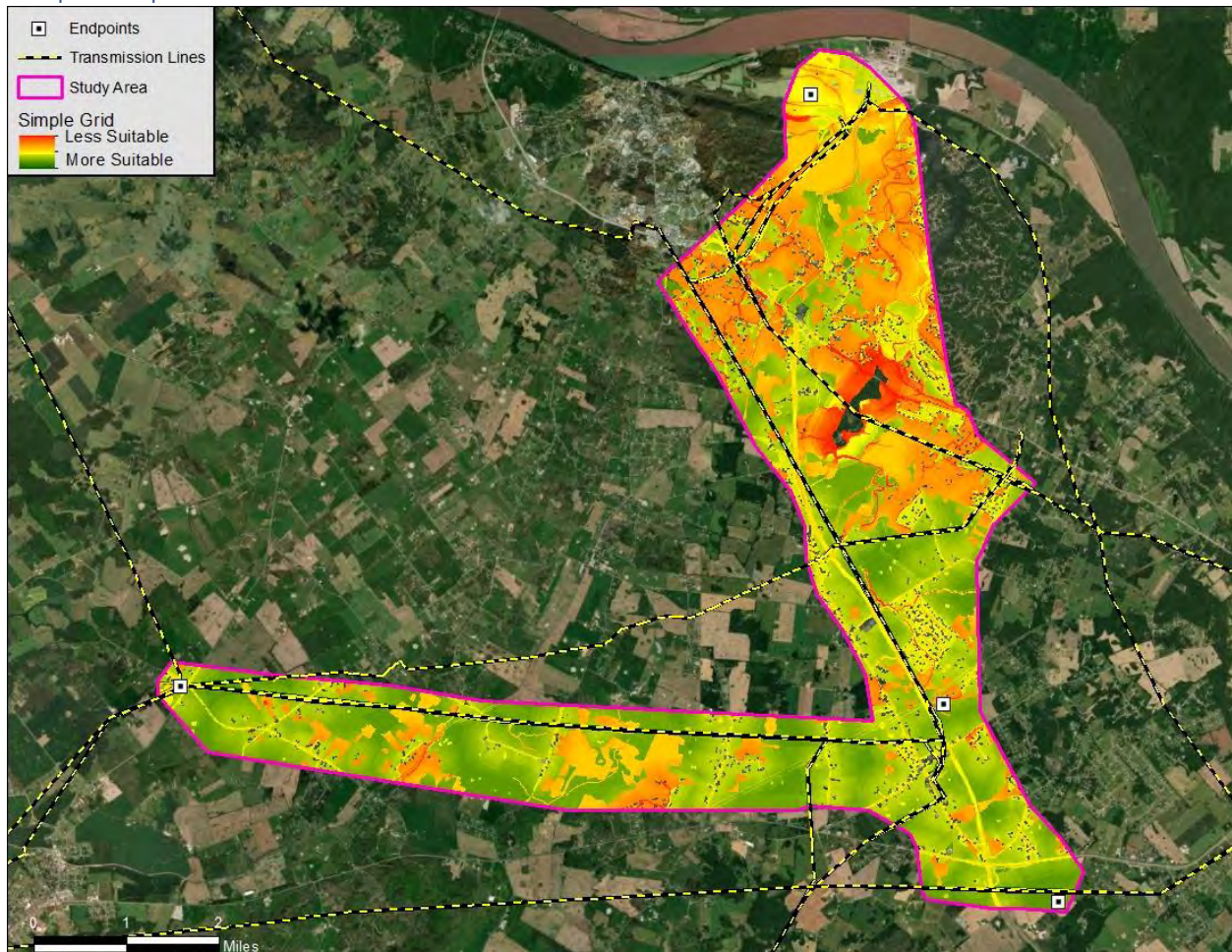


Figure 32 Simple Suitability Grid

The Simple suitability grid is created by putting equal emphasis on the Built, Natural, and Engineering perspectives.

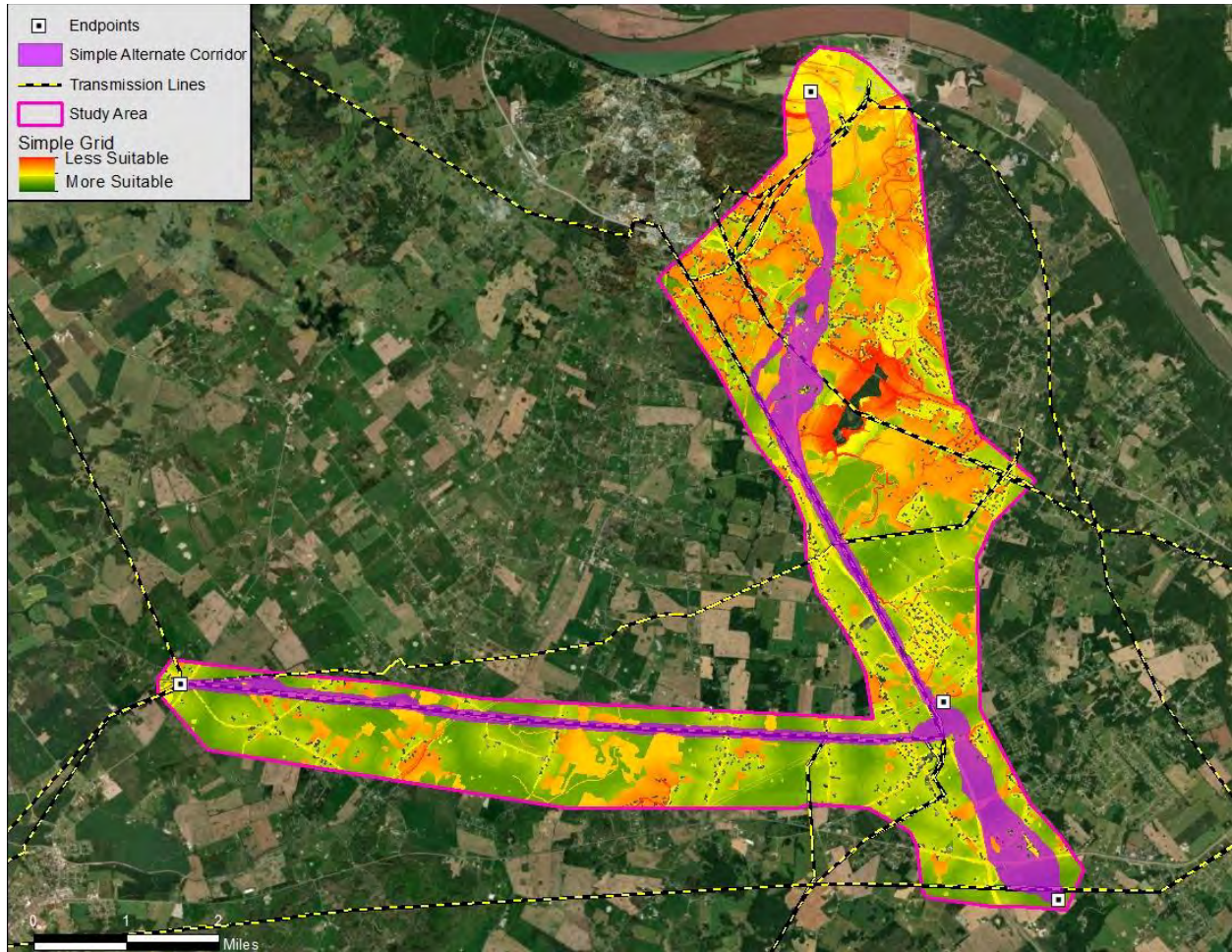


Figure 33 Simple Suitability Grid with the Alternate Corridor

The Simple Alternate Corridor is then created by taking the least cost path between the Big Meade County Substation, Proposed Otter Creek Substation, Brandenburg Steel Mill Substation, and Proposed Redmon Road Substation.

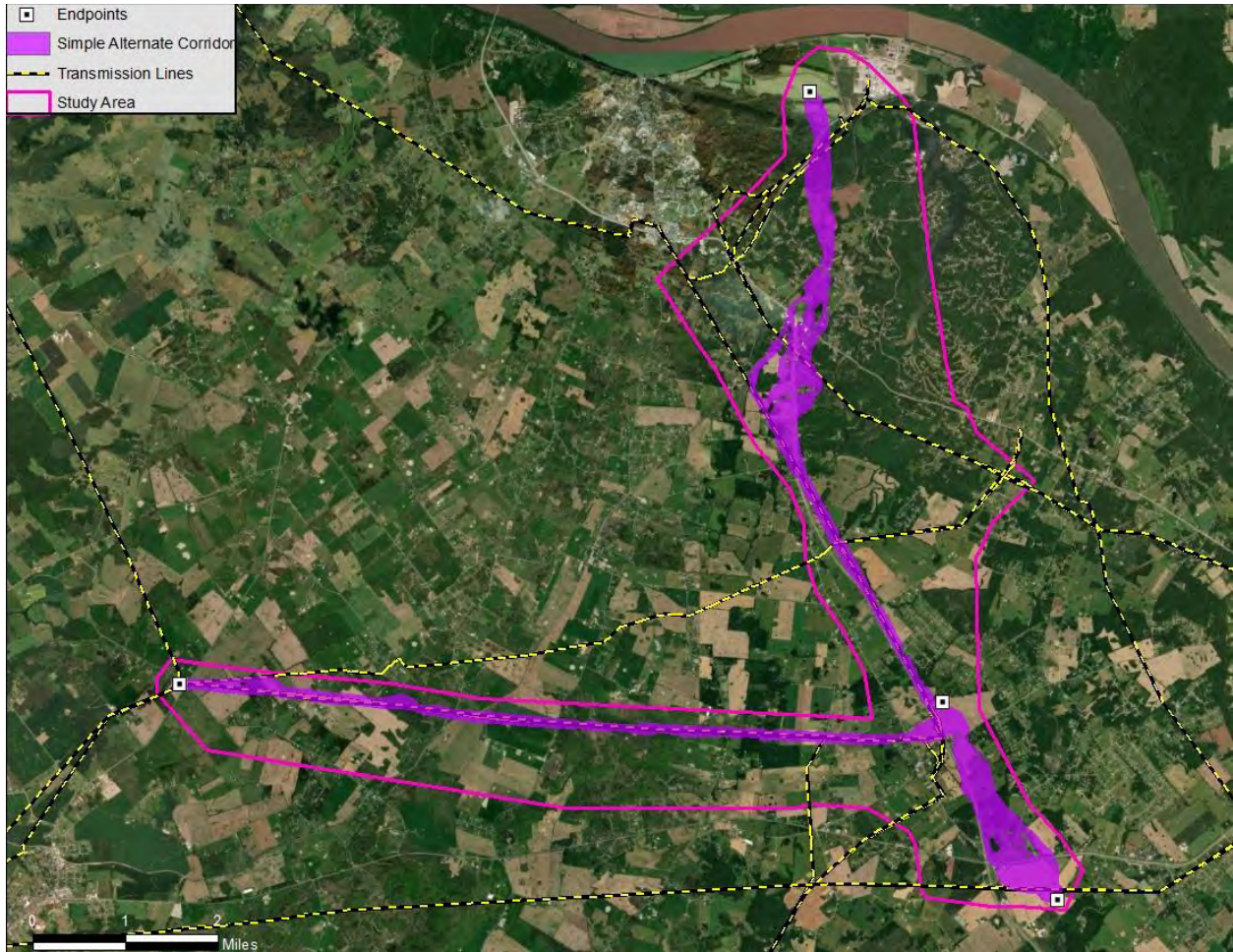


Figure 34 Simple Alternate Corridor

Composite Alternative Corridors

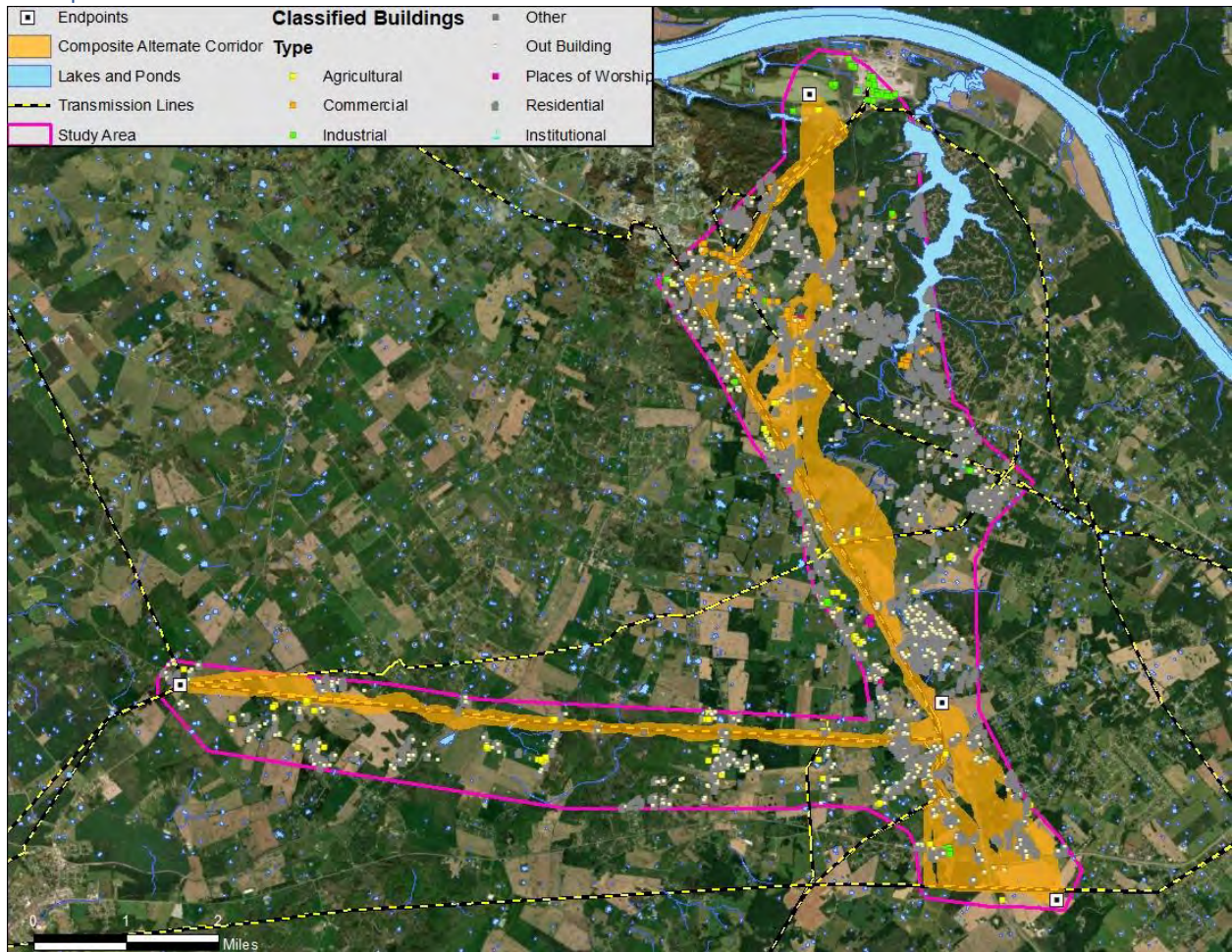


Figure 35 All Alternate Corridors

Preferred Routes

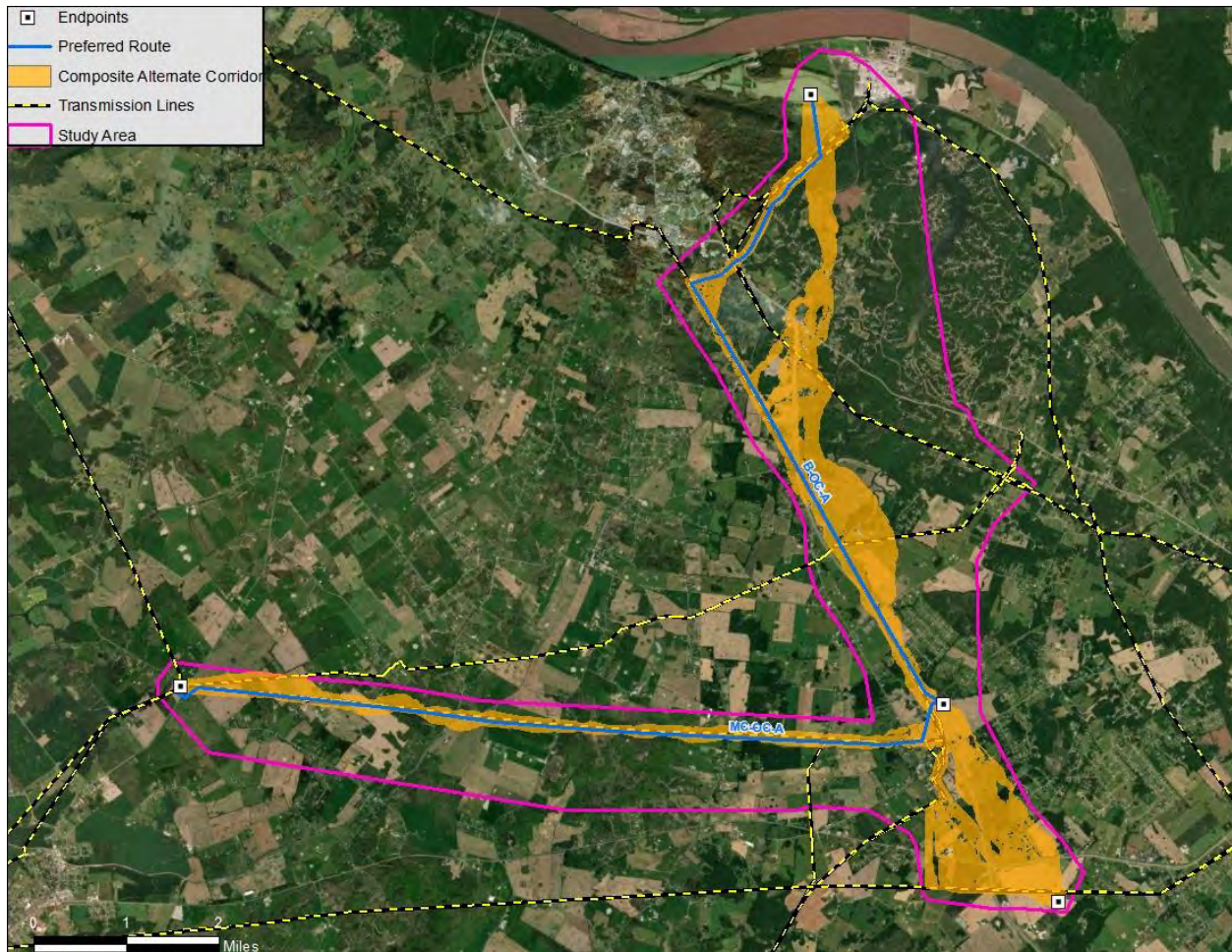


Figure 36 Alternate Routes with the Alternate Corridors

The Preferred Routes were created using the alternate corridors as guidelines to go from the Meade County Substation to Proposed Otter Creek Substation. The preferred route will rebuild the existing 69kV in the existing ROW.

The preferred route from Brandenburg Steel Mill Substation to Proposed Otter Creek Substation will rebuild the existing 69kV and expand the existing ROW by 12.5 feet on both sides.

The alternative routes developed from the proposed Otter Creek Substation to the Proposed Redmon Road Substation are described in the next section.

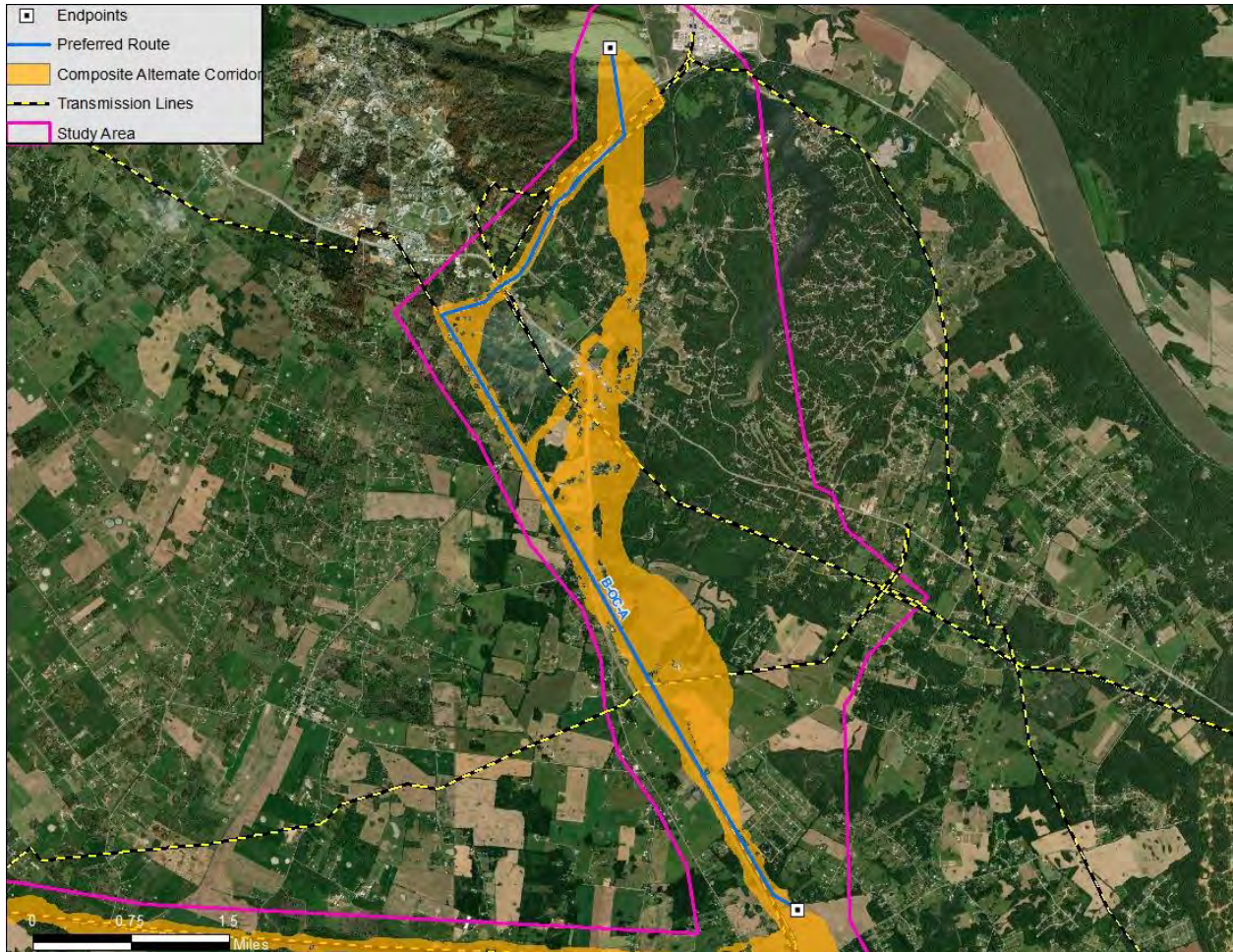


Figure 37 Brandenburg Steel Mill to Otter Creek Preferred Route with the Alternate Corridors

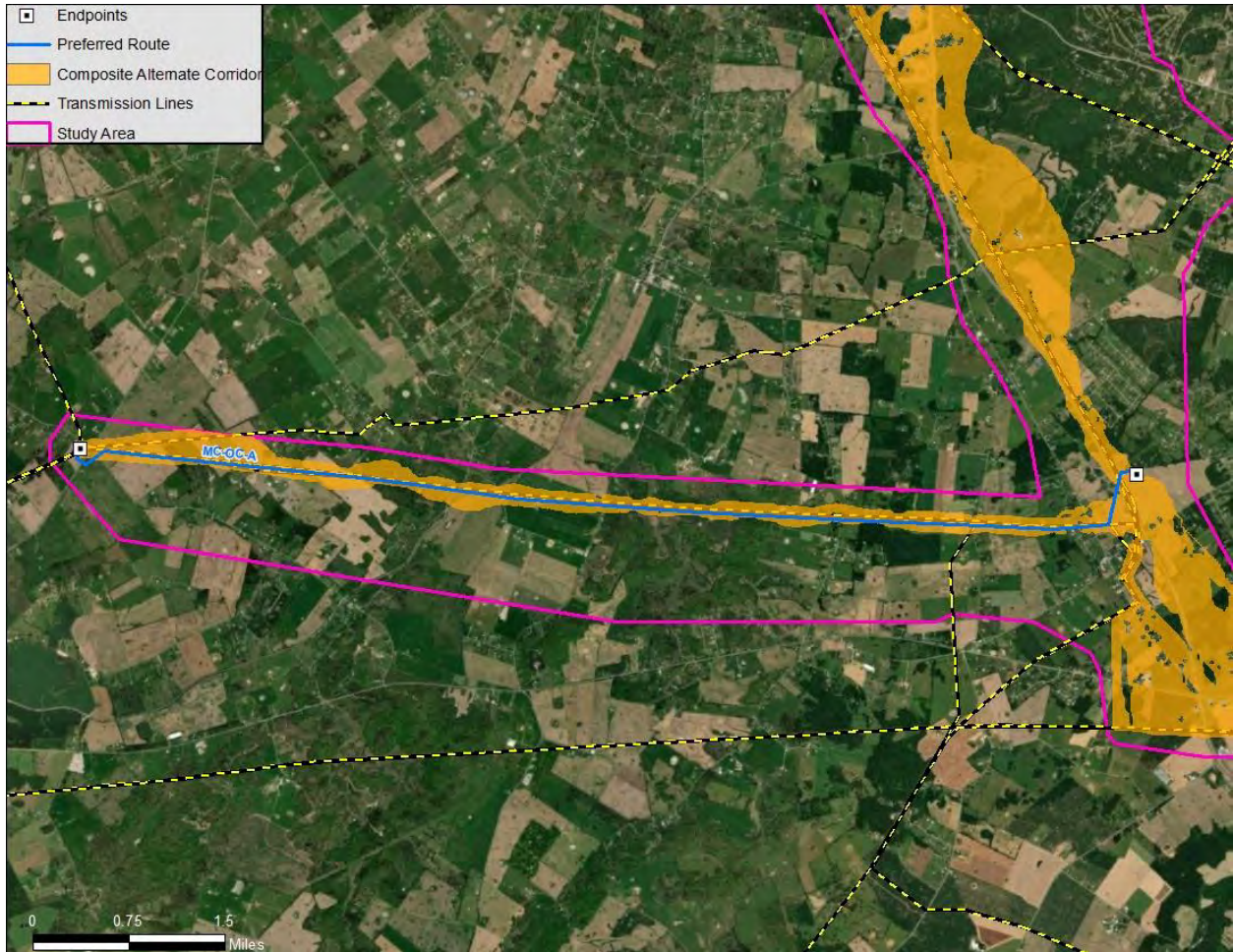


Figure 38 Meade County to Otter Creek Preferred Route with the Alternate Corridors

	Route A
Built	
Residences Within the ROW	3
Residences Within 300' of the Centerline	31
Commercial Buildings within 300' of the Centerline	5
Industrial Buildings within 300' of the Centerline	0
Agricultural Buildings within 100' of the Centerline	0
School, Daycare, Church, Cemetery, & Park within 50' of the ROW	0
Historic structures within 600' of the Centerline	0
Natural	
Tree Clearing (Acres)	7.78
Stream / River Crossings	3
Wetlands (Acres)	0
Engineering	
% Rebuild of Existing Transmission Lines	91%
% Parallel with Existing Transmission Lines	0%
% Parallel Roads	38%
Total Project Costs	\$17,184,205
Construction Cost (\$1.7M/mile)	\$14,943,000
Land Acquisition Cost (\$6,271/acre)	\$226,195
Major Angle	\$1,980,000
0-45° Angle (\$90K)	8
45-90° Angle (\$240K)	4
>90° Angle (\$300K)	1
Clearing Cost (\$4.5K/Acre)	\$35,010
Length (Miles)	8.79
Approximate new ROW required (Acres)	36

Figure 3839 Route Data Brandenburg Steel Mill Substation to Otter Creek Substation



	Route A
Built	
Residences Within the ROW	1
Residences Within 300' of the Centerline	14
Commercial Buildings within 300' of the Centerline	0
Industrial Buildings within 300' of the Centerline	0
Agricultural Buildings within 100' of the Centerline	1
School, Daycare, Church, Cemetery, & Park within 50' of the ROW	0
Historic structures within 600' of the Centerline	0
Natural	
Tree Clearing (Acres)	0
Stream / River Crossings	0
Wetlands (Acres)	0.04
Engineering	
% Rebuild of Existing Transmission Lines	95%
% Parallel with Existing Transmission Lines	1%
% Parallel Roads	0%
Total Project Costs	\$7,808,353
Construction Cost (\$820K/mile)	\$6,986,400
Land Acquisition Cost (\$6,271/acre)	\$41,953
Major Angle	\$780,000
0-45° Angle (\$90K)	6
45-90° Angle (\$240K)	1
>90° Angle (\$300K)	0
Clearing Cost (\$4.5K/Acre)	\$0
Length (Miles)	8.52
Approximate new ROW required (Acres)	7

Figure 3940 Route Data Brandenburg Steel Mill to Otter Creek Substation

Alternate Routes

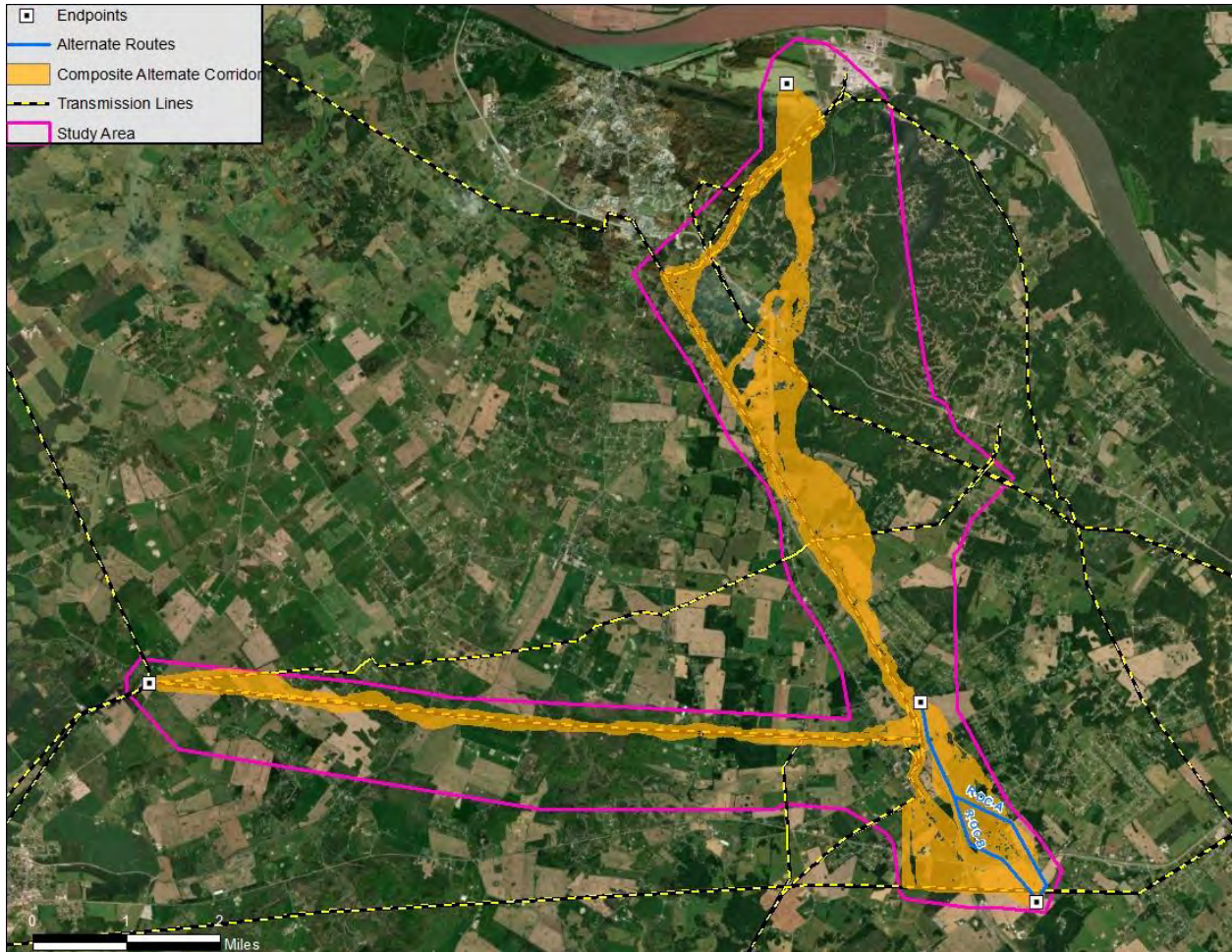


Figure 40 Redmon Road to Otter Creek Alternate Routes with Composite Corridors

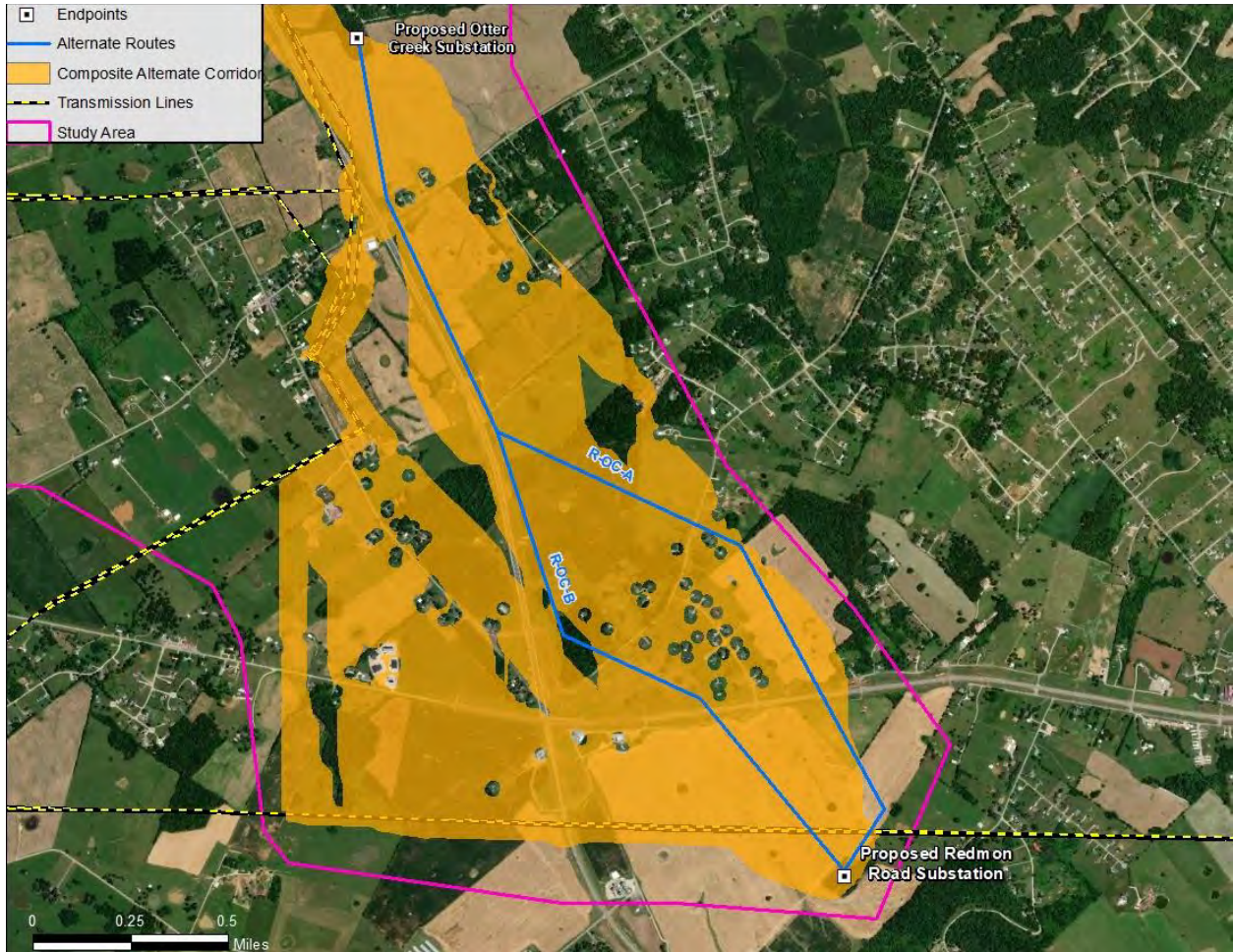


Figure 41 Redmon Road to Otter Creek Alternate Routes with Composite Corridors



Figure 42 Redmon Road to Otter Creek Alternate Routes

The Alternate Route Evaluation Model leverages weighted metrics to compare the Alternate Routes. The first step of the process is to compile data for each route. The metrics are grouped into three categories: Built, Natural, and Engineering.

The route data (Figure 32) are normalized on a scale from 0 to 1 with 0 being the best and 1 being the worst in each category. This allows comparisons of metrics in different units such as counts, acreage and dollars. The percent colocation with roads and existing distribution lines are inverted since the higher the number, the better it is for an alternate route.

The criteria are assigned weights based on their relative importance to the siting process. The weight for each criterion is represented by percentages such as 50% residences and 20% special areas. The weights within a perspective (built, natural, engineering) must total 100%.

The Alternate Route Evaluation Model places 5 times emphasis on each perspective to produce Built, Natural, and Engineering Emphasis Models. In addition, a Simple Average Model is implemented which places equal emphasis on the three perspectives.



	Route A East	Route B West
Built		
Residences Within the ROW	0	0
Residences Within 300' of the Centerline	4	2
Commercial Buildings within 300' of the Centerline	0	0
Industrial Buildings within 300' of the Centerline	0	0
Agricultural Buildings within 300' of the Centerline	1	0
School, Daycare, Church, Cemetery, & Park within 50' of the ROW	0	0
Historic structures within 600' of the Centerline	0	0
Natural		
Tree Clearing (Acres)	1.03	4.9
Stream / River Crossings	0	0
Wetlands (Acres)	0	0
Engineering		
% Rebuild of Existing Transmission Lines	0%	0%
% Parallel with Existing Transmission Lines	0%	0%
% Parallel Roads	8%	34%
Total Project Costs	\$5,627,023	\$5,315,721
Construction Cost (\$1.7M/mile)	\$4,386,000	\$4,216,000
Land Acquisition Cost (\$6,271/acre)	\$246,388	\$237,671
Major Angle	\$990,000	\$840,000
0-45° Angle (\$90K)	3	4
45-90° Angle (\$240K)	3	2
>90° Angle (\$300K)	0	0
Clearing Cost (\$4.5K/Acre)	\$4,635	\$22,050
Length (Miles)	2.58	2.48
Approximate new ROW required (Acres)	39.29	37.9

Figure 4341 Route Data Redmon Road Substation to Otter Creek Substation



Built	Route A East	Route B West
Residences Within the ROW	0.0	0.0
<i>Normalized</i>	-	-
Residences Within 300' of the Centerline	4.0	2.0
<i>Normalized</i>	1.0	0.0
Commercial Buildings within 300' of the Centerline	0.0	0.0
<i>Normalized</i>	-	-
Industrial Buildings within 300' of the Centerline	0.0	0.0
<i>Normalized</i>	-	-
Agricultural Buildings within 300' of the Centerline	1.0	0.0
<i>Normalized</i>	1.0	0.0
School, Daycare, Church, Cemetery, & Park within 50' of the ROW	0.0	0.0
<i>Normalized</i>	-	-
Historic structures within 600' of the Centerline	0.0	0.0
<i>Normalized</i>	-	-
Natural		
Tree Clearing (Acres)	1.0	4.9
<i>Normalized</i>	0.0	1.0
Stream / River Crossings	0.0	0.0
<i>Normalized</i>	-	-
Wetlands (Acres)	0.0	0.0
<i>Normalized</i>	-	-
Engineering		
% Rebuild of Existing Transmission Lines	0.00	0.00
<i>Normalized</i>	-	-
<i>Inverted</i>	-	-
% Parallel with Existing Transmission Lines	0	0
<i>Normalized</i>	-	-
<i>Inverted</i>	-	-
% Parallel Roads	0.08	0.34
<i>Normalized</i>	0.0	1.0
<i>Inverted</i>	1.0	0.0
Total Project Costs	\$ 5,627,023	\$ 5,315,721
<i>Normalized</i>	1.0	0.0

Figure 4442 Normalized Data Redmon Road Substation to Otter Creek Substation

Built	72%	Route A East	Route B West
Feature		Unit	Unit
Residences Within the ROW	0.0%	-	-
<i>Weighted</i>		-	-
Residences Within 300' of the Centerline	95.0%	1.00	0.00
<i>Weighted</i>		0.95	0.00
Commercial Buildings within 300' of the Centerline	0.0%	-	-
<i>Weighted</i>		-	-
Industrial Buildings within 300' of the Centerline	0.0%	-	-
<i>Weighted</i>		-	-
Agricultural Buildings within 300' of the Centerline	5.0%	1.00	0.00
<i>Weighted</i>		0.05	0.00
School, Daycare, Church, Cemetery, & Park within 50' of the ROW	0.0%	-	-
<i>Weighted</i>		-	-
Historic structures within 600' of the Centerline	0.0%	-	-
<i>Weighted</i>		-	-
TOTAL	100.0%	1.00	0.00
WEIGHTED TOTAL		0.72	0.00
Natural	14%		
Tree Clearing (Acres)	100.0%	0.00	1.00
<i>Weighted</i>		0.00	1.00
Stream / River Crossings	0.0%	-	-
<i>Weighted</i>		-	-
Wetlands (Acres)	0.0%	-	-
<i>Weighted</i>		-	-
TOTAL	100.0%	0.00	1.00
WEIGHTED TOTAL		0.00	0.14
Engineering	14%		
% Rebuild of Existing Transmission Lines	0.0%	-	-
<i>Weighted</i>		-	-
% Parallel with Existing Transmission Lines	0.0%	-	-
<i>Weighted</i>		-	-
% Parallel Roads	20.0%	1.00	0.00
<i>Weighted</i>		0.20	0.00
Total Project Costs	80.0%	1.00	0.00
<i>Weighted</i>		0.80	0.00
TOTAL	100.0%	1.00	0.00
WEIGHTED TOTAL		0.14	0.00
SUM OF WEIGHTED TOTALS		0.86	0.14

Figure 45 Built Emphasis Redmon Road Substation to Otter Creek Substation

Built	14%	Route A East	Route B West
Feature		Unit	Unit
Residences Within the ROW	0.0%	-	-
<i>Weighted</i>		-	-
Residences Within 300' of the Centerline	95.0%	1.00	0.00
<i>Weighted</i>		0.95	0.00
Commercial Buildings within 300' of the Centerline	0.0%	-	-
<i>Weighted</i>		-	-
Industrial Buildings within 300' of the Centerline	0.0%	-	-
<i>Weighted</i>		-	-
Agricultural Buildings within 300' of the Centerline	5.0%	1.00	0.00
<i>Weighted</i>		0.05	0.00
School, Daycare, Church, Cemetery, & Park within 50' of the ROW	0.0%	-	-
<i>Weighted</i>		-	-
Historic structures within 600' of the Centerline	0.0%	-	-
<i>Weighted</i>		-	-
TOTAL	100.0%	1.00	0.00
WEIGHTED TOTAL		0.14	0.00
Natural	72%		
Tree Clearing (Acres)	100.0%	0.00	1.00
<i>Weighted</i>		0.00	1.00
Stream / River Crossings	0.0%	-	-
<i>Weighted</i>		-	-
Wetlands (Acres)	0.0%	-	-
<i>Weighted</i>		-	-
TOTAL	100.0%	0.00	1.00
WEIGHTED TOTAL		0.00	0.72
Engineering	14%		
% Rebuild of Existing Transmission Lines	0.0%	-	-
<i>Weighted</i>		-	-
% Parallel with Existing Transmission Lines	0.0%	-	-
<i>Weighted</i>		-	-
% Parallel Roads	20.0%	1.00	0.00
<i>Weighted</i>		0.20	0.00
Total Project Costs	80.0%	1.00	0.00
<i>Weighted</i>		0.80	0.00
TOTAL	100.0%	1.00	0.00
WEIGHTED TOTAL		0.14	0.00
SUM OF WEIGHTED TOTALS		0.28	0.72

Figure 46 Natural Emphasis Redmon Road Substation to Otter Creek Substation

Built	14%	Route A East	Route B West
Feature		Unit	Unit
Residences Within the ROW	0.0%	-	-
<i>Weighted</i>		-	-
Residences Within 300' of the Centerline	95.0%	1.00	0.00
<i>Weighted</i>		0.95	0.00
Commercial Buildings within 300' of the Centerline	0.0%	-	-
<i>Weighted</i>		-	-
Industrial Buildings within 300' of the Centerline	0.0%	-	-
<i>Weighted</i>		-	-
Agricultural Buildings within 300' of the Centerline	5.0%	1.00	0.00
<i>Weighted</i>		0.05	0.00
School, Daycare, Church, Cemetery, & Park within 50' of the ROW	0.0%	-	-
<i>Weighted</i>		-	-
Historic structures within 600' of the Centerline	0.0%	-	-
<i>Weighted</i>		-	-
TOTAL	100.0%	1.00	0.00
WEIGHTED TOTAL		0.14	0.00
Natural	14%		
Tree Clearing (Acres)	100.0%	0.00	1.00
<i>Weighted</i>		0.00	1.00
Stream / River Crossings	0.0%	-	-
<i>Weighted</i>		-	-
Wetlands (Acres)	0.0%	-	-
<i>Weighted</i>		-	-
TOTAL	100.0%	0.00	1.00
WEIGHTED TOTAL		0.00	0.14
Engineering	72%		
% Rebuild of Existing Transmission Lines	0.0%	-	-
<i>Weighted</i>		-	-
% Parallel with Existing Transmission Lines	0.0%	-	-
<i>Weighted</i>		-	-
% Parallel Roads	20.0%	1.00	0.00
<i>Weighted</i>		0.20	0.00
Total Project Costs	80.0%	1.00	0.00
<i>Weighted</i>		0.80	0.00
TOTAL	100.0%	1.00	0.00
WEIGHTED TOTAL		0.72	0.00
SUM OF WEIGHTED TOTALS		0.86	0.14

Figure 437 Engineering Emphasis Redmon Road Substation to Otter Creek Substation

Built	33%	Route A East	Route B West
Feature		Unit	Unit
Residences Within the ROW	0.0%	-	-
<i>Weighted</i>		-	-
Residences Within 300' of the Centerline	95.0%	1.00	0.00
<i>Weighted</i>		0.95	0.00
Commercial Buildings within 300' of the Centerline	0.0%	-	-
<i>Weighted</i>		-	-
Industrial Buildings within 300' of the Centerline	0.0%	-	-
<i>Weighted</i>		-	-
Agricultural Buildings within 300' of the Centerline	5.0%	1.00	0.00
<i>Weighted</i>		0.05	0.00
School, Daycare, Church, Cemetery, & Park within 50' of the ROW	0.0%	-	-
<i>Weighted</i>		-	-
Historic structures within 600' of the Centerline	0.0%	-	-
<i>Weighted</i>		-	-
TOTAL	100.0%	1.00	0.00
WEIGHTED TOTAL		0.33	0.00
Natural	33%		
Tree Clearing (Acres)	100.0%	0.00	1.00
<i>Weighted</i>		0.00	1.00
Stream / River Crossings	0.0%	-	-
<i>Weighted</i>		-	-
Wetlands (Acres)	0.0%	-	-
<i>Weighted</i>		-	-
TOTAL	100.0%	0.00	1.00
WEIGHTED TOTAL		0.00	0.33
Engineering	33%		
% Rebuild of Existing Transmission Lines	0.0%	-	-
<i>Weighted</i>		-	-
% Parallel with Existing Transmission Lines	0.0%	-	-
<i>Weighted</i>		-	-
% Parallel Roads	20.0%	1.00	0.00
<i>Weighted</i>		0.20	0.00
Total Project Costs	80.0%	1.00	0.00
<i>Weighted</i>		0.80	0.00
TOTAL	100.0%	1.00	0.00
WEIGHTED TOTAL		0.33	0.00
SUM OF WEIGHTED TOTALS		0.67	0.33

Figure 48 Simple Average Redmon Road Substation to Otter Creek Substation

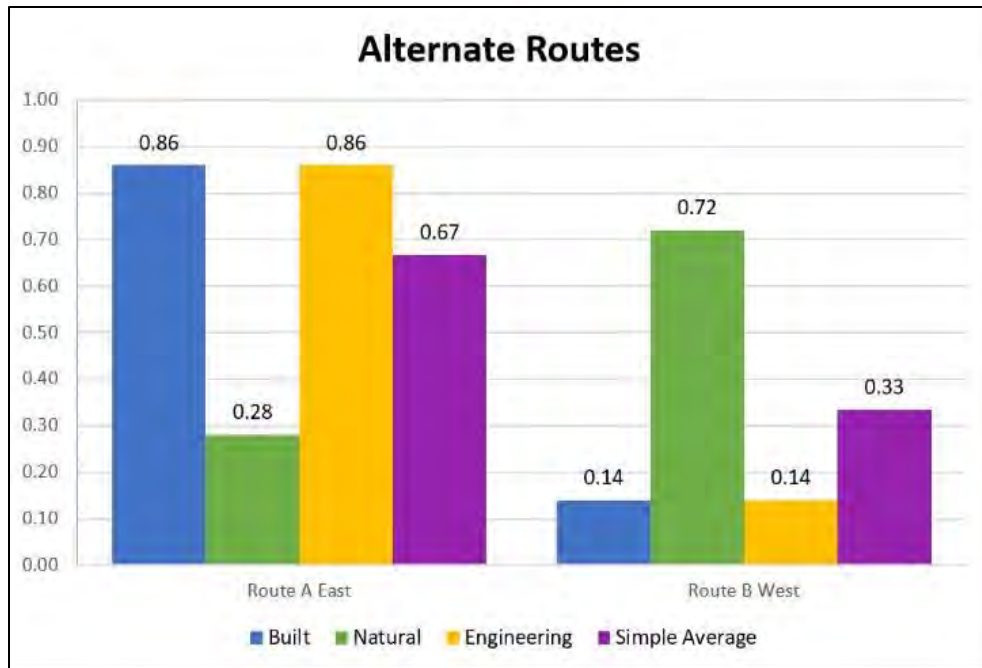


Figure 449 Alternate Route Graph

Route B scores the lowest (most suitable) from a Built perspective. This is due to the fact that Route B does not have any agricultural buildings with 300 feet of the route and less residences within 300 feet. While Route A has more residences and agricultural buildings within 300 feet of the route.

The Natural perspective is dictated by the tree clearing difference in both routes. Route A necessitates about 1 acre of tree clearing, while Route B would need about 5 acres of tree clearing making it less suitable.

In the Engineering perspective, Route B has the lowest score with the lowest cost being the main factor. The cost is lower since there is one less 45-90 degree angle in the route compared to Route A. Route B also has a higher percentage of colocation with roads when compared to Route A.

Route B has the lowest Simple Average score which is logical given the fact that it was either the most suitable in two of the three perspectives.

It should be noted that the Alternate Route Evaluation Model is commonly used to evaluate a larger number of routes for the purpose of identifying the top routes to carry on to the Expert Judgement model. There are usually more data in the model as well. For example, in the Natural criteria the only measured difference between these routes are less than 4 acres of tree clearing. One of the disadvantages of using this model to evaluate only two routes, that are very similar, is that the differences between the routes are exaggerated. This model is not used to select the preferred route. However, it was used on this project to help evaluate the route alternatives.



Preferred Route Selection

The Expert Judgment Model is used by the transmission line experts on the project team to select the preferred route. The team determined the high-level siting criteria and assigned weights to represent the relative importance. Cost was weighed the most at 40% followed by Construction/Maintenance Accessibility at 30%, Community Considerations at 20%, and Schedule Delay Risk at 10%.

Next the experts ranked each route for each of the criteria. Finally, the weights are applied, and the preferred route has the lowest total score. Both Route A and B were considered in the Expert Judgement analysis.

For the Community criteria, Route A was given the best score since the route goes on the outside of a property near the proposed Redmon Road substation. Route B also may be affected by a possible new apartment complex mentioned by the landowner, while Route A would not affect the possible apartment.

Route A has a lower risk of a schedule delay when compared to Route B because there are less trees and seasonal clearing restrictions due to the sensitive bat.

Route A has a slightly better score than Route B in terms of reliability due to the fact that Route A has less angles.

For the Natural Environment Considerations, Route A scores better because Route B has more tree clearing and is in proximity to a cave which may be bat habitat.

Both Route A and Route B scored the same when it comes to Accessibility.

Route B scores slightly better in terms of Cost according to the Alternate Route Evaluation Model estimation.

In consideration of all of these factors, Route A was selected as the preferred route.

Criteria	Weight	Route A East	Route B West
Community Issues	30%	1.0	1.5
<i>Weighted</i>		0.3	0.5
Schedule Delay Risk	15%	1.0	1.5
<i>Weighted</i>		0.2	0.2
Reliability	5%	1.0	1.2
<i>Weighted</i>		0.1	0.1
Natural Environment Considerations	10%	1.0	1.5
<i>Weighted</i>		0.1	0.2
Construction/Maintenance Accessibility	5%	1.0	1.0
<i>Weighted</i>		0.1	0.1
Cost	35%	1.1	1.0
<i>Weighted</i>		0.4	0.4
TOTAL	100%	1.02	1.29

Figure 5045 Expert Judgement Model

Preferred Routes Description

Route A comes out of the Proposed Otter Creek Substation to the southwest. The route then goes to the southeast to parallel Brandenburg Road and continues to go southeast until the route goes east to avoid a series of residences along Osborne Road. Then the route goes south into the Proposed Redmon Road Substation.

