Staff Report of Investigation

Beaver-Brownhelm Junction 345 kV Transmission Line Project

Case Number
11-4248-EL-BTX

December 19, 2012

Ohio | Power Siting Board

John Kasich, Governor **Todd Snitchler,** Chairman

In the Matter of the Application by American Transmission Systems, Incorporated for a Certificate of Environmental Compatibility and Public Need for the Beaver-Brownhelm Junction 345 kV Transmission Line Project	**)** **)** **)** **)**	**Case Number 11-4248-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 by American Transmission Systems, Incorporated for a Certificate of Environmental Compatibility and Public Need for the Beaver-Brownhelm Junction 345 kV Transmission Line Project	**)** **)** **)** **)**	**Case Number 11-4248-EL-BTX**

Members of the Board:

Todd Snitchler, Chairman, PUCO
Christiane Schmenk, Director, ODSA
Dr. Ted Wymyslo, Director, ODH
David Daniels, Director, ODA
Scott Nally, Director, Ohio EPA
Jim Zehringer, Director, ODNR
Jeffery J. Lechak, PE, Public Member
Louis Blessing, Jr., State Representative
Sandra Williams, State Representative
Tom Sawyer, State Senator
Shannon Jones, State Senator

To the Honorable Power Siting Board:

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

The *Staff Report of Investigation* has been prepared by the Staff of the Public Utilities Commission of Ohio. The findings and recommendations contained in this report are the result of Staff coordination with the 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 ORC Sections 4906.07 and 4906.12, copies of this staff report have been filed with the Docketing Division of the Public Utilities Commission of Ohio on behalf of the Ohio Power Siting Board 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 ORC 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,

Klaus Lambeck, Chief
Facilities, Siting, & Environmental Analysis Division

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ACRONYMS

BMP	best management practices
DOW	ODNR Division of Wildlife
FAA	Federal Aviation Administration
kV	kilovolts
MW	megawatts
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
OAC	Ohio Administrative Code
ODA	Ohio Department of Agriculture
ODSA	Ohio Development Services Agency
ODH	Ohio Department of Health
ODNR	Ohio Department of Natural Resources
ODOT	Ohio Department of Transportation
Ohio EPA	Ohio Environmental Protection Agency
OHPO	Ohio Historic Preservation Office
OPSB	Ohio Power Siting Board
ORC	Ohio Revised Code
PUCO	Public Utilities Commission of Ohio
SWPPP	Storm Water Pollution Prevention Plan
USFWS	U.S. Fish and Wildlife Service

I. POWERS AND DUTIES

OHIO POWER SITING BOARD

The Ohio Power Siting Board (Board or OPSB) was created in 1972. The Board is a separate entity within the Public Utilities Commission of Ohio (PUCO). The authority of the Board is outlined in Ohio Revised Code (ORC) Chapter 4906.

The Board is authorized to issue certificates of environmental compatibility and public need for the construction, operation, and maintenance of major utility facilities as defined in ORC Section 4906.01. Included within this definition 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 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, per ORC Section 4906.20, the Board authority applies to economically significant wind farms, defined in ORC 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 five MW or greater but less than 50 MW.

Membership of the Board is specified in ORC Section 4906.02(A). The voting members include: the Chairman of the PUCO who serves as Chairman of the Board; the directors of the Ohio Environmental Protection Agency (Ohio EPA), the Ohio Department of Health (ODH), the Ohio Development Services Agency (ODSA), the Ohio Department of Agriculture (ODA), 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 OPSB has promulgated rules and regulations, found in Chapter 4906 of the Ohio Administrative Code (OAC), 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 OPSB an application for a certificate of environmental compatibility and public need (ORC 4906.04 and 4906.20). The application must include a description of the facility and its location, 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 OPSB may consider relevant (ORC 4906.10(A)(1) and 4906.20(B)(1)).

Within 60 days of receiving an application, the OPSB must determine whether the application is sufficiently complete to begin an investigation (OAC 4906-5-05(A)). If an application is considered complete, the Chairman of the OPSB will cause a public hearing to be held 60 to 90 days after the official filing date of the completed application. At the public hearing, any person may provide written or oral testimony and may be examined by the parties (ORC 4906.07). Parties include the Applicant, public officials, and any person who has been granted a motion of leave for intervention (ORC 4906.08(A)).

Staff Investigation and Report

The Chairman will also cause each application to be investigated and a report published not less than 15 days prior to the public hearing. 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 OPSB, 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 under guidance of the OPSB rules and regulations in OAC Chapter 4906. The recommended findings resulting from the Staff's investigation are described in the staff report pursuant to ORC Section 4906.07(C). The report does not represent the views or opinions of the OPSB 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 and is served upon all parties to the proceeding and is made available to any person upon request (4906.07(C) and 4906.10). A record of the public hearings and all evidence, including the staff report, may be examined by the public at any time (ORC 4906.09 and 4906.12).

Board Decision

The OPSB may approve, modify and approve, or deny an application for a certificate of environmental compatibility and public need. If the OPSB 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 standards and rules adopted under the ORC (ORC 4906.10(A) and (B)).

Upon rendering its decision, the OPSB 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 (ORC 4906.11). A copy of the OPSB's decision and its opinion is memorialized upon the record and must be served upon all parties to the proceeding (ORC 4906.10(C)). Any party to the proceeding that believes its issues were not adequately addressed by the OPSB may submit within 30 days an application for rehearing (ORC 4903.10 and 4906.12). An entry on rehearing will be issued by the OPSB within 30 days and may be appealed within 60 days to the Supreme Court of Ohio (ORC 4903.11, 4903.12, and 4906.12).

CRITERIA

The recommendations and conditions in this *Staff Report of Investigation* were developed pursuant to the criteria set forth in ORC Section 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 or natural gas transmission line;
>
> (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 generation 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 ODOT 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) through (A)(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 alternate 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.

II. APPLICATION

APPLICANT

American Transmission Systems, Incorporated (ATSI or Applicant) is seeking authority to construct a new 345 kV transmission line that will extend from the existing Beaver Substation to Brownhelm Junction. ATSI will construct, own, operate, and maintain the proposed Beaver to Brownhelm Junction 345 kV Transmission Line Project.

ATSI is a wholly-owned subsidiary of The FirstEnergy Corporation. FirstEnergy Corp. was formed in 1997 through the merger of Ohio Edison Company and Centerior Energy Corporation. Through this merger, FirstEnergy became the holding company for Ohio Edison and its Pennsylvania Power Company subsidiary, as well as The Cleveland Electric Illuminating Company and The Toledo Edison Company.

In 2011, FirstEnergy completed a merger with Allegheny Energy, a Greensburg, PA-based company that served 1.6 million customers in Pennsylvania, West Virginia, Maryland and Virginia. The merger more than doubled FirstEnergy's highly efficient, supercritical coal capacity and provided opportunities for the company to grow and expand into new markets with a stronger, more focused competitive operation. Today, FirstEnergy is one of the nation's largest investor-owned electric systems based on the number of customers served.

