

Staff Report of Investigation

Speidel-Barnesville 138 kV Transmission Line Rebuild Project

Case Number 16-0437-EL-BTX

November 16, 2016



Power Siting
Board

John R. Kasich, Governor | Asim Z. Haque, Chairman

**In the Matter of the Application of AEP Ohio)
Transmission Company for a Certificate of)
Environmental Compatibility and Public Need for the)
Speidel-Barnesville 138 kV Transmission Line Rebuild)
Project.)**

16-0437-EL-BTX

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Submitted to the
OHIO POWER SITING BOARD

BEFORE THE POWER SITING BOARD OF THE STATE OF OHIO

In the Matter of the Application of AEP Ohio)
Transmission Company for a Certificate of)
Environmental Compatibility and Public Need for the) **16-0437-EL-BTX**
Speidel-Barnesville 138 kV Transmission Line Rebuild)
Project.)

Chairman, Public Utilities Commission	Director, Department of Natural Resources
Director, Department of Agriculture	Public Member
Director, Development Services Agency	Ohio House of Representatives
Director, Environmental Protection Agency	Ohio Senate
Director, Department of Health	

To the Honorable Power Siting Board:

In accordance with the Ohio Revised Code (R.C.) 4906.07(C) and rules of the Ohio Power Siting Board (Board), Staff has completed its investigation in the above matter and submits its findings and recommendations in this staff report for consideration by the Board.

The Staff of the Public Utilities Commission of Ohio (Staff) has prepared this *Staff Report of Investigation*. The findings and recommendations contained in this report are the result of Staff coordination with the following agencies that are members of the Board: Ohio Environmental Protection Agency, the Ohio Department of Health, the Ohio Development Services Agency, the Ohio Department of Natural Resources, and the Ohio Department of Agriculture. In addition, the Staff coordinated with the Ohio Department of Transportation, the Ohio Historic Preservation Office, the U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers, and the Federal Aviation Administration.

In accordance with R.C. 4906.07 and 4906.12, copies of this staff report have been filed with the Docketing Division of the Public Utilities Commission of Ohio and served upon the Applicant or its authorized representative, the parties of record, and the main public libraries of the political subdivisions in the project area.

The staff report presents the results of the Staff's investigation conducted in accordance with R.C. Chapter 4906 and the rules of the Board, and does not purport to reflect the views of the Board nor should any party to the instant proceeding consider the Board in any manner constrained by the findings and recommendations set forth herein.

Respectfully submitted,



Patrick Donlon
Director, Rates and Analysis
Public Utilities Commission of Ohio

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I. POWERS AND DUTIES

OHIO POWER SITING BOARD

The Ohio Power Siting Board (Board) was created in 1972, by amended Substitute House Bill 694. The authority of the Board is prescribed by Ohio Revised Code (R.C.) Chapter 4906.

R.C. 4906.03 authorizes the Board to issue certificates of environmental compatibility and public need for the construction, operation, and maintenance of major utility facilities defined in R.C. 4906.01. Included within this definition of major utility facilities are: electric generating plants and associated facilities designed for, or capable of, operation at 50 megawatts (MW) or more; electric transmission lines and associated facilities of a design capacity greater than or equal to 125 kilovolts (kV); and gas and natural gas transmission lines greater than 500 feet in length and more than nine inches in outside diameter, and associated facilities, designed for, or capable of, transporting gas or natural gas at pressures in excess of 125 pounds per square inch. In addition, pursuant to R.C. 4906.20, the Board authority applies to economically significant wind farms, defined in R.C. 4906.13(A) as wind turbines and associated facilities with a single interconnection to the electrical grid and designed for, or capable of, operation at an aggregate capacity of 5 MW or greater but less than 50 MW.

Membership of the Board is specified in R.C. 4906.02(A). The voting members include: the Chairman of the Public Utilities Commission of Ohio (PUCO) who serves as Chairman of the Board; the directors of the Ohio Environmental Protection Agency (Ohio EPA), the Ohio Department of Health, the Ohio Development Services Agency, the Ohio Department of Agriculture, and the Ohio Department of Natural Resources (ODNR); and a member of the public, specified as an engineer, appointed by the Governor from a list of three nominees provided by the Ohio Consumers' Counsel. Ex-officio Board members include two members (with alternates) from each house of the Ohio General Assembly.

NATURE OF INVESTIGATION

The Board has promulgated rules and regulations, found in Chapter 4906 of the Ohio Administrative Code (Ohio Adm.Code), which establish application procedures for major utility facilities and wind farms.

Application Procedures

Any person that wishes to construct a major utility facility or economically significant wind farm in this state must first submit to the Board an application for a certificate of environmental compatibility and public need.¹ The application must include a description of the facility and its location, a summary of environmental studies, a statement explaining the need for the facility and how it fits into the Applicant's energy forecasts (for transmission projects), and any other information the Board may consider relevant.²

Within 60 days of receiving an application, the Board must determine whether the application is sufficiently complete to begin an investigation. If an application is considered complete, the Chairman of the Board will cause a public hearing to be held 60 to 90 days after the official filing

¹ R.C. 4906.04 and 4906.20.

² R.C. 4906.10(A) and 4906.20(B)(1).

date of the completed application. At the public hearing, any person may provide written or oral testimony and may be examined by the parties.³

Staff Investigation and Report

The Chairman will also cause each application to be investigated and a report published by the Board's Staff not less than 15 days prior to the public hearing.⁴ The report sets forth the nature of the investigation and contains the findings and conditions recommended by Staff. The Board's Staff, which consists of career professionals drawn from the Staff of the PUCO and other member agencies of the Board, coordinates its investigation among the agencies represented on the Board and with other interested agencies such as the Ohio Department of Transportation (ODOT), the Ohio Historical Society, and the U.S. Fish and Wildlife Service (USFWS).

The technical investigations and evaluations are conducted pursuant to Ohio Adm.Code Chapter 4906. The recommended findings resulting from Staff's investigation are described in the staff report pursuant to R.C. 4906.07(C). The report does not represent the views or opinions of the Board and is only one piece of evidence that the Board may consider when making its decision. Once published, the report becomes a part of the record, is served upon all parties to the proceeding and is made available to any person upon request.⁵ A record of the public hearings and all evidence, including the staff report, may be examined by the public at anytime.⁶

Board Decision

The Board may approve, modify and approve, or deny an application for a certificate of environmental compatibility and public need. If the Board approves, or modifies and approves an application, it will issue a certificate subject to conditions. The certificate is also conditioned upon the facility being in compliance with applicable standards and rules adopted under the Ohio Revised Code.⁷

Upon rendering its decision, the Board must issue an opinion stating its reasons for approving, modifying and approving, or denying an application for a certificate of environmental compatibility and public need.⁸ A copy of the Board's decision and its opinion is memorialized upon the record and must be served upon all parties to the proceeding.⁹ Any party to the proceeding that believes its issues were not adequately addressed by the Board may submit within 30 days an application for rehearing.¹⁰ An entry on rehearing will be issued by the Board within 30 days and may be appealed within 60 days to the Supreme Court of Ohio.¹¹

³ R.C. 4906.08(C).

⁴ R.C. 4906.07.

⁵ R.C. 4906.07(C) and 4906.10.

⁶ R.C. 4906.09 and 4906.12.

⁷ R.C. 4906.10.

⁸ R.C. 4906.11.

⁹ R.C. 4906.10(C).

¹⁰ R.C. 4903.10 and 4906.12.

¹¹ R.C. 4903.11, 4903.12, and 4906.12.

CRITERIA

Staff developed the recommendations and conditions in this *Staff Report of Investigation* pursuant to the criteria set forth in R.C. 4906.10(A), which reads, in part:

The board shall not grant a certificate for the construction, operation, and maintenance of a major utility facility, either as proposed or as modified by the board, unless it finds and determines all of the following:

- (1) The basis of the need for the facility if the facility is an electric transmission line or gas pipeline;
- (2) The nature of the probable environmental impact;
- (3) That the facility represents the minimum adverse environmental impact, considering the state of available technology and the nature and economics of the various alternatives, and other pertinent considerations;
- (4) In the case of an electric transmission line or generating facility, that the facility is consistent with regional plans for expansion of the electric power grid of the electric systems serving this state and interconnected utility systems and that the facility will serve the interests of electric system economy and reliability;
- (5) That the facility will comply with Chapters 3704, 3734, and 6111 of the Revised Code and all rules and standards adopted under those chapters and under sections 1501.33, 1501.34, and 4561.32 of the Revised Code. In determining whether the facility will comply with all rules and standards adopted under section 4561.32 of the Revised Code, the board shall consult with the office of aviation of the division of multi-modal planning and programs of the department of transportation under section 4561.341 of the Revised Code;
- (6) That the facility will serve the public interest, convenience, and necessity;
- (7) In addition to the provisions contained in divisions (A)(1) to (6) of this section and rules adopted under those divisions, what its impact will be on the viability as agricultural land of any land in an existing agricultural district established under Chapter 929 of the Revised Code that is located within the site and alternative site of the proposed major utility facility. Rules adopted to evaluate impact under division (A)(7) of this section shall not require the compilation, creation, submission, or production of any information, document, or other data pertaining to land not located within the site and alternative site; and
- (8) That the facility incorporates maximum feasible water conservation practices as determined by the board, considering available technology and the nature and economics of the various alternatives.