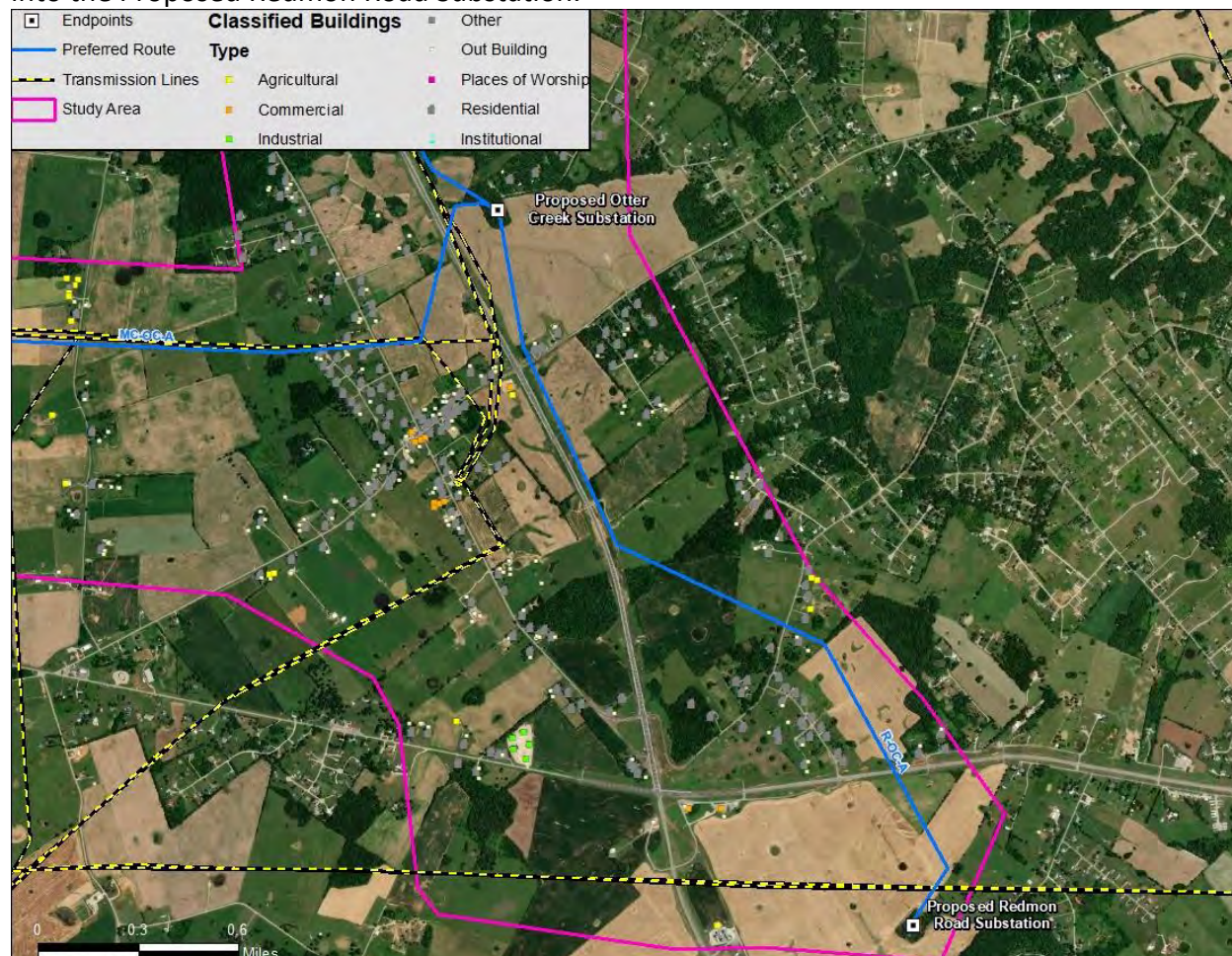


Figure 51 Redmon Road to Otter Creek Preferred Route

The preferred route for the Proposed Brandenburg Steel Mill to the Proposed Otter Creek Substation is a rebuild of the two existing Big Rivers transmission lines.

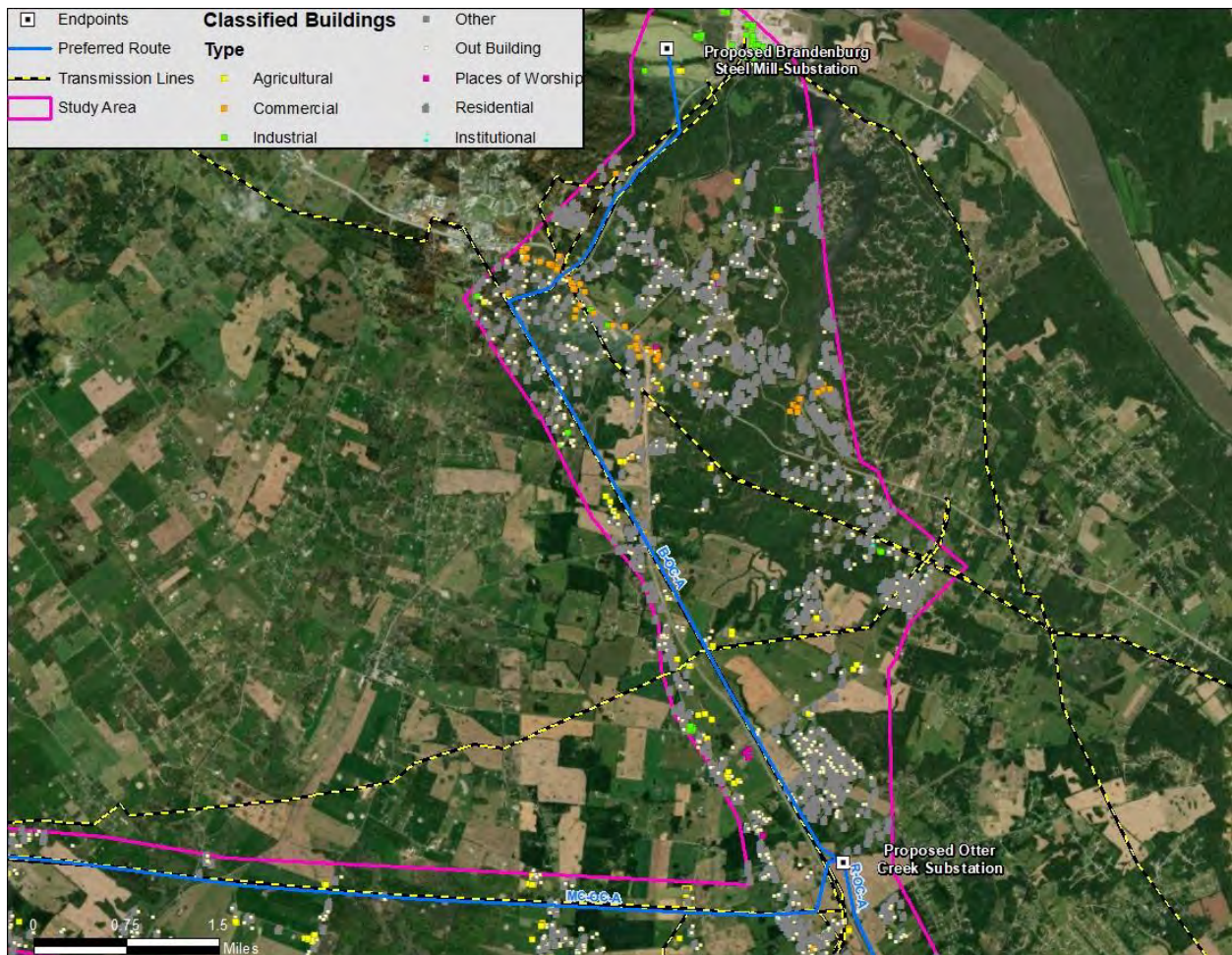


Figure 52 Brandenburg Steel Mill to Otter Creek Preferred Route

The preferred route for the Meade County Substation to the Proposed Otter Creek Substation is rebuilding the existing Big Rivers transmission line.

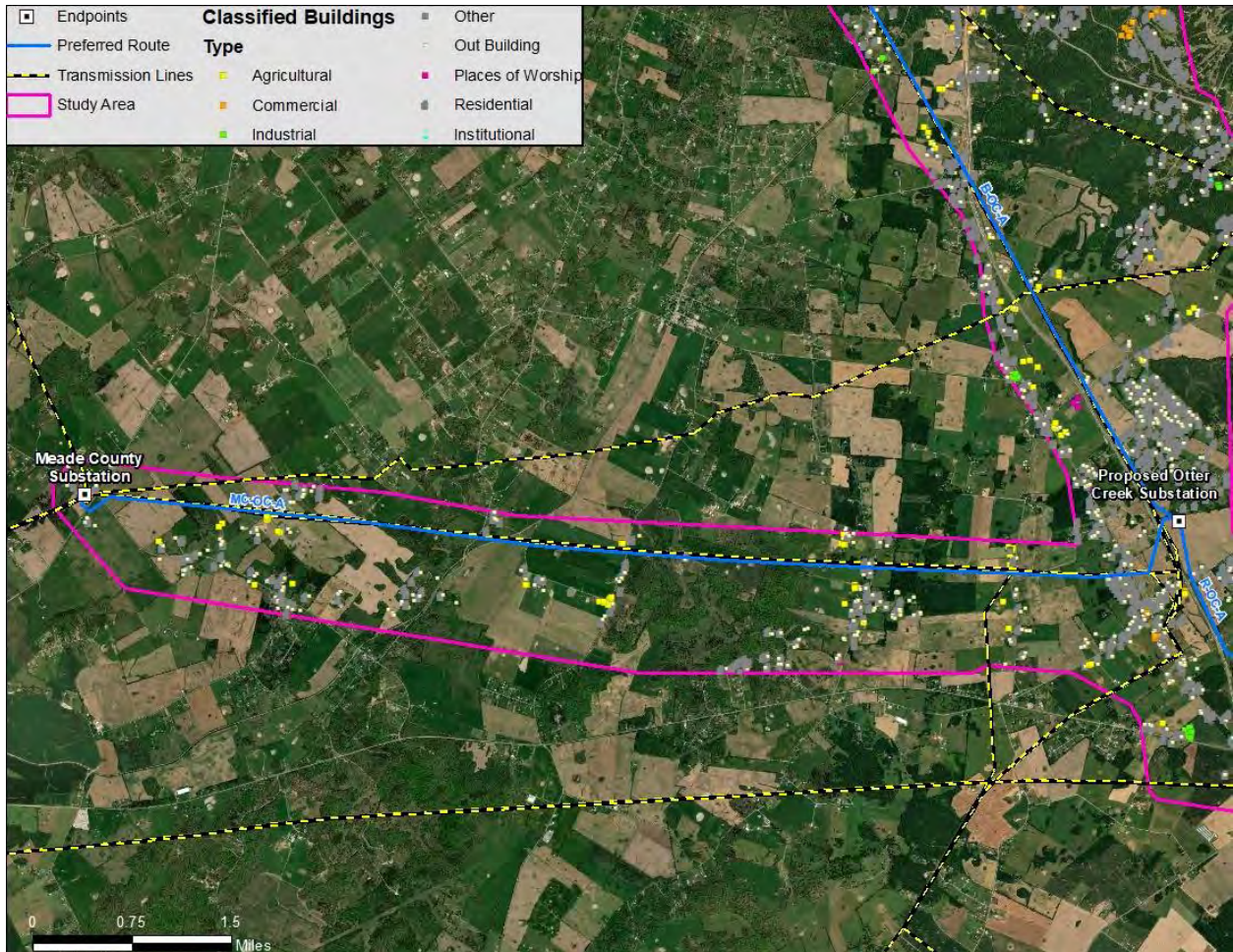


Figure 53 Meade County to Otter Creek Preferred Route



Source Data Appendix A

Parallel Existing Transmission Lines	Big Rivers
Rebuild Existing Transmission Lines (good)	Big Rivers
Parallel Interstates ROW	Kentucky Transportation Cabinet
Parallel Roads ROW	Meade County PVA
Parallel Pipelines	National Pipeline Mapping System
Future DOT Plans	Kentucky Transportation Cabinet
Parallel Railway ROW	Kentucky Transportation Cabinet
Road ROW	Meade County PVA
Rebuild Existing Transmission Lines (bad)	Big Rivers
Scenic Highways ROW	Kentucky Transportation Cabinet
Slope	
Slope 0-15%	USGS
Slope 15-30%	USGS
Slope 30-40%	USGS
Slope >40%	USGS
Areas of Least Preference	
Non-Spannable Waterbodies	Aerial Interpretation
Mines and Quarries (Active)	Kentucky Geological Survey
Buildings	Aerial Interpretation
Airports	Aerial Interpretation
Military Facilities	USGS
Center Pivot Irrigation	Aerial Interpretation
Natural Perspective	
Floodplain	
100 Year Floodplain	FEMA
Streams/Wetlands	
Streams < 5cf+Regulatory Buffer	USGS
Streams > 5cf+Regulatory Buffer	USGS
Wetlands + 30' Buffer	USGS
Outstanding State Resource Waters	Kentucky Energy and Environment Cabinet
Public Lands	
WMA + Not State Owned	Aerial Interpretation
USFS (proclamation area)	USFS
Other Conservation Land	Aerial Interpretation
USFS (actually owned)	USFS
State Owned Conservation Land	Kentucky FWS
Land Cover	
Developed Land	Aerial Interpretation
Agriculture	Aerial Interpretation



Forests	Aerial Interpretation
Wildlife Habitat	
Species of Concern Habitat	USFWS and Kentucky FWS
Areas of Least Preference	
EPA Superfund Sites	EPA
State and National Parks	NPS and Kentucky State Parks
USFS Wilderness Area	USFS
Wild/Scenic Rivers	National Wild and Scenic Rivers System
Wildlife Refuge	USFWS
State Nature Preserves	Kentucky State Parks
Designated Critical Habitat	USFWS
Built Perspective	
900-1200	Aerial Interpretation
600-900	Aerial Interpretation
300-600	Aerial Interpretation
0-300	Aerial Interpretation
Building Density	
0 - 0.05 Buildings/Acre	Aerial Interpretation
0.05 - 0.2 Buildings/Acre	Aerial Interpretation
0.2 - 1 Buildings/Acre	Aerial Interpretation
1 - 4 Buildings/Acre	Aerial Interpretation
>4 Buildings/Acre	Aerial Interpretation
Proposed Development	
Proposed Development	Big Rivers
Spannable Lakes and Ponds	
Spannable Lakes and Ponds	Aerial Interpretation
Land Use	
Commercial/Industrial	Aerial Interpretation
Agriculture (crops)	Aerial Interpretation
Agriculture (other livestock)	Aerial Interpretation
Silviculture	Aerial Interpretation
Other (forest)	Aerial Interpretation
Equine Agri-Tourism	Aerial Interpretation
Residential	Aerial Interpretation
Proximity to Eligible Historic and Archeological Sites	
Background	Kentucky Office of Archaeology and Kentucky Heritage Council
900-100	Kentucky Office of Archaeology and Kentucky Heritage Council
600-900	Kentucky Office of Archaeology and Kentucky Heritage Council



0-300	Kentucky Office of Archaeology and Kentucky Heritage Council
300-600	Kentucky Office of Archaeology and Kentucky Heritage Council
Areas of Least Preference	
Listed Archaeology Sites and Districts	Kentucky Office of Archaeology
Listed NRHP Districts and Buildings	Kentucky Heritage Council
Day Care Parcels	Meade County PVA
City and County Parcels	Meade County PVA
Cemetery Parcels	Meade County PVA
School Parcels (K-12)	Meade County PVA
Church Parcels	Meade County PVA

APPENDIX C – CULTURAL RESOURCES AND ASSOCIATED CORRESPONDENCE

KHC Effect Determination Letters for Each Project Component



ANDY BESHEAR
GOVERNOR

TOURISM, ARTS AND HERITAGE CABINET
KENTUCKY HERITAGE COUNCIL
THE STATE HISTORIC PRESERVATION OFFICE

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CRAIG A. POTTS
EXECUTIVE DIRECTOR &
STATE HISTORIC
PRESERVATION OFFICER

December 16, 2020

Ms. Allison Chapin
Burns McDonnell
1431 Opus Place, Suite 400
Downers Grove, IL 60515

Re: Determination of Effect: Meade Co. Substation to Otter Creek Substation Double Circuit Line Addition
RUS #830

Dear Ms. Chapin:

Thank you for your email and attached determination of effect for the above-mentioned project, received December 14, 2020. We understand that Big Rivers Electrical Corporation proposes to construct a 161/69 kV double circuit line between the Otter Creek Substation and the Meade County substation in Meade County, Kentucky. The proposed line corridor extends for approximately 8.5 miles and is approximately 100 feet wide. We understand from your letter that Burns McDonnell, on behalf of the United States Department of Agriculture Rural Utilities Service, is recommending a finding of No Adverse Effect for this undertaking.

The proposed project's area or potential effect (APE) contains both archaeological and cultural-historical resources. Archaeological sites include 15Md609, 15Md610, 15Md611, 15Md612, and 15Md613 as well as several isolated artifact finds. Sixty-eight cultural historical resources are located within the project (APE) including MD-115, MD-152, MD-159, MD-165, MD-167, MD-169, MD170, MD-171, MD-174, and MD-176.

During review of the archaeological report (KHC to Doug Kullen, December 10, 2020), we concurred with the recommendation that site 15Md609 and the isolated artifact finds were not eligible for the National Register of Historic Places (NRHP). Sites 15Md610-15MD613 were recommended to be not eligible for the NRHP but we did not concur. These sites have not been fully delineated and they should be considered to have an undetermined NRHP eligibility.

In our review of the cultural-historical report (KHC to Doug Kullen, November 11, 2020), we concurred that MD-170 is currently not eligible for the NRHP, but its integrity should be reevaluated in the future if its siding panels are removed. We concurred that sites MD-115, MD-165, and fifty-nine other sites in the APE are not eligible for the NRHP. We withheld comment on sites MD-152, MD-159, MD-167, MD-171, MD-174, and MD-176 because of insufficient information to establish their NRHP eligibility. The NRHP eligibility of these resources should be considered undetermined.

We understand from your letter that the proposed project will directly affect archaeological sites 15Md610, 15Md611, 15Md612, and 15Md613. Sites 15Md610, 15Md611, and 15Md613 will be affected by vehicle traffic along the transmission line corridor, but no transmission structures are planned within the portions of these sites that fall within the project APE. Site 15Md612 will be affected by both vehicle traffic and by the replacement of one existing wooden transmission structure by a new metal transmission structure. We understand that the new metal pole will be placed in the same location as the wooden pole removed.

(Continued on next page.)



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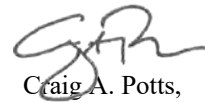
A. Chapin
Burns McDonnell
Meade Co. Substation to Otter Creek Substation Double Circuit
December 16, 2020
Page 2 of 2

Above-ground resources MD-152, MD-159, MD-167, MD-171, MD-174, and MD-176 do not fall within the transmission line corridor but are within the project's APE. We previously commented (KHC to Doug Kullen, November 11, 2020) that these sites would not be adversely affected by the project.

In consideration of our previous comments on the project and our understanding of the impacts to archaeological sites, we would concur with the no adverse effect recommendation for this project.

Should you have questions, or should project plans change, please contact Jennifer Ryall of my staff at Jennifer.Ryall@ky.gov or Chris Gunn of my staff at Chris.Gunn@ky.gov.

Sincerely,



Craig A. Potts,
Executive Director and
State Historic Preservation Officer

CP:cmg KHC # 59887, 60038, 60382, 60385



ANDY BESHEAR
GOVERNOR

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December 16, 2020

Ms. Allison Chapin
Burns McDonnell
1431 Opus Place, Suite 400
Downers Grove, IL 60515

Re: Determination of Effect: Otter Creek Substation

RUS #907

Dear Ms. Chapin:

Thank you for your email and attached documentation concerning the abovementioned project, received December 14, 2020. We understand that Big Rivers Electrical Corporation proposes to construct a 345/161 kV substation at Otter Creek, Meade County, Kentucky. We understand from your letter that Burns McDonnell, on behalf of the United States Department of Agriculture Rural Utilities Service, is recommending a finding of No Adverse Effect for this undertaking.

During our review of the archaeological report we agreed that no archaeological resources were located within the APE (KHC to Doug Kullen, December 10, 2020). We additionally received a letter report (dated October 2020) that reported no above-ground resources within the project's area of potential effect.

Because the project's APE contains no cultural resources, and therefore no historic properties eligible for the National Register of Historic Places, we would recommend that the proposed project should result in no effect to historic properties.

Should you have questions, or should project plans change, please contact Jennifer Ryall of my staff at Jennifer.Ryall@ky.gov or Chris Gunn of my staff at Chris.Gunn@ky.gov.

Sincerely,

Craig A. Potts,
Executive Director and
State Historic Preservation Officer

CP:cmg KHC # 59888, 60383, 60386



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CRAIG A. POTTS
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PRESERVATION OFFICER

December 16, 2020

Ms. Allison Chapin
Burns McDonnell
1431 Opus Place, Suite 400
Downers Grove, IL 60515

Re: Determination of Effect: Redmon Road EHV Switching Station

RUS #909

Dear Ms. Chapin:

Thank you for your email and attached documentation concerning the abovementioned project, received December 14, 2020. We understand that Big Rivers Electrical Corporation proposes to construct a switching Station along Redmon Road in Meade County, Kentucky. We understand that the survey area included approximately 6.5 acres for the proposed station location and a 1,630-foot access road. We understand from your letter that Burns McDonnell, on behalf of the United States Department of Agriculture Rural Utilities Service, is recommending a finding of No Adverse Effect for this undertaking.

During our review of the archaeological report we agreed that no archaeological resources were located within the APE (KHC to Doug Kullen, December 10, 2020). We additionally received a letter report (dated October 2020) that reported no above-ground resources within the project's area of potential effect.

Because the project's APE contains no cultural resources, and therefore no historic properties eligible for the National Register of Historic Places, we would recommend that the proposed project should result in no effect to historic properties.

Should you have questions, or should project plans change, please contact Jennifer Ryall of my staff at Jennifer.Ryall@ky.gov or Chris Gunn of my staff at Chris.Gunn@ky.gov.

Sincerely,

Craig A. Potts,
Executive Director and
State Historic Preservation Officer

CP:cmg KHC # 59885, 60380, 60387



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December 16, 2020

Ms. Allison Chapin
Burns McDonnell
1431 Opus Place, Suite 400
Downers Grove, IL 60515

Re: Determination of Effect: Redmon Road EHV Switching Station to Otter Creek Substation Transmission Line
RUS #1071

Dear Ms. Chapin:

Thank you for your email and attached documentation concerning the abovementioned project, received December 14, 2020. We understand that Big Rivers Electrical Corporation proposes to construct a 345 kV transmission line between the Redmon Road EHV switching station and the Otter Creek substation in Meade County, Kentucky. The proposed line corridor extends for approximately 2.5 miles and is approximately 100 feet wide. We understand from your letter that Burns McDonnell, on behalf of the United States Department of Agriculture Rural Utilities Service, is recommending a finding of No Adverse Effect for this undertaking.

During our review of the archaeological report, we agreed that no archaeological properties had been identified within the project's area of potential effect (APE) (KHC to Doug Kullen, December 10, 2020).

The cultural-historical survey identified twelve resources within the project's APE. In our review of the cultural-historical report (KHC to Doug Kullen, November 11, 2020), withheld comment on the National Register of Historic Places (NRHP) eligibility of MD-235. We agreed that the remaining eleven above-ground resources are not eligible for the NRHP.

In our review of the cultural-historical report, we additionally commented that, although MD-235 has an undetermined NRHP eligibility and falls within the project's APE, that it would not be adversely affected by the project.

In consideration of our previous comments on the project and our understanding of the impacts to MD-235, we would concur with the no adverse effect recommendation for this project.

Should you have questions, or should project plans change, please contact Jennifer Ryall of my staff at Jennifer.Ryall@ky.gov or Chris Gunn of my staff at Chris.Gunn@ky.gov.

Sincerely,

Craig A. Potts,
Executive Director and
State Historic Preservation Officer

CP:cmg, jr KHC # 59886, 60040, 60381, 60388



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CRAIG A. POTTS
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December 16, 2020

Ms. Allison Chapin
Burns McDonnell
1431 Opus Place, Suite 400
Downers Grove, IL 60515

Re: Determination of Effect: Otter Creek Substation to Brandenburg Steel Mill Transmission Line

RUS #1072

Dear Ms. Chapin:

Thank you for your email and attached documentation concerning the abovementioned project, received November 18, 2020. We understand that Big Rivers Electrical Corporation proposes to construct a 345 kV transmission line between the Otter Creek substation and the Nucor Brandenburg steel mill in Meade County, Kentucky. The proposed line corridor extends for approximately 8.1 miles and is approximately 100 feet wide. We understand from your letter that Burns McDonnell, on behalf of the United States Department of Agriculture Rural Utilities Service, is recommending a finding of No Adverse Effect for this undertaking.

The project's area of potential effect (APE) contains two previously recorded archaeological sites – 15Md598 and 15Md608 – and during archaeological survey of the APE, the investigator identified one additional non-site isolated artifact find. The National Register of Historic Places (NRHP) eligibility of site 15Md598 was recently evaluated as part of a separate undertaking. During consultation on that project, we concurred that the site is not eligible for the NRHP (KHC to USACE April 3, 2020). In our review of the archaeological survey of the APE (KHC to Doug Kullen, December 10, 2020), we agreed that 15Md608 and the isolated artifact find are not eligible for the NRHP.

The cultural-historical survey of the project's APE resulted in the identification of fifty-eight resources. In our review of that report (KHC to Doug Kullen, November 11, 2020), we recommended that forty-eight of these resources were not eligible for the NRHP. We recommended that MD-143 (the McGehee Cemetery), MD-159 (the Louisville, Henderson, and St. Louis Railroad), MD-191, MD-208(c), MD-218, MD-221, MD-226, MD-227, and MD-230 (the Buck Grove Cemetery) were insufficiently described to establish their NRHP eligibility. The NRHP eligibility of these resources is, therefore, undetermined. We additionally recommended that MD-228 appears to be eligible for the NRHP.

Above-ground resources MD-143, MD-159, MD-191, MD-208(c), MD-218, MD-221, MD-226, MD-227, MD-228, and MD-230 do not fall within the transmission line corridor, but are within the project's APE. In our review of the cultural-historical report, we commented that these sites would not be adversely affected by the project.

In consideration of our previous comments on the project we would concur with the no adverse effect recommendation for this project

(Continued on next page.)



An Equal Opportunity Employer

A. Chapin
Burns McDonnell
Revised Otter Creek to BSM TL
December 16, 2020
Page 2 of 2

Should you have questions, or should project plans change, please contact Jennifer Ryall of my staff at Jennifer.Ryall@ky.gov or Chris Gunn of my staff at Chris.Gunn@ky.gov.

Sincerely,



Craig A. Potts,
Executive Director and
State Historic Preservation Officer



ANDY BESHEAR
GOVERNOR

TOURISM, ARTS AND HERITAGE CABINET
KENTUCKY HERITAGE COUNCIL
THE STATE HISTORIC PRESERVATION OFFICE

MICHAEL E. BERRY
SECRETARY

JACQUELINE COLEMAN
LT. GOVERNOR

410 HIGH STREET
FRANKFORT, KENTUCKY 40601
(502) 564-7005
www.heritage.ky.gov

CRAIG A. POTTS
EXECUTIVE DIRECTOR &
STATE HISTORIC
PRESERVATION OFFICER

November 11, 2020

Mr. Douglas Kullen
Burns McDonnell
1431 Opus Place, Suite 400
Downers Grove, IL 60515

Re: Brandenburg Steel Mill Substation, Brandenburg, Meade County, Kentucky

Dear Mr. Kullen:

Thank you for your email and attached documentation concerning the abovementioned project, received October 15, 2020. We understand that Big Rivers Electrical Corporation proposes to construct a 345 kV substation on the Brandenburg Steel Mill property, Brandenburg, Meade County Kentucky. We understand that the substation will be constructed with USDA-RUS funding.

We agree that the location of the proposed substation was previously and recently evaluated as part of a USACE review process. The proposed substation will affect two previously identified archaeological sites 15Md459 and 15Md598. During the USACE consultation, we concurred that sites 15Md459 and 15Md598 are not eligible for the National Register of Historic Places (KHC to USACE, April 3, 2020).

We understand that no historic-age aboveground resources were identified within the APE for this project.

Based on the above, and our previous consultation on this project, we recommend a No Historic Properties Affected finding for this project.

Sincerely,

Craig A. Potts,
Executive Director and State Historic Preservation Officer

CP:cmg KHC # 57165, 59889, 60036



An Equal Opportunity Employer



ANDY BESHEAR
GOVERNOR

TOURISM, ARTS AND HERITAGE CABINET
KENTUCKY HERITAGE COUNCIL
THE STATE HISTORIC PRESERVATION OFFICE

MICHAEL E. BERRY
SECRETARY

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CRAIG A. POTTS
EXECUTIVE DIRECTOR &
STATE HISTORIC
PRESERVATION OFFICER

November 11, 2020

Mr. Douglas Kullen
Burns McDonnell
1431 Opus Place, Suite 400
Downers Grove, IL 60515

Re: Meade County Substation 161 kV Terminal, Meade County, Kentucky
and
Historic-Age Resource Reconnaissance Survey of Meade County Substation 161 kV Terminal Rebuild, Meade County, Kentucky (RUS #1070), prepared by Brandy Harris and Jessica Kepka of Burns McDonnell. Report dated October 2020.

Dear Mr. Kullen:

Thank you for your email and attached documentation concerning the abovementioned project, received October 15, 2020. We understand that Big Rivers Electrical Corporation proposes to construct a 161 kV terminal at the Meade County substation, Meade County Kentucky. We understand that the substation will be constructed with USDA-RUS funding.

We understand that the proposed work will take place entirely within the footprint of the existing substation. Based on our review of the historic-age resource reconnaissance survey report cited above, we understand that the authors of the report identified four previously recorded historic-age resources on four properties within the Project's APE. We understand that the authors recommended all four historic-age resources as Not Eligible for listing on the NRHP.

Based on our review, we withhold comment on the NRHP eligibility of MD-152, as we did in the previous report, as the photos are insufficient for us to understand the historic integrity of this site. We concur with the authors' recommendations that MD-115, MD-151, and MD-165 (existing transmission line segment) do not appear to preserve sufficient historic integrity or significance and, as a result, appear to be Not Eligible for listing on the NRHP. As it does not appear that MD-152 would be negatively impacted by this project, we are not requesting additional information at this time and we are able to recommend a No Historic Properties Affected finding for this project.

As we reviewed a digital version of the aboveground report, please provide (1) bound hard copy for our archival purposes.

If you have any questions, or if project plans should change, please contact Chris Gunn of my staff at Chris.Gunn@ky.gov or Jennifer Ryall of my staff at Jennifer.Ryall@ky.gov.

Sincerely,

Craig A. Potts,
Executive Director and State Historic Preservation Officer

CP:cmg KHC # 59890, 60039



An Equal Opportunity Employer

KHC Email Correspondence

From: [Gunn, Chris \(Heritage Council\)](#)
To: [Chapin, Allison M.](#); [Potts, Craig A \(Heritage Council\)](#)
Cc: [Ryall, Jennifer \(Heritage Council\)](#); [Jerrod Thomas](#); [Seibert, Erika - RD, Washington, DC](#); [bob.warren](#); [Thornhill, Steve](#); [Chambliss, Mike](#); [Kullen, Douglas](#); [Kopich, Suzanne - RD, Washington, DC](#); [barbara.britton](#)
Subject: Re: Big Rivers Electric Corporation - Brandenburg Steel Mill 345 kV and 161kV Transmission Line Project - Archaeological and Historic-Age Resource Reports
Date: Monday, December 14, 2020 3:24:41 PM

Hello Allison,

Yes, we need to receive five total determinations (one each for the five different undertakings) that lays out their APE, the cultural-historical and archaeological cultural resources in their APEs, the eligibility of those resources for the NRHP, **a specific description of how these resources will be affected by the undertakings**, and an appropriate determination of effect to historic properties that takes into account the eligibility of those resources (including any comments that we have made regarding their eligibility).

We have reviewed the identification reports, and already provided our comments on the eligibility of the resources identified. The determination of effect letters should reflect these comments. I know that I disagreed with the eligibility recommendation for some of the archaeological resources described in the reports, especially for the Meade Co to Otter Creek TL. Most of the sites described in this report have not had sufficient investigation to determine their eligibility for the NRHP because the sites extend outside of the TL corridor (outside the APE). So, their status has to be left undermined. I believe Jenn withheld comment or disagreed on the NRHP eligibility of some of the cultural-historical resources as well. In short, you have these comments from us in the report review letters, and the determination of effect letters should take these comments into account.

The most important pieces of information that we have requested but not yet been provided have to do with how the resources identified will be affected by the projects. Will new poles be placed on them? Will old poles be removed from them? Will they be affected by an access route. Other kinds of effects? Outside of the APE footprints, we have yet to review any kind of concrete plans for the work that is being proposed. These kinds of details are crucial for establishing if and/or to what extent the sites are affected and provides the basis from which to use the eligibility determinations to arrive at one fo the three determinations of effect for the undertaking - no effect, no adverse effect, or adverse effect.

We look forward to receiving the letters,

Thank you,
Chris Gunn

Christopher M. Gunn, Ph.D.
Archaeology Review Coordinator

Kentucky Heritage Council
410 High Street
Frankfort, KY 40601

502-892-3615

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[If you have an emergency action that requires Section 106 consultation, please include our Site Protection Manager Nick Laracuate \[nicolas.laracuate@ky.gov\]\(mailto:nicolas.laracuate@ky.gov\) on your emails to the review staff.](#)

From: Chapin, Allison M. <amchapin@burnsmcd.com>

Sent: Monday, December 14, 2020 1:14 PM

To: Gunn, Chris (Heritage Council) <Chris.Gunn@ky.gov>; Potts, Craig A (Heritage Council) <craig.potts@ky.gov>

Cc: Ryall, Jennifer (Heritage Council) <Jennifer.Ryall@ky.gov>; Jerrod Thomas <jerrod.thomas@bigrivers.com>; Seibert, Erika - RD, Washington, DC <erika.seibert@usda.gov>; bob.warren <bob.warren@bigrivers.com>; Thornhill, Steve <sthornh@burnsmcd.com>; Chambliss, Mike <Michael.Chambliss@bigrivers.com>; Kullen, Douglas <dkullen@burnsmcd.com>; Kopich, Suzanne - RD, Washington, DC <Suzanne.Kopich@usda.gov>; barbara.britton <barbara.britton@usda.gov>

Subject: RE: Big Rivers Electric Corporation - Brandenburg Steel Mill 345 kV and 161kV Transmission Line Project - Archaeological and Historic-Age Resource Reports

****CAUTION** PDF attachments may contain links to malicious sites. Please contact the COT Service Desk ServiceCorrespondence@ky.gov for any assistance.**

Thank you, Chris.

Just to make sure we fully understand and get the complete information to you, I want to summarize what we plan to send.

- One cover letter for each of these five project components with a summary/determination of

effect to cultural and historic resources:

- Otter Creek Substation (RUS #907)
- Redmon Road Switching Station (RUS #909)
- BSM to Otter Creek
- Meade to Otter Creek Line (RUS #830)
- Redmon Road to Otter Creek (RUS #1071)
- Otter Creek to BSM (RUS#1072)

It is our understanding that consultation is complete for these two projects (refer to attached email and letters received):

- Brandenburg Steel Mill Substation (RUS #908)
- Meade County Substation (RUS #1070)

In summary, our response to you will be a total of five letters with a summary of the APE and determination of effect for both historic and cultural resources. Please confirm you have the digital copy of these full reports that have these determinations of effect within the report itself.

We just want to make sure that is all you need at this time.

We plan to send these back to you today, so if this is not correct, please let us know and we are happy to get you what you need to complete this review. I am also available via cell for a quick call to clear this up quickly if you can give me a call.

Thank you, Chris.

Regards,
Allison

Allison Chapin \ Burns & McDonnell
Section Manager \ Environmental Services
773-251-7285

From: Gunn, Chris (Heritage Council) <Chris.Gunn@ky.gov>

Sent: Monday, December 14, 2020 8:57 AM

To: Chapin, Allison M. <amchapin@burnsmcd.com>

Cc: Ryall, Jennifer (Heritage Council) <Jennifer.Ryall@ky.gov>; Seibert, Erika - RD, Washington, DC <erika.seibert@usda.gov>

Subject: Re: Big Rivers Electric Corporation - Brandenburg Steel Mill 345 kV and 161kV Transmission Line Project - Archaeological and Historic-Age Resource Reports

Hello Allison,

Thanks - here are some answers to the questions:

Yes, we have completed our review of the identification reports for this project. However, we have not completed the consultation. We do need the revised determinations of effect for each of these

undertakings, and I believe that Erika Seibert is helping to craft those. After we review the revised DOEs, we hope to be able to finalize our 106 consultation for these projects.

No, we do need a revised transmission letter for the identification reports.

Yes, we need the printed report copies and the printed KHC (but not OSA) site forms. Please do not bind the KHC site forms with the above-ground report.

Thank you,
Chris Gunn

Christopher M. Gunn, Ph.D.
Archaeology Review Coordinator
Kentucky Heritage Council
410 High Street
Frankfort, KY 40601

502-892-3615

To our constituents, please be advised the KHC Historic Resource Library is now open for consultants wishing to conduct background research and site checks. Consultants can make appointments to visit our office in two time slots a day on Mondays, Wednesdays, and Fridays: 9 a.m. to 12 p.m. and 1 :30 p.m. to 4:30 p.m. We ask that you [please refer to this memo for information](#) and follow all protocols outlined there and posted at our facility. Consultants who require this service may also continue to utilize the electronic records review portal at <https://secure.kentucky.gov/formservices/Heritage/SiteID>. The rest of the office remains open on a limited basis. Staff continue to telecommute or alternate days in the office and are not available for face-to-face meetings or site visits. We continue to recommend that when possible, *environmental review reports, tax credit applications and supporting materials, National Register correspondence, or other documents that require hard-copy submissions be mailed or sent by delivery service* to the Kentucky Heritage Council, 410 High Street, Frankfort, KY 40601, so that staff may follow up with you by phone.

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If you have an emergency action that requires Section 106 consultation, please include our Site Protection Manager Nick Laracuate nicolas.laracuate@ky.gov on your emails to the review staff.

From: Chapin, Allison M. <amchapin@burnsmcd.com>

Sent: Monday, December 14, 2020 8:30 AM

To: Gunn, Chris (Heritage Council) <Chris.Gunn@ky.gov>

Cc: Ryall, Jennifer (Heritage Council) <Jennifer.Ryall@ky.gov>; Seibert, Erika - RD, Washington, DC <erika.seibert@usda.gov>

Subject: RE: Big Rivers Electric Corporation - Brandenburg Steel Mill 345 kV and 161kV Transmission Line Project - Archaeological and Historic-Age Resource Reports

Chris/Jennifer –

Thank you so much! You just made my Monday that much better. Big Rivers will truly appreciate your response today. If I understand your email below and the attached reports, we do not need to send a revised cover letter for each report or additional information. Your review is complete, we just have to send the printed and bound copies.

Please confirm that is correct?

Allison

Allison Chapin \ Burns & McDonnell
Section Manager \ Environmental Services
773-251-7285

From: Gunn, Chris (Heritage Council) <Chris.Gunn@ky.gov>

Sent: Monday, December 14, 2020 7:25 AM

To: Chapin, Allison M. <amchapin@burnsmcd.com>

Cc: Ryall, Jennifer (Heritage Council) <Jennifer.Ryall@ky.gov>

Subject: Re: Big Rivers Electric Corporation - Brandenburg Steel Mill 345 kV and 161kV Transmission Line Project - Archaeological and Historic-Age Resource Reports

Hello Allison,

Please find attached our responses for the five revised archaeological reports for the five undertakings sponsored by USDA-RUS. Please help to ensure that we receive the printed and bound copies of archaeological reports and cultural-historical reports and site forms that we requested.

Thank you,
Chris Gunn

Christopher M. Gunn, Ph.D.
Archaeology Review Coordinator
Kentucky Heritage Council
410 High Street
Frankfort, KY 40601

502-892-3615

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If you have an emergency action that requires Section 106 consultation, please include our Site Protection Manager Nick Laracuento nicolas.laracuento@ky.gov on your emails to the review staff.

From: amchapin@burnsmcd.com <amchapin@burnsmcd.com>

Sent: Thursday, December 10, 2020 2:01 PM

To: Ryall, Jennifer (Heritage Council) <Jennifer.Ryall@ky.gov>; Gunn, Chris (Heritage Council) <Chris.Gunn@ky.gov>

Subject: FW: Big Rivers Electric Corporation - Brandenburg Steel Mill 345 kV and 161kV Transmission Line Project - Archaeological and Historic-Age Resource Reports



amchapin@burnsmcd.com sent you a secure message

On Tue, Dec 01, 2020 at 03:05 PM amchapin@burnsmcd.com wrote:
Chris and Jennifer - just wanted to make sure this didn't get lost in your inbox and you were able to download the files. Please let me know if you have any access issues.
Thank you!

On Fri, Nov 20, 2020 at 08:58 PM amchapin@burnsmcd.com wrote:
Chris,
We are sending the revised final two reports for your review. Those include Meade to Otter Creek RUS #830 and Otter Creek to BSM RUS #1072.
Just so you have it all in one place, we are also attaching the other requested revised reports and the cover letter.
To summarize where we stand for the 7 project components:

1. BSM Substation - consultation complete.
2. Meade County Substation - consultation complete. One hard copy to be sent under separate cover.

3. Redmon Road to Otter Creek #1071 - attached historic and cultural resource reports (2 total) with requested revisions
4. Redmon Road Switching Station #909 - attached with figure revisions.
5. Otter Creek Substation #907 - attached with figure revisions.
6. BSM to Otter Creek #1072 - attached with requested revisions
7. Meade County Sub to Otter Creek Sub #830 - attached with requested revisions

Have a great weekend.
Thank you,
Allison

[Access message](#)

Secured by Accellion



Attachments expire on Dec 24, 2020



7 PDFs

USDA RD Applicant Section 106 SHPO Recommended Finding_Big Rivers Electric.pdf, Otter Ck to BSM RUS #1072 Archy Report rev2.pdf, Meade to Otter Ck RUS #830 Archy Report rev2.pdf, Redmon Rd to Otter Ck RUS 1071 Archy Report rev.pdf, Redmon Road RUS#909 Archy Survey Report rev.pdf, Archy Survey Report RUS #907 Otter Creek rev.pdf, Redmon Rd to Otter Creek Historic Resources Report_RUS#1071.pdf

This message requires that you sign in to access the message and any file attachments.

From: [Gunn, Chris \(Heritage Council\)](#)
To: [Chapin, Allison M.](#); [Ryall, Jennifer \(Heritage Council\)](#)
Cc: [barbara.britton](#); [Seibert, Erika - RD, Washington, DC](#); [Kullen, Douglas](#); [Thornhill, Steve](#); [bob.warren](#); [Jerrod Thomas](#)
Subject: Re: Big Rivers Electric Corporation - Brandenburg Steel Mill 345 kV and 161kV Transmission Line Project - Historic-Age Resource Reports
Date: Wednesday, November 18, 2020 2:43:08 PM
Attachments: [image001.png](#)

Hello Allison,

It is ok if the information is also in the reports, but what we really need is an updated consultation letter with our office that lays out all of the pieces of information that we consider in Section 106.

This would be a detailed description of the project activities (the undertaking), the project's APE, the historic resources within the APE, the eligibility of those resources, and the project's effects on those resources. It would also be helpful to revisit/update how this project is being conducted in relation to the USDA-RD NPA. When we began consultation on this project, the project was under the terms of the NPA, but you emailed last week to say that it was not under the NPA any longer. So, updating that aspect of the regulatory context would be appreciated as well.

Thank you,
Chris Gunn

Christopher M. Gunn, Ph.D.
Archaeology Review Coordinator
Kentucky Heritage Council
410 High Street
Frankfort, KY 40601

502-892-3615

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If you have an emergency action that requires Section 106 consultation, please include our Site Protection Manager Nick Laracuate nicolas.laracuate@ky.gov on your emails to the review staff.

From: Chapin, Allison M. <amchapin@burnsmcd.com>

Sent: Wednesday, November 18, 2020 3:17 PM

To: Gunn, Chris (Heritage Council) <Chris.Gunn@ky.gov>; Ryall, Jennifer (Heritage Council) <Jennifer.Ryall@ky.gov>

Cc: barbara.britton <barbara.britton@usda.gov>; Seibert, Erika - RD, Washington, DC <erika.seibert@usda.gov>; Kullen, Douglas <dkullen@burnsmcd.com>; Thornhill, Steve <sthornh@burnsmcd.com>; bob.warren <bob.warren@bigrivers.com>; Jerrod Thomas <jerrod.thomas@bigrivers.com>

Subject: RE: Big Rivers Electric Corporation - Brandenburg Steel Mill 345 kV and 161kV Transmission Line Project - Historic-Age Resource Reports

Thank you Chris –

To confirm this statement: **This information should be sent to us in an updated consultation packet that contains a determination of effect for the resources identified during the surveys and that are affected by the project now under review**

Doug is working on revising the two reports that had resources found. We will include more details on the project methods. Will that be sufficient?

Thank you,

Allison

Allison Chapin \ Burns & McDonnell
Section Manager \ Environmental Services
773-251-7285

From: Gunn, Chris (Heritage Council) <Chris.Gunn@ky.gov>

Sent: Wednesday, November 18, 2020 1:59 PM

To: Chapin, Allison M. <amchapin@burnsmcd.com>; Ryall, Jennifer (Heritage Council) <Jennifer.Ryall@ky.gov>

Cc: barbara.britton <barbara.britton@usda.gov>; Seibert, Erika - RD, Washington, DC <erika.seibert@usda.gov>; Kullen, Douglas <dkullen@burnsmcd.com>; Thornhill, Steve <sthornh@burnsmcd.com>; bob.warren <bob.warren@bigrivers.com>; Jerrod Thomas <jerrod.thomas@bigrivers.com>

Subject: Re: Big Rivers Electric Corporation - Brandenburg Steel Mill 345 kV and 161kV Transmission Line Project - Historic-Age Resource Reports

Hello Allison,

I'm also bringing in Jenn Ryall on this response so that she can address the questions about the above-ground reports.

Redmon Road and Otter Creek stations:

The thing that needs to be clarified concerning those two project areas is when the tree clearing occurred and if it was done in relation to the project or as a condition of the purchase. This documentation is important to establish that there has not been anticipatory demolition or activity prior to the initiation of consultation that precludes our ability to assess the presence and significance of historic properties - both above and below ground.

Meade County to Otter Creek Line report.

This information is helpful to understand. However, it does point to a larger issue with the consultation - we have not been given sufficient information to understand effect. When we initiated consultation, the designs for this project were not finalized. Without this information, we cannot really completely comment on effects. The information that you have provided demonstrates that there is a direct effect to these sites. The question then becomes is it an adverse effect. As I expressed to Doug, we would be happy to consider minimization measures to avoid adverse effect in light that the project entail pole replacement. However, we would need to understand what kind of equipment will be needed to remove the existing poles and the amount of work and prep that will be necessary to install the new poles. This information should be sent to us in an updated consultation packet that contains a determination of effect for the resources identified during the surveys and that are affected by the project now under review.

Above-ground reports - I'll let Jenn respond on these.

** As I am writing this, I see that you sent another email with some revise reports.**

Thank you,
Chris Gunn

Christopher M. Gunn, Ph.D.
Archaeology Review Coordinator
Kentucky Heritage Council
410 High Street
Frankfort, KY 40601

502-892-3615

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visits. We continue to recommend that when possible, *environmental review reports, tax credit applications and supporting materials, National Register correspondence, or other documents that require hard-copy submissions be mailed or sent by delivery service* to the Kentucky Heritage Council, 410 High Street, Frankfort, KY 40601, so that staff may follow up with you by phone.

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From: Chapin, Allison M. <amchapin@burnsmcd.com>

Sent: Wednesday, November 18, 2020 12:23 PM

To: Gunn, Chris (Heritage Council) <Chris.Gunn@ky.gov>

Cc: barbara.britton <barbara.britton@usda.gov>; Seibert, Erika - RD, Washington, DC <erika.seibert@usda.gov>; Kullen, Douglas <dkullen@burnsmcd.com>; Thornhill, Steve <sthornh@burnsmcd.com>; bob.warren <bob.warren@bigrivers.com>; Jerrod Thomas <jerrod.thomas@bigrivers.com>

Subject: FW: Big Rivers Electric Corporation - Brandenburg Steel Mill 345 kV and 161kV Transmission Line Project - Historic-Age Resource Reports

Hello Chris,

I understand that you talked to Doug yesterday. Thank you for returning our calls! If you have a few minutes to call me, that would be beneficial to talk about next steps to clear up the remaining action items. My cell phone is listed below. Or if you can simply reply back to this email with concurrence on next steps, that would be sufficient.

A few key topics we want to address:

1. Redmon Road and Otter Creek Substation reports - Please see email below from Big Rivers.
 - a. Once we make the requested figure revisions to all of the reports, will you be able to consult on these two projects based on the information below?
2. Meade County to Otter Creek Line Report
 - a. Big Rivers will not impact any of the identified sites. The sites are all located within the previously disturbed, existing ROW. The poles will all be replaced pole for pole in the same disturbance hole. Disturbance will be equal to past maintenance and replacement activities that have occurred over the last 7 decades to repair the wooden poles. The new steel poles will be in the same hole and will require less maintenance in the future.
 - b. Doug is going to send the revised language to clear this up. We are revising the reports and will resend, but if you find you need more details based on the email you receive from Doug, please let us know so we can get you everything you need to make your final determination.
 - c. Will this
3. Above-ground reports: You mentioned that the Redmon Road to Otter Creek and Otter Creek to Brandenburg Steel Mill reports duplicate site numbers for different resources.

- a. There were 3 resource numbers that were duplicated in the two reports. When we got the numbers corrected with the SHPO she just reassigned numbers for 1071 so that the numbers for 1072 could remain the same. Since the numbers didn't need corrected for 1072 we only needed to adjust 1071.
 - i. Redmon Road to Otter Creek #1071 report was revised and we will resend. There will be no change to Otter Creek to Brandenburg #1072.
 - ii. Please confirm this will clear this up.

Thank you – again, feel free to call my cell to walk through any of this. Our goal is to get you revised reports tomorrow for all of this so you can complete your review, however if we are misinterpreting anything and you still need more info, please advise!

We appreciate you working with us on this.

Allison

Allison Chapin \ Burns & McDonnell
Section Manager \ Environmental Services
773-251-7285

From: Warren, Bob <Bob.Warren@bigrivers.com>
Sent: Monday, November 16, 2020 11:12 AM
To: Gunn, Chris (Heritage Council) <Chris.Gunn@ky.gov>
Cc: Thornhill, Steve <sthornh@burnsmcd.com>; Harris, Brandy M <bmharris@burnsmcd.com>; Jerrod Thomas <jerrod.thomas@bigrivers.com>; lauren.rayburn@usda.gov; Kullen, Douglas <dkullen@burnsmcd.com>; Ryall, Jennifer (Heritage Council) <Jennifer.Ryall@ky.gov>; Chapin, Allison M. <amchapin@burnsmcd.com>
Subject: RE: Big Rivers Electric Corporation - Brandenburg Steel Mill 345 kV and 161kV Transmission Line Project - Historic-Age Resource Reports

Chris:

Big Rivers has **not yet purchased** the two parcels needed for Redmon Road Switching Station and for Otter Creek Substation.

Bob Warren, P.E.
Director Engineering
Big Rivers Electric
Third & Main Streets
Henderson, Kentucky 42420
Phone 270-844-6212

From: Gunn, Chris (Heritage Council) <Chris.Gunn@ky.gov>
Sent: Monday, November 16, 2020 9:01 AM
To: Chapin, Allison M. <amchapin@burnsmcd.com>; Ryall, Jennifer (Heritage Council) <Jennifer.Ryall@ky.gov>
Cc: Thornhill, Steve <sthornh@burnsmcd.com>; Harris, Brandy M <bmharris@burnsmcd.com>; Thomas, Jerrod <Jerrod.Thomas@bigrivers.com>; Warren, Bob <Bob.Warren@bigrivers.com>; lauren.rayburn@usda.gov; Kullen, Douglas <dkullen@burnsmcd.com>

Subject: Re: Big Rivers Electric Corporation - Brandenburg Steel Mill 345 kV and 161kV Transmission Line Project - Historic-Age Resource Reports

Hello Allison,

Please find attached the signed responses for these projects.

The reports were not specific about the timeline of the land clearing. Please provide documentation of the clearing of the land before Big Rivers purchased the properties. The photos in the report appear to demonstrate that the land was cleared very recently prior to the survey, and this will clear up the matter.

Thank you,
Chris Gunn

Christopher M. Gunn, Ph.D.
Archaeology Review Coordinator
Kentucky Heritage Council
410 High Street
Frankfort, KY 40601

502-892-3615

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If you have an emergency action that requires Section 106 consultation, please include our Site Protection Manager Nick Laracuate nicolas.laracuate@ky.gov on your emails to the review staff.

From: Chapin, Allison M. <amchapin@burnsmcd.com>

Sent: Friday, November 13, 2020 4:02 PM

To: Gunn, Chris (Heritage Council) <Chris.Gunn@ky.gov>; Ryall, Jennifer (Heritage Council)

<Jennifer.Ryall@ky.gov>

Cc: Thornhill, Steve <sthornh@burnsmcd.com>; Harris, Brandy M <bmharris@burnsmcd.com>; Jerrod Thomas <jerrod.thomas@bigrivers.com>; bob.warren <bob.warren@bigrivers.com>; lauren.rayburn@usda.gov <lauren.rayburn@usda.gov>; Kullen, Douglas <dkullen@burnsmcd.com>

Subject: RE: Big Rivers Electric Corporation - Brandenburg Steel Mill 345 kV and 161kV Transmission Line Project - Historic-Age Resource Reports

Thank you, Chris. We are reviewing this to see if we have more questions. However, one initial question is on this comment:

Redmon Road EHV switch station and Otter Creek substation:

Because project activities began before the initiation of project activities, we are precluded from comment on these two projects.

The clearing and farming activity that occurred was not related to the Project, Big Rivers did not own the land and this was a farming activity that occurred independently of the project. Can you help us understand why you are precluded from comment on those two projects? And is that for cultural as well as historic?

Thank you very much!

Allison

Allison Chapin \ Burns & McDonnell
Section Manager \ Environmental Services
773-251-7285

From: Gunn, Chris (Heritage Council) <Chris.Gunn@ky.gov>

Sent: Friday, November 13, 2020 1:40 PM

To: Chapin, Allison M. <amchapin@burnsmcd.com>; Ryall, Jennifer (Heritage Council) <Jennifer.Ryall@ky.gov>

Cc: Thornhill, Steve <sthornh@burnsmcd.com>; Harris, Brandy M <bmharris@burnsmcd.com>; Jerrod Thomas <jerrod.thomas@bigrivers.com>; bob.warren <bob.warren@bigrivers.com>; lauren.rayburn@usda.gov

Subject: Re: Big Rivers Electric Corporation - Brandenburg Steel Mill 345 kV and 161kV Transmission Line Project - Historic-Age Resource Reports

Hello Allison,

I was hoping to have the signed letters back for these project by now, but I have not received them yet. I did want to provide you with some comments, primarily from my reviews of these projects.

Jenn and I are able to concur that the two projects proposed for the Meade County substation and Brandenburg Steel Mill substation will result in No Effect to Historic Properties.

All of the archaeological reports need revision to address the three following issues:

- Figure 1-1 – should only depict the survey described in the report, not all of the separate undertakings.
- Figure 2-1 – should not disclose the location of archaeological sites outside of the survey area described in the report. This is protected information.
- The reports should all contain a map that indicates observed field conditions and the survey methods applied in those conditions to evaluate the presence/absence of archaeological sites.

Additionally, for those reports that describe newly located and/or revised sites, an artifact analysis chapter needs to be included in the report.