HISTORY OF THE APPLICATION

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

On August 31, 2011, the Applicant held a public information meeting regarding the proposed electric transmission line project.

On July 31, 2012, the Applicant filed the Beaver-Brownhelm Junction 345 kV Transmission Line Project application.

On August 9, 2012 (and amended on August 15, 2012), the Applicant filed a motion for waivers of the one-year notice provision and to allow itself to submit wetland and stream assessment information in electronic format with a limited number of hard copies. Staff did not object to these waivers.

On August 17, 2012, the Applicant filed supplemental data (the Wetland Delineation Report) to the application.

On September 27, 2012, the Applicant was issued a letter of compliance regarding the application from the Chairman of the Board.

A local public hearing has been scheduled for January 3, 2013, at 6:00 p.m., at the Brownhelm Township Hall, 1940 North Ridge Road, Vermillion, Ohio 44089. The adjudicatory hearing will commence on January 17, 2013, at 10:00 a.m., in Hearing Room 11-C, at the offices of the PUCO, 180 East Broad Street, Columbus, Ohio.

This summary of the history of the application does not include every filing in case numbers 11-4248-EL-BTX. The docketing record for this case, which lists all documents filed to date, can be found in the Appendix to this report and online at http://dis.puc.state.oh.us.

PROJECT DESCRIPTION

ATSI proposes to construct, own, operate, and maintain the Beaver-Brownhelm Junction 345 kV Transmission Line near Lorain, Ohio. The $3 million project is a necessary component of the larger transmission system upgrade known as the Beaver-Davis Besse 345 kV Transmission Line Project that will help meet electrical supply needs in the area for the foreseeable future at a reasonable cost to consumers, even during periods of peak demand. The Applicant plans to begin construction no sooner than October 1, 2013 and place the transmission line in service by April 30, 2014.

Preferred Route

The Preferred Route for the Beaver to Brownhelm Junction 345 kV Transmission Line begins approximately 950 feet south of the existing Beaver Substation. The 2.8-mile transmission line route then extends south to a proposed connection point south of North Ridge Road, largely paralleling the east side of the existing transmission line corridor. The Preferred Route parallels an existing 345 kV transmission line, which allows the right-of-ways to overlap by 25 feet, resulting in a 125-foot wide construction corridor.

The Applicant obtained the right-of-way for the Preferred Route when the existing transmission line corridor was developed. The right-of-way is located entirely on FirstEnergy Generation Corp. or Ohio Edison fee-owned property leased to ATSI with easements granted to ATSI. The right-of-way associated with the Preferred Route crosses eleven parcels.

Alternate Route

The Alternate Route for the Beaver-Brownhelm Junction 345 kV Transmission Line is 2.8 miles long. It also begins approximately 950 feet south of the existing Beaver Substation and extends south to the proposed connection point south of North Ridge Road. The Alternate Route largely parallels the west side of the existing transmission line corridor. The right-of-way associated with the Alternate Route also crosses eleven parcels. The Alternate Route parallels an existing 138 kV transmission line, which does not allow an overlap of the right-of-ways, and results in a 150-foot wide construction corridor.

Avon-Beaver #1 Relocation Route

The Avon-Beaver #1 transmission line's current alignment will change to accommodate the new transmission line connection of the Preferred or Alternate route. The Avon-Beaver #1 Transmission Line would be relocated to a new corridor extending north from its existing east-to-west corridor, and is considered a common section in this project application. The entire 0.4-mile long Avon-Beaver #1 Relocation Route is on FirstEnergy-owned property, and parallels the eastern side of the Beaver Substation and existing transmission line corridor.

The Preferred, Alternate, and Avon-Beaver #1 Relocation routes are shown on the map in this report.

PROJECT MAP

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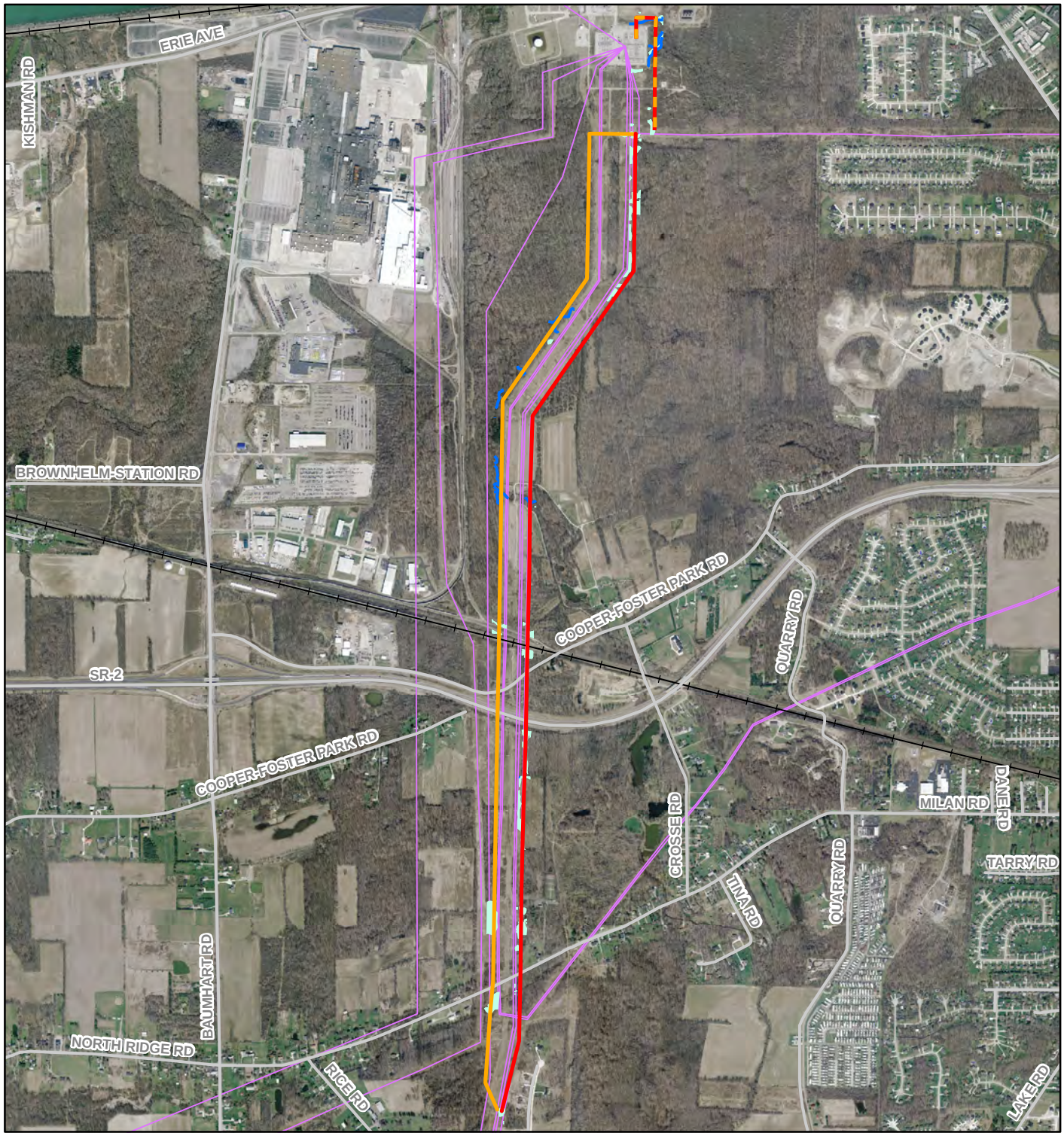