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II. APPLICATION

APPLICANT

The Applicant, AEP Ohio Transmission Company (AEP Ohio Transco), would own, construct, operate, and maintain the proposed Speidel-Barnesville 138 kV Transmission Line. AEP Ohio Transco is a transmission-only affiliate of AEP Ohio/Ohio Power Company, based in Gahanna, Ohio, and is a unit of AEP. The PUCO approved AEP Ohio Transco as a public utility in Ohio in 2010.

HISTORY OF THE APPLICATION

Prior to formally submitting its application, the Applicant consulted with the Staff and representatives of the Board regarding application procedures.

On March 29, 2016, the Applicant held a public informational meeting regarding the proposed electric transmission line rebuild project in Barnesville, Ohio.

On June 9, 2016, the Applicant filed a Motion for Waiver that the application contain survey data under the ecological rule to be within 100 feet of the potential disturbance area of the facility.

On June 24, 2016, the Applicant filed the Speidel-Barnesville 138 kV Transmission Line Rebuild application.

On July 12, 2016, the Administrative Law Judge issued an Entry granting the Applicant's Waiver Requests.

On August 19, 2016, the Director of Rates and Analysis, PUCO, issued a letter of compliance regarding the application to the Applicant.

On November 10, 2016, the Applicant filed a supplement to the application.

A local public hearing has been scheduled for December 1, 2016 at 6:00 p.m., at the Barnesville High School, 910 Shamrock Drive, Barnesville, Ohio 43713. The evidentiary hearing will commence on December 15, 2016, at 10:00 a.m., in Hearing Room 11-D, at the offices of the PUCO, 180 East Broad Street, Columbus, Ohio, 43215.

This summary of the history of the application does not include every filing in case number 16-0437-EL-BTX. The docketing record for this case, which lists all documents filed to date, can be found online at <http://dis.puc.state.oh.us>.

PROJECT DESCRIPTION

AEP Ohio Transco proposes to construct the Speidel-Barnesville 138 kV Transmission Line in Belmont County, Ohio.¹² The Applicant would own, operate, and maintain the transmission line.

On June 24, 2016, the Applicant filed the Speidel-Barnesville 138 kV Transmission Line Rebuild application. On July 12, 2016, the Administrative Law Judge issued an Entry granting the

¹² "Application to the Ohio Power Siting Board for a Certificate of Environmental Compatibility and Public Need" (Application), American Electric Power Ohio Transmission Company, Inc., June 24, 2016.

Applicant's Waiver Request for information pertaining to field study parameters. The contents of the transmission line application adhere to the rules that were in effect at the time of submittal.

The proposed project involves the installation of a new 138 kV overhead electric transmission line between the existing Speidel Substation and a planned Barnesville distribution substation. To meet 138 kV standards, a 100-foot right-of-way is proposed by the Applicant for the new single circuit transmission line, which would incorporate steel poles for support. The Applicant utilized public input and field survey data to identify route alternatives and further identify a Preferred Route and an Alternate Route.

This project will rebuild the existing Speidel-Barnesville 69 kV Transmission Line, which was built in 1914 and serves the village of Barnesville. The rebuilt line would continue to serve the village of Barnesville with 69 kV transmission service, but would be built to 138 kV design standards. Construction of a planned 138/12 kV distribution substation would replace the existing Barnesville Substation south of the village. As the region develops, this transmission line would be operated at 138 kV to serve the additional future load.

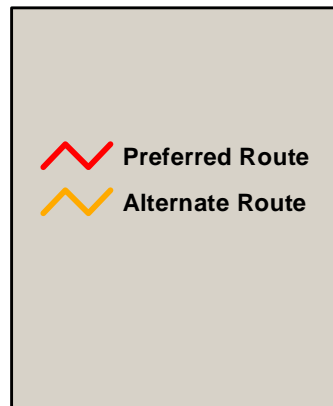
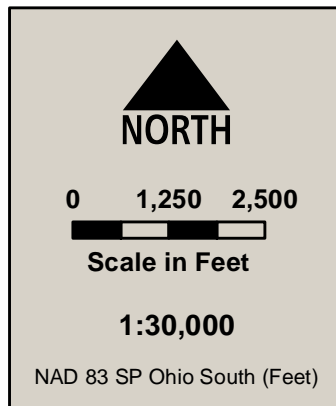
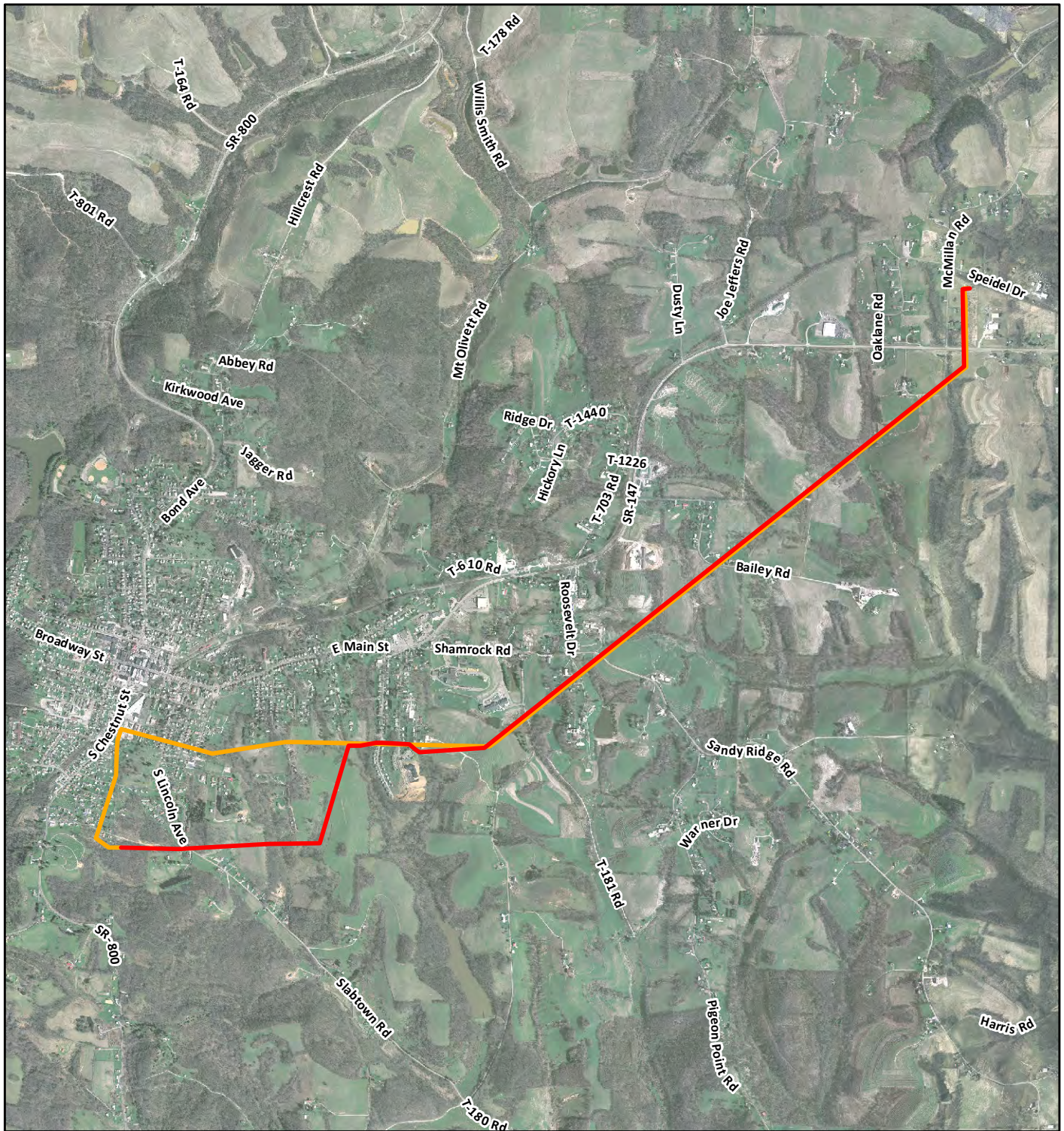
Preferred Transmission Line Route

The Preferred Route is approximately 3.7 miles long, and predominately parallels the existing Speidel-Barnesville 69 kV Transmission Line. This route would be offset by approximately 25 feet from the centerline of the existing 69 kV line in order to ensure safer construction and reliability and to allow the existing line to remain in service during construction.