Additional specific comments and issues:

Redmon Road EHV to Otter Creek Substation report - this report contains information from two different surveys. I cannot review this report

Meade County to Otter Creek line report:

The not eligible recommendation is unsupported by the level of field effort. A single shovel test in these sites is not sufficient to assess their integrity and presence/absence of intake subsurface deposits. Likewise, it is not clear to me that 15Md611 and 15Md612 are not part of the same site - something that adequate shovel testing would have confirmed. Additional fieldwork is warranted to support the eligibility recommendations in the report.

Redmon Road EHV switch station and Otter Creek substation:

Because project activities began before the initiation of project activities, we are precluded from comment on these two projects.

Above-ground reports:

The Redmon Road to Otter Creek and Otter Creek to Brandenburg Steel Mill reports duplicate site numbers for different resources. These reports should be revised to accurately describe the KHC resource numbers that correspond with the resources described in these reports.

In sum, we are only able to finalized consultation on the two reports listed for concurrence above. Three of the remaining projects have deficient information and we cannot complete consultation until this information is provided/corrected. We are precluded from comment on two of the reports.

We look forward to receipt of the revised reports.

Thank you,
Chris Gunn

Christopher M. Gunn, Ph.D.
Archaeology Review Coordinator
Kentucky Heritage Council
410 High Street
Frankfort, KY 40601

502-892-3615

To our constituents, please be advised the KHC Historic Resource Library is now open for consultants wishing to conduct background research and site checks. Consultants can make appointments to visit our office in two time slots a day on Mondays, Wednesdays, and Fridays: 9 a.m. to 12 p.m. and 1 :30 p.m. to 4:30 p.m. We ask that you [please refer to this memo for information](#) and follow all protocols outlined there and posted at our facility. Consultants who require this service may also continue to utilize the electronic records review portal at <https://secure.kentucky.gov/formservices/Heritage/SiteID>. The rest of the office remains open on a limited basis. Staff continue to telecommute or alternate days in the office and are not available for face-to-face meetings or site visits. We continue to recommend that when possible, *environmental review reports, tax credit applications and supporting materials, National Register correspondence, or other documents that require hard-copy submissions* **be mailed or sent by delivery service** to the Kentucky Heritage Council, 410 High Street, Frankfort, KY 40601, so that staff may follow up with you by phone.

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From: Chapin, Allison M. <amchapin@burnsmcd.com>

Sent: Thursday, November 12, 2020 8:02 AM

To: Ryall, Jennifer (Heritage Council) <Jennifer.Ryall@ky.gov>; Gunn, Chris (Heritage Council) <Chris.Gunn@ky.gov>

Cc: Thornhill, Steve <sthornh@burnsmcd.com>; Harris, Brandy M <bmharris@burnsmcd.com>; Jerrod Thomas <jerrod.thomas@bigrivers.com>; bob.warren <bob.warren@bigrivers.com>; lauren.rayburn@usda.gov <lauren.rayburn@usda.gov>

Subject: RE: Big Rivers Electric Corporation - Brandenburg Steel Mill 345 kV and 161kV Transmission Line Project - Historic-Age Resource Reports

Good Morning,

We are just checking in to see if you have any questions on your review of the Big Rivers Phase I and/or historic survey reports?

Thank you,
Allison

Allison Chapin \ Burns & McDonnell
Section Manager \ Environmental Services
773-251-7285

From: Chapin, Allison M.
Sent: Friday, October 16, 2020 2:12 PM
To: Ryall, Jennifer (Heritage Council) <Jennifer.Ryall@ky.gov>; Gunn, Chris (Heritage Council) <Chris.Gunn@ky.gov>
Cc: Thornhill, Steve <sthornh@burnsmcd.com>; Harris, Brandy M <bmharris@burnsmcd.com>; jerrod.thomas@bigrivers.com; bob.warren@bigrivers.com; lauren.rayburn@usda.gov
Subject: RE: Big Rivers Electric Corporation - Brandenburg Steel Mill 345 kV and 161kV Transmission Line Project - Historic-Age Resource Reports

Jennifer/Chris-

Attached is the cover letter/request for concurrence for the reports sent to you electronically.

Let us know if you have any questions.

Thank you,

Allison

Allison Chapin \ Burns & McDonnell
Section Manager \ Environmental Services
773-251-7285

From: Ryall, Jennifer (Heritage Council) <Jennifer.Ryall@ky.gov>
Sent: Friday, October 16, 2020 8:27 AM
To: Chapin, Allison M. <amchapin@burnsmcd.com>
Cc: Thornhill, Steve <sthornh@burnsmcd.com>; Harris, Brandy M <bmharris@burnsmcd.com>; jerrod.thomas@bigrivers.com; bob.warren@bigrivers.com; lauren.rayburn@usda.gov; Gunn, Chris (Heritage Council) <Chris.Gunn@ky.gov>
Subject: RE: Big Rivers Electric Corporation - Brandenburg Steel Mill 345 kV and 161kV Transmission Line Project - Historic-Age Resource Reports

Thanks, Allison. I was able to download the (7) cultural historic survey reports.
Will there be a transmittal letter paired with the reports so we know what we're being asked to respond to? We'll need a letter either from Burns McDonnell or from the applicant.

~Jenn

Jennifer Ryall
Environmental Review Coordinator
Kentucky Heritage Council
410 High Street
Frankfort, Kentucky 40601
Phone: (502) 892-3619
Pronouns: she, her, hers



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slots a day on Mondays, Wednesdays, and Fridays: 9 a.m. to 12 p.m. and 1 :30 p.m. to 4:30 p.m. We ask that you [please refer to this memo for information](#) and follow all protocols outlined there and posted at our facility. Consultants who require this service may also continue to utilize the electronic records review portal at <https://secure.kentucky.gov/formservices/Heritage/SiteID>. The rest of the office remains open on a limited basis. Staff continue to telecommute or alternate days in the office and are not available for face-to-face meetings or site visits. We continue to recommend that when possible, *environmental review reports, tax credit applications and supporting materials, National Register correspondence, or other documents that require hard-copy submissions* **be mailed or sent by delivery service** to the Kentucky Heritage Council, 410 High Street, Frankfort, KY 40601, so that staff may follow up with you by phone.

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[If you have an emergency action that requires Section 106 consultation, please include our Site Protection Manager Nick Laracuate \[nicolas.laracuate@ky.gov\]\(mailto:nicolas.laracuate@ky.gov\) on your emails to the review staff.](#)

From: amchapin@burnsmcd.com <amchapin@burnsmcd.com>

Sent: Thursday, October 15, 2020 6:32 PM

To: Ryall, Jennifer (Heritage Council) <Jennifer.Ryall@ky.gov>

Cc: sthornh@burnsmcd.com; bmharris@burnsmcd.com; jerrod.thomas@bigrivers.com; bob.warren@bigrivers.com; lauren.rayburn@usda.gov; Gunn, Chris (Heritage Council) <Chris.Gunn@ky.gov>

Subject: Big Rivers Electric Corporation - Brandenburg Steel Mill 345 kV and 161kV Transmission Line Project - Historic-Age Resource Reports



amchapin@burnsmcd.com sent you a secure message

Jennifer,

Please find the historic-age resource survey reports for each of the seven project components for the Big Rivers Electric Corporation - Brandenburg Steel Mill 345 kV and 161kV Transmission Line Project.

Each has a separate report, and we are kindly requesting your review and concurrence on our findings for this project.

Feel free to reach out to myself 773-251-7285 or Brandy Harris

512-558-2884 if you have any questions.

Thank you,

Allison

[Access message](#)



Attachments expire on Nov 14, 2020



7 PDFs

Otter Creek Substation Historic Resources Report_RUS907.pdf, Meade County Substation Historic Resources Report_RUS1070.pdf, Redmon Road Switching Station Historic Resources Report_RUS909.pdf, Brandenburg Steel Mill Substation Archaeological and Architectural Survey Report_RUS908.pdf, Redmon Rd to Otter Creek Historic Resources Report_RUS1071.pdf, BSM to Otter Creek Historic Resources Report_RUS1072.pdf, Meade County Sub to Otter Creek Sub Historic Resources Report_RUS830.pdf

This message requires that you sign in to access the message and any file attachments.

From: [Gunn, Chris \(Heritage Council\)](#)
To: [Ryall, Jennifer \(Heritage Council\)](#); [Chapin, Allison M.](#)
Cc: [Nekolny, Samantha](#); [Thornhill, Steve](#); [Potts, Craig A \(Heritage Council\)](#)
Subject: Re: Big Rivers Electric Corporation - Nucor/Brandenburg Steel Mill 345 & 161 kV Transmission Projects - Section 106 Consultation
Date: Tuesday, June 2, 2020 2:56:59 PM
Attachments: [image002.png](#)

Hello Allison,

I think Jenn articulated our position in her response, highlighting the distinction between area of potential effect and actual effects to historic properties within that APE.

Per our phone conversation, we were asked to comment on the appropriateness of the APE, and not project effects. We additionally provided our comments on the portions of those APEs that needed additional efforts to identify archaeological and cultural historic properties.

I do not agree that the APEs for existing substations and transmission lines replacements are categorically excluded from surveys to determine effects.

The portions of the APE that have been previously surveyed for archaeological resources do not need to be re-surveyed. The remainder of the transmission line corridors within the APE should be surveyed.

Substation APEs may need additional work depending on the extent of previous disturbance. If we are talking about only equipment replacement/new equipment within the existing footprint of the substation, then I would agree that there is a low potential to have significant archaeological sites present and affected by the undertaking. If existing substations require modification of the existing footprint, through expansion or reorientation, then survey would need to cover the portions of the substation APE outside of the existing footprint.

Additionally, the archaeological APEs should include any access roads, lay-down or storage areas, and temporary right-of-way necessary to complete the projects. Have these kinds of areas been identified yet during planning? They may have, been, but I don't have your submission in front of me at the moment, and can't remember.

Thank you,
Chris Gunn

From: Ryall, Jennifer (Heritage Council) <Jennifer.Ryall@ky.gov>
Sent: Tuesday, June 2, 2020 2:55 PM

To: Chapin, Allison M. <amchapin@burnsmcd.com>; Gunn, Chris (Heritage Council) <Chris.Gunn@ky.gov>

Cc: Nekolny, Samantha <snekolny@burnsmcd.com>; Thornhill, Steve <sthornh@burnsmcd.com>; Potts, Craig A (Heritage Council) <craig.potts@ky.gov>

Subject: RE: Big Rivers Electric Corporation - Nucor/Brandenburg Steel Mill 345 & 161 kV Transmission Projects - Section 106 Consultation

Hi Allison – thanks for your help thinking through APEs for this project. Honestly, there are some variables in your response which is what spurred our questions. With that in mind, I'd recommend including RUS#1070 along with your aboveground APE in order to eliminate these variables (ie. we don't know beyond a "preliminary" basis whether there are historic resources within .25 miles of Meade County Substation, you state that the additional equipment would not "directly impact" any historic resources but it's less clear about indirect effects, our office hasn't been afforded an opportunity to comment on the NRHP eligibility of the historic age property you're aware that exists although you seem to flesh out an eligibility argument below). Speaking of which, is the Meade County Substation itself 50 years of age?

As it relates to the following question, I'm not sure I understand.

<<Please confirm that your office is asking for historic resource survey only within the visual APE around new substations/transmission lines.>>

Chris and I had understood we were commenting on the 7 APEs provided. Anywhere in your submission where it stated that <<Phasing of Section 106 review under the NPA is needed for this aspect of the project>> we assumed this meant both aboveground and belowground consultation and were concurring with this. As it relates to "rebuild" projects our office has never concurred that these are excluded from Section 106 review for aboveground purposes and, in fact, we frequently review them through EKPC/USDA - but typically we're most concerned about any areas where the poles would increase in height or where pole locations would shift from their original locations, perhaps placing them closer to (or within the viewshed of) a historic resource.

Hopefully this is helpful,

~Jenn

Jennifer Ryall

Environmental Review Coordinator

Kentucky Heritage Council

410 High Street

Frankfort, Kentucky 40601

Phone: (502) 892-3619



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From: Chapin, Allison M. <amchapin@burnsmcd.com>

Sent: Tuesday, June 2, 2020 1:44 PM

To: Gunn, Chris (Heritage Council) <Chris.Gunn@ky.gov>; Ryall, Jennifer (Heritage Council) <Jennifer.Ryall@ky.gov>

Cc: Nekolny, Samantha <snokolny@burnsmcd.com>; Thornhill, Steve <sthornh@burnsmcd.com>; Potts, Craig A (Heritage Council) <craig.potts@ky.gov>

Subject: RE: Big Rivers Electric Corporation - Nucor/Brandenburg Steel Mill 345 & 161 kV Transmission Projects - Section 106 Consultation

****CAUTION** PDF attachments may contain links to malicious sites. Please contact the COT Service Desk ServiceCorrespondence@ky.gov for any assistance.**

Chris/Jennifer,

Thank you for your review of our Section 106 consultation letter. We still have a few questions and are hoping that your office can provide clarification (see below).

Archaeological/Physical APE

For new substations or transmission lines, we understand that archaeological survey will be needed across the right-of-way, except in portions covered by previous archaeological surveys.

For existing substations and for transmission lines where poles will be replaced pole for pole, we understand that archaeological survey will not be needed, since these locations have been previously disturbed.

In previous correspondence, we identified six proposed archaeological survey areas (SA-1 through SA-6). Please refer to the attached maps and confirm that archaeological survey will only be needed in those six survey areas.

Visual APE

The visual APE for above-ground historic resources is 0.25-mile from any new substation or transmission line. Existing line (where rebuilds are planned) will not be surveyed for above-ground historic resources, as the poles will simply be replaced pole for pole, and there will be no new/additional visual impacts.

Please confirm that your office is asking for historic resource survey only within the visual APE around new substations/transmission lines.

Additional clarification points are in red under your comments in the email chain below.
Thank you for your assistance in addressing these points.
Allison

Allison Chapin \ Burns & McDonnell
Section Manager \ Environmental Services
O 312-741-5861 \ M 773-251-7285

From: Gunn, Chris (Heritage Council) <Chris.Gunn@ky.gov>
Sent: Friday, May 29, 2020 1:54 PM
To: Chapin, Allison M. <amchapin@burnsmcd.com>
Cc: Nokolny, Samantha <snokolny@burnsmcd.com>; Thornhill, Steve <sthornh@burnsmcd.com>;
Ryall, Jennifer (Heritage Council) <Jennifer.Ryall@ky.gov>; Potts, Craig A (Heritage Council)
<craig.potts@ky.gov>
Subject: Re: Big Rivers Electric Corporation - Nucor/Brandenburg Steel Mill 345 & 161 kV
Transmission Projects - Section 106 Consultation

Hello Allison,

Per our phone conversation on May 11, please see below for our comments on the APEs for seven Big Rivers projects that are funded through the USDA-RUS to supply the Nucor Steel mill in Meade County.

RUS #1070 - The archaeological APE for this project appears to be appropriate, however we are unable to comment on the above-ground APE of the project. Please provide additional information about what is entailed in the construction of a 161 kV transmission line terminal. For example, will additional equipment be added to the existing substation? If additional equipment is necessary, how tall will it be, and how does this height compare to existing equipment at the substation?

New equipment at the 161 kV Meade County Substation would be within the existing footprint and would be comparable in height to existing equipment which is also 161 kV. Lighting is currently in place at the existing substation. The Project would include additional lighting for maintenance, access, and egress in and around the new equipment as necessary. All lighting would utilize energy-efficient technology.

Preliminary map research suggests there is only 1 historic-age property within 0.25 mile of the facility, and it is within the immediate viewshed of the existing substation. Construction of additional equipment in this area would not directly impact the resource as all construction would occur within the existing fence. Furthermore, the historic-age property is surrounded by non-historic-age development, and if significant, its integrity of setting would have already been reduced by construction of the existing facility.

RUS #907 - The APE for archaeological and above-ground effects appears to be appropriate for this project. We look forward to the results of the identification efforts and consulting on effects for this substation.

RUS #908 - We agree that the APE for this substation falls within the APE of the Nucor Brandenburg Steel Mill, and we understand from your letter that the project is defined as a part of the Still Mill. We agree that a sufficient level of effort to identify historic properties for the Steel Mill project has taken place through our consultation with the United States Army Corps of Engineers. We do not believe that our consultation with the Corps, however, satisfies the USDA's obligations to comply with Section 106, and that additional consultation with our office is necessary to develop a concurrence of effects that articulates the substation funded by USDA to the remainder of the Corps' permitted undertaking that has resulted in an adverse effect.

A letter will be sent under separate cover to address your comments.

RUS #909 - The APE for archaeological and above-ground effects appears to be appropriate for this project. We look forward to the results of the identification efforts and consulting on effects for this substation.

RUS #1072 - The APE for the archaeological and above-ground effects appears to be appropriate for this project. The portions of the APE that have not been previously assessed for archaeological resources should be surveyed, and identification of above-ground properties within the APE should be completed. We look forward to the results of the identification efforts and consulting on effects for this transmission line.

RUS #830 - The APE for the archaeological and above-ground effects appears to be appropriate for this project. The portions of the APE that have not been previously assessed for archaeological resources should be surveyed, and identification of above-ground properties within the APE should be completed. We look forward to the results of the identification efforts and consulting on effects for this transmission line.

RUS#1071 - The APE for the archaeological and above-ground effects appears to be appropriate for this project. The portions of the APE that have not been previously assessed for archaeological resources should be surveyed, and identification of above-ground properties within the APE should be completed. We look forward to the results of the identification efforts and consulting on effects for this transmission line.

Please let Jenn or I know if we can provide any clarification or answer any questions. We look forward to continuing consultation with you.

Thank you,
Chris Gunn

From: Chapin, Allison M. <amchapin@burnsmcd.com>
Sent: Thursday, May 21, 2020 12:52 PM
To: Gunn, Chris (Heritage Council) <Chris.Gunn@ky.gov>
Cc: Nekolny, Samantha <snekolny@burnsmcd.com>; Thornhill, Steve <sthornh@burnsmcd.com>; Ryall, Jennifer (Heritage Council) <Jennifer.Ryall@ky.gov>; Potts, Craig A (Heritage Council) <craig.potts@ky.gov>
Subject: RE: Big Rivers Electric Corporation - Nucor/Brandenburg Steel Mill 345 & 161 kV Transmission Projects - Section 106 Consultation

Thank you for the update Chris!
Have a great holiday weekend. We look forward to hearing back next week.
Allison

Allison Chapin \ Burns & McDonnell
Section Manager \ Environmental Services
o 312-741-5861 \ m 773-251-7285

From: Gunn, Chris (Heritage Council) <Chris.Gunn@ky.gov>
Sent: Thursday, May 21, 2020 11:07 AM
To: Chapin, Allison M. <amchapin@burnsmcd.com>
Cc: Nekolny, Samantha <snekolny@burnsmcd.com>; Thornhill, Steve <sthornh@burnsmcd.com>; Ryall, Jennifer (Heritage Council) <Jennifer.Ryall@ky.gov>; Potts, Craig A (Heritage Council) <craig.potts@ky.gov>
Subject: Re: Big Rivers Electric Corporation - Nucor/Brandenburg Steel Mill 345 & 161 kV Transmission Projects - Section 106 Consultation

Hello Allison,

Jenn and I are still making our way through the packet. We'll be able to provide our comments next week.

Thank you,
Chris Gunn

From: Chapin, Allison M. <amchapin@burnsmcd.com>
Sent: Thursday, May 21, 2020 10:27 AM
To: Gunn, Chris (Heritage Council) <Chris.Gunn@ky.gov>

Cc: Nekolny, Samantha <snekolny@burnsmcd.com>; Thornhill, Steve <sthornh@burnsmcd.com>; Ryall, Jennifer (Heritage Council) <Jennifer.Ryall@ky.gov>; Potts, Craig A (Heritage Council) <craig.potts@ky.gov>

Subject: FW: Big Rivers Electric Corporation - Nucor/Brandenburg Steel Mill 345 & 161 kV Transmission Projects - Section 106 Consultation

****CAUTION** PDF attachments may contain links to malicious sites. Please contact the COT Service Desk ServiceCorrespondence@ky.gov for any assistance.**

Good Morning Chris,

We just wanted to check in on your review of the Big Rivers project. Any questions or information you need to help with your review, please let us know. We just want to make sure we have staff available to head out for any surveys should they be required.

Also, you mentioned issuing individual letters for each of the project components, would you consider sending the letters individually as they are completed so we can start to plan appropriately?

Thank you, and feel free to give me a call on my cell phone if you have any questions at all,
Regards,
Allison

Allison Chapin \ Burns & McDonnell
Section Manager \ Environmental Services
o 312-741-5861 \ m 773-251-7285

From: Nekolny, Samantha <snekolny@burnsmcd.com>

Sent: Wednesday, April 1, 2020 11:05 AM

To: craig.potts@ky.gov

Cc: Rayburn, Lauren - Barnardsville, NC <lauren.rayburn@usda.gov>; Chapin, Allison M. <amchapin@burnsmcd.com>; Thornhill, Steve <sthornh@burnsmcd.com>; Warren, Bob <Bob.Warren@bigrivers.com>; Thomas, Jerrod <Jerrod.Thomas@bigrivers.com>

Subject: Big Rivers Electric Corporation - Nucor/Brandenburg Steel Mill 345 & 161 kV Transmission Projects - Section 106 Consultation

Craig,

Please see the attached Notification of Intent to Initiate Section 106 Consultation for Big Rivers Electric Corporation - Nucor/Brandenburg Steel Mill 345 & 161 kV Transmission Projects. We will also be mailing a hard copy, but with the unknown status of whether you're in the office, we wanted to send you the electronic version first.

If you have any questions at all, do not hesitate to reach out. We hope you and your friends and family are well during this time.

Regards,

Samantha NekoIny \ Burns & McDonnell
Assistant Environmental Scientist
Natural & Cultural Resources \ Environmental Services
o 630-724-3825 \ M 630-664-3113
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1431 Opus Place, Suite 400 \ Downers Grove, IL 60515

2020 Burns & McDonnell Phase I
Archaeological Resource and Historic
Resource Survey Results

Recorded Archaeological Sites within Proposed Physical APE

Site Number	Age	Site Type	NRHP Status	Project Component
15Md608	Prehistoric	Lithic scatter	Recommended not eligible	RUS #1072
IF 1	Prehistoric	Isolated find	Recommended not eligible	RUS #1072
15Md610	Prehistoric	Lithic scatter	Recommended not eligible	RUS #830
IF 2	Prehistoric	Isolated find	Recommended not eligible	RUS #830
15Md609	Prehistoric	Lithic scatter	Recommended not eligible	RUS #830
15Md612	Woodland	Lithic scatter	Recommended not eligible	RUS #830
15Md611	Prehistoric	Lithic scatter	Recommended not eligible	RUS #830
15Md613	Prehistoric	Lithic scatter	Recommended not eligible	RUS #830
IF 4	Prehistoric	Isolated find	Recommended not eligible	RUS #830
IF 5	Prehistoric	Isolated find	Recommended not eligible	RUS #830

Source: Burns & McDonnell, Douglas Kullen 2020.

RUS # 1070 Historic Resource Inventory Table

KHC ID	Location	Style	Construction Date	NRHP Eligibility Recommendation	Comments/ Integrity Assessment
MD 115	South side of Guston Rd, approx. 0.35 mi NW of intersection with KY-79	Ranch	ca. 1950	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.
MD 151	3435 Guston Rd	Contemporary Folk	ca. mid-1970s	Not Eligible	Resource lacks design distinction and known historic associations.
MD 152	8065 KY-79	Ranch	ca. 1975	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.
MD 165 Big Rivers EC Transmission Line	Segment starting at the existing Meade County Substation	No Style	ca. 1956	Not Eligible	Resource retains a degree of integrity but lacks design distinction and known historic associations.

RUS #1071 Resource Inventory Table

Resource Number	County	Location	Historic Use	Current Use	Style	Construction Date	NRHP Eligibility Recommendation	Comments/ Integrity Assessment	Effect Assessment	In Project Footprint
MD 183	Meade	4265 Garrett Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Minimal Traditional	ca. 1950	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 184a	Meade	4215 Garrett Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Vernacular	ca. 1950	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 184b	Meade	4215 Garrett Rd	Domestic: Secondary Structure	Domestic: Secondary Structure	No Style	ca. 1940	Not Eligible	Resource is not associated with an intact historic-age farm complex. It lacks design distinction and known historic associations.	N/A	No
MD 185	Meade	4199 Garrett Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Minimal Traditional	ca. 1955	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 188	Meade	4240 Garrett Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Vernacular with Colonial Revival	ca. 1955	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 189	Meade	4125 Garrett Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Vernacular with Craftsman and Bungalow	ca. 1930	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 190a	Meade	4099 Garrett Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Ranch	ca. 1950	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 190b	Meade	4099 Garrett Rd	Unknown	Unknown	No Style	ca. 1950	Not Eligible	Resource is in poor condition reducing its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 192a	Meade	3955 Garrett Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	National Folk Hall-and-Parlor Family	ca. 1925	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No

Resource Number	County	Location	Historic Use	Current Use	Style	Construction Date	NRHP Eligibility Recommendation	Comments/ Integrity Assessment	Effect Assessment	In Project Footprint
MD 192b	Meade	3955 Garrett Rd	Domestic: Secondary Structure	Domestic: Secondary Structure	No Style	ca. 1950	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 193	Meade	N side of Garrett Rd, approx. 0.09 mi E of intersection with Brandenburg Rd	Domestic: Single Dwelling	Vacant/ Not in Use	Simplified Ranch	ca. 1955	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 194	Meade	W side of Brandenburg Rd, approx. 0.06 mi S of intersection with Garrett Rd	Agriculture: Agricultural Outbuilding	Commerce: Warehouse	No Style	ca. 1940	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No

RUS #1072 Historic Resource Inventory Table

KHC Number	County	Location	Historic Use	Current Use	Style	Construction Date	NRHP Eligibility Recommendation	Comments/ Integrity Assessment	Effect Assessment	In Project Footprint
MD 143 McGehee Cemetery	Meade	N side of Olin Rd, N of intersection with Moremen Rd	Funerary: Cemetery	Funerary: Cemetery	No Style	ca. 1841	Undetermined	Additional research would be necessary to confirm the eligibility status of the resource. The resource would not be impacted physically by the project.	N/A	No
MD 191	Meade	NE side of Bud Wilson Rd, 0.31 mi N of intersection with Christian Church Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Contemporary Folk	ca. 1975	Not Eligible	Resource has been relocated impacting its integrity of setting. It lacks design distinction and known historic associations.	N/A	No
MD 192	Meade	346 Berryman Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Minimal Traditional	ca. 1950	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 193	Meade	SE side of Berryman Rd, 0.16 mi SE of intersection with KY-933	Domestic: Single Dwelling	Domestic: Single Dwelling	Undetermined	ca. 1950	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 194	Meade	305 Berryman Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Contemporary Folk	ca. 1975	Not Eligible	Resource has been relocated impacting its integrity of setting. It lacks design distinction and known historic associations	N/A	No
MD 195a	Meade	215 Berryman Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Minimal Traditional	ca. 1955	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 195b	Meade	215 Berryman Rd	Domestic: Secondary Structure	Domestic: Secondary Structure	No Style	ca. 1955	Not Eligible	Resource lacks design distinction and known historic associations.	N/A	No
MD 196a	Meade	150 Berryman Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	National Folk Gable-Front	ca. 1940	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 196b	Meade	150 Berryman Rd	Domestic: Secondary Structure	Domestic: Secondary Structure	No Style	ca. 1960	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 197a	Meade	20 Berryman Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Split Level	ca. 1965	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No

KHC Number	County	Location	Historic Use	Current Use	Style	Construction Date	NRHP Eligibility Recommendation	Comments/ Integrity Assessment	Effect Assessment	In Project Footprint
MD 197b	Meade	20 Berryman Rd	Domestic: Secondary Structure	Domestic: Secondary Structure	No Style	ca. 1965	Not Eligible	Resource lacks design distinction and known historic associations.	N/A	No
MD 198 Brandenburg Furniture and Mattress	Meade	2195 Brandenburg Rd	Commerce: Specialty Store	Commerce: Specialty Store	Commercial	ca. 1965	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 199	Meade	2265 Brandenburg Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Ranch	ca. 1955	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 200	Meade	135 Wise Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	National Folk Gable Front-and-Wing	ca. 1920	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 201	Meade	NE side of Wise Rd, 0.32 mi SE of intersection with Shamrock Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Contemporary Folk	ca. 1975	Not Eligible	Resource lacks design distinction and known historic associations.	N/A	No
MD 202a	Meade	490 Wise Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Simplified Ranch	ca. 1950	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 202b	Meade	490 Wise Rd	Agriculture: Agricultural Outbuilding	Vacant/ Not in Use	No Style	ca. 1920	Not Eligible	Resource is in poor physical condition reducing its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 203	Meade	S side of Wise Rd, 0.41 mi SE of intersection with Shamrock Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Simplified Ranch	ca. 1955	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 204	Meade	655 Meade Springs Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	National Folk	ca. 1910	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 205	Meade	1250 Meade Springs Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	National Folk Hall-and-Parlor	ca. 1900	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No

KHC Number	County	Location	Historic Use	Current Use	Style	Construction Date	NRHP Eligibility Recommendation	Comments/ Integrity Assessment	Effect Assessment	In Project Footprint
MD 206a	Meade	E side of Meade Springs Rd, 0.94 E of intersection with Old Ekron Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Ranch	ca. 1965	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 206b	Meade	E side of Meade Springs Rd, 0.94 E of intersection with Old Ekron Rd	Domestic: Secondary Structure	Domestic: Secondary Structure	No Style	ca. 1965	Not Eligible	Resource lacks design distinction and known historic associations.	N/A	No
MD 206c	Meade	E side of Meade Springs Rd, 0.94 E of intersection with Old Ekron Rd	Domestic: Secondary Structure	Domestic: Secondary Structure	No Style	ca. 1965	Not Eligible	Resource lacks design distinction and known historic associations.	N/A	No
MD 207 Louisville, Henderson, & St. Louis Railroad	Meade	Segment crosses unnamed road that intersects Meade Springs Rd, 0.62 mi E of intersection with Meadow Springs Ct	Transportation: Rail-Related	Transportation: Rail-Related	No Style	ca. 1888	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling.	N/A	Yes
MD 208a	Meade	W side of Doe Run Ekron Rd, 0.19 mi SW of intersection with KY-448	Domestic: Single Dwelling	Domestic: Single Dwelling	National Folk	ca. 1940	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling.	N/A	No
MD 208b	Meade	W side of Doe Run Ekron Rd, 0.19 mi SW of intersection with KY-448	Domestic: Secondary Structure	Domestic: Secondary Structure	No Style	ca. 1975	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling.	N/A	No
MD 208c	Meade	W side of Doe Run Ekron Rd, 0.19 mi SW of intersection with KY-448	Agriculture: Agricultural Outbuilding	Agriculture: Agricultural Outbuilding	No Style	ca. 1925	Not Eligible	Resource is in poor physical condition reducing its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 208d	Meade	W side of Doe Run Ekron Rd, 0.19 mi SW of intersection with KY-448	Agriculture: Agricultural Outbuilding	Agriculture: Agricultural Outbuilding	No Style	ca. 1925	Not Eligible	Resource is in poor physical condition reducing its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 209	Meade	W side of Doe Run Ekron Rd, 0.30 mi SW of intersection with KY-448	Agriculture: Storage	Agriculture: Storage	No Style	ca. 1975	Not Eligible	Resource retains a degree of integrity but lacks design distinction and known historic associations.	N/A	No
MD 210	Meade	SE side of Doe Run Ekron Rd, 0.39 mi S of intersection with KY-448	Unknown	Unknown	No Style	ca. 1960	Not Eligible	Resource is in poor physical condition reducing its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 211a	Meade	299 Doe Run Ekron Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Ranch	ca. 1975	Not Eligible	Resource is in poor physical condition reducing its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No

KHC Number	County	Location	Historic Use	Current Use	Style	Construction Date	NRHP Eligibility Recommendation	Comments/ Integrity Assessment	Effect Assessment	In Project Footprint
MD 211b	Meade	299 Doe Run Ekron Rd	Unknown	Unknown	No Style	ca. 1975	Not Eligible	Resource is in poor physical condition reducing its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 212	Meade	275 Doe Run Ekron Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Contemporary Folk	ca. 1975	Not Eligible	Resource is in poor physical condition reducing its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 213	Meade	181 Doe Run Ekron Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Minimal Traditional	ca. 1950	Not Eligible	Resource retains a degree of integrity but lacks design distinction and known historic associations.	N/A	No
MD 214	Meade	4363 Brandenburg Rd	Domestic: Single Dwelling	Vacant/ Not in Use	Contemporary Folk	ca. 1975	Not Eligible	Resource is in poor physical condition reducing its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 215	Meade	E side of Brandenburg Rd, 0.07 mi N of intersection with Doe Run Ekron Rd	Domestic: Single Dwelling	Vacant/ Not in Use	National Folk	ca. 1930	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 216a	Meade	W side of Brandenburg Rd, 0.22 mi S of intersection with Doe Run Ekron Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Minimal Traditional	ca. 1950	Not Eligible	Resource lacks design distinction and known historic associations.	N/A	No
MD 216b	Meade	W side of Brandenburg Rd, 0.22 mi S of intersection with Doe Run Ekron Rd	Domestic: Secondary Structure	Domestic: Secondary Structure	No Style	ca. 1950	Not Eligible	Resource lacks design distinction and known historic associations.	N/A	No
MD 217	Meade	4525 Brandenburg Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Minimal Traditional	ca. 1950	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 218	Meade	27580 Joe Prather Hwy	Agriculture: Agricultural Outbuilding	Agriculture: Agricultural Outbuilding	No Style	ca. 1925	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 219a	Meade	SW side of Brandenburg Rd, 0.11 mi S of intersection with Harrington Ave	Domestic: Single Dwelling	Domestic: Single Dwelling	Minimal Traditional	ca. 1950	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 219b	Meade	SW side of Brandenburg Rd, 0.11 mi S of intersection with Harrington Ave	Domestic: Secondary Structure	Domestic: Secondary Structure	No Style	ca. 1950	Not Eligible	Resource lacks design distinction and known historic associations.	N/A	No

KHC Number	County	Location	Historic Use	Current Use	Style	Construction Date	NRHP Eligibility Recommendation	Comments/ Integrity Assessment	Effect Assessment	In Project Footprint
MD 220	Meade	5155 Brandenburg Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Ranch	ca. 1955	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 221	Meade	5229 Brandenburg Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Ranch	ca. 1960	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 222	Meade	5245 Brandenburg Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Ranch	ca. 1975	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 223	Meade	5275 Brandenburg Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	National Folk Massed Plan	ca. 1940	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 224	Meade	5415 Brandenburg Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Simplified Ranch	ca. 1955	Not Eligible	Resource retains a degree of integrity but lacks design distinction and known historic associations.	N/A	No
MD 225	Meade	NW corner of Simpson Ln and Brandenburg Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Minimal Traditional	ca. 1950	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 226a	Meade	5378 Brandenburg Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Commercial	ca. 1950	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 226b	Meade	5378 Brandenburg Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	No Style	ca. 1965	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 226c	Meade	5378 Brandenburg Rd	Domestic: Secondary Structure	Domestic: Secondary Structure	No Style	ca. 1965	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No

KHC Number	County	Location	Historic Use	Current Use	Style	Construction Date	NRHP Eligibility Recommendation	Comments/ Integrity Assessment	Effect Assessment	In Project Footprint
MD 226d	Meade	5378 Brandenburg Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	No Style	ca. 1965	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 227	Meade	SW side of Holston Ln, 0.21 mi NE of intersection with Brandenburg Rd	Agriculture: Agricultural Outbuilding	Agriculture: Agricultural Outbuilding	Stock Barn	ca. 1925	Undetermined	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations. Additional survey and research would be required to determine the resource's potential associations to an unassessed historic district.	N/A	No
MD 228	Meade	SW side of Brandenburg Rd, 0.32 mi NW of intersection with Buck Grove Rd	Agriculture: Agricultural Outbuilding	Agriculture: Agricultural Outbuilding	Gothic-Arched Barn	ca. 1920	Not Eligible	Resource retains a degree of integrity but lacks design distinction and known historic associations.	N/A	No
MD 229	Meade	NW side of Buck Grove Rd, 0.15 mi NW of intersection with Brandenburg Rd	Agriculture: Agricultural Outbuilding	Agriculture: Agricultural Outbuilding	No Style	ca. 1940	Not Eligible	Resource retains a degree of integrity but lacks design distinction and known historic associations.	N/A	No
MD 230 Buck Grove Cemetery	Meade	255 Buck Grove Rd	Funerary: Cemetery	Funerary: Cemetery	No Style	1857	Not Eligible	Resource does not represent a designed landscape, nor does it possess distinctive design characteristics or evidence of local craftsmanship. It is not associated with persons of transcendent importance to local development patterns.	N/A	No
MD 231 Buck Grove Baptist Church	Meade	255 Buck Grove Rd	Religion: Church	Religion: Church	Not Style	1957	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 232 Big Rivers EC Transmission Line	Meade	E side of KY-933, 0.18 mi S of intersection with Olin Rd	Industry/Processing: Energy Facility	Industry/Processing: Energy Facility	No Style	ca. 1956	Not Eligible	Resource retains a degree of integrity but lacks design distinction and known historic associations.	N/A	Yes

RUS #830 Resource Inventory Table

KHC ID	County	Location	Historic Use	Current Use	Style	Construction Date	NRHP Eligibility Recommendation	Comments/ Integrity Assessment	Effect Assessment	In Project Footprint
MD 115	Meade	South side of Guston Rd, approx. 0.35 mi NW of intersection with KY-79	Domestic: Single Dwelling	Domestic: Single Dwelling	Ranch	ca. 1950	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 151	Meade	3435 Guston Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Contemporary Folk	ca. mid-1970s	Not Eligible	Resource lacks design distinction and known historic associations.	N/A	No
MD 152	Meade	8065 KY-79	Domestic: Single Dwelling	Domestic: Single Dwelling	Ranch	ca. 1975	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 153a	Meade	6650 Haysville Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	National Folk, I-House Family	ca. 1900	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 153b	Meade	6650 Haysville Rd	Agriculture: Agricultural Outbuilding	Agriculture: Agricultural Outbuilding	No Style	ca. 1925	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 154	Meade	5985 Haysville Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Ranch	ca. mid-1970s	Not Eligible	Resource retains a degree of integrity but lacks design distinction and known historic associations.	N/A	No
MD 155	Meade	5955 Haysville Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Simplified Ranch	ca. mid-1970s	Not Eligible	The resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 156	Meade	5959 Haysville Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	National Folk	ca. 1910	Not Eligible	The resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 157a	Meade	7200 Old State Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Ranch	ca. 1965	Not Eligible	The resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 157b	Meade	7200 Old State Rd	Agriculture: Agricultural Outbuilding	Agriculture: Agricultural Outbuilding	No Style	ca. 1920	Not Eligible	The resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 158	Meade	7005 Old State Rd	Agriculture: Agricultural Outbuilding	Agriculture: Agricultural Outbuilding	No Style	ca. 1920	Not Eligible	The resource retains a degree of integrity but is not associated with an intact historic-age farm complex. It lacks design distinction and known historic associations.	N/A	No

KHC ID	County	Location	Historic Use	Current Use	Style	Construction Date	NRHP Eligibility Recommendation	Comments/ Integrity Assessment	Effect Assessment	In Project Footprint
MD 159 Louisville, Henderson & St. Louis Railroad	Meade	Segment crosses Mills Road, approximately 0.27 mile northeast of the intersection with Old State Road	Transportation: Rail-Related	Transportation: Rail-Related	No Style	ca. 1888	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling.	N/A	Yes
MD 160	Meade	565 Mills Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Ranch	ca. 1970	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 161a	Meade	525 Mills Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Ranch	ca. mid-1970s	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 161b	Meade	525 Mills Rd	Agriculture: Agricultural Outbuilding	Agriculture: Agricultural Outbuilding	No Style	ca. 1950	Not Eligible	Resource retains a degree of integrity but is not associated with an intact history-age farm complex. It lacks design distinction and known historic associations.	N/A	No
MD 162a	Meade	1880 Stringtown Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Split Level	ca. 1965	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 162b	Meade	1800 Stringtown Rd	Domestic: Secondary Structure	Domestic: Secondary Structure	No Style	ca. 1975	Not Eligible	The resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 163a	Meade	1880 Stringtown Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Split Level	ca. 1970	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 163b	Meade	1880 Stringtown Rd	Domestic: Secondary Structure	Domestic: Secondary Structure	No Style	ca. 1970	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 164a	Meade	1830 Stringtown Rd	Domestic: Secondary Structure	Domestic: Secondary Structure	No Style	ca. 1950	Not Eligible	Resource maintains a degree of integrity but is not associated with an intact historic-age farm complex. It lacks design distinction and known historic associations.	N/A	No
MD 164b	Meade	1830 Stringtown Rd	Agriculture: Agricultural Outbuilding	Agriculture: Agricultural Outbuilding	No Style	ca. 1950	Not Eligible	Resource maintains a degree of integrity but is not associated with an intact historic-age farm complex. It lacks design distinction and known historic associations.	N/A	No

KHC ID	County	Location	Historic Use	Current Use	Style	Construction Date	NRHP Eligibility Recommendation	Comments/ Integrity Assessment	Effect Assessment	In Project Footprint
MD 165 Big Rivers EC Transmission Line	Meade	Segment between existing Meade County Substation and Brandenburg Rd	Industry/Processing: Energy Facility	Industry/Processing: Energy Facility	No Style	ca. 1956	Not Eligible	Resource retains a degree of integrity but lacks design distinction and known historic associations.	N/A	Yes
MD 166a	Meade	3225 Shumate Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Minimal Traditional	ca. 1940	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 166b	Meade	3225 Shumate Rd	Domestic: Secondary Structure	Domestic: Secondary Structure	No Style	ca. 1940	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 167	Meade	West side of Shumate Rd, approx. 0.10 mi NW of intersection with Dave Smith Rd	Agriculture: Agricultural Outbuilding	Agriculture: Agricultural Outbuilding	No Style	Unknown	Undetermined	Resource was not accessible from the public ROW. Additional survey would be required to assess the integrity and significance of the complex components and to finalize NRHP recommendations.	No Adverse Effect	No
MD 168a	Meade	730 Dave Smith Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Ranch	ca. 1975	Not Eligible	Resource retains a degree of integrity but lacks design distinction and known historic associations.	N/A	No
MD 168b	Meade	730 Dave Smith Rd	Agriculture: Agricultural Outbuilding	Agriculture: Agricultural Outbuilding	No Style	ca. 1960	Not Eligible	Resource retains a degree of integrity but lacks design distinction and known historic associations.	N/A	No
MD 169a	Meade	1490 Payne Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	National Folk Gable-Front-and- Wing	ca. 1910	Eligible: Criterion C	Resource retains a high degree of integrity and is a distinctive example of its type in the APE and region. It is recommended for NRHP inclusion individually under Criterion C at the local level.	No Adverse Effect	No
MD 169b	Meade	1490 Payne Rd	Domestic: Secondary Structure	Domestic: Secondary Structure	No Style	ca. 1910	Not Eligible	Resource is in poor condition and lacks integrity of design, materials, workmanship, and feeling. It does not maintain known historic associations.	N/A	No
MD 170a	Meade	1390 Payne Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Folk Victorian	ca. 1910	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 170b	Meade	1390 Payne Rd	Agriculture: Agricultural Outbuilding	Agriculture: Agricultural Outbuilding	No Style	ca. 1920	Not Eligible	Resource is in poor condition reducing its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 170c	Meade	1390 Payne Rd	Domestic: Secondary Structure	Domestic: Secondary Structure	No Style	ca. 1910	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No

KHC ID	County	Location	Historic Use	Current Use	Style	Construction Date	NRHP Eligibility Recommendation	Comments/ Integrity Assessment	Effect Assessment	In Project Footprint
MD 170d	Meade	1390 Payne Rd	Domestic: Secondary Structure	Domestic: Secondary Structure	No Style	ca. 1940	Not Eligible	Resource retains a degree of integrity but lacks design distinction and known historic associations.	N/A	No
MD 171a	Meade	1145 Payne Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Craftsman Bungalow	ca. 1925	Undetermined	Resource has experienced alterations that have reduced its integrity and it lacks design distinction. However, the complex represents one of few historic period agricultural operations in active use in the area. Additional research would be required to confirm its significance under NRHP Criteria A and B.	No Adverse Effect	No
MD 171b	Meade	1145 Payne Rd	Agriculture: Agricultural Outbuilding	Agriculture: Agricultural Outbuilding	No Style	ca. 1925	Undetermined	Resource has experienced alterations that have reduced its integrity and it lacks design distinction. However, the complex represents one of few historic period agricultural operations in active use in the area. Additional research would be required to confirm its significance under NRHP Criteria A and B.	No Adverse Effect	No
MD 171c	Meade	1145 Payne Rd	Agriculture: Agricultural Outbuilding	Agriculture: Agricultural Outbuilding	No Style	ca. 1950	Undetermined	Resource has experienced alterations that have reduced its integrity and it lacks design distinction. However, the complex represents one of few historic period agricultural operations in active use in the area. Additional research would be required to confirm its significance under NRHP Criteria A and B.	No Adverse Effect	No
MD 171d	Meade	1145 Payne Rd	Agriculture: Agricultural Outbuilding	Agriculture: Agricultural Outbuilding	No Style	ca. 1950	Undetermined	Resource has experienced alterations that have reduced its integrity and it lacks design distinction. However, the complex represents one of few historic period agricultural operations in active use in the area. Additional research would be required to confirm its significance under NRHP Criteria A and B.	No Adverse Effect	No
MD 171e	Meade	1145 Payne Rd	Agriculture: Agricultural Outbuilding	Agriculture: Agricultural Outbuilding	No Style	ca. 1925	Undetermined	Resource has experienced alterations that have reduced its integrity and it lacks design distinction. However, the complex represents one of few historic period agricultural operations in active use in the area. Additional research would be required to confirm its significance under NRHP Criteria A and B.	No Adverse Effect	No
MD 171f	Meade	1145 Payne Rd	Agriculture: Agricultural Outbuilding	Agriculture: Agricultural Outbuilding	No Style	ca. 1950	Undetermined	Resource has experienced alterations that have reduced its integrity and it lacks design distinction. However, the complex represents one of few historic period agricultural operations in active use in the area. Additional research would be required to confirm its significance under NRHP Criteria A and B.	No Adverse Effect	No
MD 171g	Meade	1145 Payne Rd	Domestic: Secondary Structure	Domestic: Secondary Structure	No Style	ca. 1960	Undetermined	Resource has experienced alterations that have reduced its integrity and it lacks design distinction. However, the complex represents one of few historic period agricultural operations in active use in the area. Additional research would be required to confirm its significance under NRHP Criteria A and B.	No Adverse Effect	No

KHC ID	County	Location	Historic Use	Current Use	Style	Construction Date	NRHP Eligibility Recommendation	Comments/ Integrity Assessment	Effect Assessment	In Project Footprint
MD 171h	Meade	1145 Payne Rd	Agriculture: Agricultural Outbuilding	Agriculture: Agricultural Outbuilding	No Style	ca. 1950	Undetermined	Resource has experienced alterations that have reduced its integrity and it lacks design distinction. However, the complex represents one of few historic period agricultural operations in active use in the area. Additional research would be required to confirm its significance under NRHP Criteria A and B.	No Adverse Effect	No
MD 171i	Meade	1145 Payne Rd	Domestic: Secondary Structure	Domestic: Secondary Structure	No Style	ca. 1950	Undetermined	Resource has experienced alterations that have reduced its integrity and it lacks design distinction. However, the complex represents one of few historic period agricultural operations in active use in the area. Additional research would be required to confirm its significance under NRHP Criteria A and B.	No Adverse Effect	No
MD 172a	Meade	7625 Brandenburg Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Ranch	ca. 1975	Not Eligible	Resource retains a degree of integrity but lacks design distinction and known historic associations.	N/A	No
MD 172b	Meade	7625 Brandenburg Road	Domestic: Secondary Structure	Domestic: Secondary Structure	No Style	ca. 1975	Not Eligible	Resource retains a degree of integrity but lacks design distinction and known historic associations.	N/A	No
MD 173a	Meade	West side of Brandenburg Rd, approx. 0.18 mi NW of intersection with Redmon Rd	Industry/Processing: Communication Facility	Industry/Processing: Communication Facility	Industrial	ca. 1965	Not Eligible	Resource retains a degree of integrity but lacks design distinction and known historic associations.	N/A	No
MD 173b	Meade	West side of Brandenburg Rd, approx. 0.18 mi NW of intersection with Redmon Rd	Industry/Processing: Communication Facility	Industry/Processing: Communication Facility	Industrial	ca. 1965	Not Eligible	Resource retains a degree of integrity but lacks design distinction and known historic associations.	N/A	No
MD 174	Meade	East side of Brandenburg Rd, approx. 0.03 mi SE of intersection with Redmon Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Ranch	ca. 1955	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 175	Meade	7970 Brandenburg Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Minimal Traditional	ca. 1955	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 176	Meade	7990 Brandenburg Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	National Folk I-House Family	ca. 1880	Undetermined	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. Mid-Twentieth Century development and non-historic-age infill have reduced its integrity of setting. However, it is distinctive in the region in form, style, and age and it may maintain historic associations with early community development in the railroad era. Additional research would be required to confirm these associations under Criteria A.	No Adverse Effect	No

KHC ID	County	Location	Historic Use	Current Use	Style	Construction Date	NRHP Eligibility Recommendation	Comments/ Integrity Assessment	Effect Assessment	In Project Footprint
MD 177	Meade	4345 Garrett Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Prairie	ca. 1910	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 178a	Meade	4315 Garrett Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	National Folk	ca. 1940	Not Eligible	Resource retains a degree of integrity but lacks design distinction and known historic associations.	N/A	No
MD 178b	Meade	4315 Garrett Rd	Domestic: Secondary Structure	Domestic: Secondary Structure	No Style	ca. 1950	Not Eligible	Resource retains a degree of integrity but lacks design distinction and known historic associations.	N/A	No
MD 179a	Meade	4291 Garrett Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	National Folk	ca. 1940	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 179b	Meade	4291 Garrett Rd	Domestic: Secondary Structure	Domestic: Secondary Structure	No Style	ca. 1940	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 180	Meade	4275 Garrett Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Minimal Traditional	ca. 1955	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 181	Meade	4265 Garrett Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Ranch	ca. 1975	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 182	Meade	4245 Garrett Rd	Domestic: Secondary Structure	Domestic: Secondary Structure	No Style	ca. 1950	Not Eligible	Resource is not associated with an intact historic-age farm complex. It lacks design distinction and known historic associations.	N/A	No
MD 183	Meade	4265 Garrett Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Minimal Traditional	ca. 1950	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 184a	Meade	4215 Garrett Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Vernacular	ca. 1950	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 184b	Meade	4215 Garrett Rd	Domestic: Secondary Structure	Domestic: Secondary Structure	No Style	ca. 1940	Not Eligible	Resource is not associated with an intact historic-age farm complex. It lacks design distinction and known historic associations.	N/A	No
MD 185	Meade	4199 Garrett Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Minimal Traditional	ca. 1955	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No

KHC ID	County	Location	Historic Use	Current Use	Style	Construction Date	NRHP Eligibility Recommendation	Comments/ Integrity Assessment	Effect Assessment	In Project Footprint
MD 186	Meade	4272 Garrett Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Minimal Traditional	ca. 1955	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 187a	Meade	4260 Garrett Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Simplified Ranch	ca. 1955	Not Eligible	Resource retains a degree of integrity but lacks design distinction and known historic associations.	N/A	No
MD 187b	Meade	4260 Garrett Rd	Domestic: Secondary Structure	Domestic: Secondary Structure	No Style	ca. 1955	Not Eligible	Resource retains a degree of integrity but lacks design distinction and known historic associations.		No
MD 188	Meade	4240 Garrett Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Vernacular with Colonial Revival	ca. 1955	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 189	Meade	4125 Garrett Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Vernacular with Craftsman and Bungalow	ca. 1930	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 190a	Meade	4099 Garrett Rd	Domestic: Single Dwelling	Domestic: Single Dwelling	Ranch	ca. 1950	Not Eligible	Resource has experienced alterations that have reduced its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No
MD 190b	Meade	4099 Garrett Rd	Unknown	Unknown	No Style	ca. 1950	Not Eligible	Resource is in poor condition reducing its integrity of design, materials, workmanship, and feeling. It lacks design distinction and known historic associations.	N/A	No

Initial Consultation



April 1, 2020

Mr. Craig Potts
State Historic Preservation Officer
Kentucky Heritage Council
The Barstow House
410 High Street
Frankfort, KY 40601

Re: Notification of Intent to Initiate Section 106 Review and apply Rural Development's Nationwide Programmatic Agreement to Phase Section 106 Review
Big Rivers Electric Corporation (KY 62)
Nucor/Brandenburg Steel Mill 345 & 161 kilovolt (kV) Transmission Projects
Kentucky Heritage Council Project Registration #: FY20-3590
Office of State Archaeology Registration #: FY20-10449

Dear Mr. Potts:

Big Rivers Electric Corporation (Big Rivers Electric), a not-for-profit rural electric cooperative headquartered in Henderson, Kentucky, may seek financial assistance from the U.S. Department of Agriculture's Rural Utilities Service (RUS) to finance several projects associated with Nucor Corporation's plans to construct a steel mill near Brandenburg in Meade County, Kentucky (Figure 1). If RUS elects to fund these projects, they will become undertakings subject to review under Section 106 of the National Historic Preservation Act, 54 U.S.C. 306108, and its implementing regulations, 36 CFR Part 800.

Pursuant to 36 CFR § 800.2(c)(4), and 7 CFR § 1970.5(b)(2) of the regulations, "Environmental Policies and Procedures" (7 CFR Part 1970), RUS has issued a blanket delegation for its applicants to initiate and proceed through Section 106 review. Big Rivers Electric retained the services of Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell) to assist the cooperative. In accordance with this blanket delegation, Burns & McDonnell is initiating Section 106 review on behalf of RUS. In delegating this authority, RUS is advocating for the direct interaction between its borrowers, their consultants, and the State Historic Preservation Office (SHPO).

Because Big Rivers Electric is still in early project planning for several new components of the at-large project, RUS has chosen to apply the *Programmatic Agreement among the U.S. Department of Agriculture Rural Development Programs, National Conference of State Historic Preservation Officers, Tribal Signatories, and The Advisory Council on Historic Preservation for Sequencing Section 106* (NPA) as executed on July 3, 2018, to phase aspects of project review for the potential undertaking. The undertaking would qualify for use of this Section 106 program alternative as "[t]he schedule for the undertaking may span one to five years or longer, and/or can be composed of multiple projects that are rarely staked or precisely located and, or, the nature of the undertaking is often unclear, prior to the obligation of funds." Additional information on the requirements of the agency's NPA can be found here:

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<https://www.rd.usda.gov/programs-services/all-programs/telecommunications-programs/telecom-maps/section-106-nationwide>. Big Rivers Electric is aware that phasing of Section 106 review for this potential undertaking would only apply to loan obligation and that Section 106 review must be complete prior to project construction.