Lorain County

NORTH

0 0.25 0.5

Miles

1:24,000

NAD 83 SP Ohio North (Feet)

- Preferred Route
- Alternate Route
- Avon-Beaver #1
- Existing Transmission
- Stream
- Wetland

Overview Map

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Beaver to Brownhelm 345 kV Transmission Line

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.

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III. CONSIDERATIONS AND RECOMMENDED FINDINGS

In the matter of the application of American Transmission Systems, Incorporated, the following considerations and recommended findings are submitted pursuant to ORC Section 4906.07(C) and ORC Section 4906.10(A).

Considerations for ORC Section 4906.10(A)(1)

BASIS OF NEED

Purpose of Proposed Facility

The proposed Beaver-Brownhelm Junction 345 kV Transmission Line Project is a component of the Beaver-Davis Besse #2 345 kV Transmission Line Project. The project is required by PJM to mitigate thermal overloads during west-to-east energy transfers. The project would ensure reliability and quality service to a large portion of northern Ohio. Without the project, ATSI would not be able to maintain compliance with PJM and North American Electric Reliability Corporation (NERC) reliability criteria. This section of the staff report focuses on reviewing the need of the proposed substation.

Long Term Forecast

The proposed transmission line project is identified in the 2012 *American Transmission Systems, Incorporated Long-Term Forecast Report to the Public Utilities Commission of Ohio*. The Public Utilities Commission assigned this document case number 12-0504-EL-FOR.

PJM Regional Transmission Expansion Plan

PJM Interconnection LLC (PJM) is the Regional Transmission Organization charged with planning for upgrades to the regional transmission system in Ohio. PJM annually issues the Regional Transmission Expansion Plan (RTEP) report. The RTEP analyzes reliability criteria, operational performance of the transmission system, and economic and environmental factors. The RTEP provides for the construction of expansions and upgrades of the PJM transmission system, as needed to maintain compliance with reliability criteria and, when appropriate, to enhance the economic and operational efficiency of wholesale electricity markets in the PJM Region.

The proposed project was identified in the 2011 PJM RTEP and approved by the PJM Board (PJM, February 2012). PJM analysis shows that, without the Beaver-Brownhelm Junction 345 kV Transmission Line Project and the associated Beaver-Davis Besse #2 345 kV transmission line, the area would experience voltage collapse. In addition, to allow for stakeholder input, the proposed project was presented at the May 10, 2012, Transmission Expansion Advisory Committee meeting (PJM, 2012).

Load Growth

PJM projects that electric demand will grow at an average rate of approximately 1 percent per year in the ATSI footprint (PJM, January 2012). During the early 2000's, prior to the recession, demand was increasing at 2 percent or greater. Even during the recession, ATSI set a 2011 summer peak record of 14,739 MW. The ATSI summer peak was 5 percent greater than what PJM projected for the summer of 2011. PJM's 10-year summer load growth average for the entire footprint is 1.4 percent.

System Economy and Reliability

The Beaver-Brownhelm Junction 345 kV Transmission Line Project would reinforce the ATSI transmission system and not adversely affect neighboring utilities. PJM and ATSI studies confirmed that the proposed transmission line would improve reliability by correcting thermal overloads, capacity limitations, and voltage violations. The transmission line would allow ATSI to meet PJM and NERC planning criteria to ensure reliability and provide reliable electric service to its customers.

Conclusion

Staff concludes that ATSI has demonstrated the basis of need due to the reliability problems in northern Ohio. Furthermore, PJM has required this project in order to alleviate reliability problems on the transmission grid. In addition, the line would help to serve new load, which is expected to grow at the rate of 1 percent per year. The proposed project would ensure safe, reliable electric service while meeting all the applicable ATSI, NERC, and PJM reliability 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 ORC Section 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 report entitled Recommended Conditions of Certificate.

Considerations for ORC Section 4906.10(A)(2)

NATURE OF PROBABLE ENVIRONMENTAL IMPACT

Pursuant to ORC Section 4906.10(A)(2), the Board must determine the nature of the probable environmental impact of the proposed facility. Staff has found the following with regard to the nature of the probable environmental impact:

Socioeconomic Impacts

Demographics

The project is located within the city of Lorain in Lorain County in a sparsely developed, wooded area containing residential and recreational land uses. Over the last ten years, the population of this region has increased. According to the U.S. Census, the population of Lorain County increased between the years of 2000 and 2010 by 5.5 percent to 301,356 (U.S. Census Bureau, 2010). However, over the same period, the population of the city of Lorain declined by 6.6 percent to 64,097 (U.S. Census Bureau, 2010). Population density within the project area is relatively sparse in comparison to the city as a whole. In 2010, the city of Lorain had an average population density of 2,651 persons per square mile, compared to approximately 988 persons per square mile within the census tract containing the project (U.S. Census Bureau, 2010). The project is not expected to impact the demographics of the region as a whole.

Land Use

Residential properties are concentrated in the southern portion of both routes, along Whittlesey Road, North Ridge Road, and Heritage Way. Nineteen residences are located within 1,000 feet of the Preferred Route. Six residences are located within approximately 200 feet of the Preferred Route centerline along North Ridge Road and Heritage Way. Twenty-two residences are located within 1,000 of the Alternate Route, two of which are within 250 feet of the route centerline. Staff recommends the Applicant avoid locating transmission line towers and poles on residential property to the extent practicable.

No residences would be relocated or removed for construction of the transmission line along either the Preferred or Alternate route. However, existing vegetation would be cleared and new building construction restricted on residential property within the project right-of-way. The Applicant indicated that, with the exception of a few small trees on an undeveloped lot, no trees would need to be removed from the yards of residences along Heritage Way for the Preferred Route. Residences situated near the Preferred or Alternate route would be impacted by temporary ambient noise increases associated with project construction. Existing noise from State Highway 2 would make these temporary noise increases less noticeable for residences along Whittlesey Road. However, construction noise would be clearly audible from residences along North Ridge Road and Heritage Way. The Applicant intends to limit project construction to daylight hours as a means of reducing construction-related noise impacts.

In the event that an existing septic system located within the project right-of-way is damaged by construction, operation, or maintenance of the project, the Applicant is committed to repairing or replacing the system.