The Preferred Route exits the existing Speidel Substation and follows the existing 69 kV line to the south and southwest for approximately 2.8 miles. The Preferred Route splits off the existing 69 kV route just south of Grace Avenue. For 0.9 miles, the Preferred Route traverses open pasture and wooded land to the south and southwest, until it reaches the planned Barnesville distribution substation, south of the village of Barnesville.

Alternate Transmission Line Route

The Alternate Route is approximately 4 miles long, and exclusively follows along the centerline of the existing 69 kV Speidel-Barnesville Transmission Line. The Alternate Route exits the Speidel Substation to the south and follows the existing line into the village of Barnesville to the existing Barnesville distribution substation, then south through town to the planned Barnesville distribution substation.

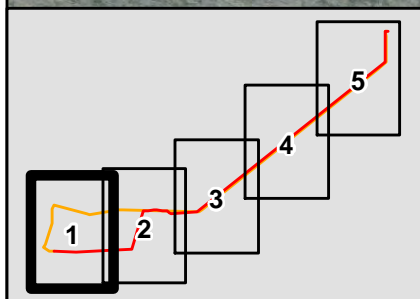
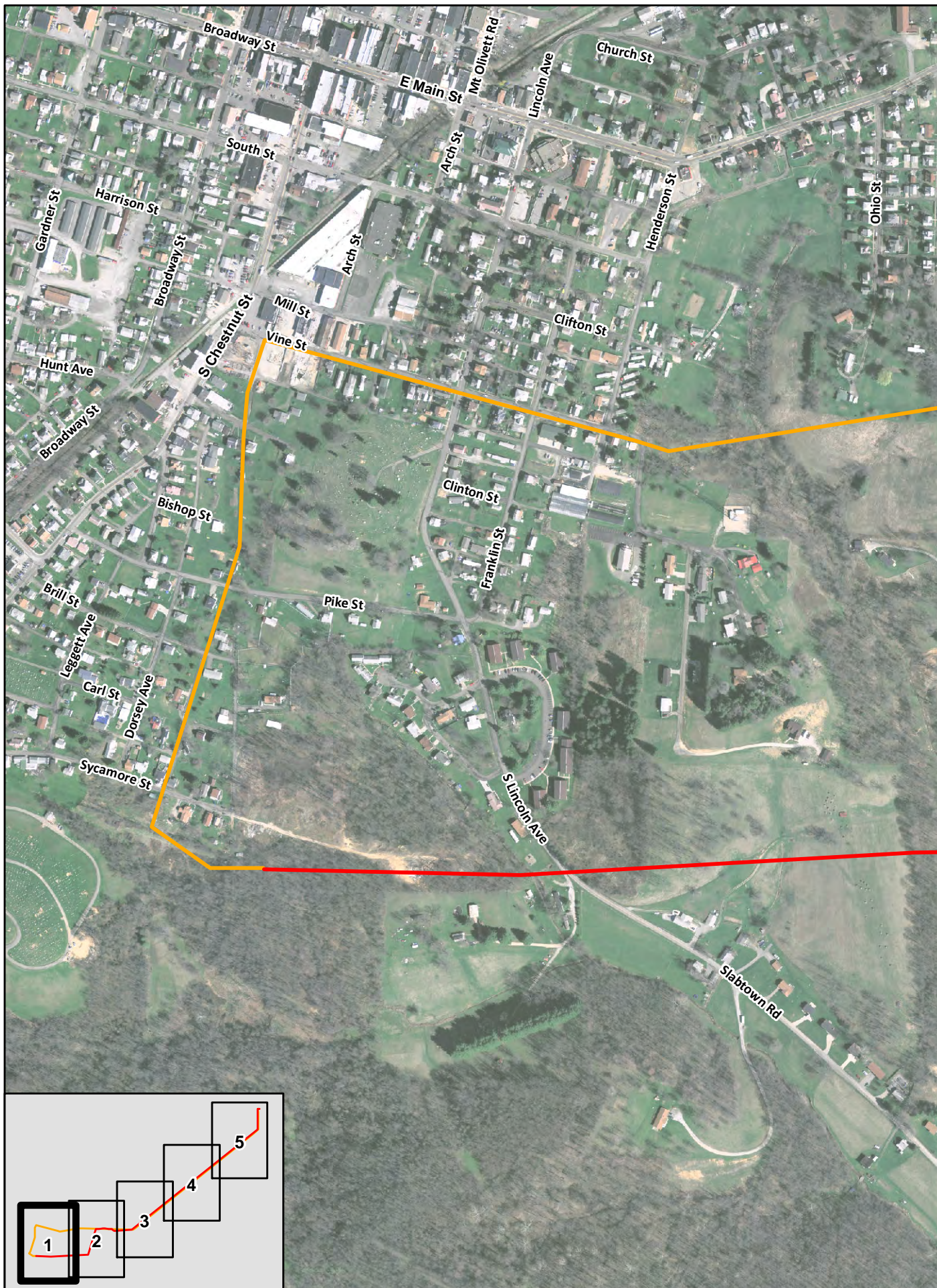


Overview Map

16-0437-EL-BTX

Speidel-Barnesville 138 kV Transmission Line Rebuild

Maps are presented solely for the purpose of providing a visual representation of the project in the staff report, and are not intended to modify the project as presented by the Applicant in its certified application and supplemental materials.





1 inch = 500 feet





1 inch = 500 feet



III. CONSIDERATIONS AND RECOMMENDED FINDINGS

In the matter of the application of AEP Ohio Transmission Company, Staff submits the following considerations and recommended findings pursuant to R.C. 4906.07(C) and 4906.10(A).

Considerations for R.C. 4906.10(A)(1)

BASIS OF NEED

Purpose of Proposed Facility

The proposed facility would be constructed to maintain and improve reliability in the eastern Ohio area, mainly Barnesville. The existing 69 kV transmission line was constructed in 1914 and is located in an area that is expected to experience increased load growth. The Applicant has shown that the increased load growth and aging infrastructure would cause reliability issues.

Long Term Forecast

The Ohio Administrative Code requires electric utilities and transmission owners to file annually a forecast report with the PUCO.¹³ The report requires a 10-year plan of committed or tentatively projected projects on the bulk power transmission network. The proposed transmission line project was identified in the *2016 AEP Ohio Transmission Company Long-Term Forecast Report to the Public Utilities Commission of Ohio*, in case number 16-1501-EL-FOR.¹⁴

System Economy and Reliability

The proposed line would replace the existing Speidel-Barnesville 69 kV Transmission Line by rebuilding the line to 138 kV. The existing facility was constructed more than 100 years ago and has reached its end of life. The proposed line would address reliability issues. A more-detailed investigation of system reliability can be found in the Electric Grid section of this report.

Conclusion

Staff concludes that the Applicant has demonstrated the basis of need due to the reliability problems caused by the increasing load and the age of the existing 69 kV line. The proposed facility would allow the transmission system to provide safe, reliable electric service, while meeting all the applicable planning criteria.

Recommended Findings

Staff recommends that the Board find that the basis of need for the project has been demonstrated and therefore complies with the requirements specified in R.C. 4906.10(A)(1), provided that any certificate issued by the Board for the proposed facility include the conditions specified in the section of this *Staff Report of Investigation* entitled Recommended Conditions of Certificate.

¹³ Ohio Adm.Code 4901:5-5.

¹⁴ “AEP Ohio Transmission Company LTFR,” Public Utilities Commission of Ohio case number 16-1501-EL-FOR, <http://dis.puc.state.oh.us>.

Considerations for R.C. 4906.10(A)(2)

NATURE OF PROBABLE ENVIRONMENTAL IMPACT

Pursuant to R.C. 4906.10(A)(2), the Board must determine the nature of the probable environmental impact of the proposed facility.

Socioeconomic Impacts

Demographics

The proposed routes would traverse land in Belmont County. The population of Belmont County increased by 4 percent between 2000 and 2010 to 70,400.¹⁵ The population of Belmont County is projected to decline slightly over the next 20 years.