Big Rivers Electric has identified several projects that are necessary to provide reliable service to Nucor Corporation's new steel mill and the surrounding area. The new service plan would include the following project components, some of which have not been fully defined. For project components requiring phased Section 106 review, RUS may proceed to obligation of loan funds after conclusion of the other aspects of its environmental review process are complete (such as reviews under the National Environmental Policy Act). For the purposes of this initial effort, Burns & McDonnell is identifying all project components, proposing an area of potential effect, and providing information to support a recommended finding of effect for those project components/activities where Section 106 review can be concluded at this moment.

Project Description and Recommended Area of Potential Effect (APE)

Substations and Switching Stations (Figures 1 and 2): The recommended physical APE for these project components consists of the locations of each substation and switching station. The stations will be bounded with a 7 foot high chain-link fence surmounted by 1 foot of barbed wire. Equipment within each station will be a maximum height of approximately 105 feet above grade. The amount of land disturbance required for each station is provided below. The recommended APE for visual effects is the area within a 0.25-mile radius of each new substation or switching station. Burns & McDonnell understands that the geographic scope of the APE for the Project substation and switching station components will not be final until a determination is made by RUS pursuant to 36 CFR § 800.4(a)(1).

- RUS #1070 (REBUILD), Meade County Substation 161 kV Terminal: The existing Meade County Substation, located at the intersection of KY 79 and Highway 428, will require the installation of a new 161 kV transmission line terminal within the fenced area; land disturbance outside of previously disturbed area is not required (Figure 2, page 7). *Finding of Effect:* Because of the project context and conditions, Big Rivers Electric recommends no effects to historic properties for this aspect of the potential undertaking and no further Section 106 review.
- RUS #907 (NEW), Otter Creek 345/161 kV Substation: This new substation would be located at the intersection of KY 313 and KY 1238. It would be located on an 8.1-acre parcel with an additional 2.2 acres of site storage associated with it (Figure 2, page 6).

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Phasing of Section 106 review under the NPA is needed for this aspect of the project.

- RUS #908 (NEW), Brandenburg Steel Mill (BSM) 345/34.5 kV Substation: This new substation would be located within the limits of the new Nucor Brandenburg Steel Mill near KY 933 and Buttermilk Falls Rd and would require 7.2 acres (Figure 2, page 1). This project component is part of the separate Nucor BSM project (LRL-2019-444-sea), and effects to historic properties at that location are currently under agency review. Because of the project context and conditions, Big Rivers Electric recommends no further consideration of this component under Section 106 in connection with the current project.
- RUS #909 (NEW), Redmon Road EHV Switching Station: This new switching station would be located southeast of KY 313 and US 60 and would require 4.6 acres (Figure 2, page 12). Phasing of Section 106 review under the NPA is needed for this aspect of the project.

Transmission Lines (Figures 1 and 2): The recommended physical area of APE for the following project components consists of the locations of the right-of-way (ROW) width and length as described below. The existing lines are 50 to 60 feet above ground level. Design of the new replacement structures is still being finalized; an example rendering is attached in Appendix A. Current plans call for the new 345/69 kV transmission line structures to extend 105 feet above ground level and be built following braced post tangent design using steel or concrete spun structures spaced approximately 500 feet apart. The new 161/69 kV transmission line structures would be approximately 95 to 105 feet above ground level and would also be built of braced post tangent design using steel or concrete spun structures spaced approximately 500 feet apart. The ROW width of each kind of line would vary as described below. The recommended APE for visual effects is the area within 0.25 mile of each new transmission line's centerline (Figure 2). Burns & McDonnell understands that the geographic scope of the APE for the Project transmission line components will not be final until a determination is made by RUS pursuant to 36 CFR § 800.4(a)(1).

- RUS #1072 (REBUILD and NEW LINE), Otter Creek Substation to BSM Substation 345 kV Line Addition in Meade County, KY (Figure 2, pages 1 through 6): Rebuild 7.3 miles of existing 69 kV line as 345/69 kV double circuit line within the existing 100-foot wide ROW. An additional 1.1 miles of new 345 kV line would be built to connect the existing line to the BSM Substation and the Otter Creek Substation. Approximately 0.3 mile of the new line would be located within Nucor Corporation's steel mill property and would have a 150-foot wide ROW; the remaining 0.8 mile would be located on private easements requiring a 125-foot wide ROW. Within existing ROW, a records search is

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provided to assess if additional archaeological survey is recommended; phasing of Section 106 review under the NPA may be needed for this aspect of the project.

- RUS #830 (REBUILD and NEW LINE), Meade County Substation to Otter Creek Substation 161/69kV Double Circuit Line Addition in Meade County, KY (Figure 2, pages 6 through 11): Rebuild 7.9 miles of existing 69 kV line as 161/69 kV double circuit that will include pole for pole replacement of the entire line within its existing 100-foot ROW. An additional 1.0 mile of new, 125-foot ROW would be built to route the 161 kV line to the west side of Meade County Substation and the north side of Otter Creek Substation. Within existing ROW, a records search is provided to assess if additional archaeological survey is recommended; phasing of Section 106 review under the NPA may be needed for this aspect of the project.
- RUS #1071 (NEW LINE), Redmon Road EHV Switching Station to Otter Creek Substation 345 kV Line in Meade County, KY (Figure 2, pages 6, 11, and 12): Construct 2.5 miles of new 345 kV line requiring a new 125-foot wide ROW that would be located on private easements. The final route/line design has not been engineered yet. Phasing of Section 106 review under the NPA is needed for this aspect of the project.

Results of Records Search

In November 2019, Burns & McDonnell requested and received architectural and archaeological site files and archaeological survey records from the Kentucky Heritage Council (KHC) and the Office of State Archaeology (OSA). Several parts of the Project overlap with the locations of previous cultural surveys (Figure 2, Table 1). One of the investigations is under agency review (Kullen 2020), one was completed by Big Rivers Electric as due diligence for a project (Foster 2013) (Appendix B), and the rest were likely completed for state and/or federal environmental and cultural compliance laws.

Table 1: Previously Archaeological Surveys that Intersect the Proposed Physical APE

ID Number	Title / Agency	Author(s) and Year	Intersects Project Component
LRL-2019-444-sea	Phase I Archaeological Survey of the Nucor Brandenburg Project, Meade County, Kentucky; U.S. Army Corps of Engineers	Kullen, Douglas and Mark Latham 2019	RUS #908 and #1072

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ID Number	Title / Agency	Author(s) and Year	Intersects Project Component
LRL-2019-444-sea	Phase I Archaeological Survey for the Nucor Brandenburg Project, Meade County, Kentucky; Addendum I	Gottsfield, Andrew et al. 2019	RUS #1072
--	Phase II Archaeological Site Evaluations at the Nucor Brandenburg Project, Meade County, Kentucky; U.S. Army Corps of Engineers; investigation under agency review	Kullen, Douglas 2020	RUS #908 and #1072
082-039	Archaeological Survey for the Riverport Road Project in Meade County, Kentucky; agency unknown	Martin, Andrew V. 2005	Slight overlap with RUS #908
--	Phase I Intensive Archaeological Survey of a 2.85-Mile Long Proposed Electrical Transmission Line in Meade County, Kentucky; due diligence	Foster, A. Lee 2013	RUS #1072
082-031	Phase I Intensive Survey of the Proposed Realignment of KY 933, Meade County, Kentucky; agency unknown	King, Melinda 2003	RUS #1072
047-118	An Archaeological Survey of the Proposed Hardin-Meade Counties KY 313 Extension; agency unknown	King, Brian 2002	RUS #830, #1071, and #1072
082-032	A Cultural Resources Assessment of the Proposed Mills Junction Substation, Meade County, Kentucky; agency unknown	Turnbow, Christopher 1979	RUS #1070
082-061	Phase I Intensive Archaeological Survey and Cultural Resources Study of a 2.9-Mile Long Proposed Electrical Transmission Line in Meade County, Kentucky; agency unknown	Foster, A. Lee 2012	Slight overlap with RUS #830

Source: Foster 2013; Gottsfield et al. 2019; Kullen 2020; Kullen and Latham 2019; OSA 2019

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Two previously recorded historic-age non-archaeological resources (historic resources) are within the proposed APE for visual effects (RUS #830 and #1070). Resources MD 115 and MD 116 are twentieth century dwellings with undetermined NRHP status (Figure 2, page 7). Two previously recorded archaeological sites, 15Md435 and 15Md450, are adjacent to the physical APE for components RUS #1071 and #1072, but do not intersect (Figure 2, pages 1 and 11; Table 2). Four recorded archaeological sites intersect the Project and proposed physical APE at the following project components: RUS #908 and #1072 (Figure 2, page 1; Table 2). Site 15Md7 on Nucor’s property was previously reported as a “cemetery on the farm of Jonas Lyons” (Funkhauser and Webb 1932). The mapped location of the site has been recognized as unreliable by the Office of State Archaeology (OSA). Recent deed research and an investigation of the mapped site location suggest that the location was misreported and is actually at least 0.6-mile southeast of the current mapped location (Gottsfield et al. 2019). Site 15Md459 is currently under agency review and has been recommended not eligible for listing on the NRHP (Kullen 2020). Two of the preliminary sites, 15Md598 and 15Md602, currently overlap the ROW, however their final boundaries are not yet on file at the OSA. Both sites are under agency review and have been recommended not eligible for listing on the NRHP (Kullen 2020; Kullen and Latham 2019).

Table 2: Previously Recorded Archaeological Sites Within or Adjacent to the Proposed Physical APE

Site Number	Age	Site Type	NRHP Status	Intersects Physical APE?
15Md7	Prehistoric	Cemetery; stone box grave	Undetermined	Yes; RUS #1072. Appears mapped location is incorrect
15Md435	Prehistoric	Open habitation without mounds	Undetermined	No
15Md450	Late Archaic- Early Woodland, historic	Open habitation without mounds	Presently not eligible	No
15Md459	Early Woodland, Middle Woodland	Open habitation without mounds	Recommended not eligible by investigator	Yes; RUS #908

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Site Number	Age	Site Type	NRHP Status	Intersects Physical APE?
15Md598	Early Archaic, Late Archaic- Early Woodland; historic	Open habitation without mounds; razed farmstead	Recommended not eligible by investigator	Yes; RUS #908 and #1072
15Md602	Historic	Razed outbuilding	Recommended not eligible by investigator	Yes; RUS #1072

Source: Gottsfield et al. 2019; Kullen 2020; Kullen and Latham 2019; OSA 2019.

Additionally, at the direction of RUS, Burns & McDonnell has notified and is seeking information about possibly affected historic properties in the APE from the enclosed list of Indian tribes (Appendix C).

Proposed Survey Areas for the Project

Approximately 4.6 miles of the proposed Project ROW is new, or greenfield, which is depicted on Figure 2, pages 1, 6, 7, 11, and 12. Most of the Project and proposed physical APE, approximately 15.2 miles, is existing line ROW depicted on Figure 2, pages 1-11. All of the existing ROW has been previously disturbed, cleared, and has experienced impacts from construction and maintenance activities since the 1950s when the existing line was constructed. Project plans within the existing ROW consist of removing and replacing transmission structures pole for pole, in the same hole. Given that there will be limited new disturbance and that the proposed Project impacts will be consistent with existing disturbances, we propose that archaeological investigations and survey are not necessary within the existing ROW portion of the APE.

Additionally, several portions of the project have been previously surveyed for cultural resources or overlap with areas that were surveyed for different projects. Burns & McDonnell is proposing that additional archaeological investigations are not necessary in areas of the Project that have been previously surveyed (Figure 2) and found negative for archaeological sites or where sites were identified intersecting with the Project, but have been determined or recommended not eligible for the NRHP. Burns & McDonnell is proposing no additional archaeological investigations or survey within the following specific areas of the physical APE:

- RUS #908: The BSM Substation consists of 7.2 acres of new substation construction (Figure 2, page 1). This Project component is located within the Nucor BSM project

Mr. Craig Potts
State Historic Preservation Officer
April 1, 2020
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boundary survey area, which has already been surveyed and is under agency review (LRL-2019-444-sea).

- RUS #1072: The line from the BSM Substation to the new Otter Creek Substation consists of 7.3 miles of existing ROW (Figure 2, pages 1-6) and an additional 1.1 miles of new ROW (Figure 2, page 1). Much of this existing ROW is located within previously surveyed areas along State Highway 933 and Joe Prather Highway. Big Rivers Electric completed an archaeological survey for a portion of the existing line in this area that is not on file at the OSA, but can be found in Appendix B of this letter. In addition, 0.3 mile of the new ROW is located within the Nucor BSM project boundary survey area, which has already been surveyed and is currently under review by the SHPO (LRL-2019-444-sea).
 - Burns & McDonnell does not recommend archaeological survey within the existing ROW or in the new ROW areas that have been previously surveyed shown on Figure 2, page 1.
- RUS #830: The line from the existing Meade County Substation to the new Otter Creek Substation consists of 7.9 miles of existing ROW (Figure 2, pages 7-11) and an additional 1.0 mile of new ROW (Figure 2, pages 6, 7, and 11).
 - Burns & McDonnell does not recommend archaeological survey within the existing ROW or in the new ROW areas that have been previously surveyed shown on Figure 2, pages 6 and 7.
- RUS #1071: The line from the Otter Creek Substation to the Redmon Road Switching Station is 2.5 miles within new ROW, shown on pages 6, 11, and 12. A portion of this ROW lines up with previously surveyed areas along Joe Prather Highway.
 - Burns & McDonnell proposes no survey in the previously surveyed areas.

Burns & McDonnell is proposing archaeological field investigations within the physical APE for Survey Areas (SA) marked as SA-1, SA-2, SA-3, SA-4, SA-5, and SA-6 on Figure 2.

In addition to potential physical effects to archaeological resources, compliance with Section 106 requires consideration of the Project's potential to adversely affect historic-age non-archaeological resources including buildings, structures, objects, and districts. Effects can be physical or non-physical such as alterations to landscapes that would visually impact the setting of significant resources. It is presumed that an APE buffer of 0.25 mile would be used to account for potential effects to such resources along greenfield portions of the Project and at proposed new substation and switching station locations. Consideration of visual impacts along rebuild alignments and substation expansion may also be required; however, the APE could be smaller in these areas depending on existing physical conditions (i.e. vegetation, topography, existing



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setting intrusions, and proposed structure design). The APE around existing facilities will be defined prior to the initiation of field efforts in coordination with RUS and SHPO staff.

Conclusions

Please review the Project, enclosed maps, and appendices. After completing your review, please provide Burns & McDonnell with your recommendation(s) regarding the need for additional study of the recommended APE. If you recommend study, please explain the nature and scope of the proposed investigation specifically in reference to those factors identified in 36 CFR § 800.4(b)(1).

Please submit your recommendations within thirty (30) days of your receipt of this request to Amber Javers (605-690-5097, ajavers@burnsmcd.com). After 30 days, Burns & McDonnell will notify RUS, so that the federal agency may determine how to proceed with Section 106 review in accordance with 36 CFR § 800.3(b)(4). Should you have any questions, please contact Amber Javers.

Sincerely,

A handwritten signature in black ink, appearing to read 'Amber Javers'.

Amber Javers
Burns & McDonnell
Senior Cultural Resources Specialist/Archaeologist

A handwritten signature in black ink, appearing to read 'Brandy Harris'.

Brandy Harris
Burns & McDonnell
Senior Cultural Resources Specialist/Architectural Historian

Enclosure Attachment
Appendix A: Typical 345 kV DC Structure Design
Appendix B: Phase I Archaeological Survey
Appendix C: Tribal Correspondence Letter Recipients
cc: Lauren Rayburn, RUS
Samantha Nokolny, Burns & McDonnell



Mr. Craig Potts
State Historic Preservation Officer
April 1, 2020
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REFERENCES

Foster, A. Lee

2013 *Phase I Intensive Archaeological Survey of a 2.85-Mile Long Proposed Electrical Transmission Line in Meade County, Kentucky*. OSA Report Registration No. FY14-7763. Unpublished manuscript prepared for Associated Engineers, Inc. Pennyriple Archaeological Services LLC, Cadiz, Kentucky.

Funkhauser, W.D., and W.S. Webb

1932 *Archaeological Survey of Kentucky*. *University of Kentucky Reports in Archaeology and Anthropology* 2:278-281..

Gottsfeld, Andrew, Michael Davis, and Douglas Kullen

2019 *Phase I Archaeological Survey for the Nucor Brandenburg Project, Meade County, Kentucky: Addendum 1*. Report submitted to USACE (Louisville District) and Kentucky Heritage Council. Burns & McDonnell Engineering Company, Inc., Downers Grove, Illinois.

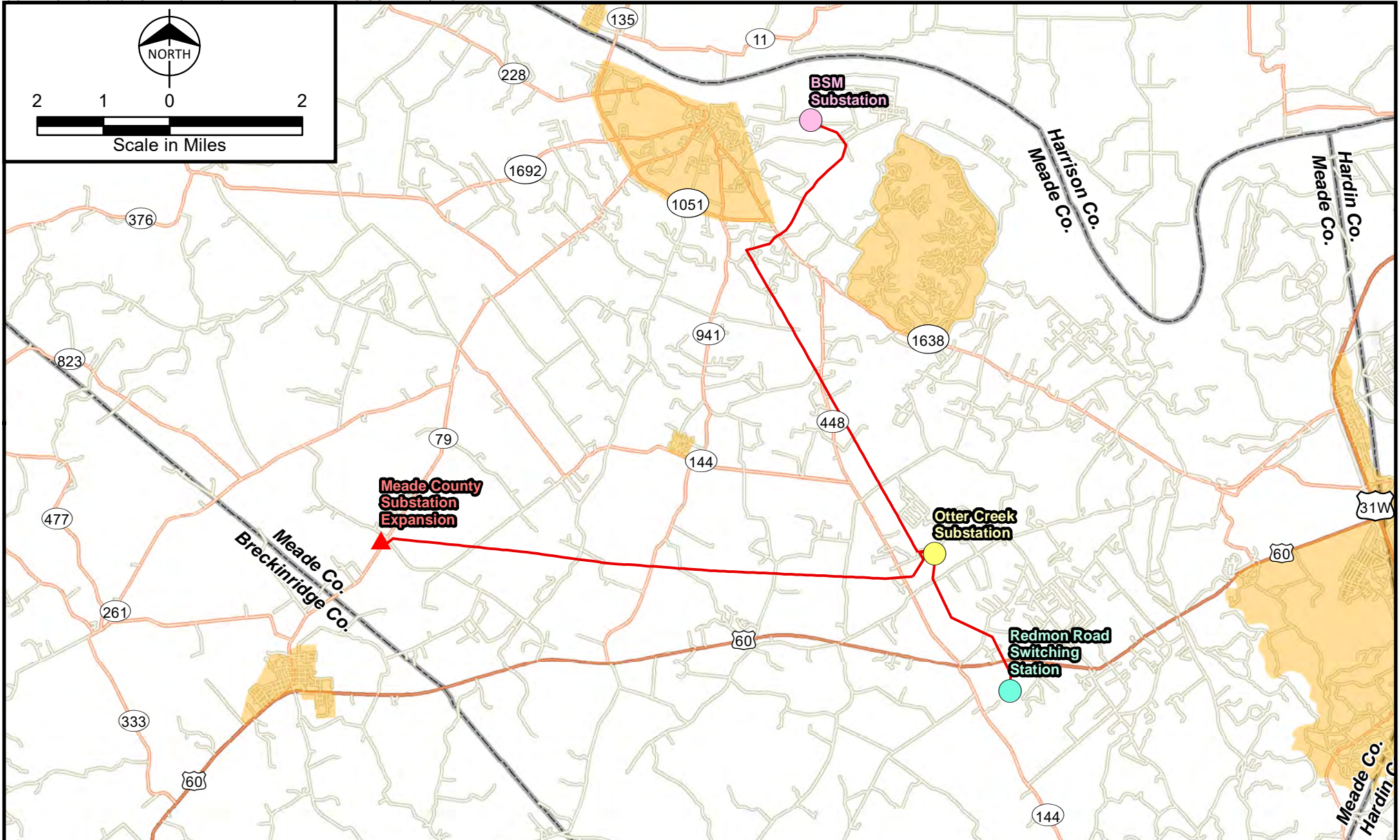
Kullen, Douglas Kullen

2020 *Phase II Archaeological Site Evaluations at the Nucor Brandenburg Project, Meade County, Kentucky*. Report submitted to USACE (Louisville District) and Kentucky Heritage Council. Burns & McDonnell Engineering Company, Inc., Downers Grove, Illinois.

Kullen, Douglas and Mark Latham

2019 *Phase I Archaeological Survey for the Nucor Brandenburg Project, Meade County, Kentucky*. Report submitted to USACE (Louisville District) and Kentucky Heritage Council. Burns & McDonnell Engineering Company, Inc., Downers Grove, Illinois.

Figures







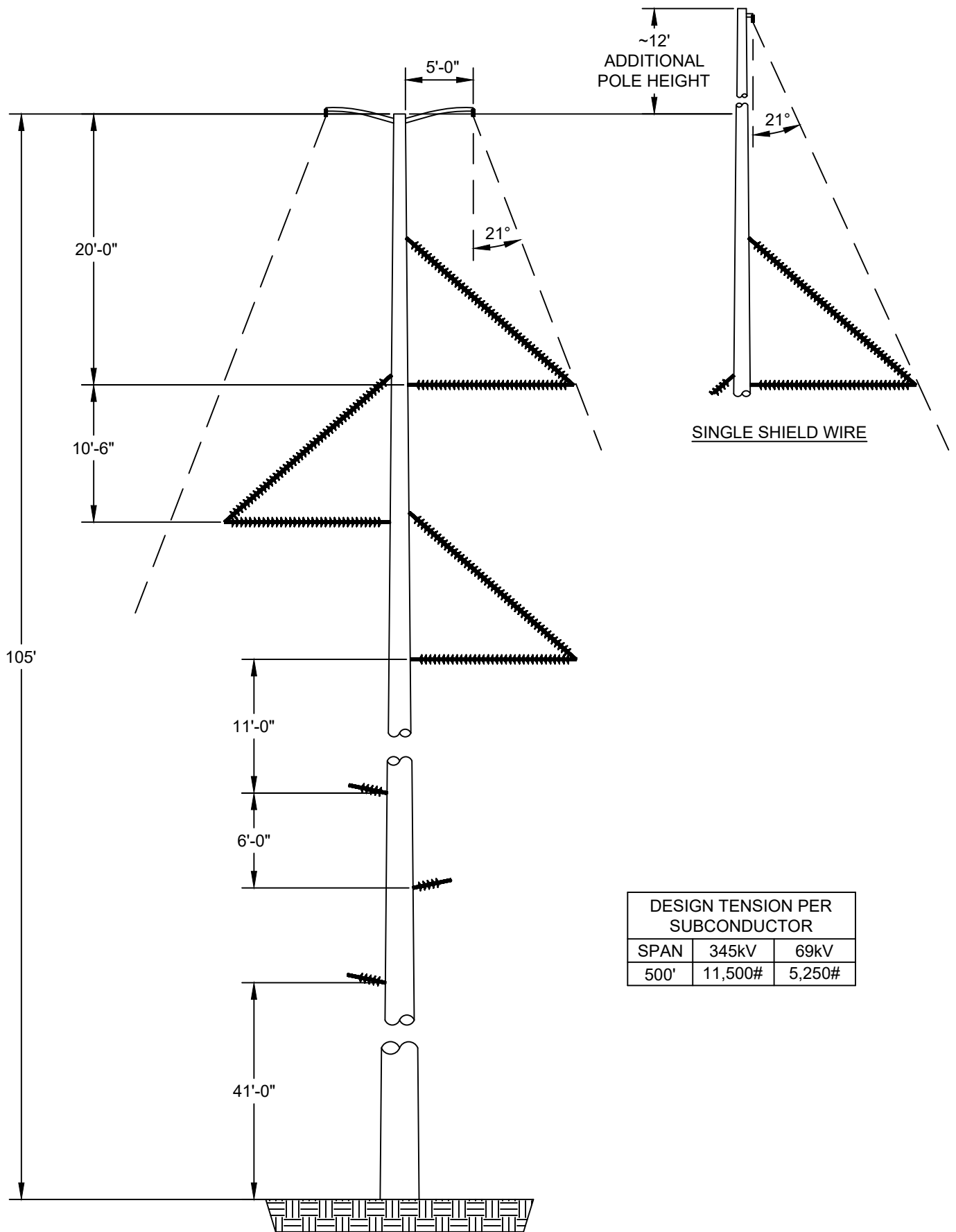
 Proposed Transmission Line	 Meade County Substation Expansion
 Municipal Area	 BSM Substation
	 Otter Creek Substation
	 Redmon Road Switching Station



Figure 1
 Big Rivers Electric Corporation
 Brandenburg Steel Mill Service
 345/161-kV Transmission Project

Figures Redacted due to
Sensitive Information

Appendix A
Typical 345 kV DC Structure Design



850 Center Way | Norcross, GA 30071
 (770) 453-1410 | pdengineers.com
 Engineers - Surveyors - Construction Management

345kV/69kV TRANSMISSION LINE
 TANGENT - COMPACT

DATE: 03-20-20

SCALE: NONE

BIG RIVERS ELECTRIC
 CORPORATION
 HENDERSON, KENTUCKY

SPC_TP-345AS
 _TP-69G

Appendix B
Phase I Archaeological Survey

Redacted due to Sensitive Info

Appendix C
Tribal Correspondence Letter Recipients
(Redacted - Already Included as
Appendix D of the Environmental
Assessment)



MATTHEW G. BEVIN
GOVERNOR

**TOURISM, ARTS AND HERITAGE CABINET
KENTUCKY HERITAGE COUNCIL**
THE STATE HISTORIC PRESERVATION OFFICE

REGINA STIVERS
DEPUTY SECRETARY

DON PARKINSON
SECRETARY

410 HIGH STREET
FRANKFORT, KENTUCKY 40601
PHONE (502) 564-7005
FAX (502) 564-5820
www.heritage.ky.gov

CRAIG A. POTTS
EXECUTIVE DIRECTOR
& STATE HISTORIC
PRESERVATION OFFICER

November 27, 2019

Ms. Samantha Nokolny
Burns McDonnell
1431 Opus Place, Suite 400
Downers Grove, IL 60515

Re: Big Rivers Electric Corporation, Brandenburg Steel Mill 345 & 161-kV Transmission Project

Dear Ms. Nokolny:

Thank you for your letter concerning the abovementioned project, received November 7, 2019. We understand that Big Rivers Electric Corporation proposes to make modifications to its transmission infrastructure to service a proposed steel mill in Brandenburg, Meade County, Kentucky. We understand that the project will be funded through the United States Department of Agriculture Rural Utilities Services, and that Burns McDonnell is assisting in conducting scoping for the preparation of an Environmental Assessment for this project.

The Kentucky Heritage Council performs the role of the State Historic Preservation Officer under the provisions of the National Historic Preservation Act. The proposed project poses the potential to affect historic properties, and we look forward to continuing consultation and review of the EA as it is drafted and finalized.

Should you have any questions concerning archaeological resources, feel free to contact Chris Gunn of my staff at (502) 892-3615 or chris.gunn@ky.gov. Questions concerning above-ground resources can be directed to Jennifer Ryall at (502) 892-3619 or jennifer.ryall@ky.gov.

Sincerely,

Craig A. Potts,
Executive Director and
State Historic Preservation Officer

CP: cmg, jr KHC # 56195

From: KY Office of State Archaeology <ky-osa@uky.edu>
Sent: Thursday, November 14, 2019 12:08 PM
To: Javers, Amber
Subject: KYOSA Data FY20-10449
Attachments: FY20-10449.zip

Here are the data you requested from the Kentucky Office of State Archaeology. If you have any problems or questions about this request please contact us at ky-osa@uky.edu

Kentucky Office of State Archaeology
University of Kentucky
1020A Export Street
Lexington, KY 40506-9854
T: (859)257-1944
F: (859)323-9866
ky-osa@uky.edu

Kentucky Heritage Council

410 High Street, Frankfort, KY 40601

Phone:502-564-7005

GIS Report and Project Registration Invoice

Invoice Date: November 19, 2019
Burns & McDonnell

Registration No.	Project Title	Principal Investigator	Date	Amount Billed
FY20- 3590	Brandenburg Steel Mill 345 & 161-kV Transmission Project	Brandy Harris	11/19/2019	\$115.00
		paid via online credit card transaction	11/18/2019	(\$115.00)
			Total Due	\$0.00

Payable to: Kentucky Heritage Council

Due and Payable upon Receipt

APPENDIX D – TRIBAL CORRESPONDENCE

TRIBAL CORRESPONDENCE RECEIVED



G W Y 9 D B F
CHEROKEE NATION®

P.O. Box 948 • Tahlequah, OK 74465-0948
918-453-5000 • www.cherokee.org

Office of the Chief

Chuck Hoskin Jr.
Principal Chief

Bryan Warner
Deputy Principal Chief

December 1, 2020

Erika K. Martin Seibert
United States Department of Agriculture
Rural Development
1400 Independence Avenue, SW
Washington, D.C. 20250

Re: Brandenburg Steel Mill 345 and 161-kV Transmission Project

Dr. Erika K. Martin Seibert:

The Cherokee Nation (Nation) is in receipt of your correspondence about and related reports for the proposed **Brandenburg Steel Mill 345 and 161-kV Transmission Project**, and appreciates the opportunity to provide comment upon this project. Please allow this letter to serve as the Nation's interest in acting as a consulting party to this proposed project.

The Nation maintains databases and records of cultural, historic, and pre-historic resources in this area. Our Historic Preservation Office (Office) reviewed this project, cross referenced the project's legal description against our information, and found instances where this project intersects or is within close proximity to such resources. However, resources located within the Area of Potential Effects (APE) are considered ineligible to be listed in the National Register of Historic Places. Thus, this Office does not object to the project proceeding as long as the following stipulations are observed:

- 1) The Nation requests that United States Department of Agriculture (USDA) re-contact this Office for additional consultation if there are any changes to the scope of or activities within the APE;
- 2) The Nation requests that the USDA halt all project activities immediately and re-contact our Offices for further consultation if items of cultural significance are discovered during the course of this project; and
- 3) The Nation requests that the USDA conduct appropriate inquiries with other pertinent Tribal and Historic Preservation Offices regarding historic and prehistoric resources not included in the Nation's databases or records.

Brandenburg Steel Mill 345 and 161-kV Transmission Project

December 1, 2020

Page 2 of 2

If you require additional information or have any questions, please contact me at your convenience.
Thank you for your time and attention to this matter.

Wado,

A handwritten signature in blue ink that reads "Elizabeth Toombs". The signature is written in a cursive style with a light blue circular highlight behind the name.

Elizabeth Toombs, Tribal Historic Preservation Officer

Cherokee Nation Tribal Historic Preservation Office

elizabeth-toombs@cherokee.org

918.453.5389



Miami Tribe of Oklahoma

3410 P St. NW, Miami, OK 74354 • P.O. Box 1326, Miami, OK 74355
Ph: (918) 541-1300 • Fax: (918) 542-7260
www.miamination.com



Via email: lauren.rayburn@usda.gov

November 17, 2020

Lauren Rayburn
USDA Rural Utilities Service
160 Zillicoa Street, Suite 2
Asheville, NC 28801

Re: Big Rivers Electric Corporation - Brandenburg Steel Mill 345 kV and 161kV Transmission Line Project - Archaeological and Historic-Age Resource Reports – Comments of the Miami Tribe of Oklahoma

Dear Ms. Rayburn:

Aya, kikwehsitoole – I show you respect. The Miami Tribe of Oklahoma, a federally recognized Indian tribe with a Constitution ratified in 1939 under the Oklahoma Indian Welfare Act of 1936, respectfully submits the following comments regarding the archaeological and historic-age resource reports for the Big Rivers Electric Corporation Brandenburg Steel Mill 345 kV and 161kV Transmission Line Project.

Having reviewed the research and archaeological reports for this project, the Miami Tribe offers no objection to the project. However, given the Miami Tribe's deep and enduring relationship to its historic lands and cultural property within present-day Kentucky, if an unanticipated discovery of human remains or Native American cultural items falling under the Native American Graves Protection and Repatriation Act (NAGPRA) or archaeological evidence is discovered during any phase of this project, the Miami Tribe requests immediate consultation with the entity of jurisdiction for the location of discovery. In such a case, please contact me at 918-541-8966 or by email at dhunter@miamination.com to initiate consultation.

Respectfully,

Diane Hunter
Tribal Historic Preservation Officer

cc: Allison Chapint amchapin@burnsmcd.com

From: [Tonya Tipton](#)
To: [Chapin, Allison M.](#)
Subject: RE: Big Rivers Electric Corporation - Brandenburg Steel Mill 345 kV and 161kV Transmission Line Project - Archaeological and Historic-Age Resource Reports
Date: Monday, November 16, 2020 3:30:06 PM

This letter is in response to the above referenced project.

The Shawnee Tribe's Tribal Historic Preservation Department concurs that no known historic properties will be negatively impacted by this project.

We have no issues or concerns at this time, but in the event that archaeological materials are encountered during construction, use, or maintenance of this location, please re-notify us at that time as we would like to resume immediate consultation under such a circumstance.

If you have any questions, you may contact me via email at tonya@shawnee-tribe.com

Thank you for giving us the opportunity to comment on this project.

Sincerely,



Tonya Tipton
Tribal Historic Preservation Officer
Phone: (918)542-2441
Email: tonya@shawnee-tribe.com
29 S Highway 69A
Miami, OK 74354
www.Shawnee-Tribe.org

From: Chapin, Allison M. <amchapin@burnsmcd.com>
Sent: Monday, November 16, 2020 12:17 PM
To: Tonya Tipton <tonya@shawnee-tribe.com>
Cc: Thornhill, Steve <sthornh@burnsmcd.com>
Subject: RE: Big Rivers Electric Corporation - Brandenburg Steel Mill 345 kV and 161kV Transmission Line Project - Archaeological and Historic-Age Resource Reports

Tonya,

I sent the reports via our file transfer system, please let me know if you have problems accessing it. I forgot to include the cover letter – please see attached which will help to explain the project and

From: [Lindsey Bilyeu](#)
To: [Nekolny, Samantha](#)
Subject: RE: Big Rivers Electric Corporation, Brandenburg Steel Mill 345 & 161-kV Transmission Project
Date: Wednesday, January 29, 2020 11:06:49 AM
Attachments: [image001.png](#)

Ms. Nekolny,

The Choctaw Nation of Oklahoma thanks you for the correspondence regarding the above referenced project. Meade Co., KY lies outside of our area of historic interest. The Choctaw Nation Historic Preservation Department respectfully defers to the other Tribes that have been contacted.

If you have any questions, please contact me.

Thank you,
Lindsey D. Bilyeu, MS
Senior Compliance Review Officer
Historic Preservation Department
Choctaw Nation of Oklahoma
P.O. Box 1210
Durant, OK 74702
580-924-8280 ext. 2631



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From: [Nekolny, Samantha](#)
To: [O'Hare, Anna K](#)
Subject: FW: Tribal Consultation
Date: Friday, January 24, 2020 2:23:08 PM

From: Sheila Bird <sheila.bird@shawnee-tribe.com>
Sent: Thursday, January 23, 2020 6:28 AM
To: Nekolny, Samantha <snokolny@burnsmcd.com>
Subject: Tribal Consultation

Please let this email serve as notice that the Shawnee Tribe has moved this project to the Active Review Files.

Please send me any updated information along with the EIS, KMZ and/or Shape Files for this project as it becomes available.

Thank you,
Sheila Bird,
Shawnee Tribe
Historic Preservation

From: [Autumn Gorrell](#)
To: [Nekolny, Samantha](#)
Subject: RE: Big Rivers Electric Corporation Brandenburg Steel Mill 345 & 161-kV Transmission Project
Date: Wednesday, January 22, 2020 2:43:44 PM

Good Afternoon,

Our office received a letter regarding the Big Rivers Electric Corporation Brandenburg Steel Mill 345 & 161-kV Transmission Project in Meade County, Kentucky.

Thank you for the project notification.

This project is outside of our area of interest at this time.

Sincerely,

Autumn L. Gorrell

Historic Preservation Tech.

Chickasaw Nation

Division of Historic Preservation and Repatriation

Department of Culture and Humanities

Office: 1-580-559-0700 Ex.62731

Email:Autumn.Gorrell@chickasaw.net



Miami Tribe of Oklahoma

3410 P St. NW, Miami, OK 74354 • P.O. Box 1326, Miami, OK 74355
Ph: (918) 541-1300 • Fax: (918) 542-7260
www.miamination.com



Via email: lauren.rayburn@usda.gov

January 3, 2020

Lauren Rayburn
USDA Rural Utilities Service
160 Zillicoa Street, Suite 2
Asheville, NC 28801

Re: Big Rivers Electric Corporation, Brandenburg Steel Mill 345 & 161-kV Transmission Project – Comments of the Miami Tribe of Oklahoma

Dear Ms. Rayburn:

Aya, kikwehsitoole – I show you respect. My name is Diane Hunter, and I am the Tribal Historic Preservation Officer for the Federally Recognized Miami Tribe of Oklahoma. In this capacity, I am the Miami Tribe's point of contact for all Section 106 issues.

The Miami Tribe offers no objection to the above-mentioned project at this time, as we are not currently aware of existing documentation directly linking a specific Miami cultural or historic site to the project site. However, as this project is within the aboriginal homelands of the Miami Tribe, if any human remains or Native American cultural items falling under the Native American Graves Protection and Repatriation Act (NAGPRA) or archaeological evidence is discovered during any phase of this project, the Miami Tribe requests immediate consultation with the entity of jurisdiction for the location of discovery. In such a case, please contact me at 918-541-8966 or by email at dhunter@miamination.com to initiate consultation.

The Miami Tribe accepts the invitation to serve as a consulting party to the proposed project. In my capacity as Tribal Historic Preservation Officer I am the point of contact for consultation.

Respectfully,

Diane Hunter
Tribal Historic Preservation Officer

cc: Samantha Nokolny snekolny@burnsmcd.com

From: [Elizabeth Toombs](#)
To: [Nekolny, Samantha](#)
Subject: Big Rivers Electric Corporation
Date: Thursday, January 2, 2020 8:46:35 AM

Good Morning, Ms. Nekolny:

The Cherokee Nation recently received a review request for the Big Rivers Electric Corporation, Brandenburg Steel Mill 345 and 161-kV Transmission Project in Meade County, Kentucky. The Nation values our government-to-government relationships with federal agencies. Thus, this email is to follow-up with a request for contact information to initiate consultation for this proposed undertaking.

Please let me know if there are any questions or concerns about this request. Thank you for your time and any information.

Wado,

Elizabeth Toombs, Tribal Historic Preservation Officer
Cherokee Nation
Tribal Historic Preservation Office
PO Box 948
Tahlequah, OK 74465-0948
918.453.5389

QUAPAW NATION

P.O. Box 765
Quapaw, OK 74363-0765

(918) 542-1853
FAX (918) 542-4694

January 2, 2020

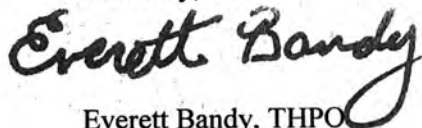
Burns McDonnell
1431 Opus Place, Suite 400
Downers Grove, IL 60515

Re: Big Rivers Electric Corporation Brandenburg Steel Mill 345 & 161-kV Transmission Project, Meade County, Kentucky

To whom it may concern,

This project is outside of the current area of interest for the Quapaw Nation; therefore, the Quapaw Nation does not desire to comment on this project at this time. Thank you for your efforts to consult with us on this matter.

Sincerely,



Everett Bandy, THPO
Quapaw Nation
P.O. Box 765
Quapaw, OK 74363
(p) 918-238-3100

From: [Douglas Taylor](#)
To: [Nekolny, Samantha](#)
Subject: Brandenburg Steel Mill 345 & 161-kV transmission Project
Date: Tuesday, December 10, 2019 2:21:58 PM
Attachments: [image001.png](#)

Greetings Ms. Nekolny,

Ref: Big Rivers Electric Corporation
Brandenburg Steel Mill 345 & 161-kV transmission Project

Thank you for including the Nottawaseppi Huron Band of the Potawatomi in your consultation process. From the description of your proposed project, it does not appear as if any cultural or religious concerns of the Tribe's will be affected. We therefore have no objection to the project.

Very Respectfully
Douglas R. Taylor

Douglas R. Taylor | Tribal Historic Preservation Officer (THPO)
Pine Creek Indian Reservation
1301 T Drive S, Fulton, Mi 49052
o: 269-704-8347 | c: 269-419-9434 | f: 269.729.5920
Douglas.Taylor@nhbpi.com | www.nhbpi.com



Please consider the environment before printing this email. This message has been prepared on resources owned by the Nottawaseppi Huron Band of the Potawatomi located in the State of Michigan. It is subject to the Electronic Communications Policy of Nottawaseppi Huron Band of the Potawatomi. This communication may contain confidential (including "protected health information" as defined by HIPAA) or legally privileged information intended for the sole use of the designated recipient(s). If you are not the intended recipient, please notify the sender immediately by reply e-mail and delete all copies of this communication and attachments without reading or saving them. If you are not the named addressee you are notified that disclosing, disseminating, copying, distributing or taking any action in reliance on the contents of this information is strictly prohibited.

**TRIBAL CORRESPONDENCE LETTER
RECIPIENTS**

TRIBAL COORDINATION LETTER RECIPIENTS

The following Tribal Historic Preservation Officers and other tribal officials were sent a coordination letter on December 4, 2019 with information related to the Project, including an overview of the Project and a location map:

<u>Company</u>	<u>Representative</u>	<u>Position</u>	<u>Response Received</u>
1. Absentee-Shawnee Tribe of Oklahoma	Devon Frazier		No
2. Eastern Shawnee Tribe of Oklahoma	Brett Barnes	THPO	No
3. Shawnee Tribe of Oklahoma	Tonya Tipton	Historic Preservation Officer	Yes
4. Cherokee Nation of Oklahoma	Elizabeth Toombs	Special Projects Officer	Yes
5. United Keetoowah Band of Indians in Oklahoma	Erin Thompson	Acting THPO	No
6. Eastern Band of Cherokee Indians	Russell Townsend	THPO	No
7. Citizen Potawatomi Nation	Dr. Kelli Mosteller	THPO	No
8. Forest County Potawatomi	Michael LaRonge	THPO	No
9. Hannahville Indian Community	Earl Meshigaud	Director of Culture	No
10. Gun Lake Tribe	Jeff Martin	Acting THPO	No
11. Nottawaseppi Huron Band of Potawatomi	Douglas Taylor	THPO	Yes
12. Prairie Band of Potawatomi	Liana Onnen	Chairperson	No
13. Pokagon Band of Potawatomi	Marvus Winchester	Director	No
14. Kickapoo Traditional Tribe of Texas	Monica Perez	Chairperson	No
15. Kickapoo Tribe of Kansas	Lester Randall	Chairman	No
16. Kickapoo Tribe of Oklahoma	Dave Pacheco, Jr.	Chairman	No
17. Miami Tribe of Oklahoma	Diane Hunter	THPO	Yes
18. Saginaw Chippewa Indian Tribe of Michigan	William Johnson	THPO	No
19. Lac Vieux Desert Band of Lake Superior	Daisy McGeshick	THPO	No
20. Lac du Flambeau Band of Lake Superior	Melinda Young	THPO	No
21. Sault Ste Marie Tribe of Chippewa	Colleen Medicine	Cultural Repatriation Specialist	No
22. Bad River Band of Lake Superior Chippewa	Edith Leosa	THPO	No
23. Keweenaw Bay Indian Community	Gary Loonsfoot	Jr. Director TH Preservation Office	No
24. Lac Courte Oreilles Band of Chippewa	Brian Bisonette		No
25. Red Cliff Band of Lake Superior Chippewa	Marvin DeFoe	THPO	No
26. Red Lake Chippewa	Kade Ferris	THPO	No
27. Sokaogon Chippewa	Chris McGeshick	Chairman	No
28. St. Croix Chippewa Community	Wanda McFaggen		No
29. Turtle Mountain Band of Chippewa	Richard McCloud	Chairman	No

<u>Company</u>	<u>Representative</u>	<u>Position</u>	<u>Response Received</u>
30. Fon du lac Band of Lake Superior	Jill Hoppe	THPO	No
31. Bois Forte Band of Chippewa	Bill Latady	THPO	No
32. Grand Portage Band of Lake Superior Chippewa	Mary Ann Gagnon	THPO	No
33. Leech Lake Band of Ojibwe	Amy Burnette	THPO	No
34. Mille Lacs Band of Obijwe	Natalie Weyaus	THPO	No
35. Grand traverse Band of Ottawa and Chippewa	Cindy Winslow		
36. Little River Band of Ottawa	Johnny "Jay" Sam II	Director Historic Preservation	No
37. Ottawa Tribe of Oklahoma	Rhonda Dixon	THPO	No
38. Little Traverse Bay Band of Odawa	Wesley Andrews	THPO	No
39. Peoria Tribe of Oklahoma	Logan Pappenfort		No
40. Sac and Fox Tribe of Mississippi in Iowa	Johnathan Buffalo	Historic Preservation Director	No
41. Sac and Fox Nation of Missouri in Kansas and Nebraska	Edmore Green	Chairperson	No
42. Sac and Fox Nation of Oklahoma	Sandra Massey	NAGPRA Coordinator	No
43. Cayuga Nation of New York	Clint Halftown	Federal Representative	No
44. Oneida Nation of New York	Jesse Bergevin	Historic Resources Specialist	No
45. Oneida Nation of Wisconsin	Corina Williams	THPO	No
46. Onondaga Nation of New York	Tony Gonyea	Faithkeeper	No
47. Seneca Nation of Indians of New York	Moris Abrams	Acting THPO	No
48. Seneca-Cayuga of Oklahoma	William Tarrant	THPO	No
49. St. Regis Mohawk Tribe	Arnold Printup	THPO	No
50. Tonawanda Seneca Nation	Darwin Hill	Chief	No
51. Tuscarora Nation of New York	Leo Henry	Chief	No
52. Chickasaw Nation	Karen Brunso	THPO	Yes
53. Choctaw Nation of Oklahoma	Dr. Ian Thompson	THPO	Yes
54. Quapaw	Everett Brandy	THPO	Yes
55. Osage Nation of Oklahoma	Dr. Andrea Hunter	THPO	No
56. Delaware Nation of Oklahoma	Dana Kelly	Historic Preservation/106 Ast.	No
57. Delaware Tribe of Indians Oklahoma	Larry Heady	DTHPO	No
58. Wyandotte Nation of Oklahoma	Sherri Clemons	THPO	No
59. Muscogee Creek Nation			No

**EXAMPLE TRIBAL COORDINATION
LETTER**



December 3, 2019

Example Name
Street Address
City, State, Zip Code

Re: Big Rivers Electric Corporation
Brandenburg Steel Mill 345 & 161-kV Transmission Project

Dear Example Name:

Burns & McDonnell Engineering Company, Inc. is conducting scoping as part of the preparation of an Environmental Assessment (EA) for the U.S. Department of Agriculture's Rural Utilities Services (RUS), as required by the National Environmental Policy Act (NEPA). Burns & McDonnell has been retained by Big Rivers Electric Corporation (Big Rivers) to prepare a draft EA for submittal to RUS for preparation of a final EA for the Brandenburg Steel Mill 345 & 161-kV Transmission Project (Project) in Meade County, Kentucky.

Nucor has announced plans to construct a steel mill near Brandenburg, Meade County Kentucky that will add a 200 MW load to Big River's system. As a result of this additional load, Big Rivers has identified several projects that are necessary to provide reliable service to this new steel mill and the surrounding area (see Project Study Area map attached). The new service plan would include a new 345-kV/34.5-kV delivery point at the Brandenburg Steel Mill, sourced from a 345-kV/161-kV substation (Otter Creek). This substation would be connected to the existing Meade County substation via a 161-kV connection and a 345-kV transmission connection to the LG&E Circuit. This interconnection will require an EHV switching station at Redmon Road-US60 Area.

More specifically, to support the new Big Rivers transmission network, two new substations and one switching station will be constructed in Meade County. The new Otter Creek 345/161-kV substation will be less than 8 acres and located to avoid environmentally sensitive areas. The second substation is the new Brandenburg Steel Mill 345/34.5-kV substation and would be less than 3 acres and located on the Brandenburg Steel Mill property. The new switching station will be the Redmon Road EHV switching station, and approximately less than 4 acres in size. Additionally, the existing Meade County substation will require a 161 kV transmission source. The substation will be expanded within the existing substation fence to accommodate this increase in voltage. Additionally, nine miles of existing 69 kV circuit will be rebuilt as double circuit 161/69-kV line between the Meade County Substation and the new Otter Creek substation. The new double circuit line will be entirely located within the existing 100-foot right-of-way. The new 161kV connection to the existing Meade County substation will require a terminal addition and no additional land will be acquired or disturbed for this portion of the project. The Redmon Road switching station will require a new 345-kV transmission circuit to the new Otter Creek substation. Approximately two miles of new transmission line within a new

Example Name
December 3, 2019
Page 2

100-foot wide right-of-way through largely rural areas would be part of this project component. Lastly, the project will require a new 345-kV transmission line from the new Otter Creek Substation to the Nucor steel mill. Approximately nine miles of new 345-kV line within 100-foot right-of-way will be required. Big Rivers is currently evaluating alternative routes for these new lines that minimize clearing requirements and potential impacts to social and sensitive environmental resources in these rural areas.

A summary of these additional projects is below:

- Meade County Substation to Otter Creek Substation 161-kV Line Addition
 - 8.5 miles, pole for pole replacement within existing right-of-way
- New Otter Creek 345/161-kV Substation
- New Brandenburg Steel Mill 345/34.5-kV Substation
- New Redmon Road 345 kV Switching Station
- Expanded Meade County Substation
- New Redmon Road Switching Station to Otter Creek Substation 345-kV Line
- New 9-mile Otter Creek Substation to Brandenburg Steel Mill Substation 345-kV Line

This letter requests that your agency participate in this Project by providing information on the resources, issues, and impacts that will be addressed in the EA documentation. A Project Study Area Map is included for your reference. Your input on any of the following resources is appreciated:

- Land use
- Aesthetics
- Water quality and wetlands
- Air quality
- Soils and geology
- Noise
- Wildlife, vegetation and fisheries, including threatened and endangered species
- Socioeconomics (population, employment, growth, development, environmental justice)
- Human health and safety
- Cultural resources (historic and archaeological sites, cemeteries)
- Transportation and roads (airport and roadway expansions, construction, operations and maintenance)

Please contact me at 630-724-3825 or snkolny@burnsmcd.com with your feedback on these items and if you need additional information. You may also mail responses to me at 1431 Opus



Example Name
December 3, 2019
Page 3

Place, Suite 400, Downers Grove, IL, 60515. We would appreciate your response within thirty (30) days of your receipt of this request.

Thank you for your participation and support of this Project.

Sincerely,

A handwritten signature in black ink, appearing to read 'S. Nekolny'.

Samantha Nekolny
Burns & McDonnell, Assistant Environmental Scientist

Enclosure Attachment

cc: Lauren Rayburn, RUS

APPENDIX E – ADDITIONAL AGENCY CORRESPONDENCE



COMMONWEALTH OF KENTUCKY
TRANSPORTATION CABINET

www.transportation.ky.gov/

Andy Beshear
GOVERNOR

Jim Gray
SECRETARY

December 17, 2019

Ms. Samantha Nekołny
Burns & McDonnell
Assistant Environmental Scientist
1431 Opus Place, Suite 400
Downers Grove, Illinois 60515

Dear Ms. Nekołny:

The Kentucky Transportation Cabinet appreciates your communication and we submit the following notes that have been over-layed on the map that you provided in your correspondence. Our notes indicate potential future roadway project locations for your consideration as they are planned to occur (although currently unscheduled) within the vicinity of your project.

If you have any questions please contact me at (502) 782-4760.

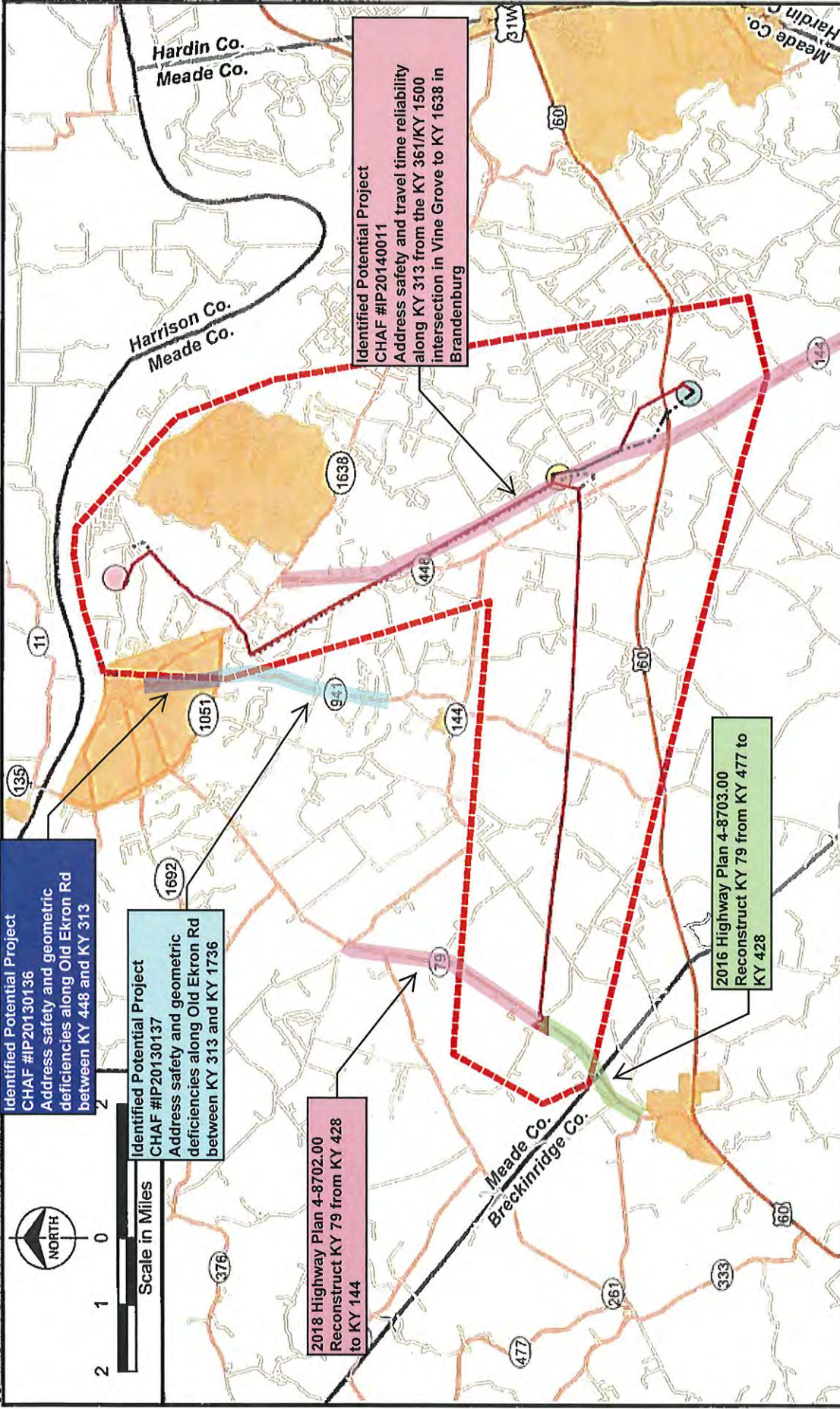
Sincerely,

A handwritten signature in black ink, appearing to read "ARSP", written over a light blue circular stamp.