Two recreational land uses are located within 1,000 feet of the Preferred and Alternate routes. The Beaver Creek Hunt Club owns land within the existing transmission line right-of-way that extends across the central portion of the Preferred and Alternate routes. Several club structures would be relocated or removed for construction of the transmission line along the Preferred

Route, including a lunch pavilion, a storage shed, and a trap throwing station. No club structures would be relocated or removed for project construction along the Alternate Route.

The Lorain Rifle and Pistol Club owns property south of State Highway 2 within the existing transmission line right-of-way. No club structures would be removed for construction of the transmission line along the Preferred Route. However, a dirt mound barrier used for target practice may be relocated for project construction along the Alternate Route. The Applicant intends to coordinate with club owners in the development of plans addressing the construction schedule, equipment access, club structure relocation and/or removal, and any required club activity restrictions.

No commercial, industrial, institutional, or agricultural land uses are located within 1,000 feet of the Preferred or Alternate route. No adverse impacts to these land uses are expected as a result of construction or operation of the transmission line.

Cultural and Archaeological Resources

The Applicant identified no previously recorded archeological sites, National Register of Historic Places (NRHP) sites, or Historic Districts within 1,000 feet of either the Preferred or Alternate route. One historic structure is located along North Ridge Road approximately 900 feet and 550 feet from the Preferred and Alternate routes, respectively. The Applicant intends to conduct a Phase I archeological survey of the project area consisting of shovel testing at pole locations along the approved route once pole locations become known.

Aesthetics

The Applicant has located both the Preferred and Alternate routes in a sparsely developed, wooded area containing residential and recreational land uses. Permanent visual impacts associated with the project would result from the introduction of a new man-made element to the landscape and the removal of trees from the line right-of-way. Perceptions of transmission line compatibility with surrounding development would vary by viewer and vantage point, and a transmission line along either route would be clearly visible from surrounding residences and roadways. However, by aligning both the Preferred and Alternate routes along either side of an existing transmission line right-of-way, the Applicant has reduced the amount of required vegetation clearing by half. Moreover, the existing right-of-way contains six transmission lines. The character of the area is largely defined by this utility infrastructure. Consequently, the presence of an additional transmission line would be consistent with the existing visual context. Due to the similarities between both routes, neither the Preferred nor Alternate route is superior in terms of aesthetic impact minimization. However, due to its closer proximity to a greater number of residences, the aesthetic impacts of the Preferred Route would be slightly more prominent.

Economics

The estimate of applicable intangible and capital costs for either route is $3,060,000. ATSI would pay approximately $24,917 in annual property taxes to Lorain County, $66,536 to Brownhelm Township, and the city of Lorain would receive approximately $115,472 in property taxes, for a total of $182,008.

All Staff recommendations for the requirements discussed in this section can be found under the **Socioeconomic Conditions** heading of the Recommended Conditions of Certificate.

Ecological Impacts

Surface Waters

The Preferred Route would cross one stream channel, with 173 linear feet within the 125-foot maintained right-of-way. The Alternate Route would cross four stream channels, with eight stream channels within the 150-foot maintained right-of-way, totaling 1,660 linear feet. The Avon-Beaver #1 Relocation Route would cross three streams, with 935 linear feet within the 150-foot maintained right-of-way. All streams, with the exception of Quarry Creek, were assessed using the Ohio EPA Primary Headwater Habitat Evaluation Index (HHEI).

Quarry Creek was assessed using the Ohio EPA Qualitative Habitat Evaluation Index (QHEI), and is designated as Warmwater Habitat at each crossing location. The centerline of the Preferred Route crosses Quarry Creek one time with approximately 173 linear feet of stream within the right-of-way. The centerline of the Alternate Route crosses Quarry Creek one time, and parallels the stream in two locations, resulting in approximately 694 linear feet of stream within the right-of-way.

OPSB Staff recommends that the Applicant be required to develop a streamside vegetation restoration plan to offset impacts associated with the removal of the existing riparian corridor along Quarry Creek. The plan would identify the locations where the planting of low-growing, shrubby vegetation would occur. The Applicant would not conduct mechanized clearing within 25 feet of all other stream channels. Stumps would be left in place to help maintain bank stability. To further limit stream impacts, tree clearing would be limited to those trees that are perceived as posing an imminent risk to the construction and operation of the facility.

Both the Preferred and Alternate routes parallel an existing transmission line corridor with well established access routes. The Applicant anticipates that during construction of the project, construction equipment crossings at streams would only occur at existing culverts. The Applicant would use an existing culvert at Quarry Creek, which is located within existing right-of-way, for access during construction to avoid any additional ecological impacts to this surface water resource. The Applicant, where possible, would avoid stream impacts by accessing pole locations from either side of streams. Some streams may have to be crossed by construction vehicles to construct the Avon-Beaver #1 Relocation Route. If a new stream crossing is necessary, the Applicant may need to place temporary culverts or bridges for passage of construction vehicles. The Applicant also proposed temporary stream fords for crossing low-quality ephemeral and intermittent streams with a drainage basin of less than one square mile. However, OPSB Staff recommends that if headwater streams need to be crossed, the Applicant would use timber matting, not fording, to avoid impacts to headwater streams. These best management practices (BMPs) would be outlined in the Storm Water Pollution Prevention Plan (SWPPP) and a copy would be provided to the Board's Staff.

The centerline of the Preferred Route would cross 12 wetlands, with 26 wetlands within the 125-foot construction corridor, totaling 4.16 acres. The centerline of the Alternate Route crosses eight wetlands, with 12 wetlands identified within the proposed 150-foot construction corridor, totaling 2.26 acres. The Avon Beaver #1 Relocation Route would cross three wetlands, with six wetlands within the 150-foot construction corridor, totaling 0.57 acres. There were no Category 3 wetlands delineated within any of the construction corridors of the proposed routes. The Applicant would take care to avoid or minimize filling and sedimentation, which could occur as a result of construction activities. Most wetlands would be spanned, as new transmission structures would be installed on upland areas. Selective clearing would be required to remove

woody vegetation in wetlands that may impede construction or interfere with operation of the transmission line.

For both construction and future right-of-way maintenance, the Applicant should limit, to the greatest extent possible, the use of herbicides in proximity to surface waters, including wetlands along the right-of-way. Individual treatment of tall growing woody plant species is preferred, while general, widespread use of herbicides during initial clearing or future right-of-way maintenance should only be used where no other options exist.

It is anticipated that a pole would be placed in wetland AB-w05a along the Avon-Beaver #1 Relocation Route. This wetland is located within the existing maintained right-of-way. In response to interrogatories from OPSB Staff, the Applicant states that the impacts to wetland AB-w05a are expected to be minimal and minor impacts associated with construction within the wetland would not alter the function or habitat type of the wetland. The Applicant would notify the U.S. Army Corps of Engineers (USACE) of the pole installation during coordination for the Nationwide 404 permit. The Applicant would utilize best management practices to minimize additional impacts to the wetland during construction and access of the pole.