The Applicant states that there are no formally adopted regional land use plans identified for the area of this project. The project would not be expected to limit future population growth or impact the demographics of the region, and is supported at the local and regional levels, based on the Applicant's discussions with local officials.

Land Use

The proposed right-of-way width for this project is 100 feet. Both routes will predominately utilize the existing 69 kV right-of-way in order to rebuild the transmission line at 138 kV. The existing easements for the 69 kV line are mostly undefined blanket easements and were established decades ago.

The Preferred Route is 3.7 miles in total length, while the Alternate Route is 4 miles in total length. The predominant existing land use for this project is existing transmission line right-of-way (75 percent of the Preferred Route and 98 percent of the Alternate Route). The Alternate Route almost exclusively follows the existing 69 kV transmission centerline to be rebuilt, while the Preferred Route follows the existing 69 kV transmission line, offset by 25 feet, and then extends beyond the existing right-of-way in specific locations in order to avoid encroaching structures.

There are 463 residences (including several multi-unit structures, such as condominiums, townhouses, and apartment complexes) within 1,000 feet of the Preferred Route centerline, 18 of these structures are within 100 feet. Of the 18 residences identified within 100 feet of the Preferred Route, six are single-family residences, and 12 are units in an apartment complex. There are 711 residences (including several multi-unit structures such as condominiums, townhouses, and apartment complexes) within 1,000 feet of the Alternate Route centerline, 70 of these structures are within 100 feet. Of the 70 residences identified within 100 feet of the Alternate Route, 64 are single-family residences and six are units in an apartment complex. Two residences are located within 10 feet of the Alternate Route centerline.

No residences would need to be removed for construction or operation of the transmission line along the Preferred Route, but it is likely that structures (including residences) would need to be removed from the right-of-way of the Alternate Route. The Preferred Route would cross 41

¹⁵ "Ohio County Profile: Belmont County," Ohio Development Services Agency: Office of Research, accessed October 13, 2016, <https://www.development.ohio.gov/files/research/C1062.pdf>.

parcels, while the Alternate Route would cross 52 parcels. Residences would experience temporary ambient noise increases during facility construction.

Approximately 56 percent of the Preferred Route and 39 percent of the Alternate Route crosses agricultural fields. As this project is intended to rebuild an existing transmission line, permanent additional impacts to agricultural fields would be minimal. Agricultural impacts would be limited to temporary disturbance and compaction of soil.

There are 35 commercial facilities within 1,000 feet of the Alternate Route centerline, four of which are also located within 1,000 feet of the Preferred Route centerline. Most of these facilities are located within the village of Barnesville. There are no industrial facilities located within 1,000 feet of either the Preferred or Alternate route. No negative impacts to commercial or industrial land uses are anticipated as a result of the project.

No recreational areas were identified within 1,000 feet of either the Preferred or Alternate route. Three schools were identified within 1,000 feet of both the Preferred and Alternate routes. None of these schools is located within 100 feet of either route. Several institutional land uses (medical uses and churches) were identified as being within 1,000 feet of both routes. None of these churches is located within 100 feet of either route. Additionally, one library was located within 1,000 feet of the Alternate Route, but not within 100 feet. No negative impacts to institutional and recreational land uses are expected from the construction, operation, or maintenance of the project along either route.

Cultural, Archaeological, and Architectural Resources

The Applicant conducted a cultural resources literature review of the proposed transmission line project. The literature review was conducted for the area within one mile of the project area. The Applicant's cultural resources consultant states that one known archaeological site was identified within 1,000 feet of the Preferred Route, 11 Ohio Historic Inventory (OHI) structures were identified within 1,000 feet, and two cemeteries were identified within 1,000 feet. The Preferred Route crosses one National Register Boundary (The Friends Boarding School and Ohio Yearly Meetinghouse Historic District).

One known archaeological site was identified within 1,000 feet of the Alternate Route, and 19 Ohio Historic Inventory (OHI) structures were identified within 1,000 feet, one of which is located approximately 50 feet away from the Alternate Route. Five cemeteries were identified within 1,000 feet. There are two National Register Boundaries within listed within 1,000 feet of the Alternate Route, one of which is crossed by the Alternate Route (The Friends Boarding School and Ohio Yearly Meetinghouse Historic District).

As of the filing of this staff report, the Applicant is completing Phase I cultural resources field work-studies for the project. The Applicant states that upon completion, the results of field studies will be submitted to Staff and the Ohio Historic Preservation Office. Staff recommends continued coordination between affected parties prior to construction to ensure minimal effects from this project on cultural resources.

Aesthetics

Permanent visual impacts would result from the introduction of a new manmade element to the landscape. Aesthetic impacts would vary with the viewer and setting, depending on the degree of

contrast between the proposed transmission line and the existing landscape. Where the new transmission line would be constructed through wooded areas and over open land or through the village of Barnesville, aesthetic contrast would be greater in these areas. In areas where the new transmission line would be constructed where aboveground utilities are already located, the aesthetic impact would be lessened.

Economics

The Applicant estimates the total applicable intangible and capital costs for the Preferred Route at \$16,630,102 and the Alternate Route at \$16,331,502.¹⁶ Estimates of applicable intangible and capital costs for both routes are highlighted in the following accounts:

- Land and land rights: Preferred Route - \$1,445,000 and Alternate Route - \$1,401,000
- Poles and fixtures: Preferred Route - \$8,728,109 and Alternate Route - \$8,237,147
- Overhead conductors and devices: Preferred Route - \$6,456,993 and Alternate Route - \$6,693,355
- Right-of-way clearing, roads, trails or other access: Preferred Route - \$6,456,993 and Alternate Route - \$6,693,355.

The Preferred and Alternate routes are located within Belmont County, Warren Township, and the village of Barnesville. AEP Ohio Transco would pay property taxes on utility facilities in each jurisdiction, allocating \$225,000 in tax revenue to local governments and school districts.¹⁷

All Staff recommendations for the requirements discussed in this section of the *Staff Report of Investigation* are included under the **Socioeconomic Conditions** heading of the Recommended Conditions of Certificate section.

Ecological Impacts

Geology

Belmont County lies within the western flank of the unglaciated Allegheny Plateau region. The village of Barnesville, and both the Preferred and Alternate routes, are in a rugged area of the county that has been dissected by drainage. The ridgetops and valleys are narrow. The side slopes are steep to very steep.

The bedrock found beneath both the Preferred and Alternate routes is sedimentary rocks of the Pennsylvanian and Permian Systems consisting of shale, sandstone, limestone, and coal. The exposed strata belong entirely to the upper portion of the Conemaugh and the Monongahela Formations of the Pennsylvanian System and the Dunkard Formation of the Permian System.

The Conemaugh Formation is exposed only in the western part of the county and in the valleys of the northeastern part of Belmont County. The Monongahela Formation is mostly exposed in the western part of the county at a greater extent than the Conemaugh Formation and to a lesser extent than the Dunkard Formation.

¹⁶ Application, 6-1.

¹⁷ Application, 6-3.

Coal was commercially mined in the areas surrounding the village of Barnesville. No active or abandoned coalmines pose an impact to the construction of either the Preferred or Alternate route.

Soils and Slopes

The Preferred and Alternate routes are located in areas dominated by three soil types: the Dekalb, Lowell-Westmoreland, and Westmoreland soils. Although both routes cross areas with slopes greater than 12 percent, none of these soil types exhibit slip prone characteristics that would limit the construction of the project.

The Applicant will conduct a geotechnical investigation to provide detailed site-specific information on the soil associations and engineering characteristics for soils that will be crossed by the Preferred and Alternate routes. Additionally, the Applicant will implement engineering methods and best management practices in its design and during construction of the transmission line to provide stability to areas crossed with slopes exceeding 12 percent.

Surface Waters

The Preferred Route right-of-way contains 26 streams, totaling 2,519 linear feet. Twenty-three streams are intermittent, and three are ephemeral. Eighteen streams would be crossed by the Preferred Route centerline. The Alternate Route right-of-way contains 25 streams, totaling 2,642 linear feet. Twenty-three streams are intermittent, and two are ephemeral. Fifteen streams would be crossed by the Alternate Route centerline.

The proposed transmission line would aerially span all streams, and no in-water work is expected. The Applicant has committed not to conduct mechanized clearing within 25 feet of any stream, and would only clear trees in this 25-foot corridor that are tall enough to have the potential to interfere with safe construction and operation of the transmission line. Some streams may need to be crossed by construction vehicles. The Applicant would utilize timber mats, steel plates, or similar acceptable methods for temporary stream crossings if necessary.