Amanda R. Spencer, P.E.
Director
Division of Planning

ARS/NH

Enclosure



<p>BURNS & MCDONNELL</p>	<p>Big Rivers Electric Corporation Brandenburg Steel Mill 345/161-kV Transmission Project Project Study Area</p>
<p>Project Study Area (Red dashed line)</p> <p>Alternate Transmission Line (Dashed red line)</p> <p>Existing Transmission Line (Dotted red line)</p> <p>Proposed Transmission Line (Solid red line)</p> <p>Municipal Area (Light orange shading)</p> <p>Meade County Substation (Red triangle)</p> <p>Vicinity of Proposed Brandenburg Steel Mill Substation (Pink circle)</p> <p>Vicinity of Proposed Otter Creek Substation (Yellow circle)</p> <p>Vicinity of Proposed Redmon Road Switching Station (Blue circle)</p>	<p>Source: Esri, and Burns & McDonnell Engineering Company, Inc.</p>

APPENDIX F –BIOLOGICAL RESOURCES AND ASSOCIATED CORRESPONDENCE



MATTHEW G. BEVIN
GOVERNOR

CHARLES G. SNAVELY
SECRETARY

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

ZEB WEESE
EXECUTIVE DIRECTOR

October 24, 2019

Brianne Innusa
Burns and McDonnell Engineering
1431 Opus place
Downers Grove, IL 60515

Project: Big Rivers Electric Coporation; 118263
Project ID: 20-0046
Project Type: Standard (*customers will be invoiced), 1 mile buffer
(\$120 fee)
Site Acreage: 287.62
Site Lat/Lon: 37.901835 / -86.128429
County: Meade
USGS Quad: FLAHERTY; GUSTON; IRVINGTON; MAUCKPORT;
ROCK HAVEN
Watershed HUC12: Doe Run; Flippins Run-Ohio River

Dear Brianne Innusa,

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

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

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

Project ID: 20-0046
October 24, 2019
Page 2

part of Kentucky. Heritage reports summarize the existing information known to the Kentucky Natural Heritage Program at the time of the request regarding the biological elements or locations in question. They should never be regarded as final statements on the elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments. We would greatly appreciate receiving any pertinent information obtained as a result of on-site surveys.

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

Sincerely,

Nour Salam
Geoprocessing Specialist

Standard Occurrence Report
KNP monitored species within 1 Miles of Project Area

EO ID	Scientific Name	Common Name	GRank	SRank	SPROT	USESA	STWG	Last Obs Date	Precision	EO Rank	Lat / Lon	Directions	Habitat
9918	<i>Chondestes grammacus</i>	Lark Sparrow	G5	S2S3B	S		Y	1939-06-12	G	H	37.8605 / -86.0901	On Lafe Newton Farm nr Fort Knox, Meade Co.	Open situations with scattered bushes and trees, prairie, forest edge, cultivated areas, orchards, fields with bushy borders, and savanna (B83COM01NA).
12911	<i>Crangonyx lewisi</i>	Lewis Cave Amphipod	G2	S1S2	T			1961-02-02	M	H	37.9557 / -86.1193	Tributary of Doe Run, Meade County	
261	<i>Cryptobranchus alleganiensis alleganiensis</i>	Eastern Hellbender	G3T2	S2S3	S	SOMC	Y	1961-07-11	M	H		Sensitive Element - Contact OKNP at naturepreserves@ky.gov	Confined to running waters of fairly large streams and rivers, especially in stretches with large flat stones.
10526	<i>Cryptobranchus alleganiensis alleganiensis</i>	Eastern Hellbender	G3T2	S2S3	S	SOMC	Y	1941-03-31	M	H		Sensitive Element - Contact OKNP at naturepreserves@ky.gov	Confined to running waters of fairly large streams and rivers, especially in stretches with large flat stones.
6137	<i>Dryobius sexnotatus</i>	Six-banded Longhorn Beetle	GNR	S2	T	SOMC		1940-	C	U	37.9695 / -86.2168	Meade County.	Appears to be dependent on climax hardwood forest habitat, where it principally lives on sugar maple and, to a lesser extent, beech and elm (Perry et al. 1974, Schweitzer 1989). Mid June to mid July is when adults are typically found (Mike Bratton, pers c
1413	<i>Gammarus bousfieldi</i>	Bousfield's Amphipod	G1	S1	E	SOMC	Y	1989-	S	C	37.9356 / -86.1236	DOE RUN, JUST BELOW MOUTH OF SPRING, STA 1.	Pools or areas with little current, deep mud-detritus bottoms, and beds of emergent vegetation (Cole and Minckley 1961).
3327	<i>Gammarus bousfieldi</i>	Bousfield's Amphipod	G1	S1	E	SOMC	Y	1961	S	H	37.9442 / -86.1215	Blue Spring, tributary of Doe Run, ca 0.5 mi from spring source of Doe Run (Site lg).	Pools or areas with little current, deep mud-detritus bottoms, and beds of emergent vegetation (Cole and Minckley 1961).
10150	<i>Gammarus bousfieldi</i>	Bousfield's Amphipod	G1	S1	E	SOMC	Y	1989-	S	C	37.9478 / -86.1306	DOE RUN, 2.0 CR MI DOWNSTREAM FROM SOURCE, STA 2.	Pools or areas with little current, deep mud-detritus bottoms, and beds of emergent vegetation (Cole and Minckley 1961).
10242	<i>Gammarus bousfieldi</i>	Bousfield's Amphipod	G1	S1	E	SOMC	Y	1963-pre	M	H	37.95 / -86.1261	TRIBUTARY II-B, OF DOE RUN. (ABOUT 2.25 MI FROM MAIN SPRING SOURCE OF DOE RUN, SEE PUBLICATION MAP	Pools or areas with little current, deep mud-detritus bottoms, and beds of emergent vegetation (Cole and Minckley 1961).

Standard Occurrence Report
KNP monitored species within 1 Miles of Project Area

EO ID	Scientific Name	Common Name	GRank	SRank	SPROT	USESA	STWG	Last Obs Date	Precision	EO Rank	Lat / Lon	Directions	Habitat
10588	<i>Gammarus bousfieldi</i>	Bousfield's Amphipod	G1	S1	E	SOMC	Y	1963-pre	M	H	37.9456 / -86.1306	FOR LOCALITY). BUFFALO SPRING, TRIB TO DOE RUN (ABOUT 1.5 MI FROM MAIN SPRING SOURCE OF DOE RUN).	Pools or areas with little current, deep mud-detritus bottoms, and beds of emergent vegetation (Cole and Minckley 1961).
2909	<i>Hyla versicolor</i>	Gray Treefrog	G5	S2S3	S		Y	1998-06-25	S	C	37.9095 / -86.2337	Northwest side of KY 2727, 1.3 rd mi (018A) and 0.7 rd mi (018B) NE of Haysville.	Permanent and temporary ponds in semi-open habitats. Native habitat is unknown.
10878	<i>Hyla versicolor</i>	Gray Treefrog	G5	S2S3	S		Y	1984-06-27	S	NR	37.9025 / -86.0764	East side of KY 1108 (Hobbs-Reesor Rd), 0.8 rd mi S (039A) and 1.5 rd mi S (039B) jct KY 1238.	Permanent and temporary ponds in semi-open habitats. Native habitat is unknown.
15858	<i>Lanius ludovicianus</i>	Loggerhead Shrike	G4	S3S4B,S4N	S	SOMC	Y	1990-05-19	Q	NR	37.8125 / -86.0625	Somewhere on quadrangle outside of CW block	
1564	<i>Limestone barrens (open woodland)</i>		GNR	S2	T			1997-07-29	S	C	37.9582 / -86.1541		Ca 1.5 air mi S of Jct of KY 1051/KY 448, on N side of Meade Springs Rd, ca 1.0 mi E of its Jct w/ Old Ekron Rd.
7197	<i>Myriophyllum heterophyllum</i>	Broadleaf Water-milfoil	G5	S3?	S			1980-	M	H	37.9494 / -86.1292	DOE RUN, BELOW THE DAM A SHORT DISTANCE UPSTREAM FROM THE HOTEL.	Ponds, ditches and sluggish streams.
4161	<i>Orconectes inermis inermis</i>	Ghost Crayfish	G5T4	S3	S		Y	1963-03-16	M	H		Sensitive Element - Contact OKNP at naturepreserves@ky.gov	Subterranean waters (Hobbs 1989) in cave streams. This species is often found in larger base-level pools where mud and silt substrates predominate (Taylor and Schuster, 2004).
16442	<i>Panax quinquefolius</i>	American Ginseng	G3G4	S3S4	CE			2015	S	B		Sensitive Element - Contact OKNP at naturepreserves@ky.gov	
7823	<i>Tomostima cuneifolia</i>	Wedge-leaf Whitlow-grass	G5	S1	E			1984-05-24	G	E	37.8917 / -86.3028	N of Irvington, nr rock quarry off US 60.	Dry rocky or sandy soil, cedar glades including disturbed sites.

Bat Habitats within 1 Miles of Project Area

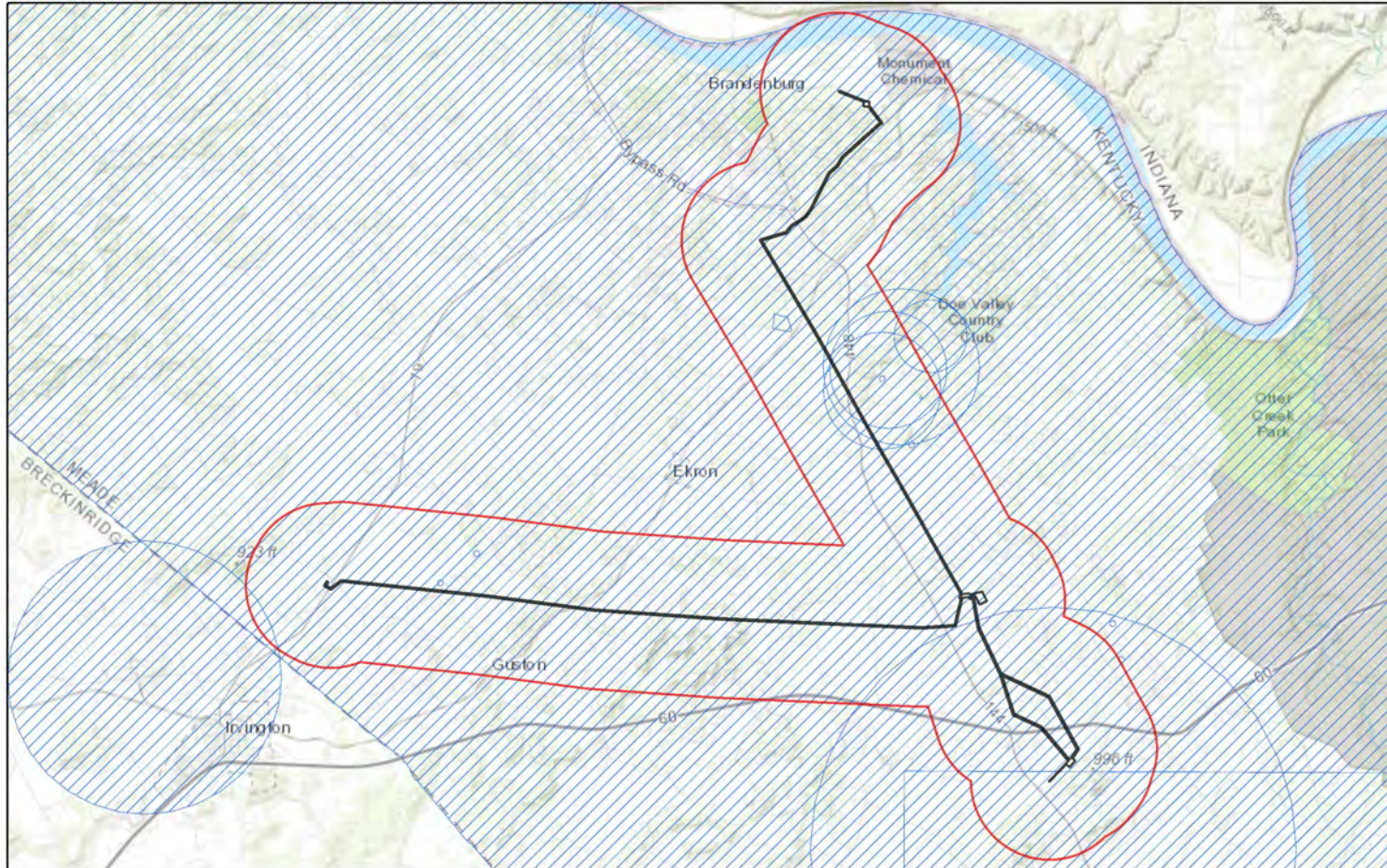
Habitat	Species	USFWS
S1 + W2	<i>M. sodalis</i>	Contact USFWS at (502) 695-0468 or KentuckyES@fws.gov

Bat Habitats within 1 Miles of Project Area




Habitat	Species	USFWS
SUMMER 1	<i>M. septentrionalis</i>	Contact USFWS at (502) 695-0468 or KentuckyES@fws.gov
SWARMING 2	<i>M. septentrionalis</i>	Contact USFWS at (502) 695-0468 or KentuckyES@fws.gov
Summer 1	<i>M. sodalis</i>	Contact USFWS at (502) 695-0468 or KentuckyES@fws.gov
Swarming 1	<i>M. sodalis</i>	Contact USFWS at (502) 695-0468 or KentuckyES@fws.gov

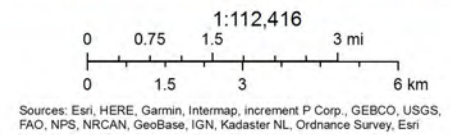
THESE DATA ARE VALID ONLY ON THE DATE ON WHICH THE REPORT WAS GENERATED.
THESE DATA MAY ONLY BE USED FOR THE PROJECT NAMED ABOVE.

Big Rivers Electric Coporation



October 24, 2019

-  Project Boundary
-  Buffered Project Boundary
-  Element Occurences



From: [Dawson, Doug \(FW\)](#)
To: [Nekolny, Samantha](#)
Subject: Brandenburg Steel Mill 345 & 161-kV Transmission Project (Meade County, Kentucky)
Date: Thursday, November 21, 2019 1:25:56 PM
Attachments: [KDFWR comment letter.pdf](#)

Ms. Nekolny,

Attached is our comment letter concerning the subject project. Let me know if you have any questions or require additional information.

Have a great day,

Doug

Doug Dawson
Environmental Section Chief
Kentucky Dept. of Fish & Wildlife Resources
#1 Sportsman's Lane
Frankfort, KY 40601
PH: 502-892-4472
Fax: 502-564-4519
visit our website at www.fw.ky.gov



**TOURISM, ARTS AND HERITAGE CABINET
KENTUCKY DEPARTMENT OF FISH & WILDLIFE RESOURCES**

Matthew G. Bevin
Governor

Don Parkinson
Secretary

#1 Sportsman's Lane
Frankfort, Kentucky 40601
Phone (502) 564-3400
1-800-858-1549
Fax (502) 564-0506
fw.ky.gov

Regina Stivers
Deputy Secretary

Rich Storm
Commissioner

November 21, 2019

Burns & McDonnell
Attn: Samantha Nekolny
1431 Opus Place, Suite 400
Downers Grove, IL 60515

RE: Big Rivers Electric Corporation
Brandenburg Steel Mill 345 & 161-kV Transmission Project
Meade County, Kentucky

Dear Ms. Nekolny:

The Kentucky Department of Fish and Wildlife Resources (KDFWR) has received your request for information pertaining to the subject project. Based on our review of the proposed project, we offer the following comments:

The Kentucky Fish and Wildlife Information System indicates that the federally – listed Indiana bat (*Myotis sodalis*), Northern Long-eared bat (*Myotis septentrionalis*), and gray bat (*Myotis grisescens*) are known to occur within the project study area. Please be aware that our database is a dynamic one that only represents our current knowledge of various species distributions. If tree clearing will be required for the project, please coordinate with the U.S. Fish and Wildlife Service Kentucky Field Office (502-695-0468) to discuss the project and ways to ensure compliance under the federal Endangered Species Act.

Several species listed within Kentucky's State Wildlife Action Plan (SWAP) are known to occur within the limits of the scoping area. The gray treefrog (*Hyla versicolor*), southern leopard frog (*Rana sphenoccephala*), savannah sparrow (*Passerculus sandwichensis*), Kentucky warbler (*Geothlypis formosa*), Henslow's sparrow (*Sitta Canadensis*), prothonotary warbler (*Protonotaria citrea*), wood thrush (*Hylocichla mustelina*), and willow flycatcher (*Empidonax traillii*) have been documented within the project scoping limits. The proposed project is located in the Kentucky SWAP Priority Conservation Areas for grassland birds and amphibians. Based on this information we recommend the following:

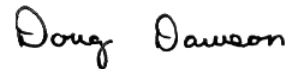
- Avoid direct impacts to permanent and seasonal ponds; including karst features such as sinkholes, and wetlands. The gray treefrog and southern leopard frogs utilize these types of habitats as breeding sites.
- Gray treefrogs prefer forested surroundings, but utilize a wide variety of habitats during its life cycle. We recommend avoiding small woodland areas as well as tree-lined fencerows.
- Avoiding woodlots and tree-lined fencerows will also minimize impacts to avian species that utilize the area.



To minimize indirect impacts to the aquatic environment, the KDFWR recommends that erosion control measures be developed and implemented prior to construction to reduce siltation into waterways and karst features located within the project area. Such erosion control measures may include, but are not limited to silt fences, staked straw bales, brush barriers, sediment basins, and diversion ditches. Erosion control measures will need to be installed prior to construction and should be inspected and repaired regularly as needed.

I hope this information is helpful to you, if you have questions or require additional information, please call me at 502-892-4472.

Sincerely,

A handwritten signature in black ink that reads "Doug Dawson". The signature is written in a cursive, slightly slanted style.

Doug Dawson
Environmental Section Chief

Cc: Environmental Section File

From: [Miller, Jessica](#)
To: [Nekolny, Samantha](#)
Subject: Big Rivers Electric Corp. Brandenburg Steel Mill 345 & 161-kV Transmission Project
Date: Tuesday, November 12, 2019 1:35:18 PM
Attachments: [IPaC Letter for Project Proponents.pdf](#)

Ms. Nekolny,

Please see the attached letter to obtain more information regarding federally listed species relevant to the proposed project.

Jessi

--

Jessica Blackwood Miller
Fish & Wildlife Biologist
Kentucky Field Office
U.S. Fish & Wildlife Service
330 W. Broadway, Rm 265
Frankfort, KY 40601
Ph: (502) 695-0468 ext. 104
Fax: (502) 695-1024

NOTE: This email correspondence and any attachments to and from this sender is subject to the Freedom of Information Act (FOIA) and may be disclosed to third parties.



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

Dear Project Proponent:

We have received your request for a species list for your project. The Kentucky Field Office (KFO) is directing project proponents to obtain species lists from the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) system located at: <https://ecos.fws.gov/ipac/>. IPaC will immediately provide you with a current species list appropriate for your proposed project and an official letter on USFWS letterhead. This list will include species currently listed as threatened or endangered, species proposed for listing, critical habitat for listed species, and bird species of conservation concern.

When you open the IPaC site, you will be asked to input a location for your proposed project. The location can be input in different ways. Often, the easiest way is to zoom into the vicinity of the project area on the map and use the sketch tool to approximate the boundaries of the proposed project site, plus an appropriate buffer. This location that you input should represent the entire “action area” of your 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).

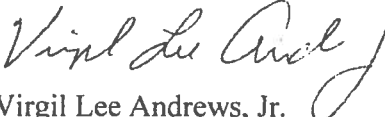
IPaC will generate a species list specific to the action area of the proposed project, as you defined it. You can then request an official species list under the “Regulatory Documents” tab. This species list fulfills the requirements of the USFWS under section 7(c) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.) to provide information as to whether any proposed or listed species may be present in the area of a proposed action. The letter generated by IPaC will explain how to request an updated list or a revised list based on project modifications.

The official species list is not a concurrence letter; additional coordination with the KFO may be necessary to ensure ESA compliance. Please read the letter that accompanies the species list for further direction as to how to request technical assistance or section 7 consultation from the KFO. Please include the consultation tracking number on the IPaC-generated letter (e.g., 04EK1000-####-SLI-####) at the top of your future correspondences with the KFO. The KFO

will be able to retrieve the information that you input into IPaC; there is no need to include a printed copy of your IPaC-generated letter or species list with your correspondence.

Thank you for your request. Your concern for the protection of endangered and threatened species is greatly appreciated. If you have any questions or problems obtaining a species list from IPaC, please contact Jessica Blackwood Miller at (502) 695-0468 extension 104 or jessica_miller@fws.gov.

Sincerely,

A handwritten signature in cursive script that reads "Virgil Lee Andrews, Jr." The signature is written in black ink and is positioned above the printed name and title.

Virgil Lee Andrews, Jr.
Field Supervisor



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:

October 24, 2019

Consultation Code: 04EK1000-2020-SLI-0048

Event Code: 04EK1000-2020-E-00204

Project Name: Big Rivers Electric Corporation: Brandenburg Steel Mill Service 345 kV and 161 kV Transmission Lines

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 and critical habitat that may occur within the boundary that you entered into IPaC. For your species 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 significant indirect effects that extend well beyond the project footprint (e.g., long-term 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 “critical habitat” refers to specific areas identified as essential for the conservation of a species that have been designated by regulation. Critical habitat usually does not include all the habitat that the species is known to occupy or all the habitat that may be important to the species. Thus, even if your project area does not include critical habitat, the species on the list may still be present.

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

Project Summary

Consultation Code: 04EK1000-2020-SLI-0048

Event Code: 04EK1000-2020-E-00204

Project Name: Big Rivers Electric Corporation: Brandenburg Steel Mill Service 345 kV and 161 kV Transmission Lines

Project Type: DEVELOPMENT

Project Description: Nucor announced plans to construct a 200 MW steel mill near Brandenburg in Meade County Kentucky. The selected service plan includes a new 345 kV/34.5 kV delivery point at the Brandenburg steel mill. The new delivery point will be sourced from a new 345 kV/161 kV substation (Otter Creek). The new 345 kV/161 kV substation will include a 161 kV connection to the existing Meade County substation and a 345 kV transmission interconnection to an existing LG&E circuit. To be completed in 2020.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/37.93718041590708N86.13280495553671W>



Counties: Meade, KY

Endangered Species Act Species

There is a total of 13 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 12 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

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.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.
-

Mammals

NAME	STATUS
<p>Gray Bat <i>Myotis grisescens</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329 General project design guidelines: https://ecos.fws.gov/ipac/guideline/design/population/21/office/42431.pdf</p>	Endangered
<p>Indiana Bat <i>Myotis sodalis</i> There is final critical habitat for this species. Your location overlaps the critical habitat. This species only needs to be considered under the following conditions: <ul style="list-style-type: none"> ▪ The project area includes known 'summer 1 (outer-tier)' habitat. ▪ The project area includes known 'swarming 1' habitat. Species profile: https://ecos.fws.gov/ecp/species/5949 General project design guidelines: https://ecos.fws.gov/ipac/guideline/design/population/1/office/42431.pdf</p>	Endangered
<p>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"> ▪ The specified area includes areas in which incidental take would not be prohibited under the 4(d) rule. For reporting purposes, please use the "streamlined consultation form," linked to in the "general project design guidelines" for the species. Species profile: https://ecos.fws.gov/ecp/species/9045 General project design guidelines: https://ecos.fws.gov/ipac/guideline/design/population/10043/office/42431.pdf</p>	Threatened

Clams

NAME	STATUS
<p>Clubshell <i>Pleurobema clava</i> Population: Wherever found; Except where listed as Experimental Populations No critical habitat has been designated for this species. This species only needs to be considered under the following conditions:</p> <ul style="list-style-type: none"> ▪ The species may be affected by projects that significantly impact, directly or indirectly, the following rivers: Barren, Green, Licking, or Ohio. <p>Species profile: https://ecos.fws.gov/ecp/species/3789 General project design guidelines: https://ecos.fws.gov/ipac/guideline/design/population/352/office/42431.pdf</p>	Endangered
<p>Fanshell <i>Cyprogenia stegaria</i> No critical habitat has been designated for this species. This species only needs to be considered under the following conditions:</p> <ul style="list-style-type: none"> ▪ The species may be affected by projects that significantly impact, directly or indirectly, the following rivers: Barren, Green, Licking, Ohio, Rolling Fork Salt, or Tennessee. <p>Species profile: https://ecos.fws.gov/ecp/species/4822 General project design guidelines: https://ecos.fws.gov/ipac/guideline/design/population/368/office/42431.pdf</p>	Endangered
<p>Northern Riffleshell <i>Epioblasma torulosa rangiana</i> No critical habitat has been designated for this species. This species only needs to be considered under the following conditions:</p> <ul style="list-style-type: none"> ▪ The species may be affected by projects that significantly impact, directly or indirectly, the following rivers: Green, Licking, or Ohio. <p>Species profile: https://ecos.fws.gov/ecp/species/527 General project design guidelines: https://ecos.fws.gov/ipac/guideline/design/population/374/office/42431.pdf</p>	Endangered
<p>Orangefoot Pimpleback (pearlymussel) <i>Plethobasus cooperianus</i> No critical habitat has been designated for this species. This species only needs to be considered under the following conditions:</p> <ul style="list-style-type: none"> ▪ The species may be affected by projects that significantly impact, directly or indirectly, the following rivers: Green, Ohio, Salt, or Tennessee. <p>Species profile: https://ecos.fws.gov/ecp/species/1132 General project design guidelines: https://ecos.fws.gov/ipac/guideline/design/population/340/office/42431.pdf</p>	Endangered
<p>Purple Cat's Paw (=purple Cat's Paw Pearlymussel) <i>Epioblasma obliquata obliquata</i> Population: Wherever found; Except where listed as Experimental Populations No critical habitat has been designated for this species. This species only needs to be considered under the following conditions:</p> <ul style="list-style-type: none"> ▪ The species may be affected by projects that significantly impact, directly or indirectly, the following rivers: Green, Licking, or Ohio. <p>Species profile: https://ecos.fws.gov/ecp/species/5602 General project design guidelines: https://ecos.fws.gov/ipac/guideline/design/population/323/office/42431.pdf</p>	Endangered

NAME	STATUS
<p>Rabbitsfoot <i>Quadrula cylindrica cylindrica</i></p> <p>There is final critical habitat for this species. Your location is outside the critical habitat. This species only needs to be considered under the following conditions:</p> <ul style="list-style-type: none"> ▪ The species may be affected by projects that significantly impact, directly or indirectly, the following rivers: Barren, Cumberland (below the falls), Green, Ohio, Rolling Fork Salt, South Fork Kentucky, or Tennessee. <p>Species profile: https://ecos.fws.gov/ecp/species/5165 General project design guidelines: https://ecos.fws.gov/ipac/guideline/design/population/3645/office/42431.pdf</p>	Threatened
<p>Ring Pink (mussel) <i>Obovaria retusa</i></p> <p>No critical habitat has been designated for this species. This species only needs to be considered under the following conditions:</p> <ul style="list-style-type: none"> ▪ The species may be affected by projects that significantly impact, directly or indirectly, the following rivers: Barren, Cumberland (below the falls), Green, Ohio, or Tennessee. <p>Species profile: https://ecos.fws.gov/ecp/species/4128 General project design guidelines: https://ecos.fws.gov/ipac/guideline/design/population/341/office/42431.pdf</p>	Endangered
<p>Rough Pigtoe <i>Pleurobema plenum</i></p> <p>No critical habitat has been designated for this species. This species only needs to be considered under the following conditions:</p> <ul style="list-style-type: none"> ▪ The species may be affected by projects that significantly impact, directly or indirectly, the following rivers: Barren, Green, Licking, or Ohio. <p>Species profile: https://ecos.fws.gov/ecp/species/6894 General project design guidelines: https://ecos.fws.gov/ipac/guideline/design/population/338/office/42431.pdf</p>	Endangered
<p>Sheepnose Mussel <i>Plethobasus cyphus</i></p> <p>No critical habitat has been designated for this species. This species only needs to be considered under the following conditions:</p> <ul style="list-style-type: none"> ▪ The species may be affected by projects that significantly impact, directly or indirectly, the following rivers: Barren, Green, Kentucky, Licking, Ohio, Salt, or Tennessee. <p>Species profile: https://ecos.fws.gov/ecp/species/6903 General project design guidelines: https://ecos.fws.gov/ipac/guideline/design/population/7816/office/42431.pdf</p>	Endangered
<p>Spectaclecase (mussel) <i>Cumberlandia monodonta</i></p> <p>No critical habitat has been designated for this species. This species only needs to be considered under the following conditions:</p> <ul style="list-style-type: none"> ▪ The species may be affected by projects that significantly impact, directly or indirectly, the following rivers: Barren, Cumberland (below the falls), Green, Little South Fork of the Cumberland, Ohio, or Tennessee. <p>Species profile: https://ecos.fws.gov/ecp/species/7867 General project design guidelines: https://ecos.fws.gov/ipac/guideline/design/population/4490/office/42431.pdf</p>	Endangered

Critical habitats

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Indiana Bat <i>Myotis sodalis</i> https://ecos.fws.gov/ecp/species/5949#crithab	Final



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:

October 24, 2019

Consultation Code: 04EK1000-2020-TA-0048

Event Code: 04EK1000-2020-E-00205

Project Name: Big Rivers Electric Corporation: Brandenburg Steel Mill Service 345 kV and 161 kV Transmission Lines

Subject: Verification letter for the 'Big Rivers Electric Corporation: Brandenburg Steel Mill Service 345 kV and 161 kV Transmission Lines' project under the January 5, 2016, Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-eared Bat and Activities Excepted from Take Prohibitions.

Dear Brianne Innusa:

The U.S. Fish and Wildlife Service (Service) received on October 24, 2019 your effects determination for the 'Big Rivers Electric Corporation: Brandenburg Steel Mill Service 345 kV and 161 kV Transmission Lines' (the Action) using the northern long-eared bat (*Myotis septentrionalis*) key within the Information for Planning and Consultation (IPaC) system. This IPaC key assists users in determining whether a Federal action is consistent with the activities analyzed in the Service's January 5, 2016, Programmatic Biological Opinion (PBO). The PBO addresses activities excepted from "take"^[1] prohibitions applicable to the northern long-eared bat under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based upon your IPaC submission, the Action is consistent with activities analyzed in the PBO. The Action may affect the northern long-eared bat; however, any take that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). Unless the Service advises you within 30 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the PBO satisfies and concludes your responsibilities for this Action under ESA Section 7(a)(2) with respect to the northern long-eared bat.

Please report to our office any changes to the information about the Action that you submitted in IPaC, the results of any bat surveys conducted in the Action area, and any dead, injured, or sick northern long-eared bats that are found during Action implementation. If the Action is not

completed within one year of the date of this letter, you must update and resubmit the information required in the IPaC key.

This IPaC-assisted determination allows you to rely on the PBO for compliance with ESA Section 7(a)(2) only for the northern long-eared bat. It **does not** apply to the following ESA-protected species that also may occur in the Action area:

- Clubshell, *Pleurobema clava* (Endangered)
- Fanshell, *Cyprogenia stegaria* (Endangered)
- Gray Bat, *Myotis grisescens* (Endangered)
- Indiana Bat, *Myotis sodalis* (Endangered)
- Northern Riffleshell, *Epioblasma torulosa rangiana* (Endangered)
- Orangefoot Pimpleback (pearlymussel), *Plethobasus cooperianus* (Endangered)
- Purple Cat's Paw (=purple Cat's Paw Pearlymussel), *Epioblasma obliquata obliquata* (Endangered)
- Rabbitsfoot, *Quadrula cylindrica cylindrica* (Threatened)
- Ring Pink (mussel), *Obovaria retusa* (Endangered)
- Rough Pigtoe, *Pleurobema plenum* (Endangered)
- Sheepnose Mussel, *Plethobasus cyphus* (Endangered)
- Spectaclecase (mussel), *Cumberlandia monodonta* (Endangered)

If the Action may affect other federally listed species besides the northern long-eared bat, a proposed species, and/or designated critical habitat, additional consultation between you and this Service office is required. If the Action may disturb bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act is recommended.

[1]Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct [ESA Section 3(19)].

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

Big Rivers Electric Corporation: Brandenburg Steel Mill Service 345 kV and 161 kV Transmission Lines

2. Description

The following description was provided for the project 'Big Rivers Electric Corporation: Brandenburg Steel Mill Service 345 kV and 161 kV Transmission Lines':

Nucor announced plans to construct a 200 MW steel mill near Brandenburg in Meade County Kentucky. The selected service plan includes a new 345 kV/34.5 kV delivery point at the Brandenburg steel mill. The new delivery point will be sourced from a new 345 kV/161 kV substation (Otter Creek). The new 345 kV/161 kV substation will include a 161 kV connection to the existing Meade County substation and a 345 kV transmission interconnection to an existing LG&E circuit. To be completed in 2020.

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/37.93718041590708N86.13280495553671W>



Determination Key Result

This Federal Action may affect the northern long-eared bat in a manner consistent with the description of activities addressed by the Service's PBO dated January 5, 2016. Any taking that may occur incidental to this Action is not prohibited under the final 4(d) rule at 50 CFR

§17.40(o). Therefore, the PBO satisfies your responsibilities for this Action under ESA Section 7(a)(2) relative to the northern long-eared bat.

Determination Key Description: Northern Long-eared Bat 4(d) Rule

This key was last updated in IPaC on May 15, 2017. Keys are subject to periodic revision.

This key is intended for actions that may affect the threatened northern long-eared bat.

The purpose of the key for Federal actions is to assist determinations as to whether proposed actions are consistent with those analyzed in the Service's PBO dated January 5, 2016.

Federal actions that may cause prohibited take of northern long-eared bats, affect ESA-listed species other than the northern long-eared bat, or affect any designated critical habitat, require ESA Section 7(a)(2) consultation in addition to the use of this key. Federal actions that may affect species proposed for listing or critical habitat proposed for designation may require a conference under ESA Section 7(a)(4).

Determination Key Result

This project may affect the threatened Northern long-eared bat; therefore, consultation with the Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.) is required. However, based on the information you provided, this project may rely on the Service's January 5, 2016, *Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-Eared Bat and Activities Excepted from Take Prohibitions* to fulfill its Section 7(a)(2) consultation obligation.

Qualification Interview

1. Is the action authorized, funded, or being carried out by a Federal agency?

Yes

2. Have you determined that the proposed action will have "no effect" on the northern long-eared bat? (If you are unsure select "No")

No

3. Will your activity purposefully **Take** northern long-eared bats?

No

4. Is the project action area located wholly outside the White-nose Syndrome Zone?

Automatically answered

No

5. Is the project action area located within 0.25 miles of a known northern long-eared bat hibernaculum?

Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency

Automatically answered

No

6. Is the project action area located within 150 feet of a known occupied northern long-eared bat maternity roost tree?

Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency

Automatically answered

No

Project Questionnaire

If the project includes forest conversion, report the appropriate acreages below. Otherwise, type '0' in questions 1-3.

1. Estimated total acres of forest conversion:

12

2. If known, estimated acres of forest conversion from April 1 to October 31

0

3. If known, estimated acres of forest conversion from June 1 to July 31

0

If the project includes timber harvest, report the appropriate acreages below. Otherwise, type '0' in questions 4-6.

4. Estimated total acres of timber harvest

0

5. If known, estimated acres of timber harvest from April 1 to October 31

0

6. If known, estimated acres of timber harvest from June 1 to July 31

0

If the project includes prescribed fire, report the appropriate acreages below. Otherwise, type '0' in questions 7-9.

7. Estimated total acres of prescribed fire

0

8. If known, estimated acres of prescribed fire from April 1 to October 31

0

9. If known, estimated acres of prescribed fire from June 1 to July 31

0

If the project includes new wind turbines, report the megawatts of wind capacity below. Otherwise, type '0' in question 10.

10. What is the estimated wind capacity (in megawatts) of the new turbine(s)?
0



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March 26, 2020

Mr. Lee Andrews
U.S. Fish and Wildlife Service
J.C. Watts Federal Building, Room 265
330 West Broadway
Frankfort, KY 40601

Re: Notification of Intent to Initiate Section 7 Consultation
Big Rivers Electric Corporation
Nucor/Brandenburg Steel Mill 345 & 161 kilovolt (kV) Transmission Projects

Dear Mr. Andrews:

Big Rivers Electric Corporation (Big Rivers Electric), a not-for-profit rural electric cooperative headquartered in Henderson, Kentucky, may seek financial assistance from the U.S. Department of Agriculture's Rural Utilities Service (RUS), to finance several projects associated with Nucor Corporation's plans to construct a steel mill near Brandenburg in Meade County, Kentucky. Big Rivers Electric retained the services of Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell) to assist the cooperative in order that RUS may assess the environmental impacts of the following proposed project:

Nucor/Brandenburg Steel Mill 345 & 161-kV Transmission Project
IPaC Consultation Code: 04EK1000-2020-SLI-0048

PROJECT DESCRIPTION

Big Rivers Electric has identified several projects that are necessary to provide reliable service to Nucor Corporation's new steel mill and the surrounding area (Figure 1). The new service plan would include the following project components:

Substations and Switching Stations (Figures 1 and 2): The stations will be fenced with a fence height of 8 feet and a 7-foot square mesh fabric with one foot of barbed wire. The equipment within the stations will have a maximum height of 95 feet above grade for the steel A-frames. The amount of new land disturbance required for each substation or switching station is provided below.

- RUS #908: NEW: Brandenburg Steel Mill 345/34.5 kV Substation: The new substation would be located within the limits of the new Nucor Brandenburg Steel Mill near KY 933

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and Buttermilk Falls Rd and will require approximately 7.2 acres permitted under the Nucor Project (Figure 2, Page 1).

- RUS #907: NEW: Otter Creek 345/161 kV Substation: The new substation would be located at the intersection of KY 313 and KY 1238 and will be located on an approximately 8.1-acre parcel with an additional 2.2 acres of site storage associated with it, located to avoid environmentally sensitive areas (Figure 2, Page 6).
- RUS #1070: REBUILD: Meade County Substation 161 kV Terminal: The existing Meade County Substation, located at the intersection of KY 79 and Highway 428, will require the installation of a new 161 kV transmission line terminal within the fenced area; new land disturbance outside of previously disturbed area is not required (Figure 2, Page 7).
- RUS #909: NEW: Redmon Road EHV Switching Station: The new switching station would be located southeast of KY 313 and US 60 and will require approximately 4.6 acres (Figure 2, Page 12).

Transmission Lines: The new, 345 kV transmission line structures would be built of braced post tangent design using steel or concrete spun structures spaced approximately 500 feet apart. The new 161 kV transmission line structures would be built of braced post tangent design using steel or concrete spun structures spaced approximately 500 feet apart. The ROW width of each kind of line would vary as described below.

- RUS #1072: REBUILD and NEW LINE: Otter Creek Substation to Brandenburg Steel Mill (BSM) Substation 345 kV Line Addition in Meade County, KY: Rebuild 7.3 miles of existing 69 kV line as 345/69 kV double circuit line within the existing 100-foot wide ROW. An additional 1.1 miles of new 345 kV line is needed to connect the existing line to the BSM Substation and the Otter Creek Substation. Approximately 0.3 miles of the new line would be located within Nucor Corporation's steel mill property and will have a new 150-foot wide ROW; the remaining 0.8 miles will be located on private easements and require a new 125-foot wide ROW.
- RUS #830: REBUILD and NEW LINE: Meade County Substation to Otter Creek Substation 161/69 kV Double Circuit Line Addition in Meade County, KY: Rebuild 7.9 miles of existing 69 kV line as 161/69 kV double circuit that will include pole for pole replacement of the entire line within its existing 100-foot ROW. An additional 1.0 miles of new, 125-foot ROW also is needed to route the 161 kV line to the west side of the Meade County Substation and the north side of the Otter Creek Substation.

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- RUS #1071: NEW LINE: Redmon Road EHV Switching Station to Otter Creek Substation 345 kV Line in Meade County, KY: Construct 2.5 miles of new 345 kV line requiring a new 125-foot wide ROW that will be located on private easements. The final route/line design has not been engineered at this moment.

SITE DESCRIPTION

The proposed project area is located in the Mitchell Plain ecoregion of Kentucky (EPA 2019). This plain is underlain by Mississippian limestones and is characterized by well-developed karst, low relief, and extensive agriculture. The region is known to contain sinkholes, ponds, springs, sinkhole wetlands, subterranean drainage, and dry valleys. Natural vegetation is a mosaic of blue stem prairie and oak-hickory forest. Today the region is known for extensive cropland and pastureland with mixed oak forests found on steep slopes, and pin oak (*Quercus palustris*), swamp oak (*Quercus bicolor*), white oak (*Quercus alba*), and sweetgum (*Liquidambar styraciflua*) growing in poorly drained areas. Sinkhole wetlands are common in the region. Water quality has been degraded from municipal effluent, agricultural discharge, and bank erosion following riparian forest removal.

SPECIES CONSIDERED AND EVALUATED

Based upon the construction activities outlined above and the resulting disturbance to the existing environment, Burns & McDonnell evaluated the potential of the project to affect federally listed threatened or endangered species or critical habitats that are known to occur, or could potentially occur within the vicinity of the proposed project area. To assess these potential effects, Burns & McDonnell reviewed available information for Meade County. According to the U.S. Fish and Wildlife Service (USFWS) online Information for Planning and Consultation (IPaC) tool, there are 13 threatened or endangered species likely to occur within the Project Study Area in Meade County Kentucky (Table 1). Eleven species are endangered and two are threatened. Within the Project Study Area there is critical habitat for Indiana bat (*Myotis sodalis*).

Table 1: USFWS Project Study Area Threatened and Endangered Species

Common Name	Scientific Name	Federal Status
Gray bat	<i>Myotis grisescens</i>	Endangered
Indiana bat	<i>Myotis sodalis</i>	Endangered
Northern long-eared bat	<i>Myotis septentrionalis</i>	Threatened
Clubshell	<i>Pleurobema clava</i>	Endangered
Fanshell	<i>Cyprogenia stegaria</i>	Endangered

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Northern riffleshell	<i>Epioblasma torulosa rangiana</i>	Endangered
Orangefoot pimpleback	<i>Plethobasus cooperianus</i>	Endangered
Purple cat's paw	<i>Epioblasma obliquata obliquata</i>	Endangered
Rabbitsfoot	<i>Quadrula cylindrica cylindrica</i>	Threatened
Ring pink	<i>Obovaria retusa</i>	Endangered
Rough pigtoe	<i>Pleurobema plenum</i>	Endangered
Sheepnose mussel	<i>Plethobasus cyphus</i>	Endangered
Spectaclecase (mussel)	<i>Cumberlandia monodonta</i>	Endangered

SPECIES INFORMATION

Gray Bat

Gray bats use caves year-round, although summer and winter caves often have different characteristics and are in different locations. Travel and foraging habitat for this species generally includes forests. This species often follows riparian corridors, foraging on insects over streams and rivers. Burns & McDonnell is not currently aware of any known gray bat habitat in the Project area. Therefore, the Project as proposed is anticipated to have **no effect** on the gray bat.

Indiana Bat

Indiana bats hibernate in caves and mines during the winter. During the summer, this species forages in forest habitat and roosts in suitable trees. Suitable roost trees include trees that are at least 5 inches diameter at breast-height (dbh) that have sloughing bark, cracks, crevices, or hollows that a bat could access. According to the USFWS *Known Indiana Bat Habitat in Kentucky and within 20 Miles*, the Project is within a known Summer 1/Swarming 1 area for Indiana bats. According to the IPaC, the Project also crosses critical habitat for the Indiana bat, although their critical habitat is restricted to specific cave systems. Forest clearing has the potential to impact this species if suitable roost trees are present. The Project intends to follow the procedures outlined in the *Revised Conservation Strategy for Forest-dwelling Bats* with appropriate mitigation. Based on this assessment, the Project **may affect, but is not likely to adversely affect** the Indiana bat.

Mr. Lee Andrews
U.S. Fish and Wildlife Service
March 26, 2020
Page 5

Northern Long-eared Bat

During the summer, northern long-eared bat forages in forest habitat and roosts in suitable trees. Suitable roost trees include trees that are at least 3 inches dbh that have sloughing bark, cracks, crevices, or hollows that a bat could access. According to the USFWS *Known Northern Long-eared Bat Habitat in Kentucky and within 20 Miles*, the Project is within a known Summer 1/Swarming 2 area for northern long-eared bats. The 4(d) rule for the northern long-eared bat prohibits specific types of incidental take from tree clearing activities. Under the 4(d) rule, incidental take as a result of tree clearing is prohibited if it occurs within 150 feet of a documented maternity roost between June 1 and July 31, or within 0.25 miles of a documented hibernaculum at any time of year. At this time, Burns & McDonnell is not aware of any known maternity roosts or hibernacula within the buffers outlined in the 4(d) rule. Therefore, the Project **may affect, but is not likely to adversely affect** the northern long-eared bat, and any incidental take as a result of tree clearing would not be prohibited under the 4(d) rule.

Federally Protected Mussels

The 10 protected mussel species occur in perennial streams. In-stream work for this Project is currently not anticipated, thus, the Project as proposed would have **no effect** on mussel species.

FIELD ASSESSMENT

Initial desktop efforts indicated that up to 15.8 acres of tree clearing may be necessary to complete the Project. Tree clearing for the Project has the potential to impact habitat for the Indiana bat. To characterize forest habitat, Burns & McDonnell biologists conducted an assessment of wooded areas, primarily from public roads. Forested areas were viewed with binoculars or on-foot to determine approximate species and size compositions. Any forested areas that could not be fully observed were assumed to be potentially suitable.

The Project area primarily crosses cultivated crop fields and existing maintained right-of-way. Approximately 5.6 acres of the area that appeared forested based on aerial imagery had been cleared by the landowners prior to the survey. Additionally, 0.3 acres of trees were primarily small (less than 5 inches diameter at breast-height) trees, eastern red cedar (*Juniperus virginiana*), or other trees that would not be suitable for Indiana bats. Therefore, a total of approximately 4.2 acres of trees were determined to be potentially suitable as Indiana bat roosting habitat. These areas were comprised primarily of black locust (*Robinia pseudoacacia*), black cherry (*Prunus serotina*), silver maple (*Acer saccharinum*), and various species of oak (*Quercus* sp.) and hickory (*Carya* sp.).

At this time, Burns & McDonnell respectfully requests your review of the proposed Project route and your concurrence with the findings of this report. If you have any questions about the



Mr. Lee Andrews
U.S. Fish and Wildlife Service
March 26, 2020
Page 6

proposed Project or the contents of this letter, you may contact me by email at snekolny@burnsmcd.com, or by phone at 630-724-3825.

Sincerely,

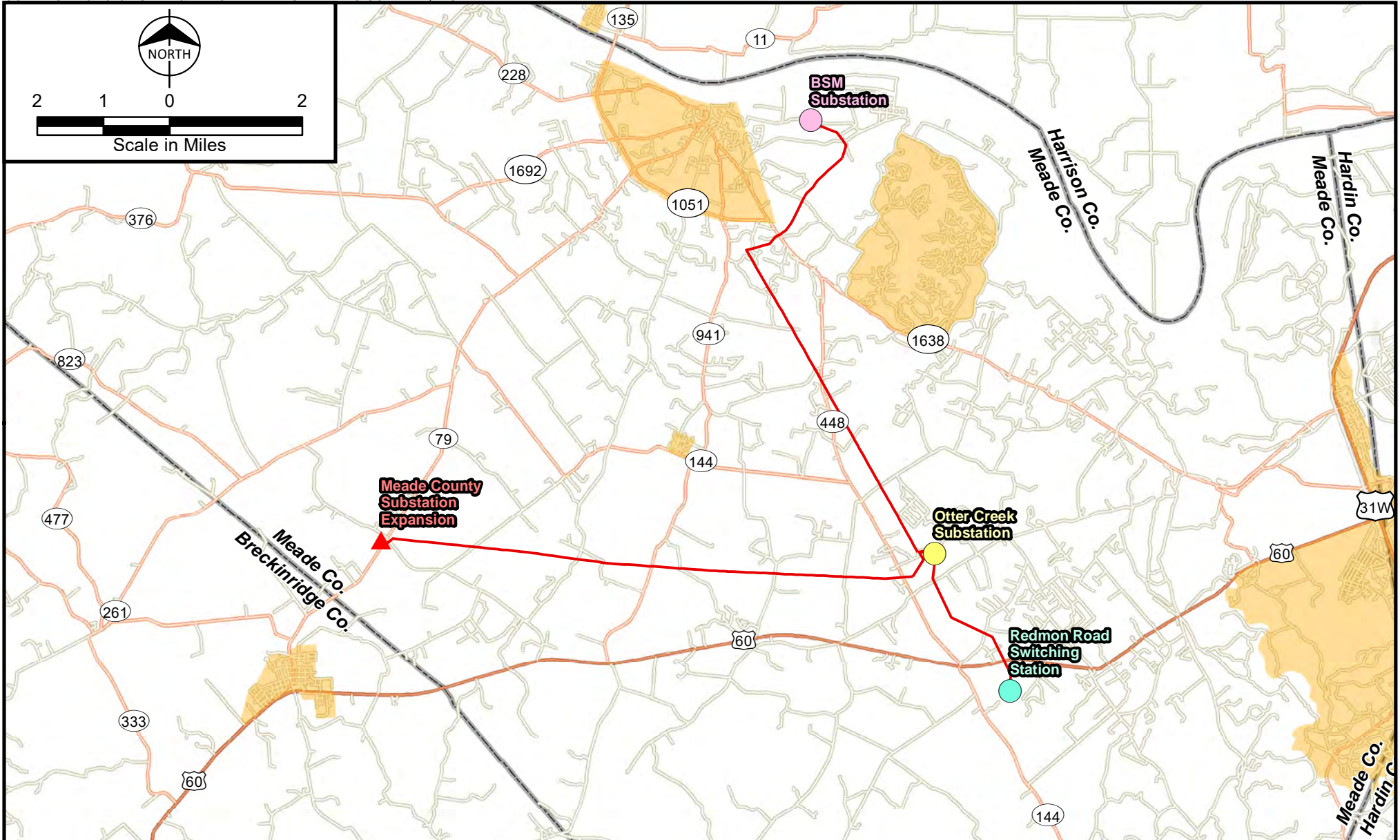
A handwritten signature in black ink, appearing to read 'Sue' followed by a stylized flourish.

Samantha Nekolny
Burns & McDonnell
Assistant Environmental Scientist

Enclosure Attachment
cc: Lauren Rayburn, RUS

REFERENCES

Environmental Protection Agency. 2019. Ecoregions of Kentucky. <https://www.epa.gov/eco-research/ecoregion-download-files-state-region-4>. Accessed October 24, 2019.