In order to minimize impacts to surface waters, Staff recommends that the Applicant be required to provide a construction access plan for review prior to the preconstruction conference, as outlined in the recommended conditions. The plan would consider the location of streams, wetlands, wooded areas, and sensitive plant species, as identified by the ODNR, Division of Wildlife (ODNR-DOW), and explain how impacts to all sensitive resources would be avoided or minimized during construction, operation, and maintenance.

No major lakes or reservoirs were observed along the right-of-way of the Preferred Route, Alternate Route, or Avon-Beaver #1 Relocation Route. One pond was identified within 75 feet of the centerline of the Preferred Route. No ponds were identified within 100 feet of the centerlines for the Alternate Route and the Avon-Beaver #1 Relocation Route. Impacts to ponds, lakes, and reservoirs are not anticipated by the construction, operation, or maintenance of the proposed transmission line.

Vegetation

The Avon-Beaver #1 Relocation, Preferred, and Alternate routes cross through several vegetative communities. The following table reflects the different vegetative communities present and associated impact for the routes.

Vegetation Community Type	Preferred Route Impacts (acres)	Alternate Route Impacts (acres)	Avon-Beaver #1 Route Impacts (acres)
Wildlife Food Plot	4.94	2.28	N/A
Maple Mixed Forest	5.47	9.81	1.33
Oak Mixed Forest	9.18	15.53	N/A
Old Field	N/A	0.4	0.82
Pine Forest	N/A	0.79	N/A
Pond	0.05	N/A	N/A
Scrub Shrub	2.23	4.43	3.6
Wetland	3.92	1.91	0.57
Total Acres	**25.79**	**35.15**	**6.32**

All impacts to each vegetative community, as listed in the above table, would be associated with the portions of the routes that would require new right-of-way. However, Staff expects that additional trees would be removed along the existing right-of-way, if they have a potential to

interfere with safe construction and operation of the transmission line. This additional clearing could include hazard trees located outside the right-of-way. All vegetative waste such as tree limbs and trunks generated during construction would be wind-rowed or chipped and disposed of appropriately.

Staff recommends that the Applicant be required to provide a vegetation management plan for review prior to the preconstruction conference, as outlined in the conditions. The plan would identify all areas of proposed vegetation clearing for the project, specifying the extent of the clearing, and describing how such clearing work would be done as to minimize removal of woody vegetation. The plan would also describe how trees and shrubs around structures, along access routes, at construction staging areas, during maintenance operations, and in proximity to any other project facilities would be protected from damage. Where extensive removal of existing woody riparian vegetation cannot be avoided, targeted replanting of site-appropriate, low-growing woody species should be included.

Threatened and Endangered Species

The Applicant requested information from the ODNR and the USFWS regarding state- and federally-listed threatened and endangered plant and animal species. Additional information was provided through field assessments and review of published ecological information. The following table reflects the results of the information requests, field assessments, and document review.

BIRDS				
Common Name	**Scientific Name**	**Federal Status**	**State Status**	**Presence in Project Area**
bald eagle	*Haliaeetus leucocephalus*	BGEPA & MBTA[1]	N/A	Known range, the Biodiversity Database currently has no records of this species near the project area.
piping plover	*Charadrius melodus*	Endangered	Endangered	Known range, these species do not nest in the state but only utilize stopover habitat as they migrate through the region. Therefore, the project is not likely to have an impact on these species.
Kirtland's warbler	*Setophaga kirtlandii*	Endangered	Endangered	Known range, suitable stop-over habitat is available within the project area. The USFWS requested that the Applicant avoid suitable habitat for species during the spring from April 22 to June 1 and in the fall from August 15 to October 15.
golden-winged warbler	*Vermivora chrysoptera*	N/A	Endangered	Known range, suitable habitat is available within the project area. ODNR requested that the Applicant avoid suitable habitat for species during the nesting period of May 15 to July 15.

[1] bald and golden eagles are protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act

REPTILES & AMPHIBIANS				
Common Name	**Scientific Name**	**Federal Status**	**State Status**	**Presence in Project Area**
Blanding's Turtle	*Emydoidea blandingii*	N/A	Threatened	Known range, suitable habitat is available within the project area. ODNR requested that the Applicant consult with a professional herpetologist (approved by Division of Wildlife) to determine whether a survey for this species needs to be performed.
MAMMALS				
Common Name	**Scientific Name**	**Federal Status**	**State Status**	**Presence in Project Area**
Indiana bat	*Myotis sodalis*	Endangered	Endangered	Known range, suitable habitat is available within the project area, further coordination with USFWS required.
bobcat	*Lynx rufus*	N/A	Endangered	Known range, due to mobility of this species, the project is not likely to have an impact on this species.
INSECTS				
Common Name	**Scientific Name**	**Federal Status**	**State Status**	**Presence in Project Area**
mottled darner	*Aeshna clepsydra*	N/A	Endangered	Known range, no suitable habitat is available in the project area.

Suitable habitat for the Indiana bat, Kirtland's warbler, golden-winged warbler, and Blanding's turtle exists within the corridor of the project.

The Indiana bat has a historical range that includes the project area. As a tree-roosting species during the non-winter months, the Indiana bat, if present, could be negatively impacted as a result of the tree clearing associated with construction and maintenance of the project. Limiting tree removal, particularly in the areas identified as potential Indiana bat habitat, would help reduce potential impacts to this species. In order to reduce potential negative impacts to this species, ODNR and OPSB Staff recommends that the Applicant be required to adhere to seasonal cutting dates (September 30 through April 1) for the clearing of trees that exhibit suitable Indiana bat summer habitat, such as roosting and maternity roost trees. The Applicant would also be required to coordinate further with USFWS, as outlined in the conditions, to determine if additional impact minimization and/or mitigation is necessary.

Both the Kirtland's warbler and the golden-winged warbler utilize shrub-dominated habitat such as successional fields, woodland edges, and clearings. Direct and indirect impacts to the Kirtland's warbler and the golden-winged warbler would be minimized by prohibiting the clearing of Kirtland's warbler suitable habitat during its migration periods in the spring (April 22 – June 1) and fall(August 15 – October 15), and golden-winged warbler nesting habitat during critical breeding periods (May 15 – July 15).

Blanding's turtles in Ohio are limited primarily to the northern counties along Lake Erie, where they inhabit the marshy shorelines, inland streams, and wet meadows. There is suitable habitat for the Blanding's turtle in the project area. ODNR requested that the Applicant consult with an ODNR Division of Wildlife-approved herpetologist to determine if the presence of this turtle in the project area is likely. In a response to interrogatories from OPSB Staff, the Applicant states that prior to construction, an ODNR Certified Herpetologist would review the project area and

construction access routes for suitable habitat. Based on the herpetologist's review, the appropriate coordination between the Applicant and ODNR would be completed.