The Applicant identified and delineated 29 wetlands within the project area, totaling 4.18 acres. The Preferred Route right-of-way contains 10 wetlands, with 1.12 total acres of wetland within the right-of-way. The Alternate Route right-of-way also contains 10 wetlands, with 1.23 acres of wetland within the right-of-way. All delineated wetlands are category 1 and category 2 wetlands. There are no category 3 wetlands in the project area.

No wetland fill is proposed for this project. The Applicant anticipates that all wetlands along either route would be spanned and that new transmission structures would be installed on upland areas or outside of wetland boundaries. Selective non-mechanized clearing would be required to remove woody vegetation in wetlands that would otherwise interfere with the operation of the transmission line.

Eight ponds were identified within 100 feet of the Preferred and Alternate routes. Impacts to ponds are not anticipated. The Applicant would utilize best management practices (BMP), including silt fencing, to minimize runoff siltation into the ponds.

The Applicant would obtain coverage under the Ohio EPA General National Pollutant Discharge Elimination System (NPDES) Permit. Sedimentation that may occur as a result of construction activities would be minimized through BMP, such as silt fences. BMP would be outlined in the

Applicant's Stormwater Pollution Prevention Plan (SWPPP) required as part of the NPDES Permit. No wetland or stream fill is anticipated.

Threatened and Endangered Species

The Applicant requested information from the ODNR and the USFWS regarding state and federal listed threatened and endangered plant and animal species. Staff gathered additional information through field assessments and review of published ecological information. The following table reflects the results of the information requests, field assessments, and document review.

FISH				
Common Name	Scientific Name	Federal Status	State Status	Presence in Project Area
Western banded killifish	<i>Fundulus diaphanous menona</i>	N/A	Endangered	Due to the type of work proposed, and no in-water work in a perennial stream, no impacts to this species are anticipated.
River darter	<i>Percina shumardi</i>	N/A	Threatened	Due to the type of work proposed, and no in-water work in a perennial stream, no impacts to this species are anticipated.
Paddlefish	<i>Polyodon spathula</i>	N/A	Threatened	Due to the type of work proposed, and no in-water work in a perennial stream, no impacts to this species are anticipated.
Channel darter	<i>Percina copelandi</i>	N/A	Threatened	Due to the type of work proposed, and no in-water work in a perennial stream, no impacts to this species are anticipated.
Tippecanoe darter	<i>Etheostoma tippecanoe</i>	N/A	Threatened	Due to the type of work proposed, and no in-water work in a perennial stream, no impacts to this species are anticipated.
REPTILES AND AMPHIBIANS				
Common Name	Scientific Name	Federal Status	State Status	Presence in Project Area
Eastern hellbender	<i>Cryptobranchus alleganiensis</i>	Federal Candidate	Endangered	Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size to provide suitable habitat, no impacts to this species are anticipated.
MAMMALS				
Common Name	Scientific Name	Federal Status	State Status	Presence in Project Area
Indiana bat	<i>Myotis sodalis</i>	Endangered	Endangered	Historical range includes the project area.
Northern long-eared bat	<i>Myotis septentrionalis</i>	Threatened	Threatened	Historical range includes the project area.
Black bear	<i>Ursus americanus</i>	N/A	Endangered	Due to the mobility of the species, no impacts are expected to this species

MUSSELS

Common Name	Scientific Name	Federal Status	State Status	Presence in Project Area
Butterfly	<i>Ellipsaria lineolate</i>	N/A	Endangered	Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size to provide suitable habitat, no impacts to this species are anticipated.
Threehorn wartyback	<i>Obliquaria reflexa</i>	N/A	Threatened	Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size to provide suitable habitat, no impacts to this species are anticipated.
Black sandshell	<i>Ligumia recta</i>	N/A	Threatened	Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size to provide suitable habitat, no impacts to this species are anticipated.

Due to a lack of suitable habitat and no proposed in-water work, impacts to state and federal listed aquatic, reptile, and amphibian species are not anticipated.

The Preferred Route would require 6.7 acres of tree clearing, and the Alternate Route would require 4 acres of tree clearing. The Applicant has committed to restricting tree clearing to the seasonal clearing period of October 1 through March 31 to avoid and potential impacts to the Indiana bat (*Myotis sodalis*) and the northern long-eared bat (*Myotis septentrionalis*). The Applicant did not indicate whether any caves or abandoned mines would be impacted by the project. Indiana bats and northern long-eared bats hibernate in the winter months and would be negatively impacted if hibernacula areas were to be disturbed. If any caves or abandoned mines may be disturbed, Staff recommends further coordination with the USFWS to determine if fall or spring portal surveys are warranted.

Vegetation

The Preferred and Alternate routes cross through several vegetative communities. The following table reflects the major vegetative communities present in the construction corridor and associated acres of impact for each route.

VEGETATION		
Community Type	Preferred Route (Acres)	Alternate Route (Acres)
Pasture	19.4	17.2
Scrub/Shrub	10.9	11.8
Forest	6.7	4
Landscaped Areas	5	6.3
Agricultural Land	2.5	2.5
Old Field	0.1	0.1

Impacts on vegetation along both the routes would be limited to the initial clearing within the 100-foot right-of-way and along access roads, and operational maintenance. Trees adjacent to the proposed transmission line right-of-way, which are significantly encroaching or prone to failure, may require clearing to allow for safe operation of the transmission line. Vegetative wastes generated during construction would be windrowed or chipped and disposed of appropriately depending on landowner requests. The Applicant does not anticipate the use of herbicides during construction or operation.

All Staff recommendations for the requirements discussed in this section of the *Staff Review of Investigation* are included under the **Ecological Conditions** heading of the Recommended Conditions of Certificate section.

Public Services, Facilities, and Safety

Noise

Most noise impacts associated with this project would be confined to the 15-month construction period. The Applicant would mitigate noise impacts by properly maintaining construction equipment with installed mufflers and limiting construction activities to daylight hours, to the extent feasible.

The Applicant will use the generally accepted construction working hours of 7:00 a.m. to 7:00 p.m., or until dusk when sunset occurs after 7:00 p.m. Impact pile driving, hoe ram, and blasting operations, if required, would be limited to the hours between 10:00 a.m. and 5:00 p.m., Monday through Friday. The Applicant could conduct construction activities that do not involve noise increases above ambient levels at sensitive receptors outside of daylight hours when necessary. The Applicant will notify property owners or affected tenants of upcoming construction activities, including any potential for nighttime construction activities.

Safety

The Applicant intends to comply with safety standards set by the Occupational Safety and Health Administration, safety standards of the PUCO, the North American Electric Reliability Corporation (NERC) Reliability Standards, and any equipment specifications. The Applicant will design the facility to meet the requirements of the National Electric Safety Code.

Communications

The Applicant does not expect radio or television interference to occur from the operation of the proposed transmission line along the Preferred or Alternate route. Any likely source of radio or television interference would be a localized effect primarily from defective hardware that can be easily detected and replaced.

All Staff recommendations for the requirements discussed in this section of the *Staff Report of Investigation* are included under the **Public Services, Facilities, and Safety Conditions** heading of the Recommended Conditions of Certificate section.

Recommended Findings

Staff recommends that the Board find that the Applicant has determined the nature of the probable environmental impact for the proposed facility, and therefore complies with the requirements specified in R.C. 4906.10(A)(2), provided that any certificate issued by the Board for the proposed

facility include the conditions specified in the section of this *Staff Report of Investigation* entitled Recommended Conditions of Certificate.

Considerations for R.C. 4906.10(A)(3)

MINIMUM ADVERSE ENVIRONMENTAL IMPACT

Pursuant to R.C. 4906.10(A)(3), the proposed facility must represent the minimum adverse environmental impact, considering the state of available technology and the nature and economics of the various alternatives, along with other pertinent considerations.

Route Selection

The Applicant conducted a route selection study to identify potential electric transmission line routes that avoid or limit impacts to sensitive land uses, ecological resources, and cultural features, while taking into consideration the engineering and construction needs of the project. The route selection study primarily focused on the existing right-of-way for the 69 kV transmission line, as this project is intended as a rebuild of the transmission line from the Speidel Substation to the planned Barnesville substation.