Proposed Transmission Line	Meade County Substation Expansion
Municipal Area	BSM Substation
	Otter Creek Substation
	Redmon Road Switching Station

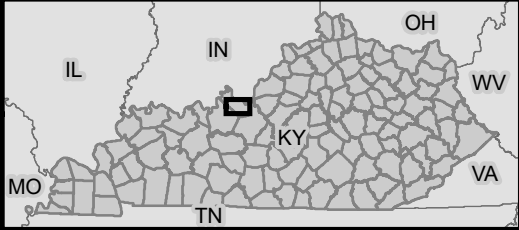
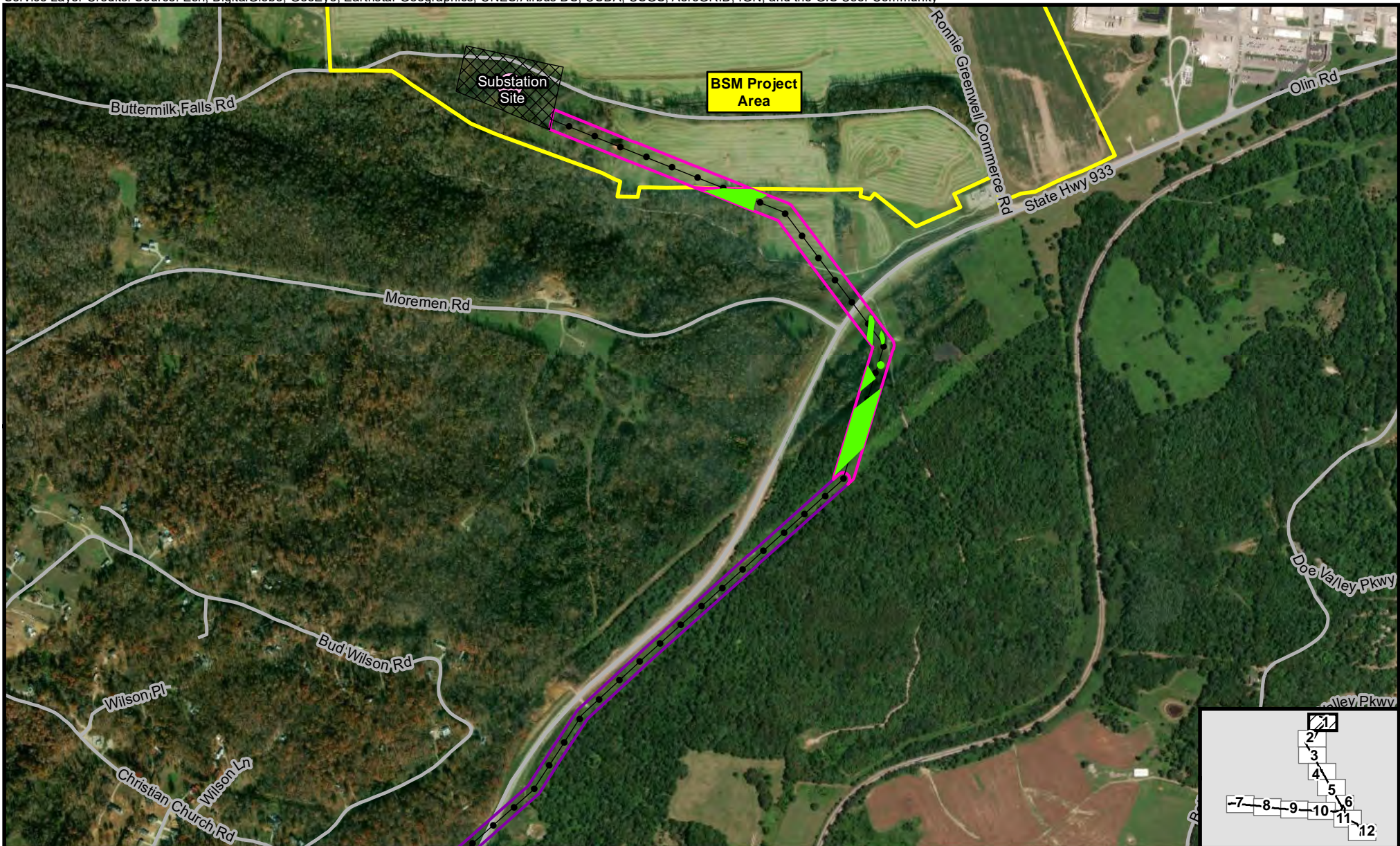


Figure 1
 Big Rivers Electric Corporation
 Brandenburg Steel Mill Service
 345/161-kV Transmission Project



- BSM Project Area
- BSM Substation
- Proposed Transmission Line
- New ROW
- Existing ROW
- Proposed Site
- Potentially Suitable Bat Habitat

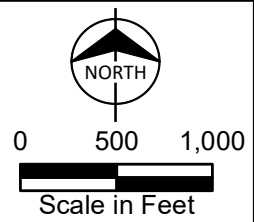
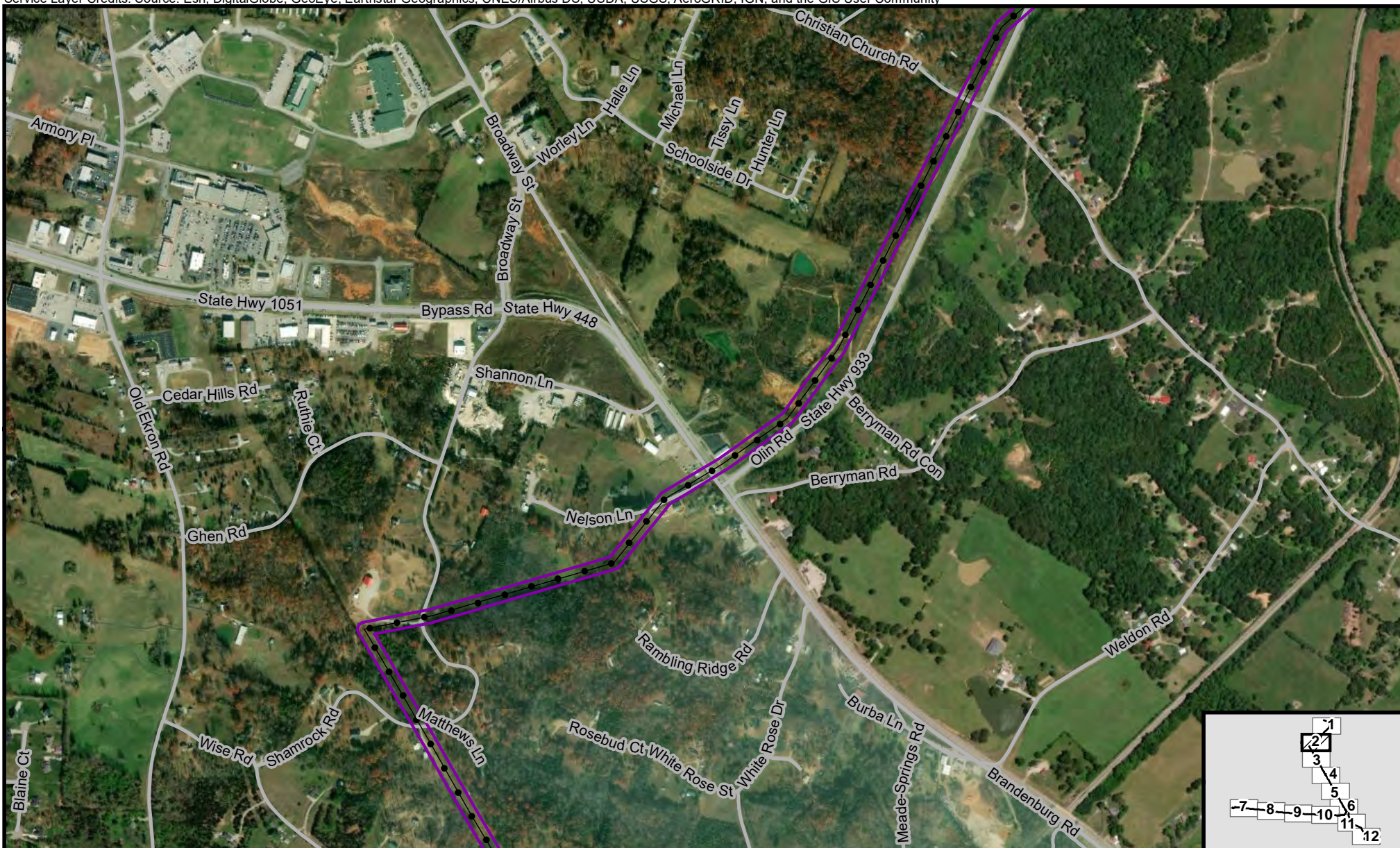


Figure 2
 Big Rivers Electric Corporation
 Brandenburg Steel Mill Service
 345/161-kV Transmission Project
 Tree Clearing
 Page 1 of 12



- Proposed Transmission Line
- ▭ Existing ROW

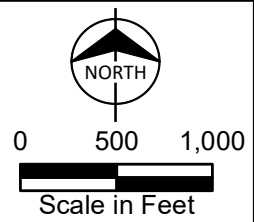


Figure 2
 Big Rivers Electric Corporation
 Brandenburg Steel Mill Service
 345/161-kV Transmission Project
 Tree Clearing
 Page 2 of 12



- Proposed Transmission Line
- ▭ Existing ROW

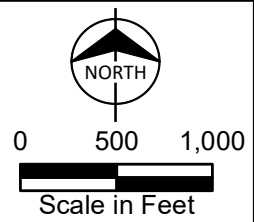


Figure 2
 Big Rivers Electric Corporation
 Brandenburg Steel Mill Service
 345/161-kV Transmission Project
 Tree Clearing
 Page 3 of 12



- Proposed Transmission Line
- █ Existing ROW

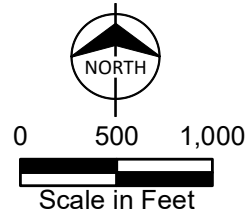
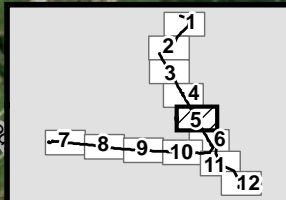


Figure 2
 Big Rivers Electric Corporation
 Brandenburg Steel Mill Service
 345/161-kV Transmission Project
 Tree Clearing
 Page 4 of 12



●—● Proposed Transmission Line
 Existing ROW

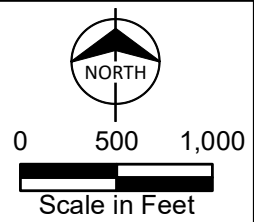
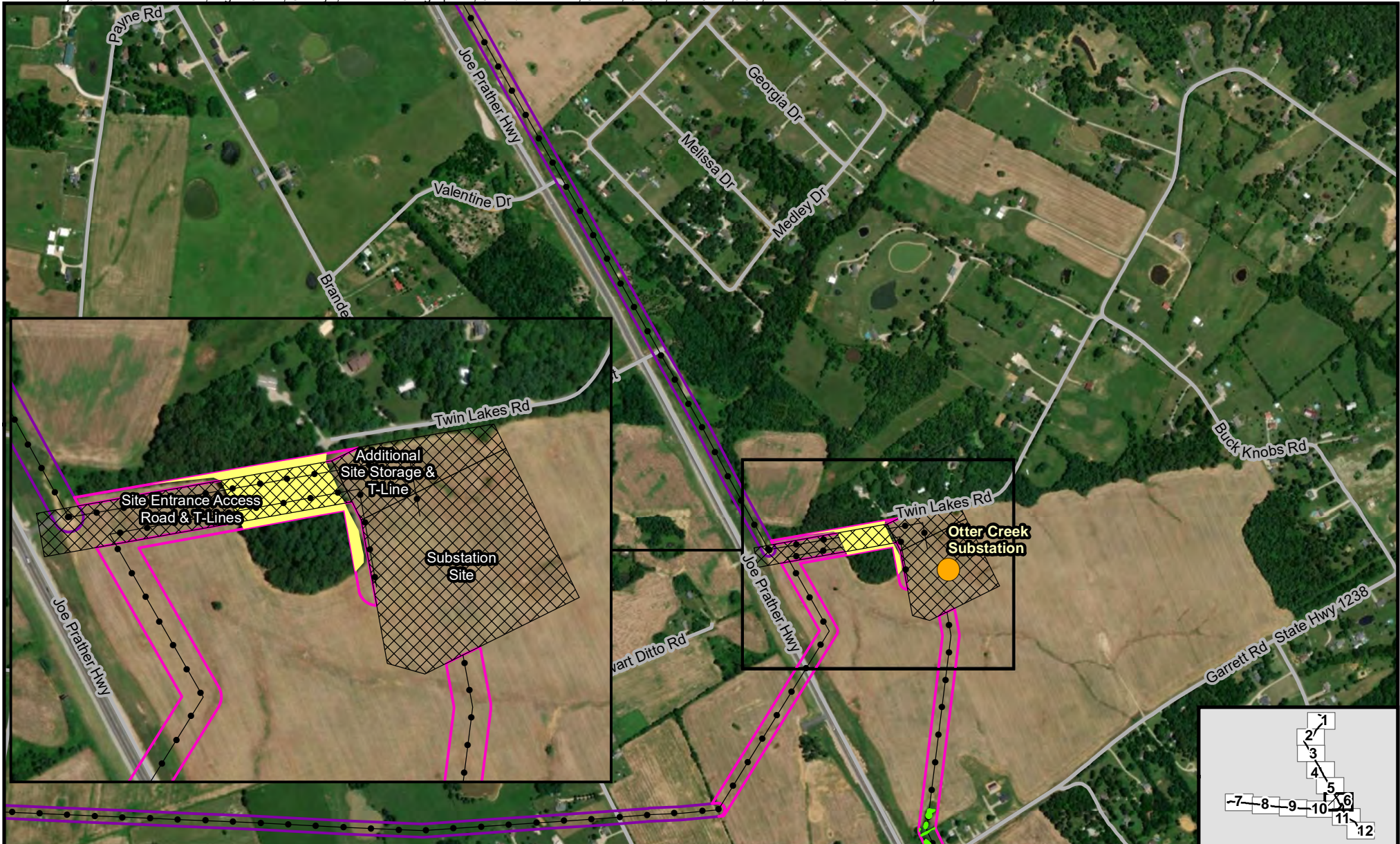


Figure 2
 Big Rivers Electric Corporation
 Brandenburg Steel Mill Service
 345/161-kV Transmission Project
 Tree Clearing
 Page 5 of 12



- Otter Creek Substation
- Cleared Forest
- Proposed Site
- Potentially Suitable Bat Habitat
- Proposed Transmission Line
- New ROW
- Existing ROW

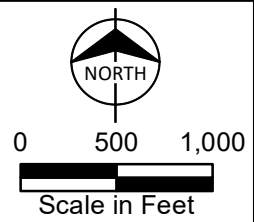
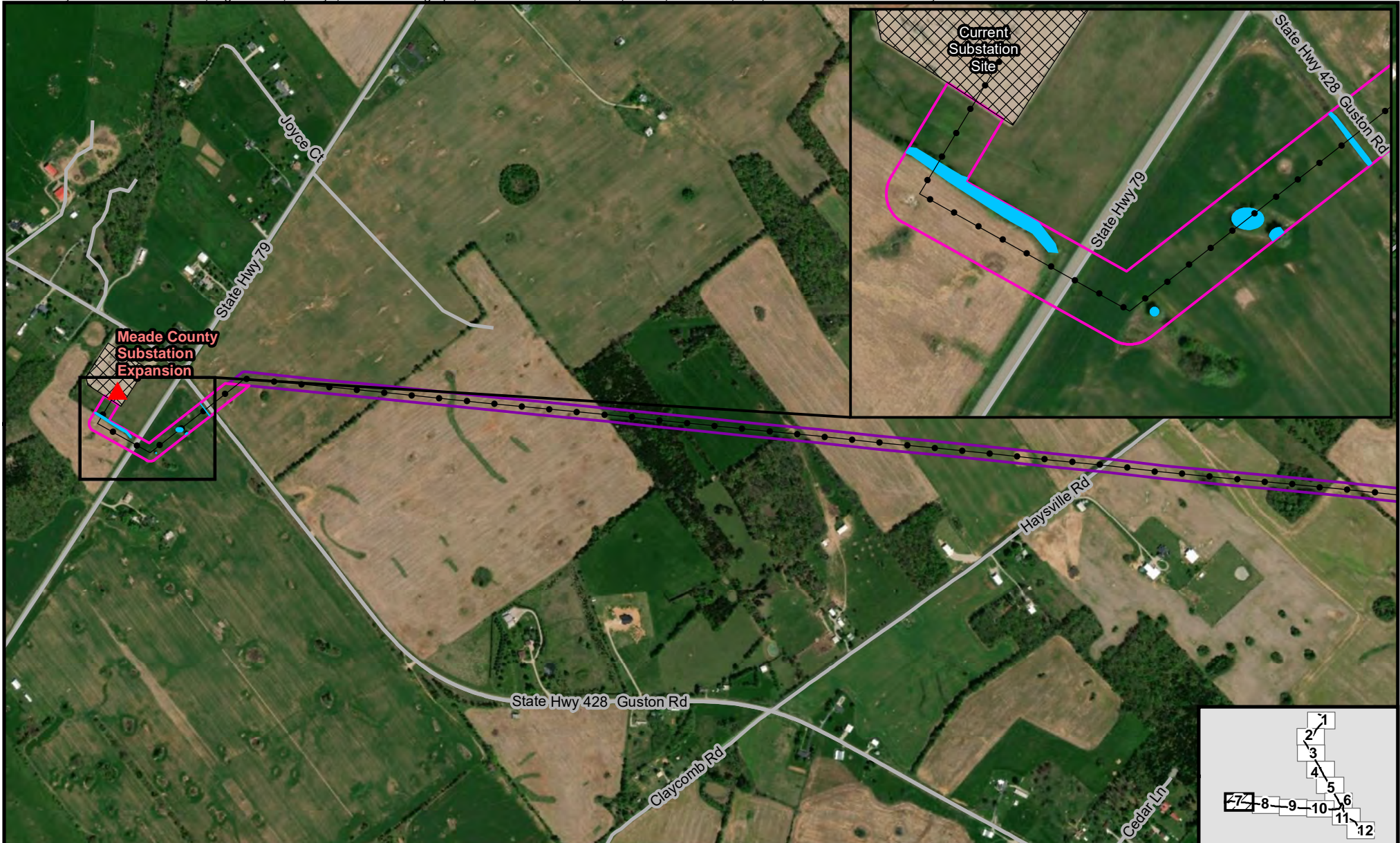


Figure 2
 Big Rivers Electric Corporation
 Brandenburg Steel Mill Service
 345/161-kV Transmission Project
 Tree Clearing
 Page 6 of 12



- ▲ Meade County Substation Expansion
- Proposed Site
- Proposed Transmission Line
- New ROW
- Existing ROW
- Not Suitable Bat Habitat

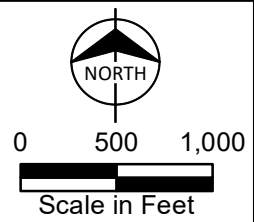
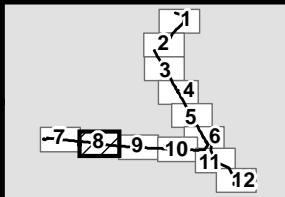
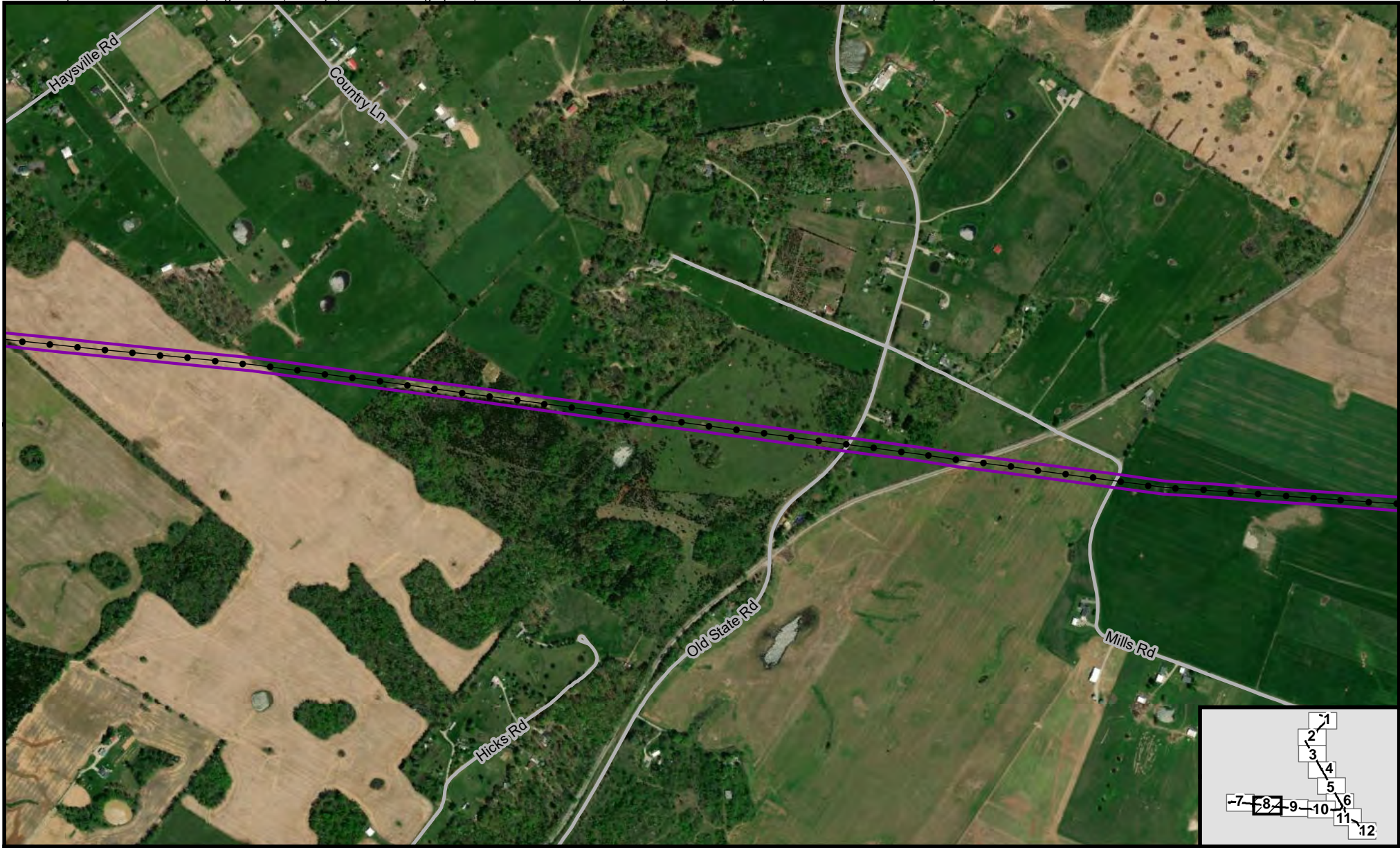


Figure 2
 Big Rivers Electric Corporation
 Brandenburg Steel Mill Service
 345/161-kV Transmission Project
 Tree Clearing
 Page 7 of 12



●—● Proposed Transmission Line
Existing ROW

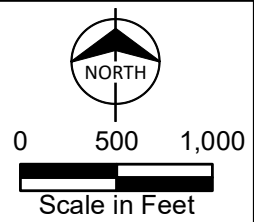
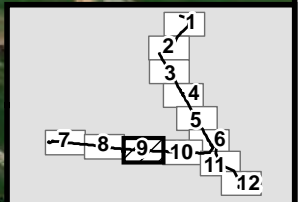
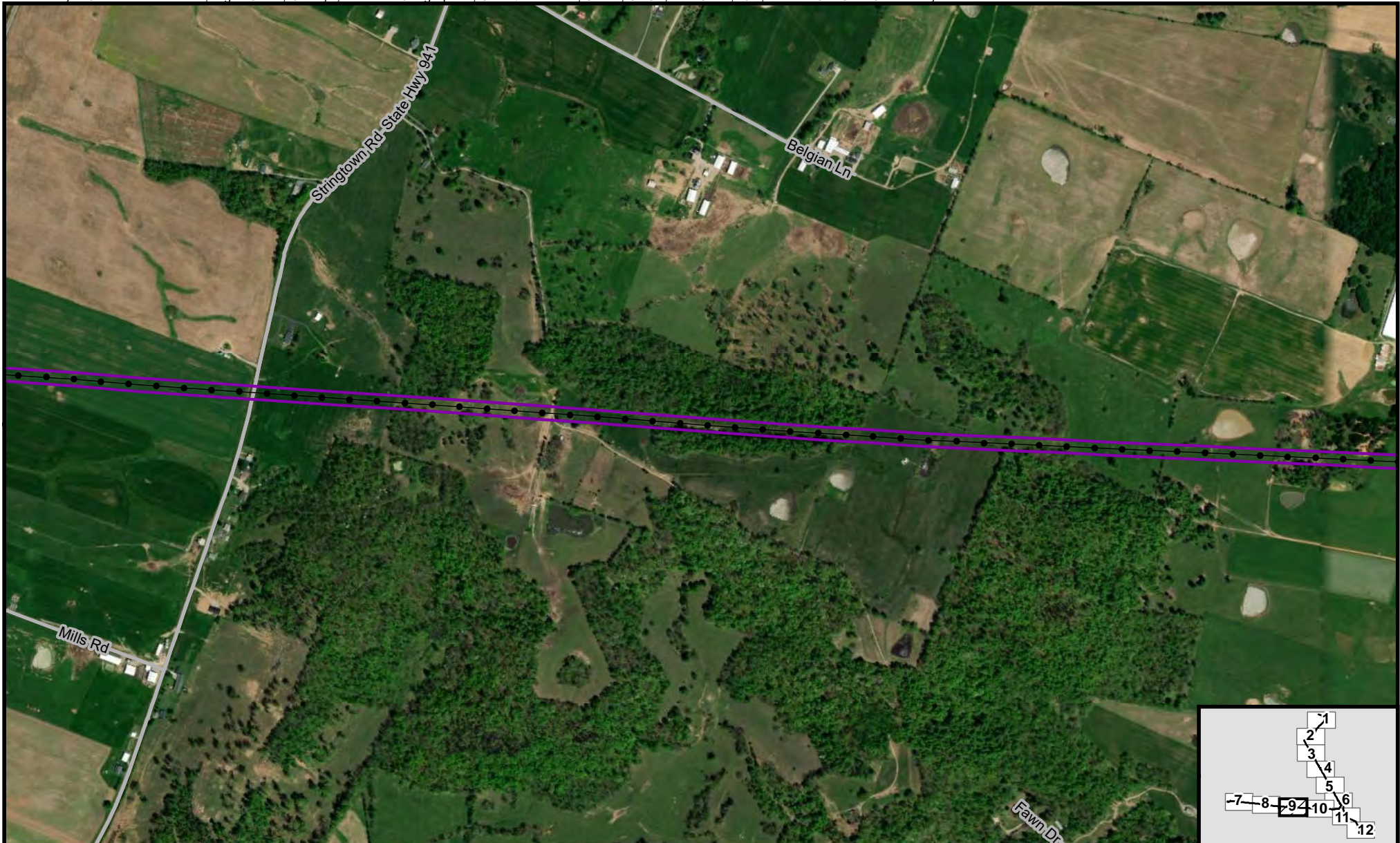


Figure 2
Big Rivers Electric Corporation
Brandenburg Steel Mill Service
345/161-kV Transmission Project
Tree Clearing
Page 8 of 12



- Proposed Transmission Line
- ▭ Existing ROW

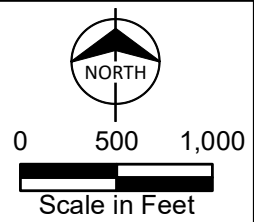
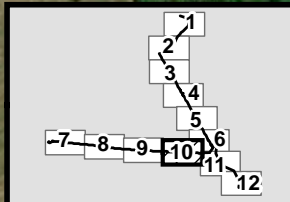
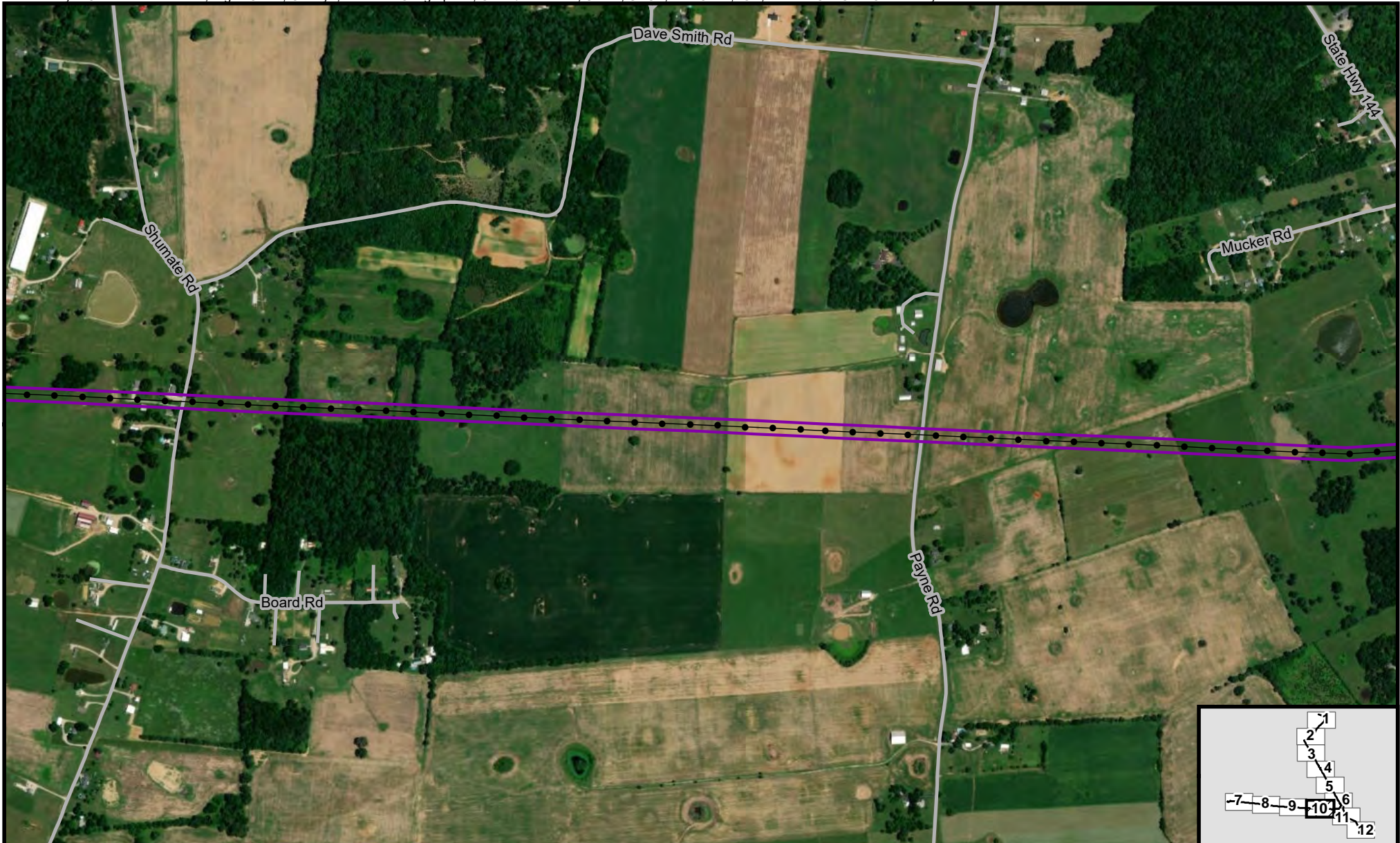


Figure 2
Big Rivers Electric Corporation
Brandenburg Steel Mill Service
345/161-kV Transmission Project
Tree Clearing
Page 9 of 12



- Proposed Transmission Line
- ▭ Existing ROW

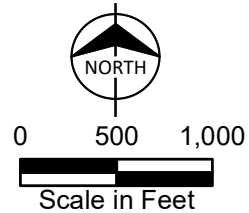
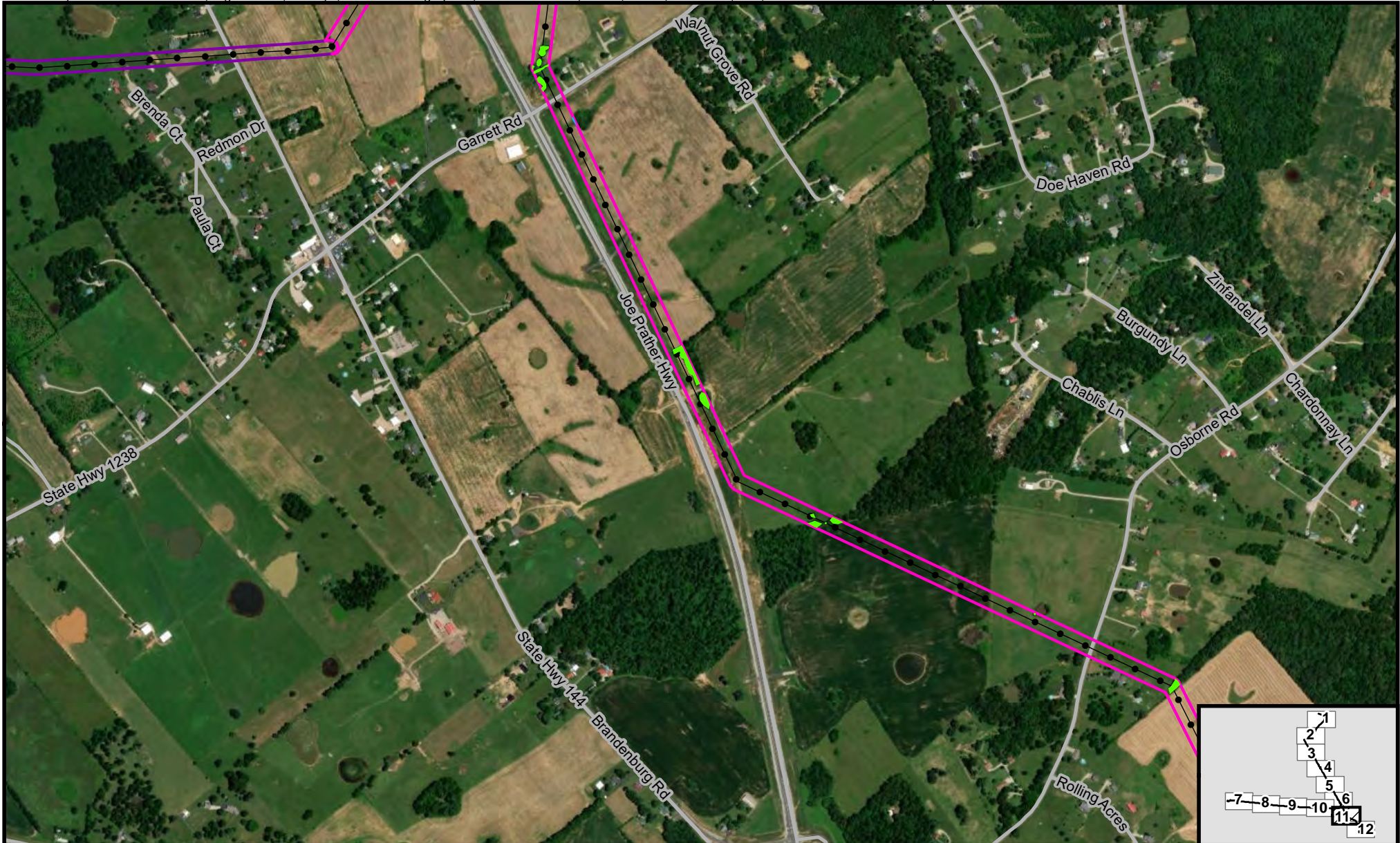


Figure 2
Big Rivers Electric Corporation
Brandenburg Steel Mill Service
345/161-kV Transmission Project
Tree Clearing
Page 10 of 12



- Proposed Transmission Line
- ▭ New ROW
- ▭ Existing ROW
- ▭ Not Suitable Bat Habitat
- ▭ Potentially Suitable Bat Habitat

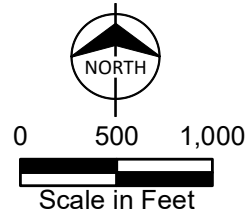
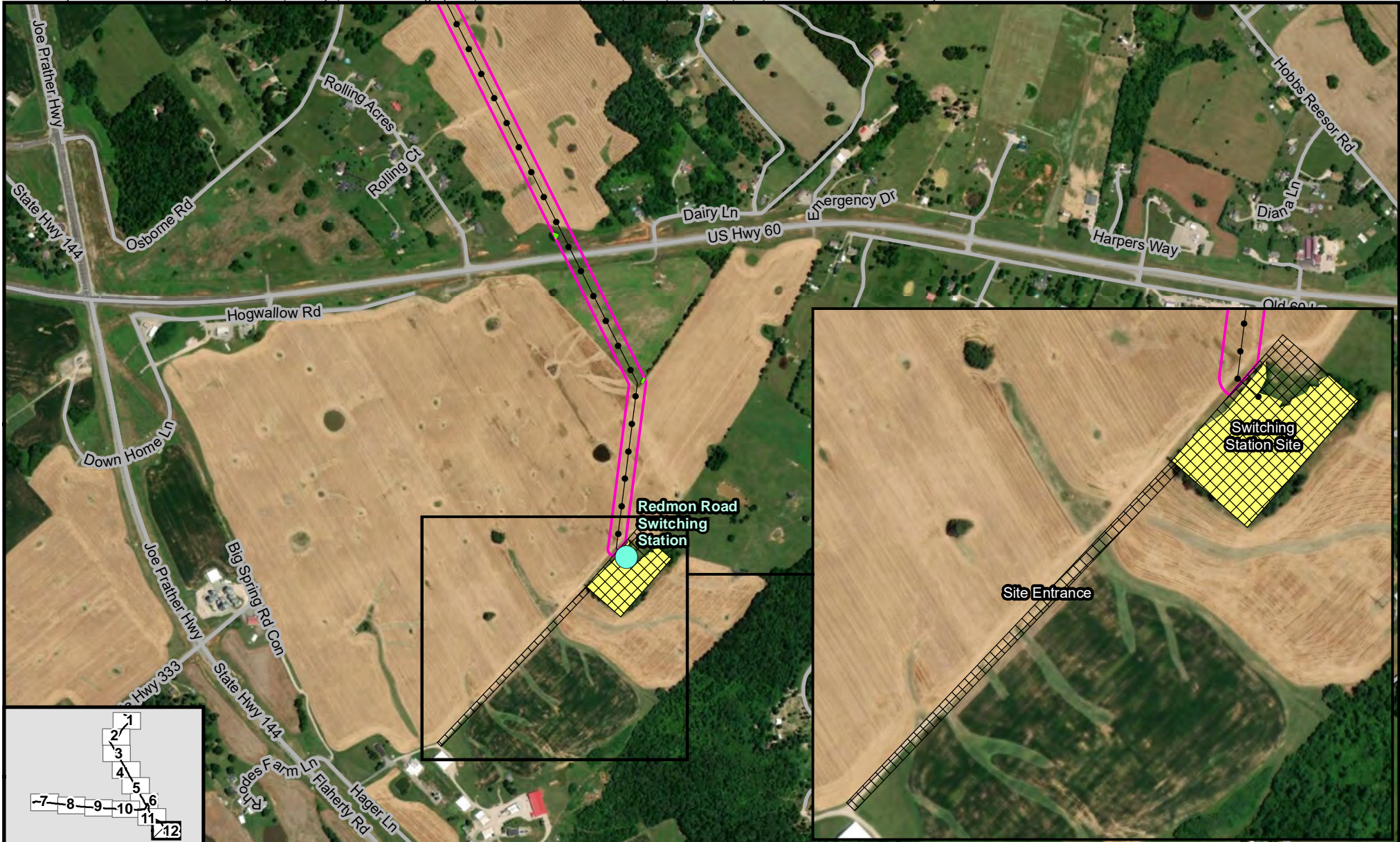


Figure 2
 Big Rivers Electric Corporation
 Brandenburg Steel Mill Service
 345/161-kV Transmission Project
 Tree Clearing
 Page 11 of 12



- Redmon Road Switching Station
- Cleared Forest
- Potentially Suitable Bat Habitat
- Proposed Site
- Proposed Transmission Line
- New ROW

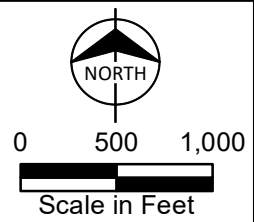


Figure 2
 Big Rivers Electric Corporation
 Brandenburg Steel Mill Service
 345/161-kV Transmission Project
 Tree Clearing
 Page 12 of 12



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

April 20, 2020

Ms. Samantha Nokolny
Burns & McDonnell
1431 Opus Place, Suite 400
Downers Grove, IL 60515

Re: FWS 2020-B-0281; Big Rivers Electric Corporation; Nucor/Brandenburg Steel Mill 345 & 161 kilovolt (kV) Transmission Projects; Meade County, Kentucky

Dear Ms. Nokolny:

The U.S. Fish and Wildlife Service (Service) has reviewed your correspondences, dated March 26, 2020 and April 15, 2020 regarding this proposed project. Big River Electric Corporation (Big Rivers) is seeking funding from the U.S. Department of Agriculture, Rural Utilities Service to construct two new substations, modify and existing substation, construct a new switching station, and construct associated transmission line to accommodate the new Nucor/Brandenburg Steel Mill. The Service has completed consultation with the U.S. Army Corps of Engineers for the footprint of the steel mill facility (04EK1000-2019-I-1657). 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*)

The proposed project would involve the removal of forested habitat that may provide suitable summer roosting, foraging, and/or commuting habitat for the species. Big Rivers proposes to make a voluntary payment into the Imperiled Bat Conservation Fund (IBCF) as a conservation measure to offset effects to the Indiana bat resulting from the removal of 4.2 acres of forested habitat, 3.15 acres in known “swarming 1” and 1.05 acre in known “summer 1 + swarming 1” Indiana bat habitat. Using the process detailed in the Kentucky Field Office’s 2016 *Revised Conservation Strategy for Forest-Dwelling Bats* (Conservation Strategy), the total contribution amount would be \$28,077¹ from November 15 – March 31; \$36,099¹ from April 1 – August 15, excluding June and July²; or \$44,121¹ from August 16 – November 14.

¹ The calculated amount is based on the current average value of farm real estate in Kentucky as reported by the U.S. Department of Agriculture in the Land Values and Cash Rents document (\$3,820). This figure is updated annually around the first week in August. In order to be in compliance with the Conservation Strategy, the contribution provided to the IBCF should be based on the most recent figure. If payment is not made prior to August 2020, please contact the Kentucky Field Office (KFO) to confirm the most current figure.

² Coordinate with the KFO if tree removal is proposed for June or July.

This conservation measure is a component of the proposed action that we are considering in our review of the project. 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. Based on the evaluation in the BO, any take of the Indiana 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 result in the destruction or adverse modification of designated critical habitat for the Indiana bat. It is our understanding that the Corps will consider this conservation measure a condition of the CWA 404 permit.

To complete this proposed conservation measure, the project proponent should mail the voluntary payment to the IBCF administered by Kentucky Natural Lands Trust. The check or money order should be made payable to Kentucky Natural Lands Trust with "Imperiled Bat Conservation Fund" in the memo line. The payment should be accompanied by a cover letter that includes the following information: the project proponent's name, the FWS project number and Corps identification number referenced in the subject line of this letter, and a contact name and address to receive the receipt of payment. To complete this proposed conservation measure, the applicant should mail voluntary payments to the Imperiled Bat Conservation Fund administered by Kentucky Natural Lands Trust.

The check or money order should be made payable to Kentucky Natural Lands Trust with "Imperiled Bat Conservation Fund" in the memo line. At this time, payments can only be received via U.S. Postal Service delivery due to office closures in response to COVID-19.

Mail to:

Imperiled Bat Conservation Fund
c/o Kentucky Natural Lands Trust
433 Chestnut Street
Berea, KY 40403

Northern long-eared bat (*Myotis septentrionalis*)

Based on the information available to us, this project may affect the northern long-eared bat, but with no effects beyond those previously evaluated in the Service's programmatic biological opinion for the northern long-eared bat final 4(d) rule dated January 5, 2016 (FWS Log# 03E00000-2016-F-0001). Any taking that may occur incidental to this project is not prohibited under the final 4(d) rule (50 CFR §17.40(o)). Therefore, you may fulfill responsibilities under ESA section 7(a)(2) relative to the northern long-eared bat for this project by requesting reliance on the Service's programmatic biological opinion for the 4(d) rule. To request reliance on the programmatic biological opinion, Federal Action Agencies may follow the procedures provided at <http://www.fws.gov/midwest/endangered/mammals/nleb/S7.html>, or at the Service's Information for Planning and Consultation (IPaC) website, <https://ecos.fws.gov/ipac/>.

You concluded that the proposed project area does not have habitat for the following species: gray bat (*Myotis grisescens*), clubshell (*Pleurobema clava*), fanshell (*Cyprogenia stegaria*),

northern riffleshell (*Epioblasma torulosa rangiana*), orangefoot pimpleback (*Plethobasus cooperianus*), purple catspaw (*Epioblasma o. obliquata*), rabbitsfoot (*Theliderma* (= *Quadrula*) *cylindrica*), ring pink (*Obovaria retusa*), rough pigtoe (*Pleurobema plenum*), sheepnose (*Plethobasus cyphus*), and spectaclecase (*Margaritifera* (= *Cumberlandia*) *monodonta*). There is no statutory requirement to request concurrence with a “no effect” determination. We have no additional comments or concerns regarding these species.

These comments are based on the information available to us and may 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 (e.g., additional forested habitat removal, forested habitat removal occurring anytime other than that which is specified above), or (3) new species are listed or critical habitat designated.

Thank you 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 46104 or jessica_miller@fws.gov.

Sincerely,

for Virgil Lee Andrews, Jr.
Field Supervisor

APPENDIX G – NRCS FARMLAND ASSESSMENT



United States Department of Agriculture

Natural Resources Conservation Service
USDA Service Center
3100 Alvey Park Drive W
Owensboro, KY 42303

July 15, 2020

Stephen G. Thornhill, LEED AP
Burns McDonnell
9400 Ward Parkway
Kansas City, MO 64114

RE: BIG RIVERS ELECTRIC COOPERATIVE SUBSTATION PROJECTS

Dear Mr. Thornhill:

Enclosed is the updated Farmland Protection Policy Act (FPPA) site assessments for Big Rivers Electric Cooperative's proposed new substations in Meade County, Kentucky. The Natural Resources Conservation Service (NRCS) is mandated to provide information on the soils and/or impact to farmland according to the Farmland Protection Policy Act (P.L. 97-98) for projects that will be utilizing federal funding. Based on the information contained in your request, it was determined that the proposed project has the potential to impact PRIME FARMLAND and FARMLAND OF STATEWIDE IMPORTANCE.

The Otter Creek Substation site has a relative LESA value of **73**, as based on a scale of 0 to 100 points (*see AD-1006*). The percentage of farmland in Meade County having the same or higher value is 46.3%. The percentage of Meade County farmland to be converted as a result of the proposed action is 0.010%.

The Redmon Road Substation site has a relative LESA value of **61**, as based on a scale of 0 to 100 points (*see AD-1006*). The percentage of farmland in Meade County having the same or higher value is 50.1%. The percentage of Meade County farmland to be converted as a result of the proposed action is 0.003%.

Please do not hesitate to contact me if I may be of additional assistance.

Sincerely,

Perri Pedley
Soil Scientist
Perri.Pedley@usda.gov

Enclosures

FARMLAND CONVERSION IMPACT RATING

PART I (To be completed by Federal Agency)		Date Of Land Evaluation Request			
Name of Project		Federal Agency Involved			
Proposed Land Use		County and State			
PART II (To be completed by NRCS)		Date Request Received By NRCS		Person Completing Form:	
Does the site contain Prime, Unique, Statewide or Local Important Farmland? <i>(If no, the FPPA does not apply - do not complete additional parts of this form)</i>		YES <input type="checkbox"/>	NO <input type="checkbox"/>	Acres Irrigated	Average Farm Size
Major Crop(s)	Farmable Land In Govt. Jurisdiction Acres: %		Amount of Farmland As Defined in FPPA Acres: %		
Name of Land Evaluation System Used	Name of State or Local Site Assessment System		Date Land Evaluation Returned by NRCS		
PART III (To be completed by Federal Agency)		Alternative Site Rating			
		Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly					
B. Total Acres To Be Converted Indirectly					
C. Total Acres In Site					
PART IV (To be completed by NRCS) Land Evaluation Information					
A. Total Acres Prime And Unique Farmland					
B. Total Acres Statewide Important or Local Important Farmland					
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted					
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value					
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)					
PART VI (To be completed by Federal Agency) Site Assessment Criteria <i>(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)</i>		Maximum Points	Site A	Site B	Site C
1. Area In Non-urban Use		(15)			
2. Perimeter In Non-urban Use		(10)			
3. Percent Of Site Being Farmed		(20)			
4. Protection Provided By State and Local Government		(20)			
5. Distance From Urban Built-up Area		(15)			
6. Distance To Urban Support Services		(15)			
7. Size Of Present Farm Unit Compared To Average		(10)			
8. Creation Of Non-farmable Farmland		(10)			
9. Availability Of Farm Support Services		(5)			
10. On-Farm Investments		(20)			
11. Effects Of Conversion On Farm Support Services		(10)			
12. Compatibility With Existing Agricultural Use		(10)			
TOTAL SITE ASSESSMENT POINTS		160			
PART VII (To be completed by Federal Agency)					
Relative Value Of Farmland (From Part V)		100			
Total Site Assessment (From Part VI above or local site assessment)		160			
TOTAL POINTS (Total of above 2 lines)		260			
Site Selected:		Date Of Selection		Was A Local Site Assessment Used? YES <input type="checkbox"/> NO <input type="checkbox"/>	
Reason For Selection:					
Name of Federal agency representative completing this form:					Date:

STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

- Step 1 - Federal agencies (or Federally funded projects) involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form. For Corridor type projects, the Federal agency shall use form NRCS-CPA-106 in place of form AD-1006. The Land Evaluation and Site Assessment (LESA) process may also be accessed by visiting the FPPA website, <http://fppa.nrcs.usda.gov/lesa/>.
- Step 2 - Originator (Federal Agency) will send one original copy of the form together with appropriate scaled maps indicating location(s) of project site(s), to the Natural Resources Conservation Service (NRCS) local Field Office or USDA Service Center and retain a copy for their files. (NRCS has offices in most counties in the U.S. The USDA Office Information Locator may be found at http://offices.usda.gov/scripts/ndISAPI.dll/oip_public/USA_map, or the offices can usually be found in the Phone Book under U.S. Government, Department of Agriculture. A list of field offices is available from the NRCS State Conservationist and State Office in each State.)
- Step 3 - NRCS will, within 10 working days after receipt of the completed form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland. (When a site visit or land evaluation system design is needed, NRCS will respond within 30 working days.
- Step 4 - For sites where farmland covered by the FPPA will be converted by the proposed project, NRCS will complete Parts II, IV and V of the form.
- Step 5 - NRCS will return the original copy of the form to the Federal agency involved in the project, and retain a file copy for NRCS records.
- Step 6 - The Federal agency involved in the proposed project will complete Parts VI and VII of the form and return the form with the final selected site to the servicing NRCS office.
- Step 7 - The Federal agency providing financial or technical assistance to the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA.

INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM

(For Federal Agency)

Part I: When completing the "County and State" questions, list all the local governments that are responsible for local land use controls where site(s) are to be evaluated.

Part III: When completing item B (Total Acres To Be Converted Indirectly), include the following:

1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them or other major change in the ability to use the land for agriculture.
2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities planned build out capacity) that will cause a direct conversion.

Part VI: Do not complete Part VI using the standard format if a State or Local site assessment is used. With local and NRCS assistance, use the local Land Evaluation and Site Assessment (LESA).

1. Assign the maximum points for each site assessment criterion as shown in § 658.5(b) of CFR. In cases of corridor-type project such as transportation, power line and flood control, criteria #5 and #6 will not apply and will, be weighted zero, however, criterion #8 will be weighed a maximum of 25 points and criterion #11 a maximum of 25 points.
2. Federal agencies may assign relative weights among the 12 site assessment criteria other than those shown on the FPPA rule after submitting individual agency FPPA policy for review and comment to NRCS. In all cases where other weights are assigned, relative adjustments must be made to maintain the maximum total points at 160. For project sites where the total points equal or exceed 160, consider alternative actions, as appropriate, that could reduce adverse impacts (e.g. Alternative Sites, Modifications or Mitigation).

Part VII: In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, convert the site assessment points to a base of 160.

Example: if the Site Assessment maximum is 200 points, and the alternative Site "A" is rated 180 points:

$$\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{180}{200} \times 160 = 144 \text{ points for Site A}$$

For assistance in completing this form or FPPA process, contact the local NRCS Field Office or USDA Service Center.

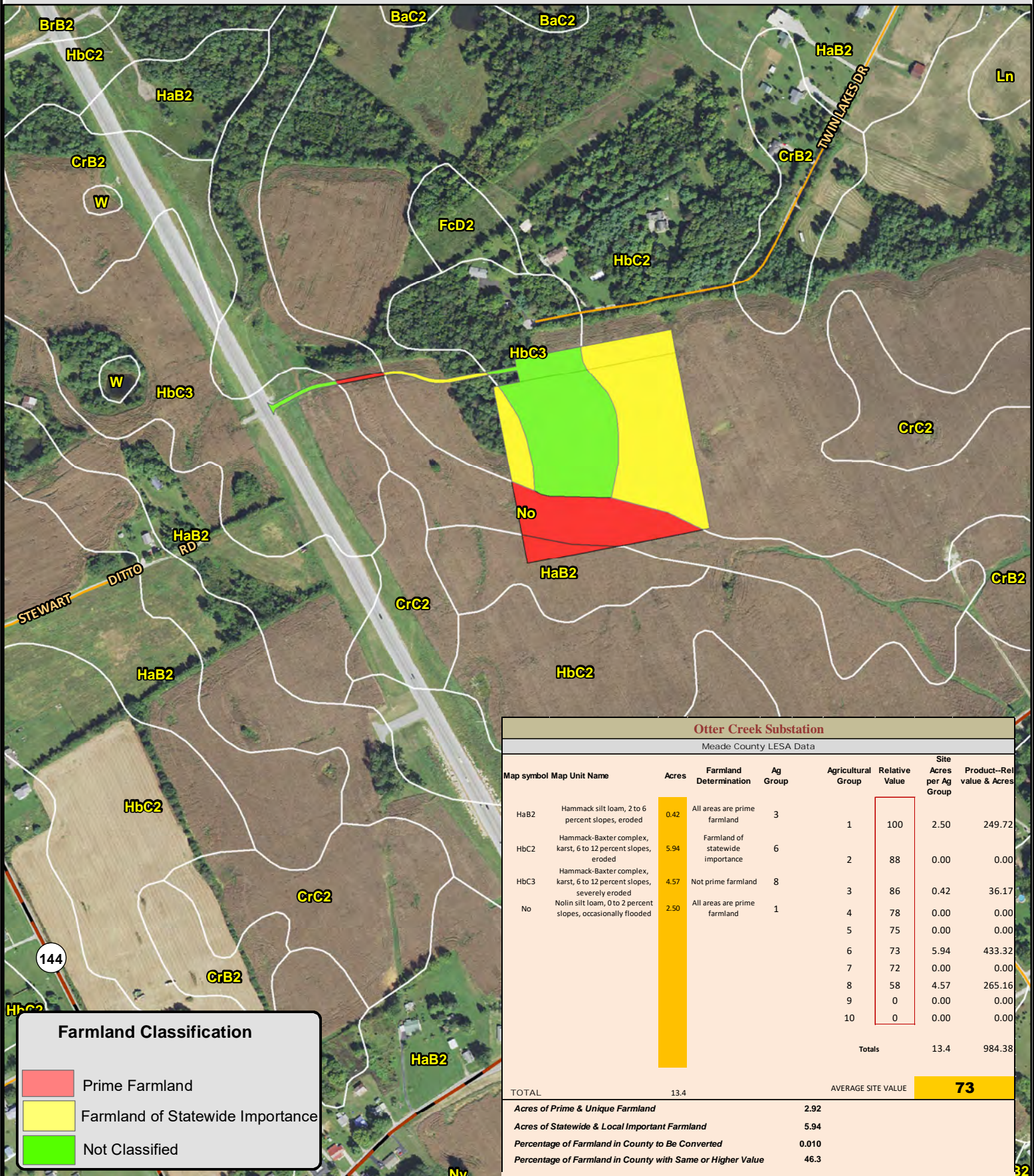
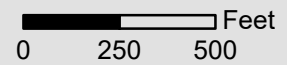
NRCS employees, consult the FPPA Manual and/or policy for additional instructions to complete the AD-1006 form.