All OPSB Staff recommendations for the requirements discussed in this section can be found under the **Ecological Conditions** of the Recommended Conditions of Certificate.

Public Services, Facilities, and Safety

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

Geology/Soils/Test Borings

Lorain County is situated on the eastern fringe of the till plain area of the Great Central Lowlands. The topography over much of the county is flat to gently rolling. The surface slopes gently to the north with the highest elevation in the southern part of the county, and the lowest elevation at the shoreline to Lake Erie. Exceptions noted are two gorges, the Black River near Elyria and east of the project area, and the Vermillion River at Mill Hollow west of the project area.

The soils of Lorain County are mostly underlain by glacial drift or till deposits. In the southern part of the county the glacial till is generally clayey. Elsewhere around the county the soil is compact, tough, and clay dominant. The soil is somewhat gravelly, containing a few cobbles, and very few boulders. As the glacier retreated northward, the exposed surface was buried beneath beds of clay, sand, and gravel. The clay, sand, and gravel were deposited by wave action in the great lake basin. Streams in the area deposited additional sediment consisting of sand and gravel.

The Applicant has indicated that soil tests will not be performed for the proposed transmission line, as foundations for the new wood poles are not necessary. However, the Applicant has a contingency plan in place to conduct tests in the event the preliminary or final design of the approved route would warrant the use of steel structures on concrete foundations.

Seismology

Lorain County has historically recorded seismic activity above the Ohio state average. The most recent event was recorded on March 12, 2007, at a location 39.8 miles away from the county center. This earthquake had a magnitude of 3.7 on the Richter scale. It is also listed as the seismic event closest to Lorain County in recent years. The oldest records of seismic events within Lorain County occurred in 1883 just south of Elyria, and in 1899 in a remote area in south-central Lorain County near the Medina County line.

Roads and Bridges

The Preferred and Alternate routes cross Cooper Foster Park Road, State Highway 2, and North Ridge Road. No interstate highways are located within 1,000 feet of the routes. Both the Preferred and Alternate routes cross a railroad corridor that runs east to west just north of State Highway 2 and crosses both the Preferred and Alternate routes.

The project area would be accessed from local roads leading to the existing utility corridor. The Applicant will be required to coordinate all traffic issues with the Lorain County Engineer and/or appropriate local officials. The Applicant will also provide a final traffic plan and access plan to each structure. Temporary access roads would be required for each of the proposed pole

locations except where the locations are sited along the existing utility corridor. Access roads will not be planned until a final route is selected, landowners are contacted, and easements for the transmission line are obtained. Once the final access roads are determined, a construction access plan will be submitted to Staff for review.

Noise

Most noise impacts associated with the proposed transmission line would be confined to the seven month construction period. The Applicant proposes to mitigate noise impacts by ensuring all mufflers are properly installed and equipment has received proper maintenance. The transient nature of the construction activities and proposed limitation of construction to daylight hours on weekdays will further reduce impacts to surrounding receptors.

Communications

Radio or television interference is not expected to occur from the operation of the proposed transmission line along either the Preferred or Alternate routes. Any likely source of radio or television interference would be a localized effect primarily from defective hardware that should be easily detected and replaced.

All OPSB Staff recommendations for the requirements discussed in this section can be found under the **Public Services, Facilities, and Safety Conditions** of the Recommended Conditions of Certificate.

Recommended Findings

The Staff recommends that the Board find that the nature of the probable environmental impact has been determined for the proposed facility, and therefore complies with the requirements specified in ORC Section 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 report entitled Recommended Conditions of Certificate.

Considerations for ORC Section 4906.10(A)(3)

MINIMUM ADVERSE ENVIRONMENTAL IMPACT

Pursuant to ORC Section 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 retained a consultant to identify Preferred and Alternate routes that meet project engineering requirements and minimize ecological, cultural, and land use impacts. A project study area was defined between the existing Beaver transmission Line to the north and the Beaver-Greenfield Transmission Line to the south. The consultant then identified and mapped ecological, land use, and cultural features in the study area that represent possible constraints to project construction. Primary constraints included woodlots, wetlands, streams, habitat of threatened or endangered species, sensitive land uses, and sites of historic or archeological significance.

A major transmission line corridor containing six FirstEnergy-owned transmission lines runs north and south between the Beaver line and the Beaver-Greenfield line. Seven potential routes were developed, many along this existing corridor, to avoid siting constraints to the greatest extent practicable. The consultant then ranked the overall desirability of these potential routes based on both quantitative and qualitative criteria. The two highest-ranking corridors were selected as the Preferred and Alternate routes. The Preferred and Alternate routes both utilize the existing transmission line corridor for their entire lengths. However, the Alternate Route is designed to pass underneath existing transmission lines in two locations and is therefore less desirable. Crossing lines is generally avoided to minimize the risk associated with potential failure of one line to affect another transmission facility below it. Failure of a transmission element that would affect another transmission element could result in undesired consequences. It is also desirable to avoid line crossings to facilitate future maintenance and upgrades. Crossing of lines require lines to be in an outage condition or protected for maintenance activities or when the line may need to be reconductored in the future.

Minimizing Impacts

Staff recommends the Preferred Route, including the Avon Beaver #1 Relocation Route, as representing the minimum adverse environmental impact. While negative social and ecological impacts are associated with either route, the necessity for the project has been justified, it is Staff's determination that the Preferred Route would realize fewer impacts overall.

The Preferred Route would result in greater aesthetic impacts due to its proximity to a higher number of residences. However, the risk associated with potential failure of one line to affect another transmission facility below it that is associated with the Alternate Route could result in undesirable power loss for many residences, businesses, or other land uses in the region, and could create a variety of problems including safety concerns.

The Preferred Route impacts a greater acreage of wetlands. However, ecological impacts associated with the Preferred Route would be less severe overall. The Alternate Route parallels Quarry Creek in two separate locations, resulting in the removal of a large amount of riparian vegetation, which currently plays a very important role in stabilizing the steep stream banks. The Alternate Route also requires a larger right-of-way due to the voltage of the line it parallels. The

combination of this larger right-of-way and the location of the route result in the removal of larger quantity and variety of vegetative communities.

Conclusion

The project would result in both temporary and permanent impacts to the project area. When balancing overall impacts, Staff concludes that the Preferred Route would result in fewer potential social and ecological impacts. For these reasons, Staff concludes that with the recommended conditions the Preferred Route along with the Avon Beaver #1 Relocation Route represents the minimum adverse environmental impact.

Recommended Findings

The Staff recommends that the Board find that the proposed facility represents the minimum adverse environmental impact, and therefore complies with the requirements specified in ORC Section 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 report entitled Recommended Conditions of Certificate.

Considerations for ORC Section 4906.10(A)(4)

ELECTRIC GRID

Pursuant to ORC Section 4906.10(A)(4), the Board must determine that the proposed electric 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.