At the public informational meeting held March 29, 2016, the Applicant presented a Preferred Route that was offset from the existing centerline of the 69 kV transmission line, and offset as necessary to avoid ecological and sociological features such as wetland and habitable structures. An Alternate Route was also presented that mirrored the centerline of the existing 69 kV transmission line from the Speidel to Barnesville substations, regardless of encroachments or other features within the existing right-of-way. Traditionally, the Applicant has filed rebuild cases in other parts of the state as Letters of Notification applications, but since this project required new right-of-way, the Applicant proceeded to file the case as a Standard Certificate Application. However, the rebuild nature of the project and utilization of a large percentage of existing right-of-way reduced the need for traditional evaluation of multi-disciplinary siting criteria.

The Applicant chose the Preferred Route, because it could be offset 25 feet from the existing centerline, allowing the existing transmission line to remain in service during construction, for safety and reliability factors.

Minimizing Impacts

While both routes are viable, they each have unique issues, and no route is without impact. Staff has analyzed each route independently and concluded that when compared to the Preferred Route, potential impacts associated with the number of residences within 100 feet of the Alternate Route is much greater (64 single-family residences vs. six single-family residences). This is significant, as a number of residences would likely need to be removed if the Alternate Route were selected, as they encroach into the Applicant's right-of-way. The Preferred Route would cross 41 properties, while the Alternate Route would cross 52 properties.

The Preferred Route would allow the Applicant to construct the project while keeping the existing 69 kV transmission line in service to the village of Barnesville, enhancing safety and reliability concerns. Additionally, the Preferred Route would cost less to build.

Conclusion

The project would result in both temporary and permanent impacts to the project area. There is a higher potential for disruption of more residences and businesses in general along the Alternate Route, as the Preferred Route crosses fewer properties, and is rerouted from the existing centerline

where buildings encroach into the right-of-way, particularly within the village of Barnesville. Therefore, Staff concludes that the Preferred Route represents the minimum adverse environmental impact when compared to the Alternate Route.

Recommended Findings

Staff recommends that the Board find that the Preferred Route represents the minimum adverse environmental impact, and therefore complies with the requirements specified in R.C. 4906.10(A)(3), provided that any certificate issued by the Board for the proposed facility include the conditions specified in the section of this *Staff Report of Investigation* entitled Recommended Conditions of Certificate.

Considerations for R.C. 4906.10(A)(4)

ELECTRIC GRID

Pursuant to R.C. 4906.10(A)(4), the Board must determine that the proposed electric facilities are consistent with regional plans for expansion of the electric power grid of the electric systems serving this state and interconnected utility systems, and that the facilities will serve the interests of electric system economy and reliability.

The purpose of this section is to evaluate the impact of integrating the proposed facility into the existing regional transmission grid. The proposed facility is part of a larger program to improve quality and reliability of the transmission system in eastern Ohio. This program would allow the Applicant to retire or replace transmission facilities that are in excess of 60 years old.

The project would be a 3.7-mile single-circuit 138 kV transmission line. The proposed circuit would begin at Speidel Substation and continue to the proposed Barnesville substation. The completed project would improve quality and reliability of the transmission system in eastern Ohio.

NERC Planning Criteria

NERC is responsible for the development and enforcement of the federal government's approved Reliability Standards, which are applicable to all owners, operators, and users of the bulk power system. As an owner, operator, and/or user of the bulk power system, the Applicant is subject to compliance with various NERC Reliability Standards, including but not limited to those related to transmission planning for contingency events.

AEP Planning Criteria

AEP Ohio Transco follows internal transmission planning criteria to plan their system. The planning criterion is required by law. The AEP Ohio Transco criterion complies with NERC Reliability Standards and PJM planning and operating manuals for the bulk electric system. This figure highlights a portion of AEP Ohio Transco's planning criteria.¹⁸

AEP PLANNING CRITERIA		
System Condition	Voltage Performance	Thermal Performance
Normal	<ul style="list-style-type: none">• 0.95 - 1.05 per unit• 8% voltage change not acceptable	100 kV - 765 kV: No facility may exceed its normal rating
Contingency	<ul style="list-style-type: none">• 0.92 - 1.05 per unit.• Voltage change from system normal of 8% or greater is not acceptable	N-1, < 344 kV: Not to exceed emergency rating N-1, > 345 kV: Not to exceed its normal rating

System Outages

The Applicant analyzed the local transmission system using a 2016 base case under 2021 summer peak loading conditions. Analysis revealed thermal overloads. The thermal overloading violates

¹⁸ "Transmission Planning Reliability Criteria - AEP PJM," AEP, accessed November 2, 2016, <https://www.aep.com/about/codeofconduct/OASIS/TransmissionStudies>.

AEP planning criteria, where no facility is to exceed its thermal rating under contingency conditions.

Staff reviewed the transcription diagrams, which displayed the power flows on the system, with and without the project in-service. Analysis revealed that without the facility, and under certain double contingencies, the system is overloaded. Without the proposed facility, the Applicant would be unable to maintain system reliability and would violate internal system planning criteria. This figure displays the facility overloaded under double contingency.

THERMAL VIOLATIONS UNDER DOUBLE CONTINGENCY			
N-1-1 Outage	Affected Area	Emergency Rating Before Improvement	Emergency Rating After Improvement
West Cambridge 138/69kV Transformer + Summerfield 138/69kV Transformer	Speidel-Barnesville 69kV Line	116%	42%
Derwent-South Cumberland 69kV line + Summerfield 138/69kV Transformer	Speidel-Barnesville 69kV Line	117%	42%

PJM Interconnection

The Applicant plans to discuss the proposed project at an upcoming PJM Transmission Expansion Advisory Committee. The project will be presented as a supplemental project and issued a supplemental upgrade ID. The construction status of supplemental transmission projects can be tracked on PJM's website.¹⁹

Conclusion

The Applicant provided details on load flow studies that were performed by the Applicant. The analysis demonstrated that, without the proposed facility, the Applicant would be unable to provide safe, reliable electric service. In addition, AEP may be unable to comply with the federal reliability standards. The Applicant is planning to present the proposed facility to PJM as a supplemental upgrade and needed to maintain local system reliability. Staff will require the Applicant to submit the presentation presented to PJM. The proposed facility is consistent with plans for expansion of the regional power system, and serves the interests of electric system economy and reliability.

Recommended Findings

Staff recommends that the Board find that the proposed facility is consistent with regional plans for expansion of the electric power grid of the electric systems serving this state and interconnected utility systems, and that the facility would serve the interests of electric system economy and

¹⁹ "Transmission Construction Status," PJM Interconnection, accessed November 2, 2016, <http://pjm.com/planning/rtep-upgrades-status/construct-status.aspx>.

reliability. Therefore, Staff recommends that the Board find that the facility complies with the requirements specified in R.C. 4906.10(A)(4), provided that any certificate issued by the Board for the proposed facilities include the conditions specified in the section of this *Staff Report of Investigation* entitled Recommended Conditions of Certificate.

Considerations for R.C. 4906.10(A)(5)

AIR, WATER, SOLID WASTE, AND AVIATION

Pursuant to R.C. 4906.10(A)(5), the facility must comply with Ohio law regarding air and water pollution control, withdrawal of waters of the state, solid and hazardous wastes, and air navigation.

Air

Air quality permits are not required for construction of the proposed facility. However, fugitive dust rules adopted under R.C. Chapter 3704 may be applicable to the construction of the proposed facility. The Applicant would control fugitive dust through dust suppression techniques such as irrigation, mulching, or application of tackifier resins. These methods of dust control are sufficient to comply with fugitive dust rules.

Water

Neither construction nor operation of the proposed facility would require the use of significant amounts of water. Therefore, the requirements under R.C. 1501.33 and 1501.34 are not applicable to this project. The Applicant would seek coverage, if needed, under the U.S. Army Corps of Engineers Nationwide Permit 12 for Utility Line Activities for surface water impacts associated with the proposed transmission line.

The Applicant intends to submit a Notice of Intent for coverage under the Ohio EPA's NPDES general permit for stormwater discharges associated with construction activities. The Applicant would submit a SWPPP to the Ohio EPA as part of the NPDES permit. This SWPPP would include a detailed construction access plan and indicate BMP for construction activities that minimize erosion-related impacts to streams and wetlands. The Applicant shall clearly identify wetlands, streams, and other environmentally sensitive areas before commencement of clearing or construction. No construction or access would be permitted in these areas unless clearly specified in the construction plans and specifications, thus minimizing any clearing-related disturbance to surface water bodies. With these provisions, construction of this facility would comply with the requirements set forth under R.C. Chapter 6111.

Solid Waste

Debris generated from construction activities would include items such as conductor scrap; construction material packaging including cartons, boxes, insulator crates, conductor reels and wrapping; and used stormwater erosion control materials. All construction-related debris would be disposed of in accordance with state and federal requirements.