Otter Creek Substation

Meade County, KY

Graphic Scale

1:6,000



Farmland Classification

- Prime Farmland
- Farmland of Statewide Importance
- Not Classified

Otter Creek Substation								
Meade County LESA Data								
Map symbol	Map Unit Name	Acres	Farmland Determination	Ag Group	Agricultural Group	Relative Value	Site Acres per Ag Group	
HaB2	Hammack silt loam, 2 to 6 percent slopes, eroded	0.42	All areas are prime farmland	3	1	100	2.50	
HbC2	Hammack-Baxter complex, karst, 6 to 12 percent slopes, eroded	5.94	Farmland of statewide importance	6	2	88	0.00	
HbC3	Hammack-Baxter complex, karst, 6 to 12 percent slopes, severely eroded	4.57	Not prime farmland	8	3	86	0.42	
No	Nolin silt loam, 0 to 2 percent slopes, occasionally flooded	2.50	All areas are prime farmland	1	4	78	0.00	
					5	75	0.00	
					6	73	5.94	
					7	72	0.00	
					8	58	4.57	
					9	0	0.00	
					10	0	0.00	
Totals							13.4	984.38
TOTAL		13.4			AVERAGE SITE VALUE		73	
Acres of Prime & Unique Farmland				2.92				
Acres of Statewide & Local Important Farmland				5.94				
Percentage of Farmland in County to Be Converted				0.010				
Percentage of Farmland in County with Same or Higher Value				46.3				

FARMLAND CONVERSION IMPACT RATING

PART I (To be completed by Federal Agency)		Date Of Land Evaluation Request			
Name of Project		Federal Agency Involved			
Proposed Land Use		County and State			
PART II (To be completed by NRCS)		Date Request Received By NRCS		Person Completing Form:	
Does the site contain Prime, Unique, Statewide or Local Important Farmland? <i>(If no, the FPPA does not apply - do not complete additional parts of this form)</i>		YES <input type="checkbox"/>	NO <input type="checkbox"/>	Acres Irrigated	Average Farm Size
Major Crop(s)	Farmable Land In Govt. Jurisdiction Acres: %		Amount of Farmland As Defined in FPPA Acres: %		
Name of Land Evaluation System Used	Name of State or Local Site Assessment System		Date Land Evaluation Returned by NRCS		
PART III (To be completed by Federal Agency)		Alternative Site Rating			
		Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly					
B. Total Acres To Be Converted Indirectly					
C. Total Acres In Site					
PART IV (To be completed by NRCS) Land Evaluation Information					
A. Total Acres Prime And Unique Farmland					
B. Total Acres Statewide Important or Local Important Farmland					
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted					
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value					
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)					
PART VI (To be completed by Federal Agency) Site Assessment Criteria <i>(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)</i>		Maximum Points	Site A	Site B	Site C
1. Area In Non-urban Use		(15)			
2. Perimeter In Non-urban Use		(10)			
3. Percent Of Site Being Farmed		(20)			
4. Protection Provided By State and Local Government		(20)			
5. Distance From Urban Built-up Area		(15)			
6. Distance To Urban Support Services		(15)			
7. Size Of Present Farm Unit Compared To Average		(10)			
8. Creation Of Non-farmable Farmland		(10)			
9. Availability Of Farm Support Services		(5)			
10. On-Farm Investments		(20)			
11. Effects Of Conversion On Farm Support Services		(10)			
12. Compatibility With Existing Agricultural Use		(10)			
TOTAL SITE ASSESSMENT POINTS		160			
PART VII (To be completed by Federal Agency)					
Relative Value Of Farmland (From Part V)		100			
Total Site Assessment (From Part VI above or local site assessment)		160			
TOTAL POINTS (Total of above 2 lines)		260			
Site Selected:	Date Of Selection	Was A Local Site Assessment Used? YES <input type="checkbox"/> NO <input type="checkbox"/>			
Reason For Selection:					
Name of Federal agency representative completing this form:					Date:

STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

- Step 1 - Federal agencies (or Federally funded projects) involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form. For Corridor type projects, the Federal agency shall use form NRCS-CPA-106 in place of form AD-1006. The Land Evaluation and Site Assessment (LESA) process may also be accessed by visiting the FPPA website, <http://fppa.nrcs.usda.gov/lesa/>.
- Step 2 - Originator (Federal Agency) will send one original copy of the form together with appropriate scaled maps indicating location(s) of project site(s), to the Natural Resources Conservation Service (NRCS) local Field Office or USDA Service Center and retain a copy for their files. (NRCS has offices in most counties in the U.S. The USDA Office Information Locator may be found at http://offices.usda.gov/scripts/ndISAPI.dll/oip_public/USA_map, or the offices can usually be found in the Phone Book under U.S. Government, Department of Agriculture. A list of field offices is available from the NRCS State Conservationist and State Office in each State.)
- Step 3 - NRCS will, within 10 working days after receipt of the completed form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland. (When a site visit or land evaluation system design is needed, NRCS will respond within 30 working days.
- Step 4 - For sites where farmland covered by the FPPA will be converted by the proposed project, NRCS will complete Parts II, IV and V of the form.
- Step 5 - NRCS will return the original copy of the form to the Federal agency involved in the project, and retain a file copy for NRCS records.
- Step 6 - The Federal agency involved in the proposed project will complete Parts VI and VII of the form and return the form with the final selected site to the servicing NRCS office.
- Step 7 - The Federal agency providing financial or technical assistance to the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA.

INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM

(For Federal Agency)

Part I: When completing the "County and State" questions, list all the local governments that are responsible for local land use controls where site(s) are to be evaluated.

Part III: When completing item B (Total Acres To Be Converted Indirectly), include the following:

1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them or other major change in the ability to use the land for agriculture.
2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities planned build out capacity) that will cause a direct conversion.

Part VI: Do not complete Part VI using the standard format if a State or Local site assessment is used. With local and NRCS assistance, use the local Land Evaluation and Site Assessment (LESA).

1. Assign the maximum points for each site assessment criterion as shown in § 658.5(b) of CFR. In cases of corridor-type project such as transportation, power line and flood control, criteria #5 and #6 will not apply and will, be weighted zero, however, criterion #8 will be weighed a maximum of 25 points and criterion #11 a maximum of 25 points.
2. Federal agencies may assign relative weights among the 12 site assessment criteria other than those shown on the FPPA rule after submitting individual agency FPPA policy for review and comment to NRCS. In all cases where other weights are assigned, relative adjustments must be made to maintain the maximum total points at 160. For project sites where the total points equal or exceed 160, consider alternative actions, as appropriate, that could reduce adverse impacts (e.g. Alternative Sites, Modifications or Mitigation).

Part VII: In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, convert the site assessment points to a base of 160.

Example: if the Site Assessment maximum is 200 points, and the alternative Site "A" is rated 180 points:

$$\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{180}{200} \times 160 = 144 \text{ points for Site A}$$

For assistance in completing this form or FPPA process, contact the local NRCS Field Office or USDA Service Center.

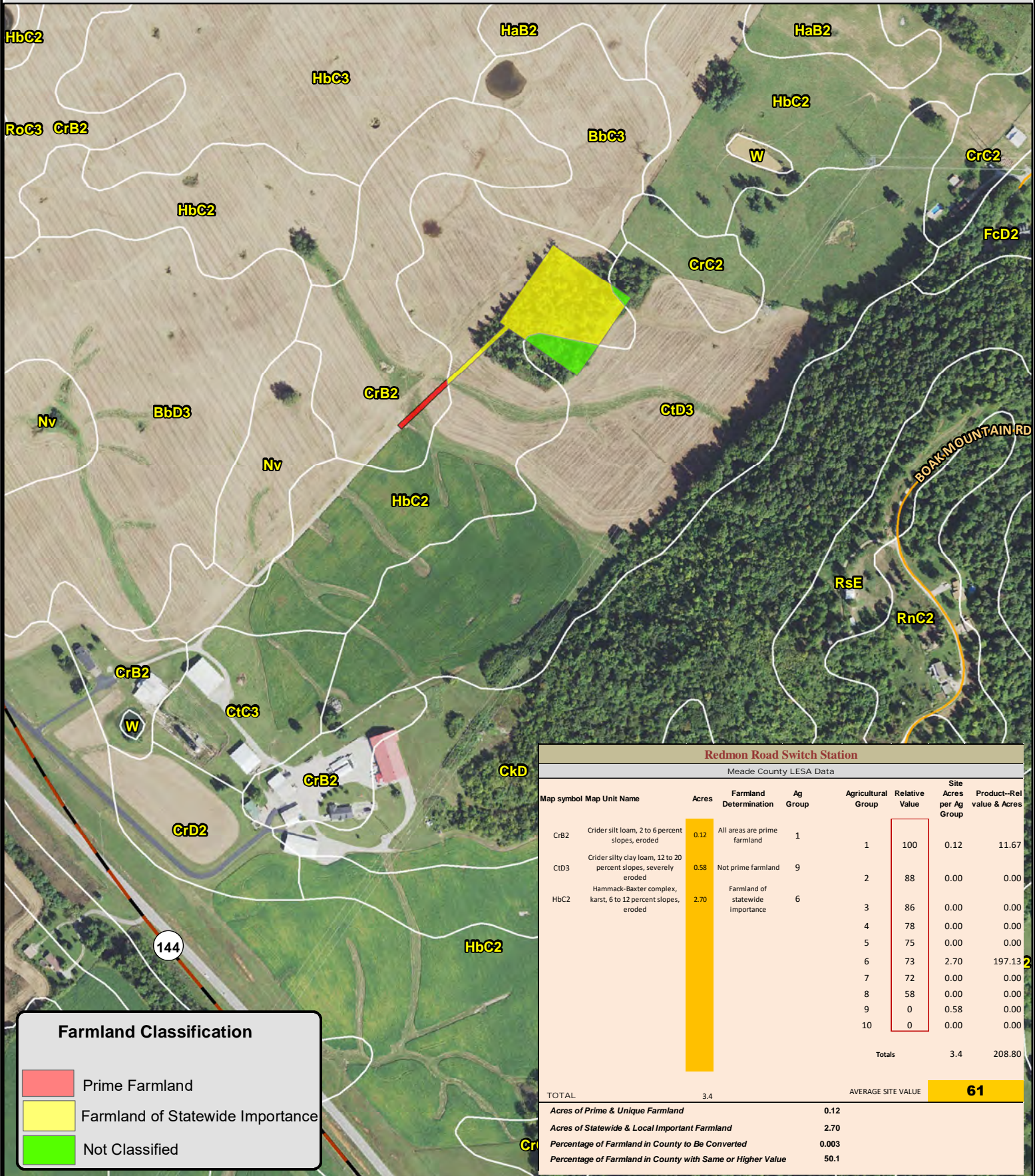
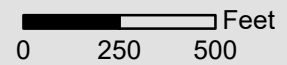
NRCS employees, consult the FPPA Manual and/or policy for additional instructions to complete the AD-1006 form.

Redmon Road Switching Station

Meade County, KY

Graphic Scale

1:6,000



Redmon Road Switch Station

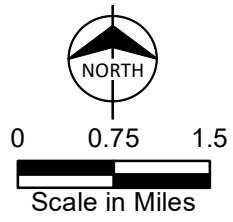
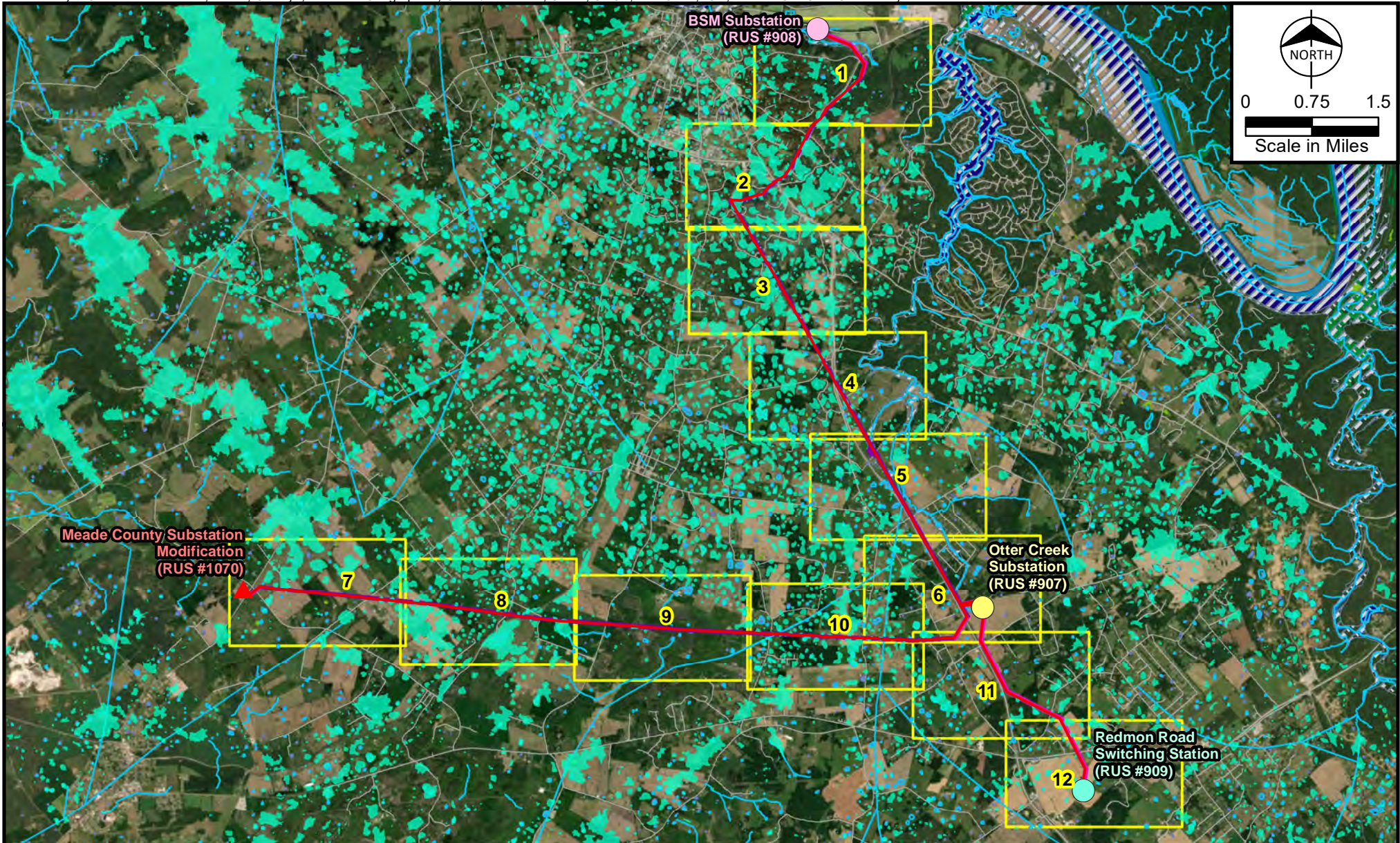
Meade County LESA Data

Map symbol	Map Unit Name	Acres	Farmland Determination	Ag Group	Agricultural Group	Relative Value	Site Acres per Ag Group	Product-Rel value & Acres
CrB2	Crider silt loam, 2 to 6 percent slopes, eroded	0.12	All areas are prime farmland	1	1	100	0.12	11.67
CtD3	Crider silty clay loam, 12 to 20 percent slopes, severely eroded	0.58	Not prime farmland	9	2	88	0.00	0.00
HbC2	Hammack-Baxter complex, karst, 6 to 12 percent slopes, eroded	2.70	Farmland of statewide importance	6	3	86	0.00	0.00
					4	78	0.00	0.00
					5	75	0.00	0.00
					6	73	2.70	197.13
					7	72	0.00	0.00
					8	58	0.00	0.00
					9	0	0.58	0.00
					10	0	0.00	0.00
Totals							3.4	208.80
TOTAL		3.4			AVERAGE SITE VALUE		61	
Acres of Prime & Unique Farmland					0.12			
Acres of Statewide & Local Important Farmland					2.70			
Percentage of Farmland in County to Be Converted					0.003			
Percentage of Farmland in County with Same or Higher Value					50.1			

Farmland Classification

- Prime Farmland
- Farmland of Statewide Importance
- Not Classified

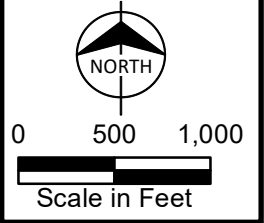
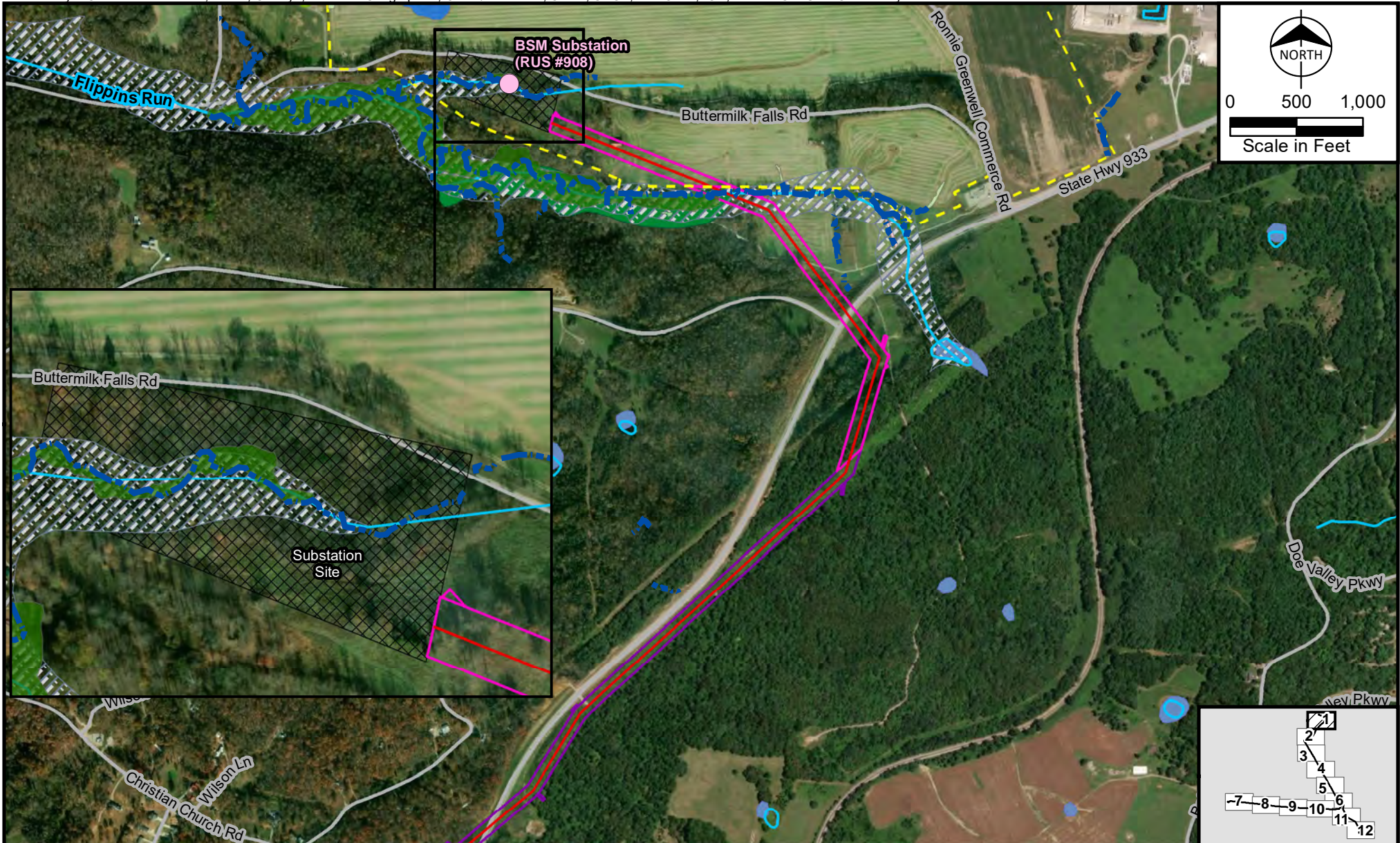
APPENDIX H –WETLANDS AND WATER RESOURCES AND ASSOCIATED CORRESPONDENCE



▲ Meade County Substation Modification	□ NHD Waterbody	NWI-Mapped Wetland
● BSM Substation	— NHD Flowline	■ Freshwater Emergent Wetland
● Otter Creek Substation	▨ Floodplain	■ Freshwater Forested/Shrub Wetland
● Redmon Road Switching Station	▨ Floodway	■ Freshwater Pond
— Proposed Transmission Line	ROW	■ Lake
■ Sinkhole	□ Greenfield	■ Other
	□ Partial Rebuild	■ Riverine



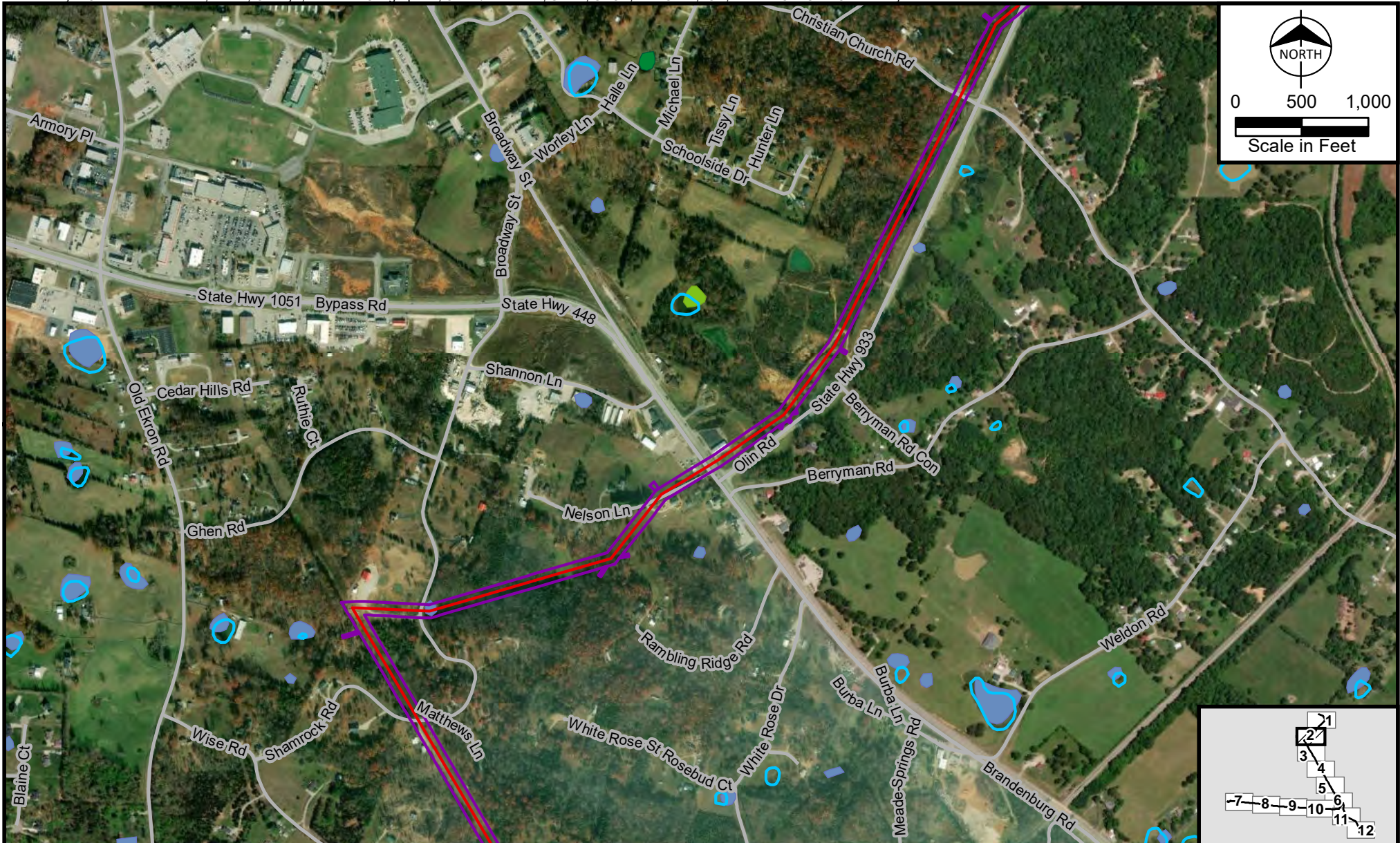
Figure H-1
 Big Rivers Electric Corporation
 Brandenburg Steel Mill Service
 345/161-kV Transmission Project
 Water Resources & Sinkholes
 Overview



BSM Substation	NHD Waterbody	Delineated Stream
Proposed Site	NHD Flowline	Floodplain
Proposed Transmission Line	Delineated Wetland	NWI-Mapped Wetland
Nucor Steel Mill Project Boundary	PEM	Freshwater Emergent Wetland
ROW	PFO	Freshwater Forested/Shrub Wetland
Greenfield	PSS	Freshwater Pond
Partial Rebuild	PUB	



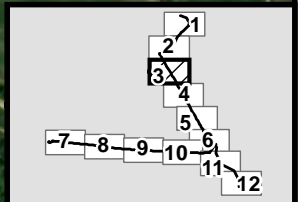
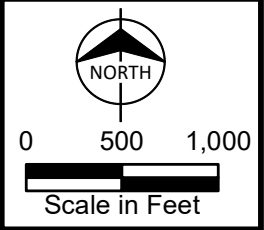
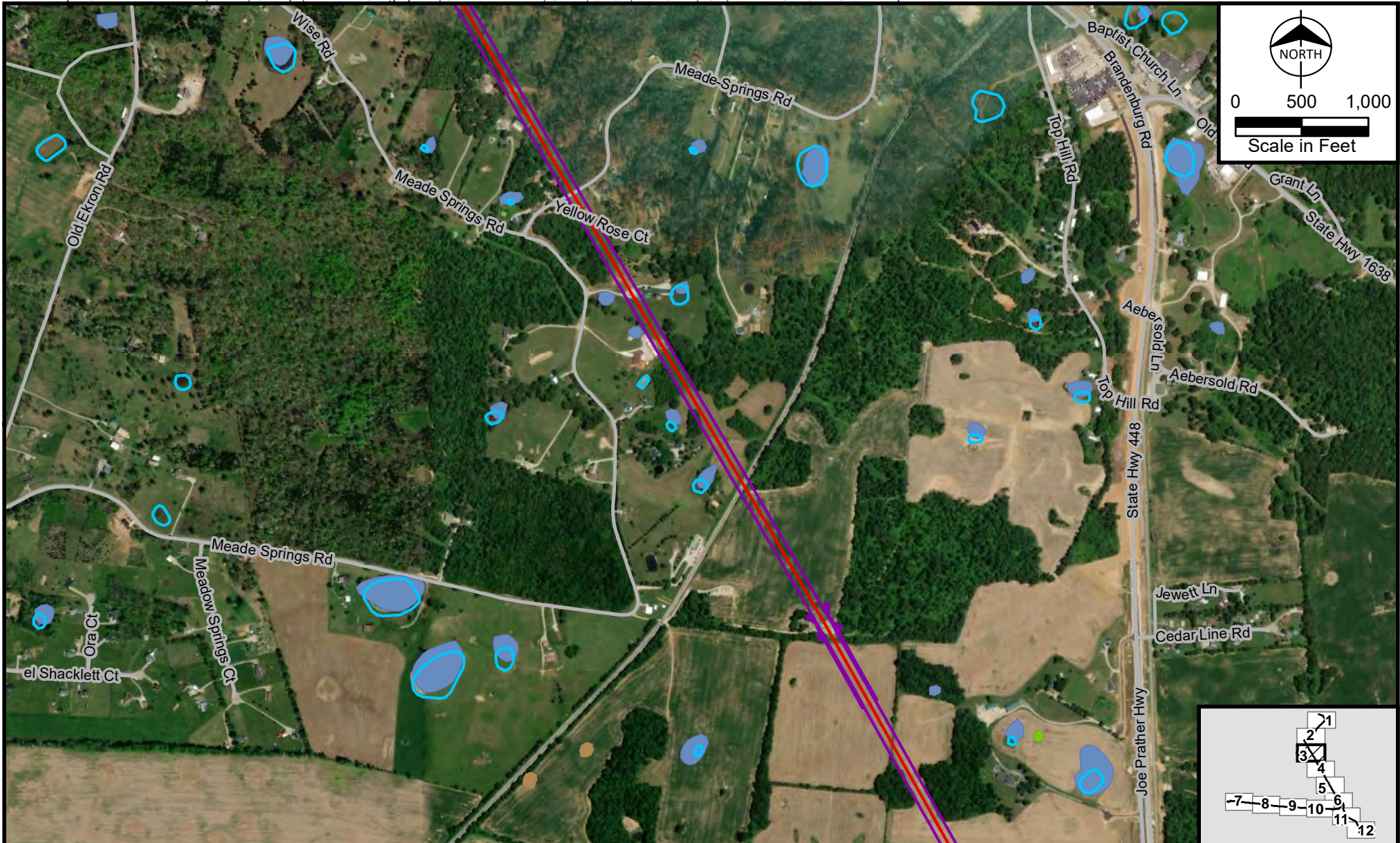
Figure H-2
 Big Rivers Electric Corporation
 Brandenburg Steel Mill Service
 345/161-kV Transmission Project
 Water Resources
 Page 1 of 12



Proposed Transmission Line	NHD Waterbody	NWI-Mapped Wetland
Partial Rebuild	Freshwater Emergent Wetland	Freshwater Forested/Shrub Wetland
	Freshwater Pond	



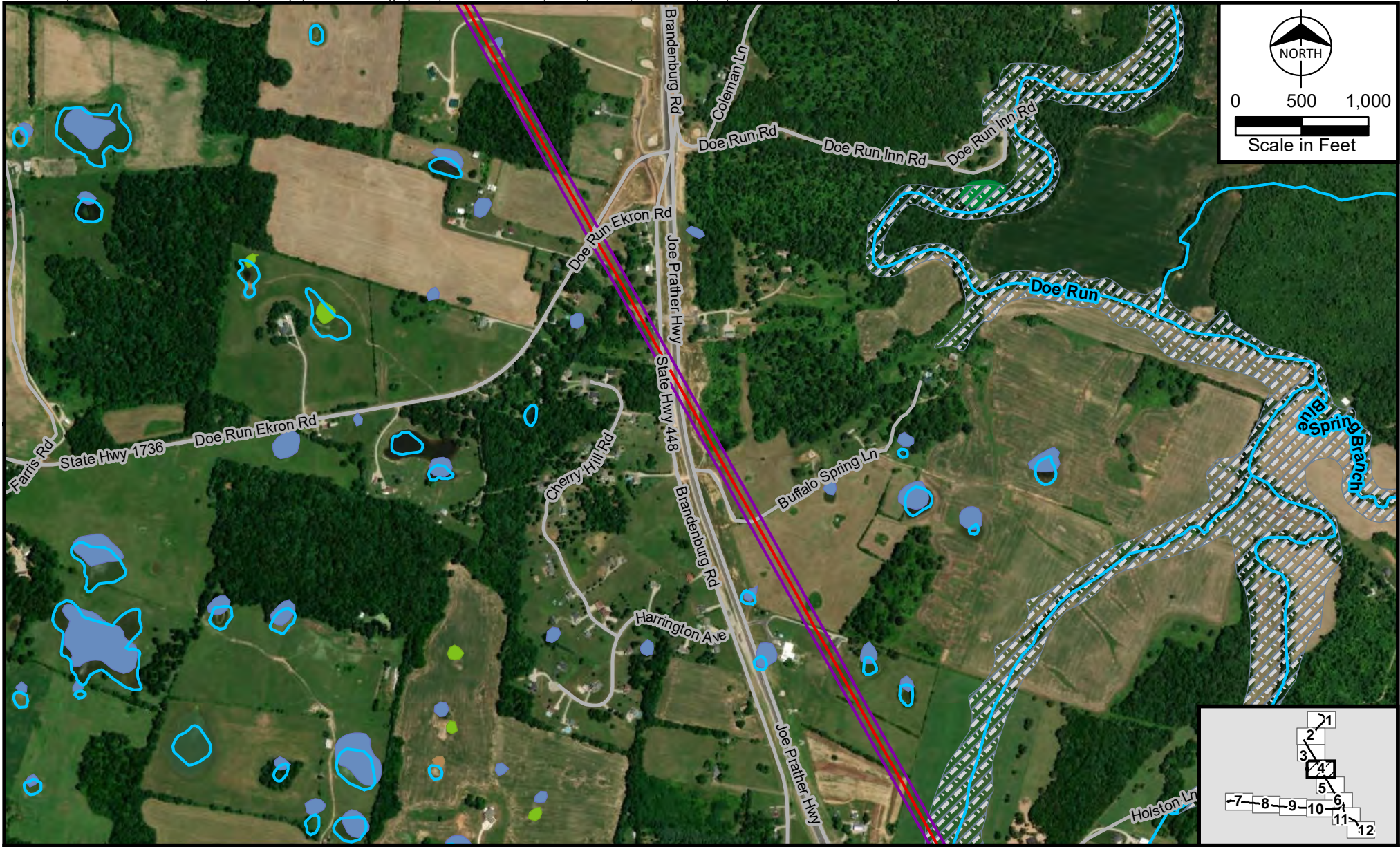
Figure H-3
 Big Rivers Electric Corporation
 Brandenburg Steel Mill Service
 345/161-kV Transmission Project
 Water Resources
 Page 2 of 12



- Proposed Transmission Line NHD Waterbody **NWI-Mapped Wetland**
- ROW**
- Partial Rebuild
- Freshwater Emergent Wetland
- Freshwater Pond
- Other



Figure H-4
Big Rivers Electric Corporation
Brandenburg Steel Mill Service
345/161-kV Transmission Project
Water Resources
 Page 3 of 12



Proposed Transmission Line	NHD Waterbody	NWI-Mapped Wetland
Partial Rebuild	NHD Flowline	Freshwater Emergent Wetland
	Floodplain	Freshwater Forested/Shrub Wetland
		Freshwater Pond
		Other



Figure H-5
 Big Rivers Electric Corporation
 Brandenburg Steel Mill Service
 345/161-kV Transmission Project
 Water Resources
 Page 4 of 12

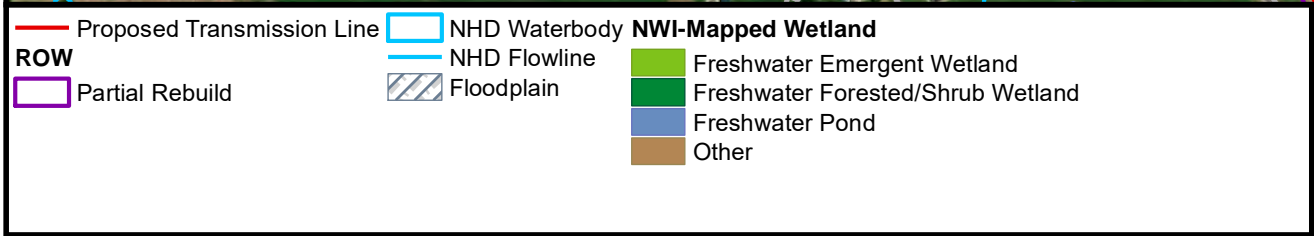
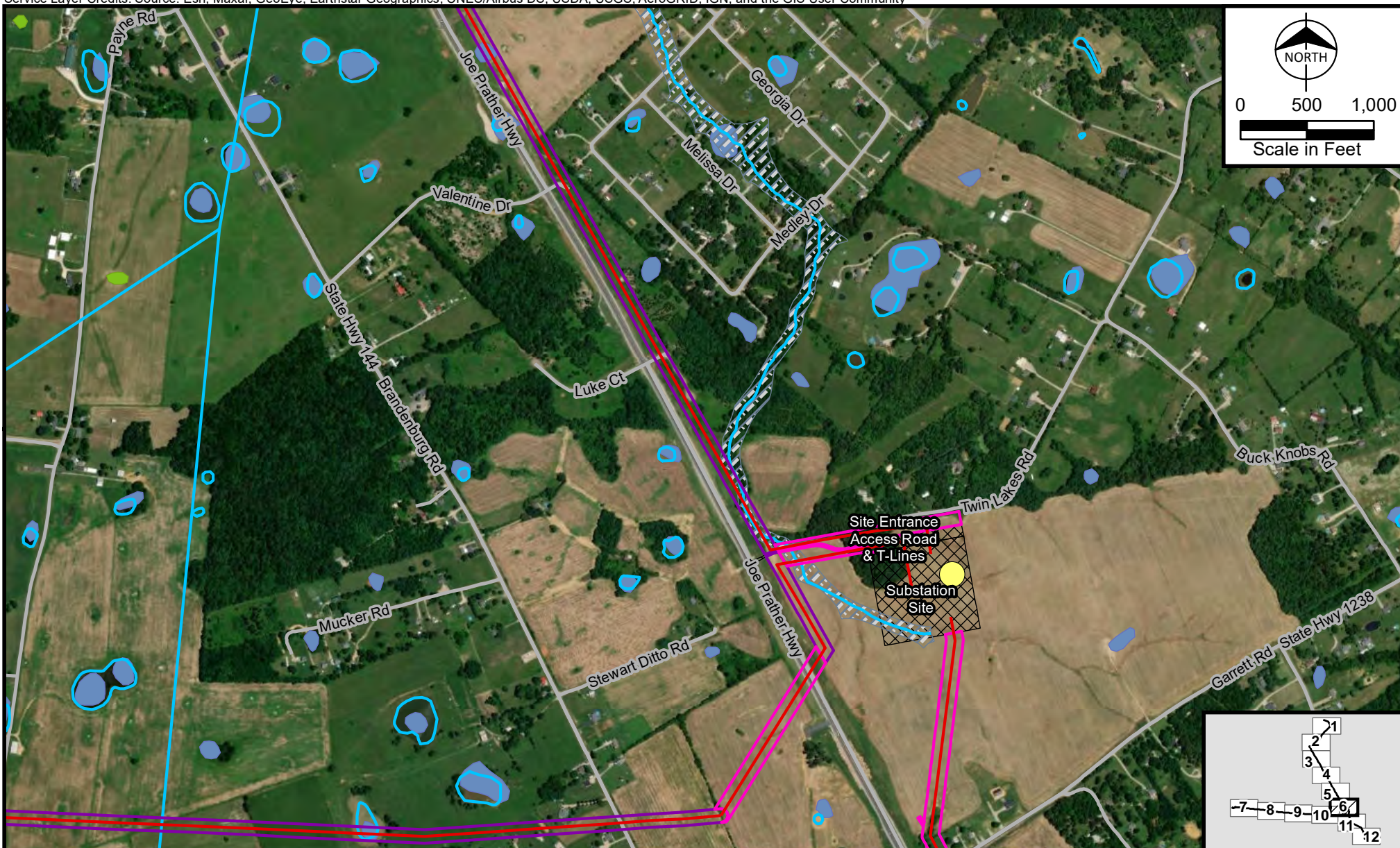


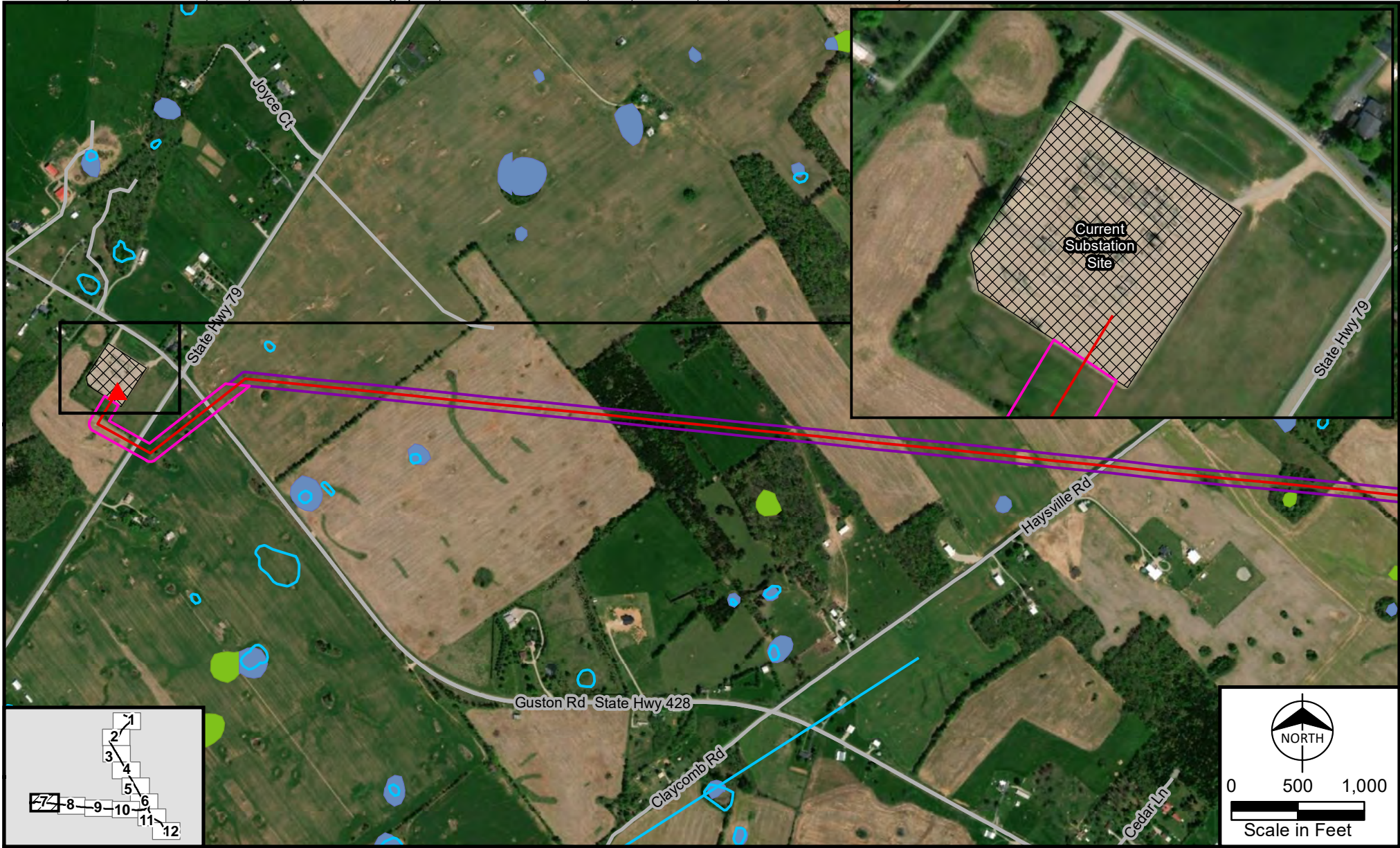
Figure H-6
 Big Rivers Electric Corporation
 Brandenburg Steel Mill Service
 345/161-kV Transmission Project
 Water Resources
 Page 5 of 12



Otter Creek Substation	NHD Waterbody	NWI-Mapped Wetland
Proposed Site	NHD Flowline	Freshwater Emergent Wetland
Proposed Transmission Line	Floodplain	Freshwater Pond
ROW		
Greenfield		
Partial Rebuild		



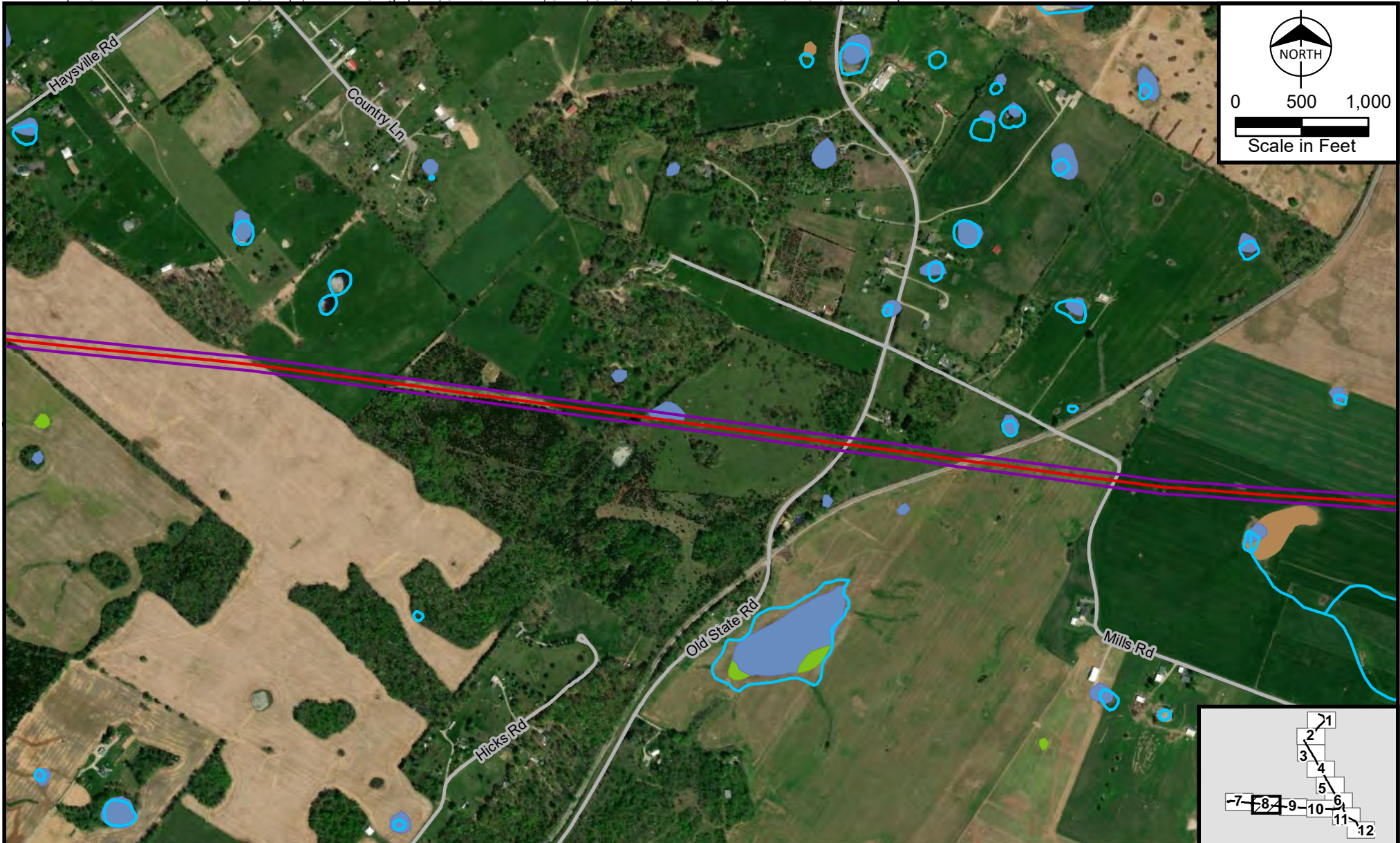
Figure H-7
 Big Rivers Electric Corporation
 Brandenburg Steel Mill Service
 345/161-kV Transmission Project
 Water Resources
 Page 6 of 12



Meade County Substation Modification	NHD Waterbody	NWI-Mapped Wetland
Proposed Site	NHD Flowline	Freshwater Emergent Wetland
Proposed Transmission Line	Freshwater Pond	
ROW		
Greenfield		
Partial Rebuild		



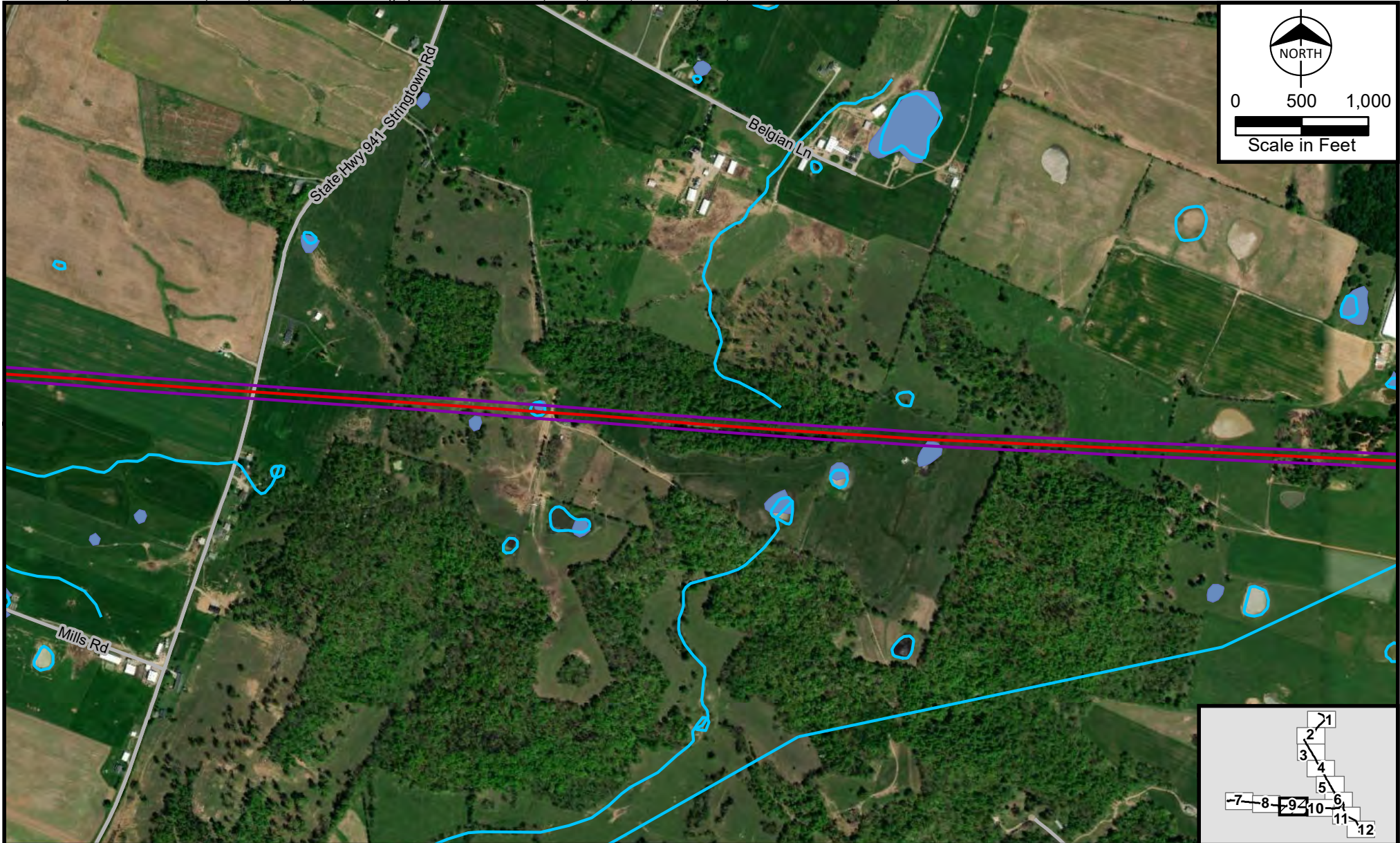
Figure H-8
 Big Rivers Electric Corporation
 Brandenburg Steel Mill Service
 345/161-kV Transmission Project
 Water Resources
 Page 7 of 12



- | | | |
|----------------------------|---------------|-----------------------------|
| Proposed Transmission Line | NHD Waterbody | NWI-Mapped Wetland |
| Partial Rebuild | NHD Flowline | Freshwater Emergent Wetland |
| | | Freshwater Pond |
| | | Other |



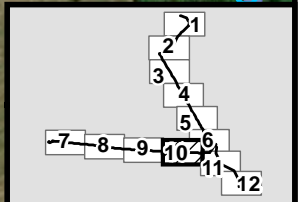
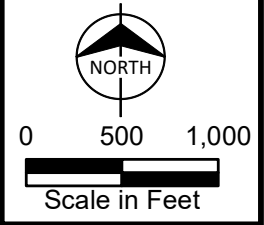
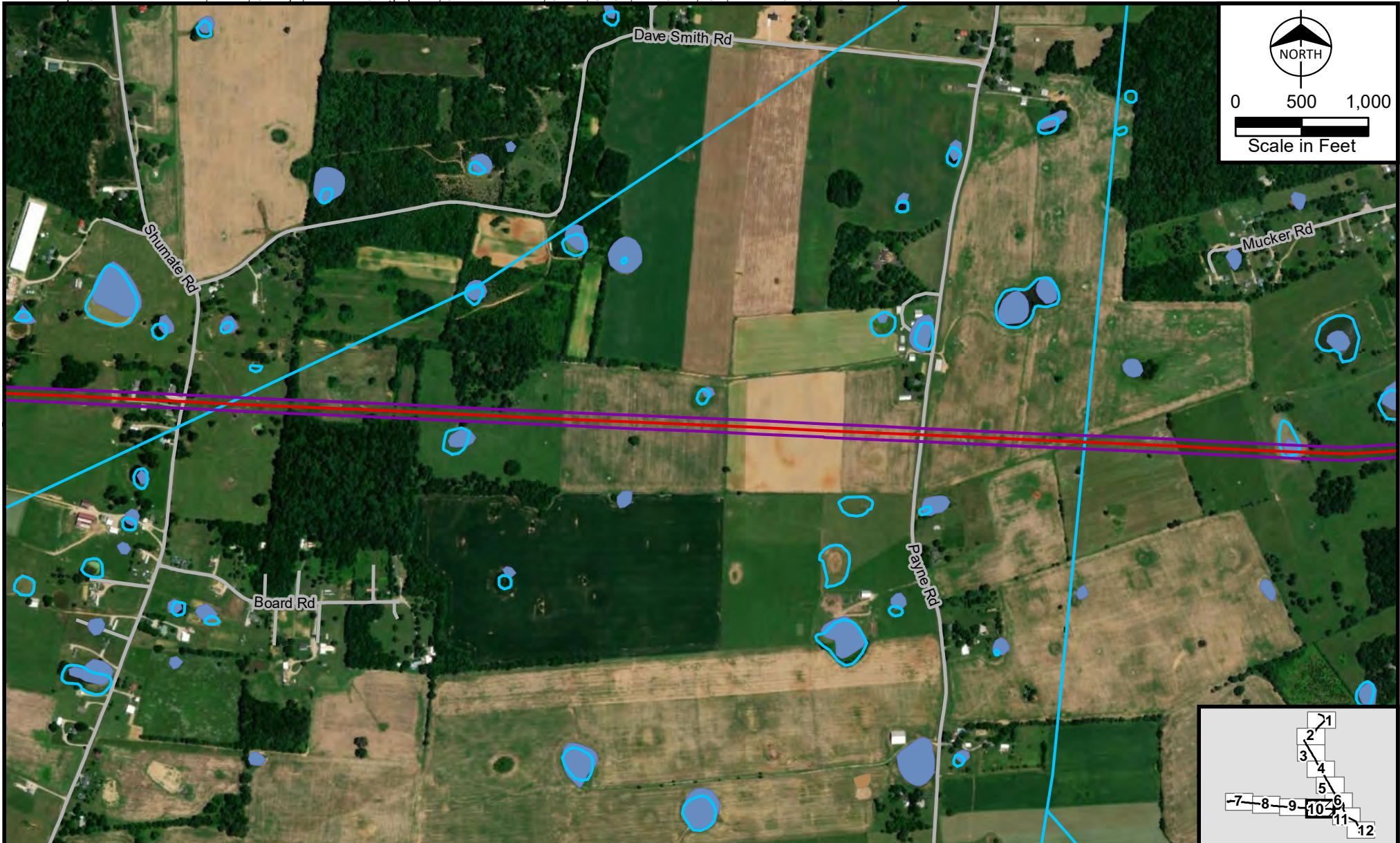
Figure H-9
 Big Rivers Electric Corporation
 Brandenburg Steel Mill Service
 345/161-kV Transmission Project
 Water Resources
 Page 8 of 12



- Proposed Transmission Line
- NHD Waterbody
- NWI-Mapped Wetland
- NHD Flowline
- Freshwater Emergent Wetland
- Partial Rebuild
- Freshwater Pond