The purpose of this section is to evaluate the impact of integrating the proposed Beaver-Brownhelm Junction 345 kV Transmission Line Project into the existing regional transmission grid. The proposed project was identified in the 2011 PJM RTEP and approved by the PJM Board (PJM, February 2012). PJM's analysis shows that, without the Beaver-Brownhelm Junction 345 kV Transmission Line Project and the associated Beaver-Davis Besse #2 345 kV Transmission Line Project, the area would experience voltage collapse.

PJM Load Deliverability Assessment

The annual load deliverability analysis is performed to ensure the transmission system is able to deliver capacity resources to load under peak system conditions. The analysis is performed by increasing load in the study area, while removing generation, under many scenarios and contingencies. PJM used a 2015 RTEP case to perform their analysis. The results showed that, during increased load and a loss of Perry generating unit one and Avon generating unit nine, the contingencies did not reach a solution. The solution wasn't reached due to a reactive power constraint in Cleveland. The inability to import power could result in a large-scale voltage collapse. There were 23 cases that did not reach a solution.

The Beaver-Brownhelm Junction 345 kV Transmission Line Project, a part of the overall Beaver-Davis Besse #2 345 kV Transmission Line Project, and the Hayes Substation Project (case number 11-4711-EL-BSB), enables the PJM Load Deliverability cases to be solved.

PJM Generator Deliverability Assessment

The annual generator deliverability assessment is run to ensure the transmission system has the resources to deliver the output of all generators to the remainder of PJM during peak system conditions. The analysis is performed by ramping up generation in one area and scaling down generation in another area, under many scenarios and contingencies, to verify that all of the generators' output is able to be delivered. The results revealed that two generator queue projects would not be deliverable.

As part of the overall Beaver-Davis Besse #2 345 kV Transmission Line Project, the proposed Beaver-Brownhelm Junction 345 kV Transmission Line allows the two queue projects to be deliverable.

NERC Category B & C

The North American Electric Reliability Corporation (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. NERC requires planners of the bulk electric transmission system to meet Reliability Standards TPL-001-0.1 through TPL-004-0 under transmission outage conditions for categories A, B, C, and D contingencies (NERC, 2012). According to NERC, a contingency is an unexpected failure or outage of a system component,

such as a generator, transmission line, circuit breaker, switch, or other electrical element. Below is a partial list of the NERC categories and their meanings:

- Category B (single contingency outage, n-1), the planning authority and transmission planner shall demonstrate that the interconnected transmission system can operate to supply projected customer demands and firm transmission service at all demand levels over the range of forecast system demand; and,

- Category C (multiple contingency outages, n-1-1), the planning authority shall demonstrate that the interconnected transmission system can operate to supply projected customer demands and firm transmission service at all demand levels over the range of forecast system demand and may rely upon the controlled interruption of customers or curtailment of firm transmission service.

During system normal conditions and categories B and C system outages, transmission lines shall not exceed their conductor thermal rating, and substation bus voltages must range from 0.95 per unit to 1.05 per unit, with a minimum contingency voltage of .092 per unit. Transformer ratings are specific to each transformer and are based on seasonal conditions, considering loss of life and thermal stresses, and ratings should not be exceeded during normal conditions or emergency conditions.

ATSI used NERC categories B and C for contingency planning of the Beaver-Brownhelm Junction 345 kV Transmission Line Project. The following tables display voltage and thermal overloads on the local and regional grid.

As seen on the voltage analysis table, voltage loading is reduced to acceptable ratings while the Beaver-Davis Besse #2 345 kV Transmission Line Project, the Hayes Substation Project, and the proposed Beaver-Brownhelm Junction 345 kV Transmission Line Project are in-service.

The thermal analysis revealed that, with the loss of the Greenfield 138 kV bus with the Beaver-Davis Besse #2 345 Line in-service and Hayes Substation not in-service, a valid load flow solution could not be reached, indicating voltage collapse. When the Hayes Substation was placed in-service, the load flow study was able to reach a solution, but the Avery transformer loaded to 169 percent of its emergency rating. Even though the proposed project enables the load flow to reach a solution, additional system reinforcements will need to be made to ensure reliability. There are two RTEP baseline projects that address the overloaded Avery transformer. Project #b1929 would replace the current transformer with a larger transformer, and Project #b1930 would increase the thermal rating of the former Avery-Greenfield 138 kV Line.

Beaver-Brownhelm Junction Project Category B & C Outages - Voltage Analysis
Beaver- Davis Besse #2 345 Line In-Service (Includes Beaver-Brownhelm Junction Project)

Outage	**Highest Loaded Element**	**Voltage kV (per unit)**	**Voltage kV (Per Unit)** ***Hayes Substation In-Service***
Carlisle-Shinrock 138 kV Line Ottawa-Lakeview 138 kV Line	Central Soya 69 kV	58.4 *(0.847 pu)*	68.1 *(0.988 pu)*
Greenfield 138 kV Bus	Central Soya 69 kV	50.6 *(0.733 pu)*	63.9 *(0.926 pu)*
Avery-Greenfield 138 kV Line Lakeview-Ottawa 138 kV Line	Flatrock 69 kV	61.5 *(0.891 pu)*	68.2 *(0.989 pu)*

Avery-Greenfield 138 kV Line Lakeview-Ottawa 138 kV Line	Lakeview 138 kV	124.9 *(0.905 pu)*	135.2 *(0.98 pu)*
Lakeview-Ottawa 138 kV Line	Lakeview 138 kV	126.5 *(0.917 pu)*	136.3 *(0.988 pu)*
Lakeview 138 kV Breaker #6 145 *(Lakeview-Ottawa 138 kV Line, Lakeview 138/34.5 kV Transformer #5)*	Lakeview 138 kV	126 *(0.913 pu)*	136 *(0.985 pu)*
Lakeview 138 kV Breaker #145 *(Lakeview-Ottawa 138 kV Line, Lakeview 138/34.5 kV Transformer #4)*	Lakeview 138 kV	126 *(0.913 pu)*	138 *(0.998 pu)*
Ottawa 138 kV Breaker #2 *(Lakeview-Ottawa 138 kV Line, Bayshore-Toussaint-Ottawa 138 kV)*	Lakeview 138 kV	126.5 *(0.917 pu)*	136.4 *(0.988 pu)*
Ottawa 138 kV Breaker #3 *(Lakeview-Ottawa 138 kV Line, Ottawa 138/69 kV Transformer)*	Lakeview 138 kV	126.5 *(0.917 pu)*	136.3 *(0.988 pu)*

Beaver-Brownhelm Junction Project Category B & C - Thermal Analysis

Beaver- Davis Besse #2 345 Line In-Service (Includes Beaver-Brownhelm Junction Project)

Outage	Highest Loaded Element	Emergency Rating *(MVA)*	Loading Per Unit	Loading Per Unit *Hayes Substation In-Service*
Greenfield 138 kV Bus	Avery 138/69 TXFMR	76	No Load Flow Solution	1.598
Greenfield-Hayes #2 138 kV Line Ottawa-Lakeview 138 kV Line	Greenfield-Hayes #1 138 kV Line	195	Load Flow Not Run	1.045
Carlisle-Shinrock 138 kV Line Ottawa-Lakeview 138 kV Line	Wakeman-Baird 69 kV Line	53	1.003	0.375

Conclusion

The Applicant provided details on studies that were performed by ATSI and PJM. These studies demonstrated that, without the proposed Beaver-Brownhelm Junction 345 kV Transmission Line Project and associated projects, ATSI will be unable to provide safe, reliable electric service. The proposed project is listed in PJM's 2011 RTEP and approved by the PJM Board (PJM, February 2012). ATSI is required by PJM to construct this project to mitigate system violations. 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

The 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 reliability. Therefore, the facility complies with the requirements specified in ORC Section 4906.10(A)(4), provided that any certificate issued by the Board for the proposed facility include the conditions specified in the section of this report entitled Recommended Conditions of Certificate.