Any contaminated soils discovered or generated during construction would be handled in accordance with applicable regulations. The Applicant intends to have a Spill Prevention Plan in place and would follow manufacturer's recommendations for any spill cleanup. The Applicant's solid waste disposal plans would comply with solid waste disposal requirements set forth in R.C. Chapter 3734.

Aviation

The height of the tallest aboveground structure of the transmission line and construction equipment would be approximately 120 feet. According to the Federal Aviation Administration (FAA), the closest airports are the Barnesville-Bradfield (6G5), Alderman (2P7), and Monroe County (2D6),

which are between 1 and 12 miles from the proposed transmission line. The closest heliport is Salt Fork Lodge (08G) approximately 17 miles away. Upon completion of the final design, the Applicant will consult with the FAA and the ODOT Office of Aviation to determine if a Notice of Construction or Alteration or other permitting as required.

In accordance with R.C. 4906.10(A)(5), Staff contacted the ODOT Office of Aviation during the review of this application in order to coordinate review of potential impacts of the facility on local airports. As of the date of this filing, no such concerns have been identified.

The Applicant has committed to obtaining and complying with federal or state laws and regulations prior to the commencement of construction activities that require such permits or authorizations. The Applicant would also provide copies of permits and authorizations, including all supporting documentation, to Staff within seven days of issuance or receipt by the Applicant. Furthermore, the Applicant would provide a schedule of construction activities and acquisition of corresponding permits for each activity at the preconstruction conference.

All Staff recommendations for the requirements discussed in this section of the *Staff Report of Investigation* are included under the **Air, Water, Solid Waste, and Aviation Conditions** heading of the Recommended Conditions of Certificate section.

Recommended Findings

Staff recommends that the Board find that the proposed facility complies with the requirements specified in R.C. 4906.10(A)(5), provided that any certificate issued by the Board for the proposed facility include the conditions specified in the section of this *Staff Report of Investigation* entitled Recommended Conditions of Certificate.

Considerations for R.C. 4906.10(A)(6)

PUBLIC INTEREST, CONVENIENCE, AND NECESSITY

Pursuant to R.C. 4906.10(A)(6), the Board must determine that the facility will serve the public interest, convenience, and necessity.

Public Interaction

The Applicant held a public informational meeting for this project on March 29, 2016. During this meeting, attendees were provided the opportunity to speak with representatives of the Applicant and provide feedback regarding potential routes.

The Applicant served copies of the complete application on officials representing Belmont County, Warren Township, the Village of Barnesville, and the Belmont County Soil and Water Conservation District. Copies of the application are available for public inspection at the Barnesville Hutton Memorial Public Library, the Belmont County District Library, the offices of the PUCO, and online at <http://opsb.ohio.gov>.

The Administrative Law Judge issued an entry on October 7, 2016, scheduling a local public hearing and an adjudicatory hearing for this proceeding. The local public hearing, at which the Board will accept written or oral testimony from any person, is scheduled for December 1, 2016, at 6 p.m., at the Barnesville High School, 910 Shamrock Drive, Barnesville, Ohio 43713. The adjudicatory hearing is scheduled for December 15, 2016, at 10 a.m., at the offices of the PUCO, 180 East Broad Street, Hearing Room 11-D, Columbus, Ohio 43215.

As of the filing of this staff report, the Board has not received any public comments or motions to intervene in this case.

The Applicant maintains a project website at <http://www.aeptransmission.com/ohio> and will have representatives available to discuss the project with the public during the construction of the project.

Electromagnetic Fields

Electric transmission lines, when energized, generate electromagnetic fields (EMF). Laboratory studies have failed to establish a strong correlation between exposure to EMF and effects on human health. There have been concerns, however, that EMF may have impacts on human health.

Because concerns exist, the Applicant has computed the EMF associated with the new circuits.²⁰ The fields were computed based on the maximum loadings of the lines, which would lead to the highest EMF values that might exist along the proposed transmission line. Daily current load levels normally operate below the maximum load conditions, thereby further reducing nominal EMF values.

The electric field is a function of the voltage, the line configuration, and the distance from the transmission lines. Electric fields are produced by voltage or electric charge. For example, a plugged in lamp cord produces an electric field, even if the lamp is turned off. The electric field

²⁰ Application, Table 7-2.

for this transmission line would be 0.13 kV/meter or less. Electric fields are easily shielded by physical structures such as the walls of a house, foliage, etc.

Magnetic fields are a function of the electric current, the configuration of the conductors, and the distance from the transmission lines. The magnetic fields for this project are estimated at the right-of-way edge to be less than 40.41 milligauss. The magnetic field output is comparable to that of common household appliances. A list of typical magnetic fields from household items, as well as the maximum magnetic field scenarios for this facility, is in the application.²¹ The Applicant states that the transmission facilities will be designed according to the requirements of the National Electric Safety Code.

Recommended Findings

Staff recommends that the Board find that the proposed facility would serve the public interest, convenience, and necessity, and therefore complies with the requirements specified in R.C. 4906.10(A)(6), provided that any certificate issued by the Board for the proposed facility include the conditions specified in the section of this *Staff Report of Investigation* entitled Recommended Conditions of Certificate.

²¹ Application, Table 7-3.

Considerations for R.C. 4906.10(A)(7)

AGRICULTURAL DISTRICTS

Pursuant to R.C. 4906.10(A)(7), the Board must determine the facility's impact on the agricultural viability of any land in an existing agricultural district within the Preferred and Alternate routes of the proposed utility facility. The agricultural district program was established under R.C. Chapter 929. Agricultural district land is exempt from sewer, water, and electrical service tax assessments. Agricultural land can be classified as an agricultural district through an application and approval process that is administered through local county auditors' offices. Eligible land must be devoted exclusively to agricultural production or be qualified for compensation under a land conservation program for the preceding three calendar years. Furthermore, eligible land must be at least 10 acres or produce a minimum average gross annual income of \$2,500.

The Preferred and Alternate routes do not cross-agricultural district land parcels. There would be no impacts to agricultural district properties along the Preferred or Alternate route.

Construction-related activities such as vehicle traffic and materials storage could lead to temporary reductions in farm productivity caused by direct crop damage, soil compaction, broken drainage tiles, and reduction of space available for planting. The Applicant intends to take steps in order to address such potential impacts to farmland, including repairing all drainage tiles damaged during construction and restoring temporarily impacted land to its original use. After construction, farm production could resume underneath the transmission line. The Applicant does not anticipate the loss of participation in agricultural district programs due to the minimal permanent impacts to agricultural land use from the project.

Recommended Findings

Staff recommends that the Board find that the impact of the proposed facility on the viability of existing agricultural land in an agricultural district has been determined, and therefore complies with the requirements specified in R.C. 4906.10(A)(7), provided that any certificate issued by the Board for the proposed facility include the conditions specified in the section of this *Staff Report of Investigation* entitled Recommended Conditions of Certificate.

Considerations for R.C. 4906.10(A)(8)

WATER CONSERVATION PRACTICE

Pursuant to R.C. 4906.10(A)(8), the proposed facility must incorporate maximum feasible water conservation practices, considering available technology and the nature and economics of the various alternatives.

Because the facility may require the use of minimal amounts of water for dust control during construction, and would not require the use of any water during operation, the facility would comply with water conservation practice as specified under R.C. 4906.10(A)(8).

Recommended Findings

Staff recommends that the Board find that the proposed facility would incorporate maximum feasible water conservation practices, and therefore complies with the requirements specified in R.C. 4906.10(A)(8).