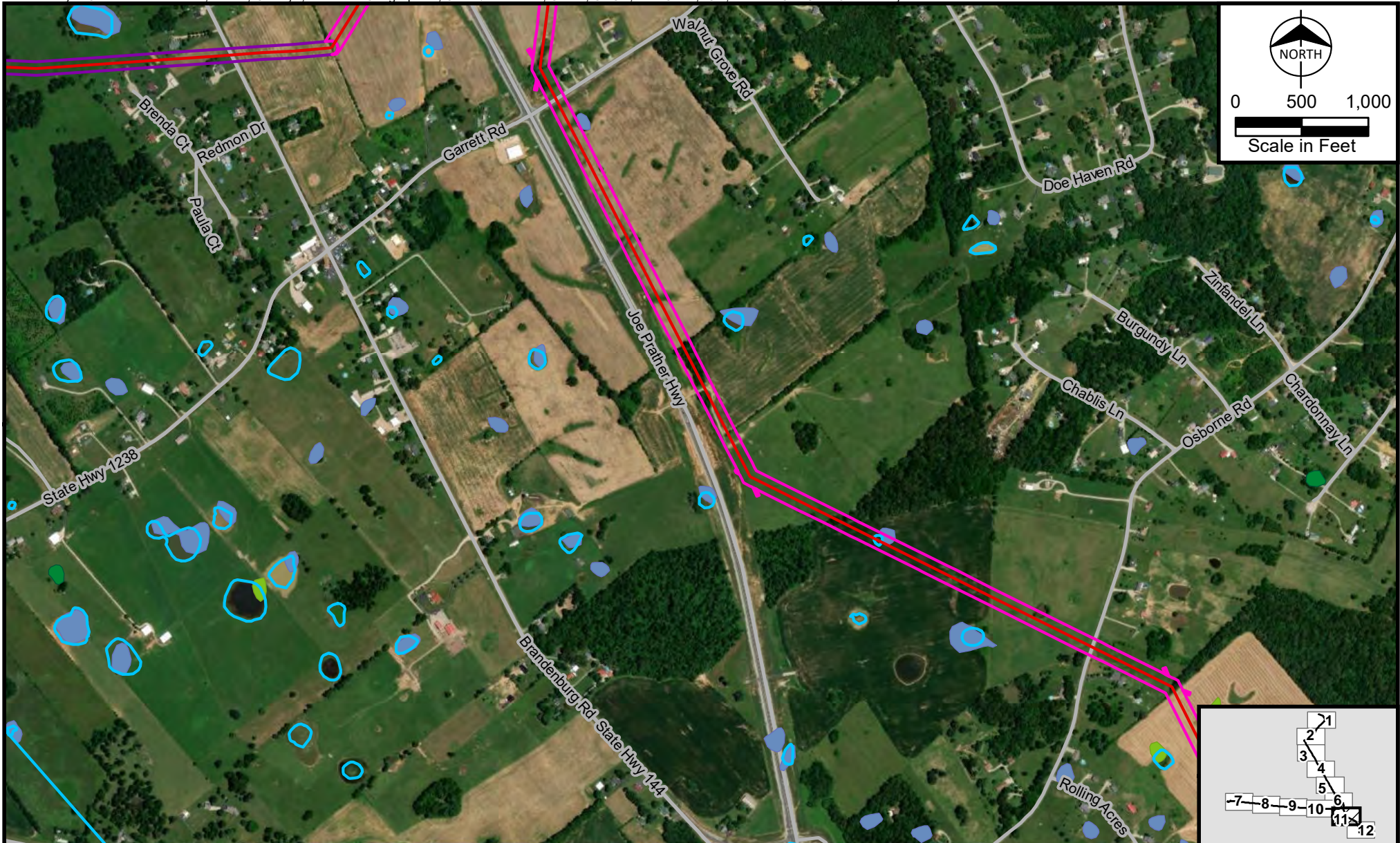
Figure H-10
Big Rivers Electric Corporation
Brandenburg Steel Mill Service
345/161-kV Transmission Project
Water Resources
 Page 9 of 12



- Proposed Transmission Line
- NHD Waterbody
- NWI-Mapped Wetland
- NHD Flowline
- Freshwater Pond
- Partial Rebuild
- Other



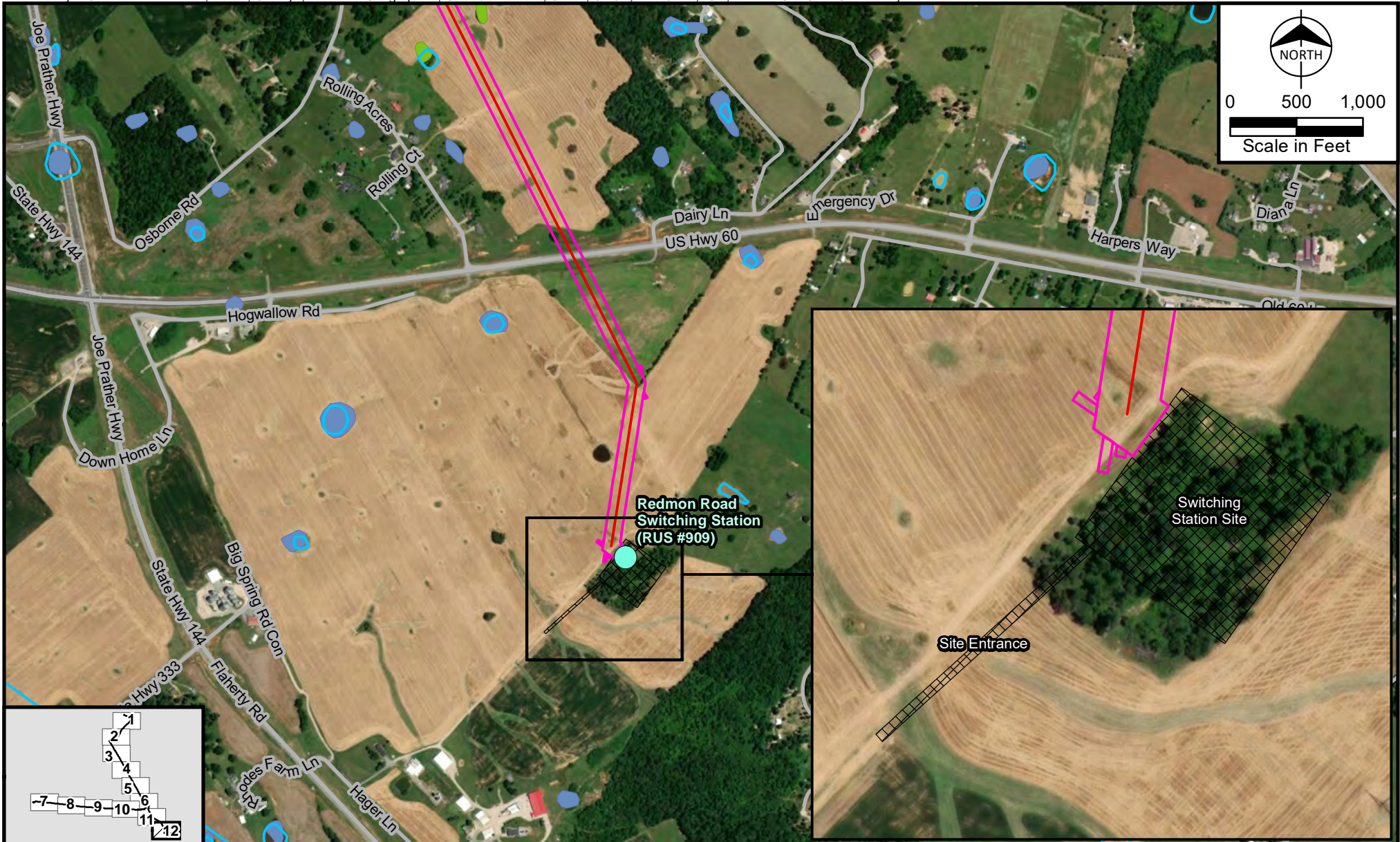
Figure H-11
Big Rivers Electric Corporation
Brandenburg Steel Mill Service
345/161-kV Transmission Project
Water Resources
 Page 10 of 12



- | | | |
|----------------------------|---------------|-----------------------------------|
| Proposed Transmission Line | NHD Waterbody | Freshwater Emergent Wetland |
| ROW | NHD Flowline | Freshwater Forested/Shrub Wetland |
| Greenfield | | Freshwater Pond |
| Partial Rebuild | | |



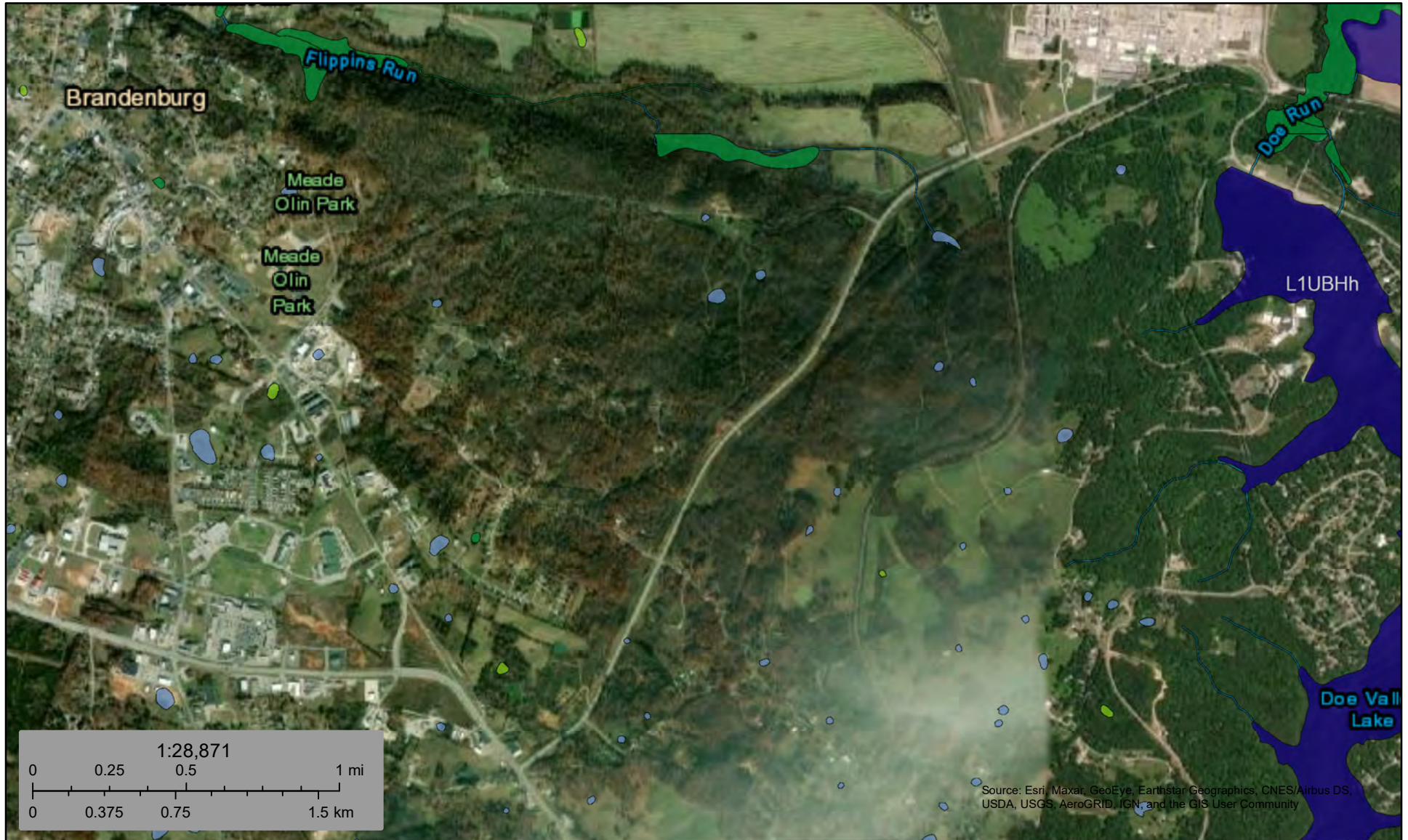
Figure H-12
 Big Rivers Electric Corporation
 Brandenburg Steel Mill Service
 345/161-kV Transmission Project
 Water Resources
 Page 11 of 12



- Redmon Road Switching Station
- NHD Waterbody
- NWI-Mapped Wetland
- Proposed Site
- NHD Flowline
- Freshwater Emergent Wetland
- Proposed Transmission Line
- Freshwater Pond
- ROW**
- Greenfield



Figure H-13
Big Rivers Electric Corporation
Brandenburg Steel Mill Service
345/161-kV Transmission Project
Water Resources
 Page 12 of 12

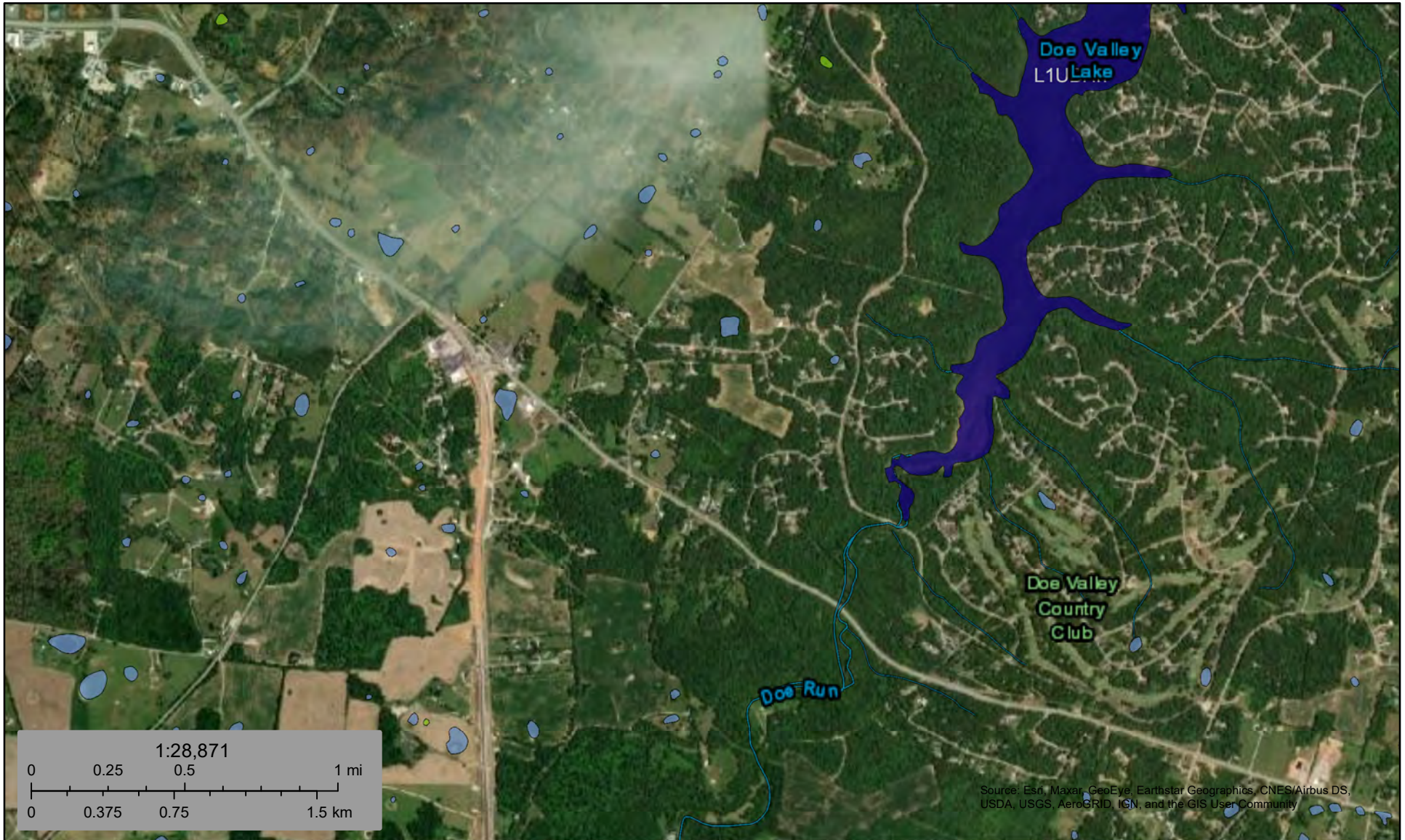


October 8, 2020

Wetlands









- | | | | | | |
|---|--------------------------------|---|-----------------------------------|---|----------|
|  | Estuarine and Marine Deepwater |  | Freshwater Emergent Wetland |  | Lake |
|  | Estuarine and Marine Wetland |  | Freshwater Forested/Shrub Wetland |  | Other |
| | |  | Freshwater Pond |  | Riverine |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.



October 8, 2020

Wetlands









- | | | | | | |
|---|--------------------------------|---|-----------------------------------|---|----------|
|  | Estuarine and Marine Deepwater |  | Freshwater Emergent Wetland |  | Lake |
|  | Estuarine and Marine Wetland |  | Freshwater Forested/Shrub Wetland |  | Other |
| | |  | Freshwater Pond |  | Riverine |

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October 8, 2020

Wetlands









- | | | |
|--|---|--|
|  Estuarine and Marine Deepwater |  Freshwater Emergent Wetland |  Lake |
|  Estuarine and Marine Wetland |  Freshwater Forested/Shrub Wetland |  Other |
| |  Freshwater Pond |  Riverine |

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October 8, 2020

Wetlands









- | | | |
|--|---|--|
|  Estuarine and Marine Deepwater |  Freshwater Emergent Wetland |  Lake |
|  Estuarine and Marine Wetland |  Freshwater Forested/Shrub Wetland |  Other |
| |  Freshwater Pond |  Riverine |

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October 8, 2020

Wetlands

- | | | |
|--|---|--|
|  Estuarine and Marine Deepwater |  Freshwater Emergent Wetland |  Lake |
|  Estuarine and Marine Wetland |  Freshwater Forested/Shrub Wetland |  Other |
| |  Freshwater Pond |  Riverine |

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October 8, 2020

Wetlands

- | | | |
|--|---|--|
|  Estuarine and Marine Deepwater |  Freshwater Emergent Wetland |  Lake |
|  Estuarine and Marine Wetland |  Freshwater Forested/Shrub Wetland |  Other |
| |  Freshwater Pond |  Riverine |

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DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, LOUISVILLE DISTRICT
600 DR. MARTIN LUTHER KING JR PL
LOUISVILLE, KY 40202

November 21, 2019

Regulatory Division
South Branch
ID No. LRL-2019-1039-sea

Ms. Samantha Nekołny
Burns & McDonnell
1431 Opus Place, Suite 400
Downers Grove, Illinois 60515

Dear Ms. Nekołny:

This is in response to your request dated November 4, 2019, concerning a proposal to construct the Brandenburg Steel Mill 345 & 161-kV Transmission Project in Meade County, Kentucky.

The U.S. Army Corps of Engineers (USACE) exercises regulatory authority under Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403) and Section 404 of the Clean Water Act, 1972 (33 USC 1344) for certain activities in "waters of the United States (U.S.)." These waters include all waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce. "Waters of the U.S." include hydrologically connected lakes, rivers, and stream channels exhibiting an Ordinary High Water Mark (OHWM); wetlands; sloughs; and wet meadows and wetlands adjacent to "waters of the U.S."

Based on the information provided by you in the above-referenced request, it appears a Department of the Army (DA) Permit may be required. The mapping you provided shows proposed work in or near what appears to be "waters of the U.S." If the project would necessitate the discharge of dredged or fill material into any "waters of the U.S." including wetlands, then you should submit a DA permit application for review by this office. We will need a completed DA permit application along with additional details regarding the project's design, scope, construction methods, purpose and a delineation of all "waters of the U.S.," including the coordinates and locations of each "water" within the proposed project area and all impacts to waters (linear feet, width and acreage).

You are reminded that all drawings must be submitted on 8½ x 11-inch paper and be of reproducible quality, and if possible, please also submit the information in electronic format via CD (please note we cannot accept thumb drives).

Our comments on this project are limited to only those effects which may fall within our area of jurisdiction and thus does not obviate the need to obtain other permits from State or local agencies.

Further information on the Regulatory Program, including the DA Permit application, can be obtained from our website at <http://www.lrl.usace.army.mil/Missions/Regulatory.aspx>. Please allow sufficient time in your preconstruction schedule for the processing of a DA permit application.

Your request has been assigned ID No. LRL-2019-1039-sea. Please reference this number on all correspondence pertaining to this project. Please contact us by writing to the District Regulatory Office at the above address, ATTN: CELRL-RDS, or contact me directly at (502) 315-6711 or Sarah.E.Atherton@usace.army.mil.

Sincerely,



Sarah Atherton
Project Manager
South Branch

APPENDIX I – FEMA FIRM MAPS

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations (BFEs)** and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Kentucky State Plane coordinate system (FIPSZONE 1600). The **horizontal datum** was NAD83. Differences in datum, spheroid, projection or state plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov/> or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242 or visit its website at <http://www.ngs.noaa.gov/>.

Base Map information shown on this FIRM was derived from the U.S.D.A. Farm Service Agency National Agriculture Imagery Program (NAIP) produced at a scale of 1:12,000 from photography dated 2004.

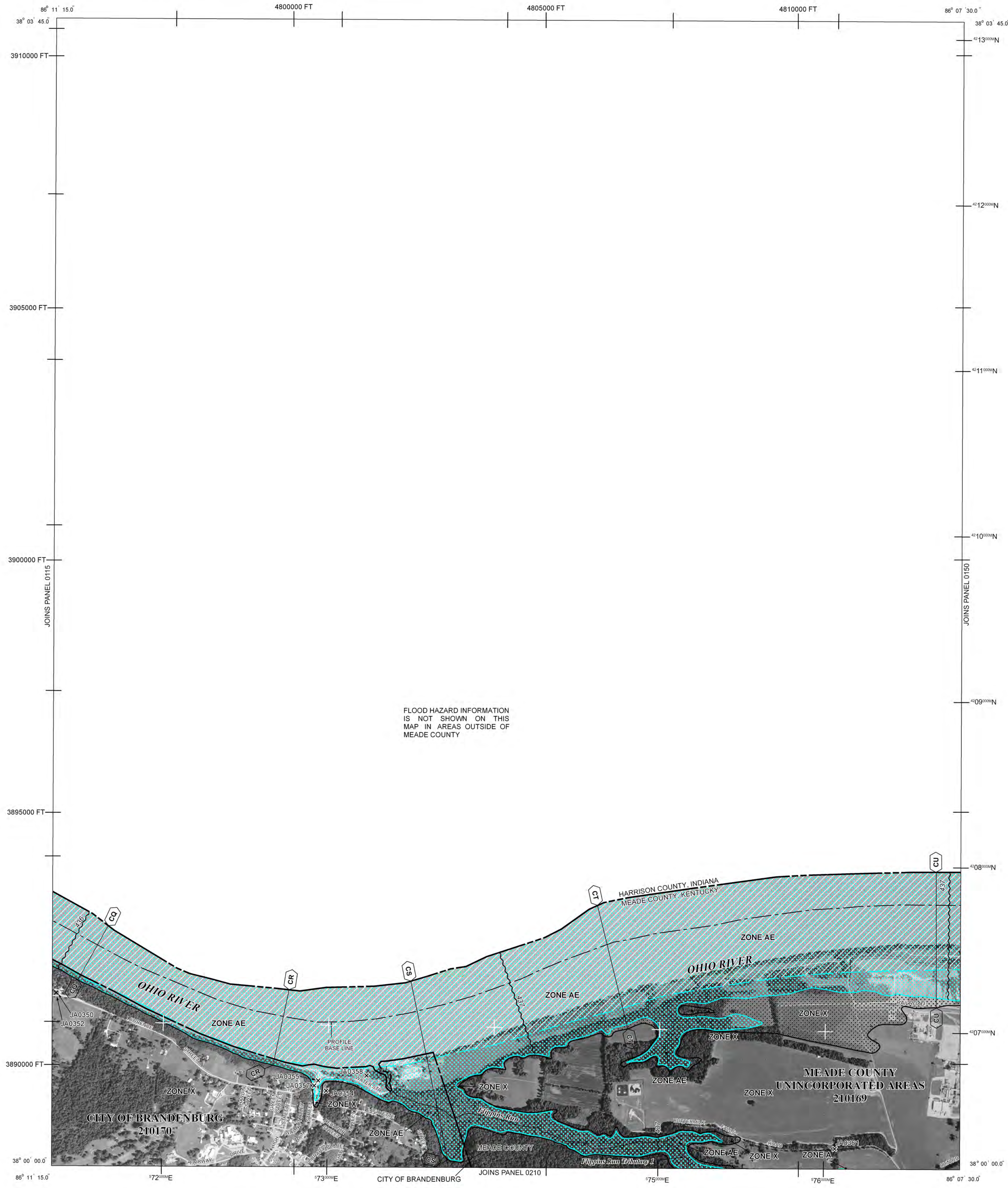
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Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

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For information on available products associated with this FIRM visit the **Map Service Center (MSC)** website at <http://msc.fema.gov/>. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the MSC website.

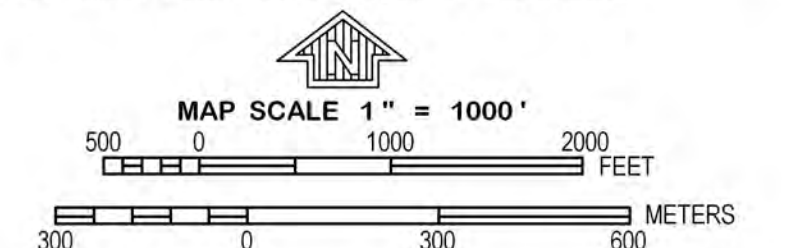
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FLOOD HAZARD INFORMATION IS NOT SHOWN ON THIS MAP IN AREAS OUTSIDE OF MEADE COUNTY

LEGEND

- SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD**
- The 1% annual chance flood (100 year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard may include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.
- ZONE A** No Base Flood Elevations determined.
 - ZONE AE** Base Flood Elevations determined.
 - ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
 - ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
 - ZONE AR** Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
 - ZONE A99** Area to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no Base Flood Elevations determined.
 - ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
 - ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.
- FLOODWAY AREAS IN ZONE AE**
- The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.
- OTHER FLOOD AREAS**
- ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
- OTHER AREAS**
- ZONE X** Areas determined to be outside of the 0.2% annual chance floodplain.
 - ZONE D** Areas in which flood hazards are undetermined, but possible.
- COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS**
- OTHERWISE PROTECTED AREAS (OPAs)**
- CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.
- 1% annual chance floodplain boundary
 - 0.2% annual chance floodplain boundary
 - Floodway boundary
 - Zone D boundary
 - CBRS and OPA boundary
 - Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities
 - Base Flood Elevation line and value; elevation in feet* (EL 10)
- *Referenced to the North American Vertical Datum of 1988
- A — A — Cross section line
 - O — O — Transect line
 - 85° 03' 45.0", 41° 24' 22.5" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
 - 487900 M 1000-meter Universal Transverse Mercator grid values, zone 16
 - 2250000 FT 5000-foot grid ticks: Kentucky State Plane coordinate system, zone (FIPSZONE 1600), Lambert Conformal Conic projection
 - KA0015 X Bench mark (see explanation in Notes to Users section of this FIRM panel)
 - M1.5 River Mile
- MAP REPOSITORY**
Refer to listing of Map Repositories on Map Index
- EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP**
JULY 18, 2011
- EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL**



NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0120C

FIRM FLOOD INSURANCE RATE MAP MEADE COUNTY, KENTUCKY AND INCORPORATED AREAS

PANEL 120 OF 350
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
BRANDENBURG CITY OF	210170	0120	C
MEADE COUNTY	210169	0120	C

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER 21163C0120C
EFFECTIVE DATE JULY 18, 2011

Federal Emergency Management Agency

NOTES TO USERS

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Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Kentucky State Plane coordinate system (FIPSZONE 1600). The **horizontal datum** was NAD83. Differences in datum, spheroid, projection or state plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov/> or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, NINGS12
National Geodetic Survey
SSM-C, #6202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

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LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100 year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard may include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.

ZONE AE Base Flood Elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE A99 Area to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside of the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities
- Base Flood Elevation value where uniform within zone; elevation in feet
- 513 (EL 10)

*Referenced to the North American Vertical Datum of 1988

- (A) (A) Cross section line
- (---) (---) Transect line
- 85° 03' 45.0", 41° 24' 22.5" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
- 487900 M 1000-meter Universal Transverse Mercator grid values, zone 16
- 2250000 M 5000-foot grid ticks: Kentucky State Plane coordinate system, zone (FIPSZONE 1600), Lambert Conformal Conic projection
- KA0015 X Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M 1.5 River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
JULY 18, 2011

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction. To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'

500 0 1000 2000 FEET
300 0 300 600 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0210C

FIRM FLOOD INSURANCE RATE MAP MEADE COUNTY, KENTUCKY AND INCORPORATED AREAS

PANEL 210 OF 350
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
BRANDENBURG CITY OF	210170	0210	C
MEADE COUNTY	210169	0210	C

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER 21163C0210C

EFFECTIVE DATE JULY 18, 2011

Federal Emergency Management Agency

NOTES TO USERS

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NGS Information Services
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1315 East-West Highway
Silver Spring, Maryland 20910-3282
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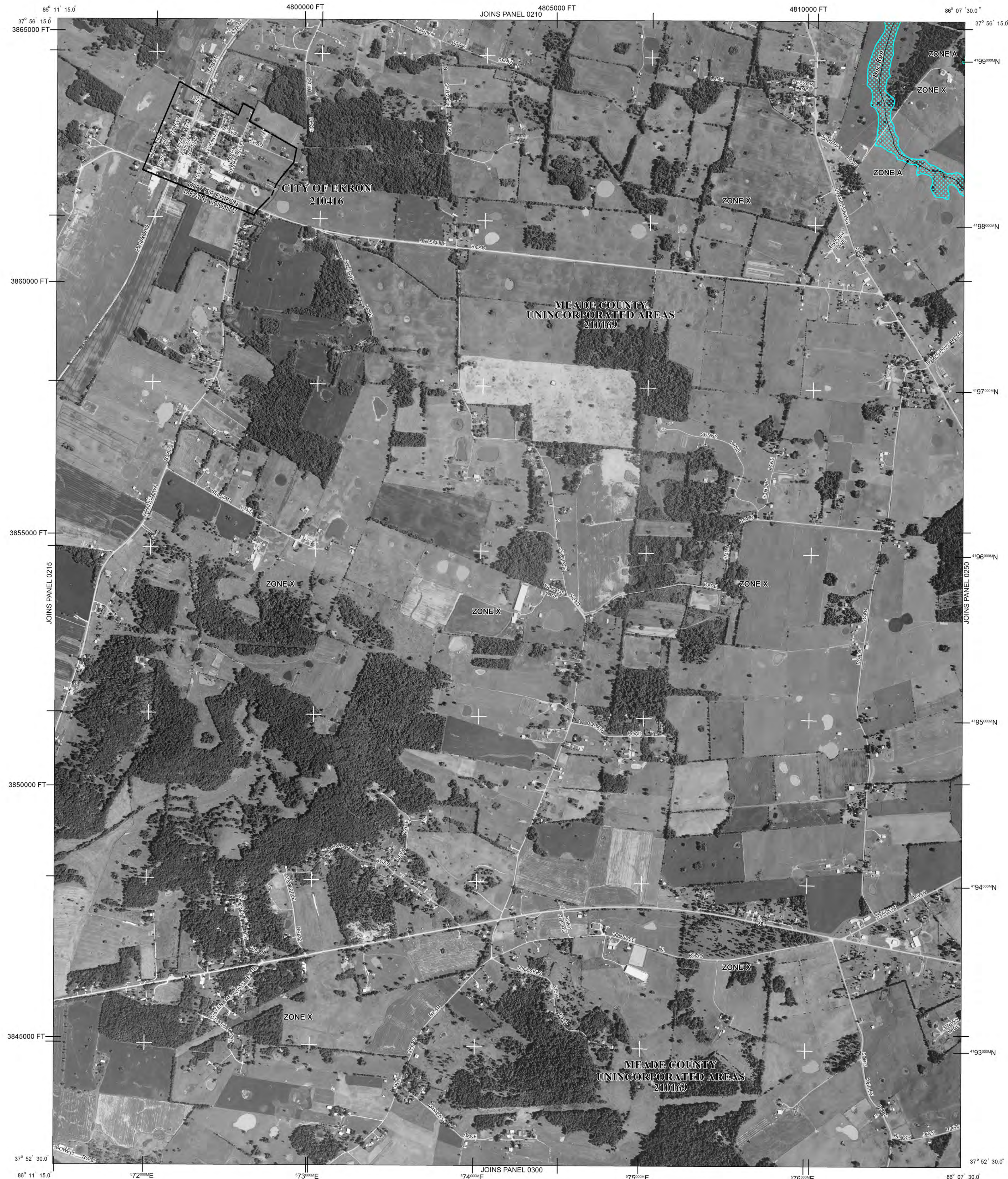
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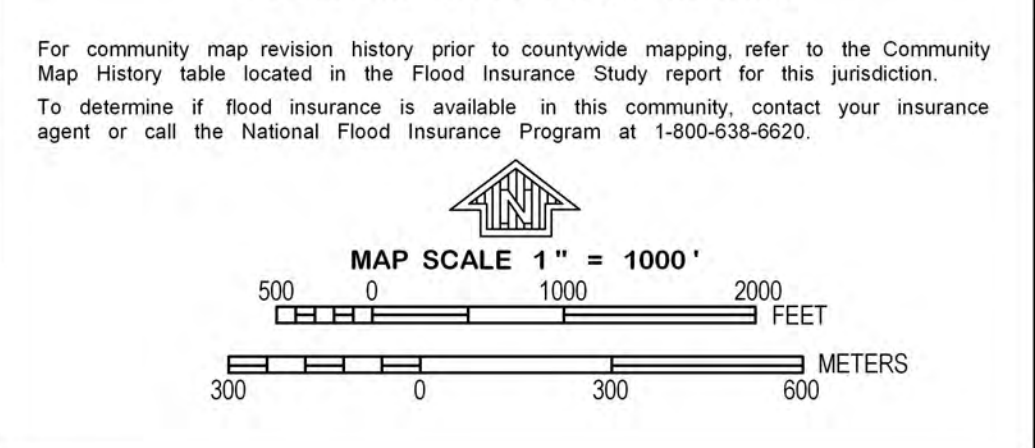
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LEGEND

- SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD
- The 1% annual chance flood (100 year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard may include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.
- ZONE A** No Base Flood Elevations determined.
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- ZONE V** Area to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- FLOODWAY AREAS IN ZONE AE
- The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.
- OTHER FLOOD AREAS
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- 5000-foot grid ticks: Kentucky State Plane coordinate system, zone (FIPSZONE 1600), Lambert Conformal Conic projection
- Bench mark (see explanation in Notes to Users section of this FIRM panel)
- River Mile
- MAP REPOSITORY
- Refer to listing of Map Repositories on Map Index
- EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP: JULY 18, 2011
- EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL:



PANEL 0220C

FIRM
FLOOD INSURANCE RATE MAP
MEADE COUNTY,
KENTUCKY
AND INCORPORATED AREAS

PANEL 220 OF 350
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
EKRON CITY OF	210416	0220	C
MEADE COUNTY	210169	0220	C

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
21163C0220C
EFFECTIVE DATE
JULY 18, 2011

Federal Emergency Management Agency

NOTES TO USERS

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NGS Information Services
NOAA, NINGS12
National Geodetic Survey
SSMC-3, #6202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242 or visit its website at <http://www.ngs.noaa.gov/>.

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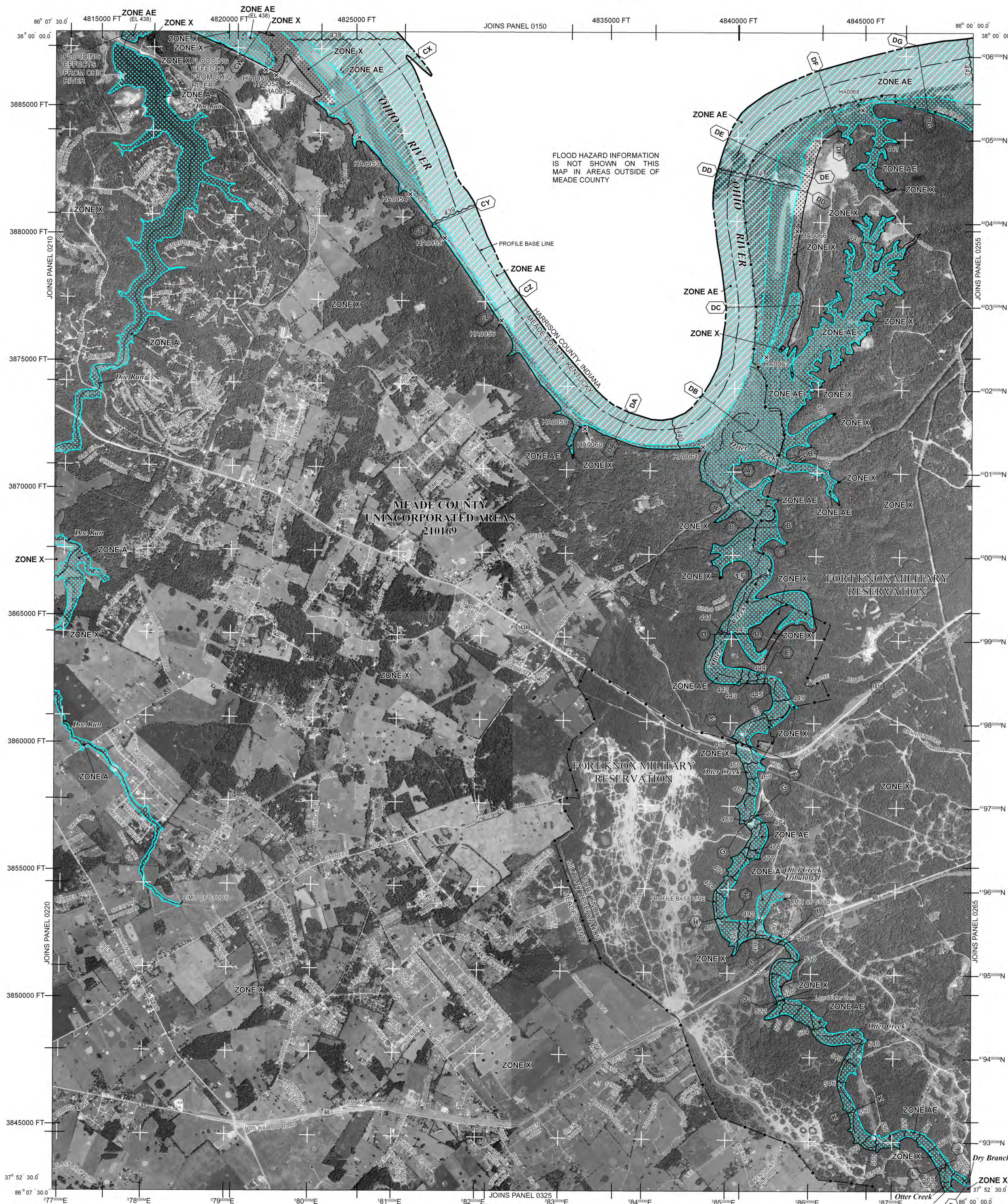
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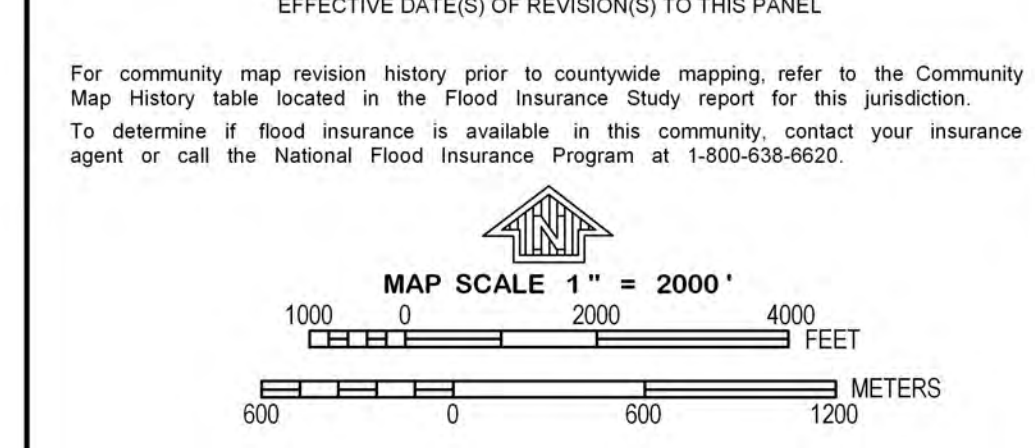
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LEGEND

- SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD
- The 1% annual chance flood (100 year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard may include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.
- ZONE A** No Base Flood Elevations determined.
- ZONE AE** Base Flood Elevations determined.
- ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
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- ZONE AR** Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently decommissioned. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- ZONE A99** Area to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.
- FLOODWAY AREAS IN ZONE AE
- The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.
- OTHER FLOOD AREAS
- ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
- OTHER AREAS
- ZONE X** Areas determined to be outside of the 0.2% annual chance floodplain.
- ZONE D** Areas in which flood hazards are undetermined, but possible.
- COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS
- OTHERWISE PROTECTED AREAS (OPAs)
- CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.
- 1% annual chance floodplain boundary
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- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities
- 513 Base Flood Elevation line and value; elevation in feet* (EL 10)
- *Referenced to the North American Vertical Datum of 1988
- Cross section line
- Transect line
- 85° 03' 45.0", 41° 24' 22.5" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
- 4587000 M 1000-meter Universal Transverse Mercator grid values, zone 16
- 2250000 FT 5000-foot grid ticks: Kentucky State Plane coordinate system, zone (FIPSZONE 1600), Lambert Conformal Conic projection
- KA0015 Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 River Mile
- MAP REPOSITORY**
Refer to listing of Map Repositories on Map Index
- EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP**
JULY 18, 2011
- EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL**



NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0250C

FIRM
FLOOD INSURANCE RATE MAP
MEADE COUNTY,
KENTUCKY
AND INCORPORATED AREAS

PANEL 250 OF 350
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:
COMMUNITY: MEADE COUNTY NUMBER: 210169 PANEL SUFFIX: 0250 C

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
21163C0250C
EFFECTIVE DATE
JULY 18, 2011

Federal Emergency Management Agency

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations (BFEs)** and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

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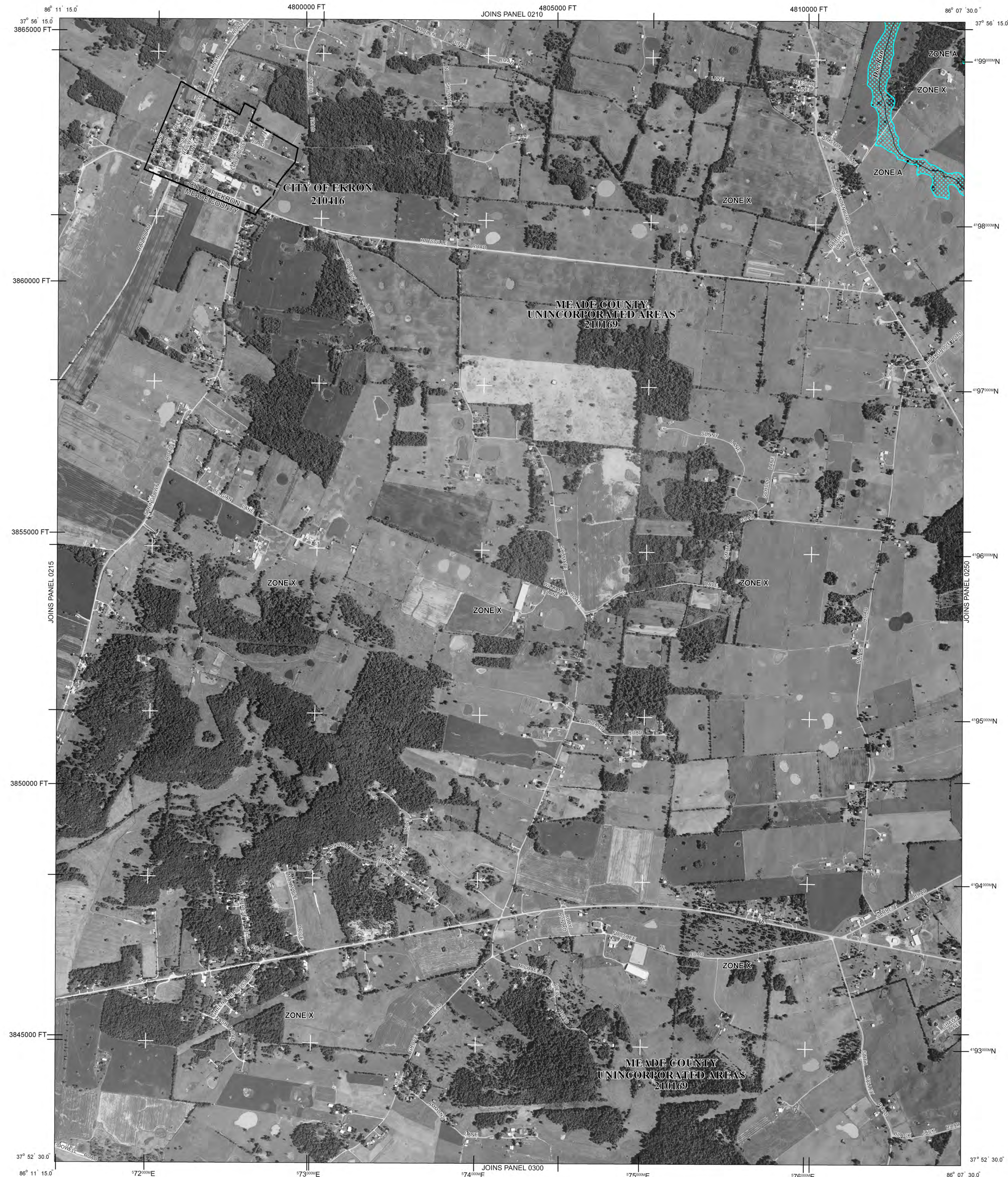
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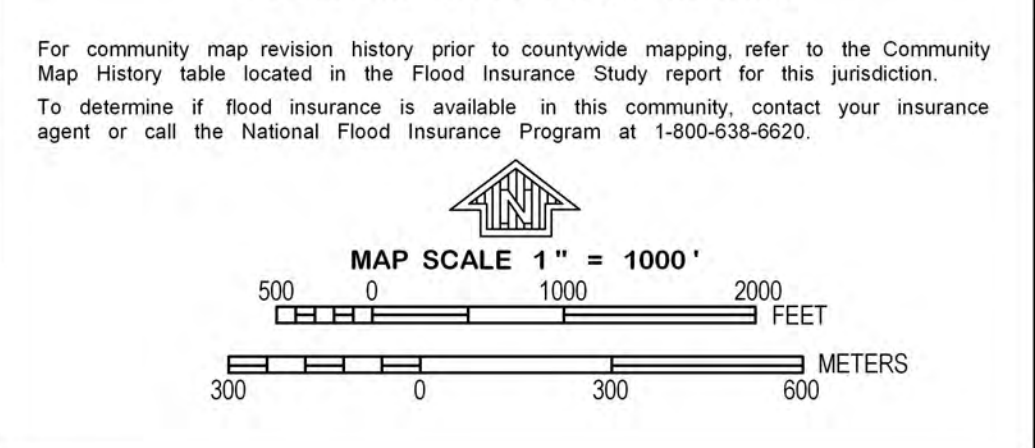
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LEGEND

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 - Base Flood Elevation value where uniform within zone; elevation in feet
- *Referenced to the North American Vertical Datum of 1988
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 - D** Transect line
- 85° 03' 45.0", 41° 24' 22.5"
487900 M
- 2250000 FT
- KA0015** Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M 1.5** River Mile
- MAP REPOSITORY**
Refer to listing of Map Repositories on Map Index
- EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP**
JULY 18, 2011
- EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL**



NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0220C

FIRM FLOOD INSURANCE RATE MAP MEADE COUNTY, KENTUCKY AND INCORPORATED AREAS

PANEL 220 OF 350
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
EKRON CITY OF	210416	0220	C
MEADE COUNTY	210169	0220	C

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
21163C0220C

EFFECTIVE DATE
JULY 18, 2011

Federal Emergency Management Agency

APPENDIX J – AGENCY COORDINATION LETTER AND RECIPIENTS

AGENCY SCOPING LETTER RECIPIENTS

The following agencies were sent a scoping letter on November 4, 2019 with information related to the Project, including an overview of the Project and a location map:

<u>Agency</u>	<u>Representative</u>	<u>Position</u>
1. U.S. Fish and Wildlife Service	Lee Andrews	Field Supervisor
2. U.S. Fish and Wildlife Service	Leo Miranda	Regional Director
3. U.S. Environmental Protection Agency	Christopher Militscher	Chief, NEPA Program Office
4. Federal Emergency Management Agency	Gracia Szczech	Regional Administrator
5. Federal Aviation Administration	Michael O'Harra	Regional Administrator
6. U.S. Army Corps of Engineers	Sarah Atherton	Regulatory Specialist
7. U.S. Army Corps of Engineers	Recipient	Chief
8. U.S. Army Corps of Engineers	Leiellen Atz	Archaeologist
9. U.S. Forest Service	Vicki Christiansen	Chief
10. National Park Service	Bob Vogel	Regional Director
11. USDA Natural Resources Conservation Service	Greg Stone	State Conservationist
12. USDA Natural Resources Conservation Service	James Tillman	Regional Conservationist
13. Kentucky Emergency Management Agency	Michael Dossett	Director
14. Kentucky Heritage Council	Craig Potts	State Historic Preservation Officer
15. Kentucky Department of Fish and Wildlife Resources	Thomas Blackwell	Conservation Officer, Mead County
16. Kentucky Department of Fish and Wildlife Resources	Kevin Raymond	Private Land Wildlife Biologist, Meade Co.
17. Kentucky Energy and Environment Cabinet	John Small	Commissioner
18. Kentucky Energy and Environment Cabinet	Paulette Akers	Director, Division of Conservation
19. Kentucky Energy and Environment Cabinet	Melissa Duff	Director, Division for Air Quality
20. Kentucky Energy and Environment Cabinet	Peter Goodmann	Director, Division of Water
21. Kentucky Energy and Environment Cabinet	Zeb Weese	Executive Director
22. Kentucky Transportation Cabinet	Paul Sanders	Chief District Engineer, District 4
23. Kentucky Transportation Cabinet	Amanda Spencer	TE Director, Planning
24. Meade County	Ron Dodson	Director
25. Meade County	Karen Chiari	Administrator
26. Meade County	Jeff Padgett	Supervisor
27. City of Brandenburg	Ronnie Joyner	Mayor
28. Kentucky Department for Environmental Protection	Beth Harrod	Section Supervisor, Water Quality Certification

29. Kentucky Department for
Environmental Protection

Jim Oerther

Floodplain Management Section

**EXAMPLE AGENCY
SCOPING LETTER**



November 4, 2019

Example Name
Title
Agency
Street Address
City, State, Zip Code

Re: Big Rivers Electric Corporation

Brandenburg Steel Mill 345 & 161-kV Transmission Project

Dear Example Name,

Burns & McDonnell Engineering Company, Inc. is conducting scoping as part of the preparation of an Environmental Assessment (EA) for the U.S. Department of Agriculture's Rural Utilities Services (RUS), as required by the National Environmental Policy Act (NEPA). Burns & McDonnell has been retained by Big Rivers Electric Corporation (Big Rivers) to prepare a draft EA for submittal to RUS for preparation of a final EA for the Brandenburg Steel Mill 345 & 161-kV Transmission Project (Project) in Meade County, Kentucky.

Nucor has announced plans to construct a steel mill near Brandenburg, Meade County Kentucky that will add a 200 MW load to Big River's system. As a result of this additional load, Big Rivers has identified several projects that are necessary to provide reliable service to this new steel mill and the surrounding area (see Project Study Area map attached). The new service plan would include a new 345-kV/34.5-kV delivery point at the Brandenburg Steel Mill, sourced from a 345-kV/161-kV substation (Otter Creek). This substation would be connected to the existing Meade County substation via a 161-kV connection and a 345-kV transmission connection to the LG&E Circuit. This interconnection will require an EHV switching station at Redmon Road-US60 Area.

More specifically, to support the new Big Rivers transmission network, two new substations and one switching station will be constructed in Meade County. The new Otter Creek 345/161-kV substation will be less than 8 acres and located to avoid environmentally sensitive areas. The second substation is the new Brandenburg Steel Mill 345/34.5-kV substation and would be less than 3 acres and located on the Brandenburg Steel Mill property. The new switching station will be the Redmon Road EHV switching station, and approximately less than 4 acres in size. Additionally, the existing Meade County substation will require a 161 kV transmission source. The substation will be expanded within the existing substation fence to accommodate this increase in voltage. Additionally, nine miles of existing 69 kV circuit will be rebuilt as double circuit 161/69-kV line between the Meade County Substation and the new Otter Creek substation. The new double circuit line will be entirely located within the existing 100-foot right-of-way. The new 161kV connection to the existing Meade County substation will require a terminal addition and no additional land will be acquired or disturbed for this portion of the

Example Name
November 4, 2019
Page 2

project. The Redmon Road switching station will require a new 345-kV transmission circuit to the new Otter Creek substation. Approximately two miles of new transmission line within a new 100-foot wide right-of-way through largely rural areas would be part of this project component. Lastly, the project will require a new 345-kV transmission line from the new Otter Creek Substation to the Nucor steel mill. Approximately nine miles of new 345-kV line within 100-foot right-of-way will be required. Big Rivers is currently evaluating alternative routes for these new lines that minimize clearing requirements and potential impacts to social and sensitive environmental resources in these rural areas.

A summary of these additional projects is below:

- Meade County Substation to Otter Creek Substation 161-kV Line Addition
 - 8.5 miles, pole for pole replacement within existing right-of-way
- New Otter Creek 345/161-kV Substation
- New Brandenburg Steel Mill 345/34.5-kV Substation
- New Redmon Road 345 kV Switching Station
- Expanded Meade County Substation
- New Redmon Road Switching Station to Otter Creek Substation 345-kV Line
- New 9-mile Otter Creek Substation to Brandenburg Steel Mill Substation 345-kV Line

This letter requests that your agency participate in this Project by providing information on the resources, issues, and impacts that will be addressed in the EA documentation. A Project Study Area Map is included for your reference. Your input on any of the following resources is appreciated:

- Land use
- Aesthetics
- Water quality and wetlands
- Air quality
- Soils and geology
- Noise
- Wildlife, vegetation and fisheries, including threatened and endangered species
- Socioeconomics (population, employment, growth, development, environmental justice)
- Human health and safety
- Cultural resources (historic and archaeological sites, cemeteries)
- Transportation and roads (airport and roadway expansions, construction, operations and maintenance)



Example Name
November 4, 2019
Page 3

Please contact me at 630-724-3825 or snekolny@burnsmcd.com with your feedback on these items and if you need additional information. You may also mail responses to me at 1431 Opus Place, Suite 400, Downers Grove, IL, 60515. We would appreciate your response within thirty (30) days of your receipt of this request.

Thank you for your participation and support of this Project.

Sincerely,

A handwritten signature in black ink, appearing to read 'Sue' followed by a stylized flourish.

Samantha Nekolny
Burns & McDonnell, Assistant Environmental Scientist

Enclosure Attachment

cc: Lauren Rayburn, RUS

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