IV. RECOMMENDED CONDITIONS OF CERTIFICATE

Following a review of the application filed by AEP Ohio Transmission Company, and the record compiled to date in this proceeding, Staff recommends that a number of conditions become part of any certificate issued for the proposed facility. These recommended conditions may be modified as a result of public or other input received subsequent to the issuance of this report. At this time, Staff recommends the following conditions:

GENERAL CONDITIONS

Staff recommends the following conditions to ensure conformance with the proposed plans and procedures as outlined in the case record to date, and to ensure compliance with all conditions listed in this staff report:

- (1) The facility shall be installed on the Applicant's Preferred Route, utilizing the equipment, construction practices, and mitigation measures as presented in the application filed on June 24, 2016, supplemented on November 10, 2016, and further clarified by recommendations in this *Staff Report of Investigation*.
- (2) The Applicant shall use the equipment and construction practices as described in the application and as modified and/or clarified in supplemental filings, replies to data requests, and recommendations in this *Staff Report of Investigation*.
- (3) The Applicant shall implement the mitigation measures as described in the application and as modified and/or clarified in supplemental filings, replies to data requests, and recommendations in this *Staff Report of Investigation*.
- (4) The Applicant shall conduct a preconstruction conference prior to the start of any construction activities. Staff, the Applicant, and representatives of the prime contractor and/or subcontractors for the project shall attend the preconstruction conference. The conference shall include a presentation of the measures to be taken by the Applicant and contractors to ensure compliance with all conditions of the certificate, and discussion of the procedures for on-site investigations by Staff during construction. Prior to the conference, the Applicant shall provide a proposed conference agenda for Staff review to ensure compliance with this condition. The Applicant may conduct separate preconstruction meetings for each stage of construction.
- (5) At least 30 days before the preconstruction conference, the Applicant shall submit to Staff, for review to ensure compliance with this condition, one set of detailed engineering drawings of the final project design, including the facility, temporary and permanent access roads, construction staging areas, and any other associated facilities and access points, so that Staff can determine that the final project design is in compliance with the terms of the certificate. The final project layout shall be provided in hard copy and as geographically-referenced electronic data. The final design shall include all conditions of the certificate and references at the locations where the Applicant and/or its contractors must adhere to a specific condition in order to comply with the certificate.
- (6) Within 60 days after the commencement of commercial operation, the Applicant shall submit to Staff a copy of the as-built specifications for the entire facility. If good cause prevents the

Applicant from submitting a copy of the as-built specifications for the entire facility within 60 days after commencement of commercial operation, it may request informally an extension of time for the filing of such as-built specifications. The Applicant shall use reasonable efforts to provide as-built drawings in both hard copy and as geographically-referenced electronic data.

- (7) The certificate shall become invalid if the Applicant has not commenced a continuous course of construction of the proposed facility within five years of the date of issuance of the certificate.
- (8) As the information becomes known, the Applicant shall provide to Staff the date on which construction will begin, the date on which construction was completed, and the date on which the facility begins commercial operation.
- (9) Prior to the commencement of construction activities that require permits or authorizations by federal or state laws and regulations, the Applicant shall obtain and comply with such permits or authorizations. The Applicant shall provide copies of permits and authorizations, including all supporting documentation, to Staff within seven days of issuance or receipt by the Applicant. The Applicant shall provide a schedule of construction activities and acquisition of corresponding permits for each activity at the preconstruction conference.
- (10) The Applicant shall provide to Staff a copy of the presentation that it provides at the PJM Transmission Expansion Advisory Committee and the supplemental ID assigned to the proposed project by PJM Interconnection.

SOCIOECONOMIC CONDITIONS

Staff recommends the following conditions to address the impacts discussed in the **Socioeconomic Impacts** section of the Nature of Probable Environmental Impact:

- (11) At least 30 days prior to the preconstruction conference, the Applicant shall provide to Staff a complaint resolution procedure to address potential public grievances resulting from project construction and operation. The resolution procedure must provide that the Applicant will work to mitigate or resolve any issues with those who submit either a formal or informal complaint and that the Applicant will immediately forward all complaints to Staff.
- (12) Prior to commencement of construction, the Applicant shall develop a public information program that informs affected property owners of the nature of the project, specific contact information of Applicant personnel who are familiar with the project, the proposed timeframe for project construction, and a schedule for restoration activities. The Applicant shall give notification to property owners at least 30 days prior to work on the affected property.
- (13) Prior to construction, the Applicant shall prepare and conduct a Phase I cultural resources survey program (which may include archaeological and architectural components) for the transmission line, laydown area(s) and access roads acceptable to Staff and the Ohio Historic Preservation Office (OHPO). If the resulting survey work discloses a find of cultural significance, or a site that could be eligible for inclusion in the National Register of Historic Places, then the Applicant shall prepare a mitigation or avoidance plan. Any such mitigation

or avoidance effort, if needed, shall be developed in coordination with the OHPO and submitted to Staff for review to ensure compliance with this condition.

- (14) The Applicant shall avoid, where possible, or minimize to the maximum extent practicable, any damage to field tile drainage systems and soils resulting from construction, operation, and/or maintenance of the facility in agricultural areas. The Applicant shall promptly repair or provide for the repair of, damaged field tile systems to at least original conditions at the Applicant's expense. If applicable, the Applicant shall segregate and restore excavated topsoil in accordance with the Applicant's lease agreement with the landowner. The Applicant shall plow or otherwise de-compact severely compacted soils.

ECOLOGICAL CONDITIONS

Staff recommends the following conditions to address the impacts discussed in the **Ecological Impacts** section of the Nature of Probable Environmental Impact:

- (15) The Applicant shall not conduct mechanized clearing within 25 feet of any stream channel.
- (16) The Applicant shall adhere to seasonal cutting dates of October 1 through March 31 for removal of trees, unless coordination efforts with the Ohio Department of Natural Resources (ODNR) and the U.S. Fish and Wildlife Service (USFWS) allow a different course of action.
- (17) The Applicant shall provide a construction access plan for review prior to the preconstruction conference. The plan would consider the location of streams, wetlands, wooded areas, and sensitive plant species, as identified by the ODNR Division of Wildlife, and explain how impacts to all sensitive resources will be avoided or minimized during construction, operation, and maintenance. The plan would include the measures to be used for restoring the area around all temporary access points, and a description of any long-term stabilization required along permanent access routes.
- (18) The Applicant shall contact Staff, the ODNR, and the USFWS within 24 hours if state or federal threatened or endangered species are encountered during construction activities. Construction activities that could adversely impact the identified plants or animals shall be halted until an appropriate course of action has been agreed upon by the Applicant, Staff, and the ODNR in coordination with the USFWS. Nothing in this condition shall preclude agencies having jurisdiction over the facility with respect to threatened or endangered species from exercising their legal authority over the facility consistent with law.
- (19) If any caves or abandoned mines may be disturbed, the Applicant shall coordinate with the USFWS to determine if fall or spring portal surveys are warranted.
- (20) The Applicant shall not cross streams by fording for construction access and shall instead employ timber matting or other methods that avoid or minimize streambed disturbance.

PUBLIC SERVICES, FACILITIES, AND SAFETY CONDITIONS

Staff recommends the following conditions to address the requirements discussed in the **Public Services, Facilities, and Safety** section of the Nature of Probable Environmental Impact:

- (21) General construction activities shall be limited to the hours of 7:00 a.m. to 7:00 p.m., or until dusk when sunset occurs after 7:00 p.m. Impact pile driving, hoe ram, and blasting operations, if required, shall be limited to the hours between 10:00 a.m. to 5:00 p.m., Monday through Friday. Construction activities that do not involve noise increases above ambient levels at sensitive receptors are permitted outside of daylight hours when necessary. The Applicant shall notify property owners or affected tenants of upcoming construction activities including potential for nighttime construction activities.
- (22) Prior to commencement of construction activities that require transportation permits, the Applicant shall obtain all such permits. The Applicant shall coordinate with the appropriate authority regarding any temporary or permanent road closures, lane closures, road access restrictions, and traffic control necessary for construction and operation of the proposed facility.

AIR, WATER, SOLID WASTE, AND AVIATION CONDITIONS

Staff recommends the following conditions to address the requirements discussed in the **Air, Water, Solid Waste, and Aviation** section of the Nature of Probable Environmental Impact:

- (23) The Applicant shall remove all temporary gravel and other construction staging area and access road materials after completion of construction activities, as weather permits, unless otherwise directed by the landowner. Impacted areas shall be restored to preconstruction conditions in compliance with the Ohio Environmental Protection Agency (Ohio EPA) General National Pollutant Discharge Elimination System (NPDES) permit(s) obtained for the project and the approved Stormwater Pollution Prevention Plan (SWPPP) created for this project.
- (24) The Applicant shall not dispose of gravel, or any other construction material, during or following construction of the facility by spreading such material on agricultural land. All construction debris and all contaminated soil shall be promptly removed and properly disposed of in accordance with Ohio EPA regulations.
- (25) At least seven days before the preconstruction conference, the Applicant shall submit to Staff, for review, a copy of all NPDES permits including its approved SWPPP, approved Spill Prevention, Control, and Countermeasure procedures, and its erosion and sediment control plan. The Applicant must address any soil issues through proper design and adherence to Ohio EPA best management practices related to erosion and sedimentation control.
- (26) The Applicant shall re-coordinate with the Federal Aviation Administration (FAA) and the Ohio Department of Transportation once final pole locations and heights are determined for this project. Additionally, the Applicant shall provide Staff with completed FAA 7460-1 forms. If the proposed pole locations and heights constitute a hazard to air navigation then further coordination with Staff shall be necessary before construction can commence.



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