Considerations for ORC Section 4906.10(A)(5)

AIR, WATER, SOLID WASTE, AND AVIATION

Pursuant to ORC Section 4906.10(A)(5), the facility must comply with specific sections of the ORC 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 pursuant to the requirements of ORC Chapter 3704 (air pollution control laws) may be applicable to the proposed facility. The Applicant will 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, so requirements under ORC 1503.33 and 1501.34 are not applicable to this project. The Applicant will apply for the Ohio National Pollutant Discharge Elimination System (NPDES) Construction Water General Permit, Ohio EPA No. OHC000003, and seek coverage under the U.S. Army Corps of Engineers Nationwide Permit (12) Utility Line Activities, for wetland impacts associated with the proposed transmission line.

The Applicant intends to submit a Notice of Intent (NOI) for coverage under the Ohio EPA's NPDES General Permit for Storm Water Discharges Associated with Construction Activity and a related Storm Water Pollution Prevention Plan (SWPPP). This SWPPP will be developed for the project pursuant to Ohio EPA regulations and will conform to the ODNR's Rainwater and Land Development Manual. It will include a detailed construction access plan. Following the SWPPP, as well as using best management practices for construction activities, would help minimize any erosion-related impacts to streams and wetlands. Wetlands, streams, and other environmentally sensitive areas shall be clearly identified before commencement of clearing or construction. No construction or access will 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 will comply with requirements of ORC Chapter 6111, and the rules and laws adopted under this chapter.

Solid Waste

Solid waste generated from construction activities would include items such as conductor scrap, construction material packaging including cartons, insulator crates, conductor reels, and wrapping, and used storm water erosion control materials. All construction-related debris would be disposed of in Ohio EPA approved landfills, or other appropriately licensed and operated facilities.

Any contaminated soils discovered or generated during construction would be handled in accordance with applicable regulations. The Applicant plans to have a Spill Prevention Plan in place and will follow manufacturer's recommendations for any spill cleanup. Vegetation waste from clearing activities will be removed or wind-rowed along the edge of the right-of-way. Marketable timber will be cut into appropriate lengths for sale or disposition by the landowner and stumps will not be removed. The Applicant's solid waste disposal plans will comply with

solid waste disposal requirements in ORC Chapter 3734, and the rules and laws adopted under this chapter.

Aviation

The tallest anticipated above ground structure and construction equipment is designed to be approximately 90 feet. According to the Federal Aviation Administration (FAA) Office of Aeronautical Information Services, 17 airports and two heliports are located in Lorain County. However, the closest facility is actually located in Erie County. The facility is a heliport, located approximately five miles west of the Alternate Route, south of the city of Vermilion. While the exact pole locations are currently unknown, major turning points where poles were required were entered into the FAA's Notice Criteria Tool website. Based on the coordinates, elevations, and heights of these representative pole locations, no notice criteria were exceeded. Therefore, construction and operation along the Preferred or Alternate route is not anticipated to impact any airports, landing strips, or heliports.

In accordance with ORC 4561.32, Staff contacted the Ohio Office of Aviation during review of this application in order to coordinate review of potential impacts of the facility on local airports. As of the date of preparation of this report, no such concerns have been identified. Construction and operation at neither the Preferred nor Alternate route is expected to have an impact on aviation.

All Staff recommendations for the requirements discussed in this section can be found under the **Air, Water, Solid Waste, and Aviation Conditions** heading of the Recommended Conditions of Certificate.

Recommended Findings

The Staff finds that the proposed facility complies with the requirements specified in ORC Section 4906.10(A)(5), provided that any certificate issued by the Board for the certification of the proposed facility include the conditions specified in the section of this report entitled Recommended Conditions of Certificate.

Considerations for ORC Section 4906.10(A)(6)

PUBLIC INTEREST, CONVENIENCE, AND NECESSITY

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

The Beaver-Brownhelm Junction 345 kV Transmission Line Project is a necessary component of the larger transmission system upgrade known as the Beaver-Davis Besse 345 kV Transmission Line Project, which will be submitted to the Board separately at a later date. The transmission line project will serve the public interest because it will help meet electrical supply needs in the area for the foreseeable future at a reasonable cost to consumers, even during periods of peak demand.

EMF

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. However, there have been concerns that EMF may have impacts on human health.

Because these concerns exist, the Applicant is required to compute the EMF associated with the new circuits. 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 will normally operate below the maximum load conditions, thereby further reducing nominal EMF values. The EMF profiles are shown in Figures 06-1 to 06-8 in the application.

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 would be less than 0.16 kilovolt/meter. The electric fields are easily shielded by physical structures such as the walls of a house, foliage, or other barriers.

The magnetic fields are a function of the electric current, the configuration of the conductors, and the distance from the transmission lines. The magnetic fields were estimated at the right-of-way edge to be less than 15.53 milligauss. The magnetic field output is comparable to that of common household appliances. The maximum magnetic field scenarios are listed in the application (Tables 06-4 and 06-5).

The magnetic fields generated by the transmission line are attenuated very rapidly as the distance from the transmission line increases. The nearest residence is over 160 feet from the Preferred Route, and about 285 feet from the Alternate Route.

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 ORC Section 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 report entitled Recommended Conditions of Certificate.

Considerations for ORC Section 4906.10(A)(7)

AGRICULTURAL DISTRICTS

Pursuant to ORC Section 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 site of the proposed utility facility. The agricultural district program was established under ORC Chapter 929. Agricultural district land is exempt from sewer, water, or 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 Applicant has indicated there is no agricultural district land located within the proposed right-of-way of the Preferred Route or Alternate Route. Therefore, the Applicant proposes no mitigation for agricultural district land.

Recommended Findings

The 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 ORC Section 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 report entitled Recommended Conditions of Certificate.

Considerations for ORC Section 4906.10(A)(8)

WATER CONSERVATION PRACTICE

Pursuant to ORC Section 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 would not require the use of water for operation, water conservation practice as specified under ORC 4906.10(A)(8) is not applicable to the project.

Recommended Findings

The Staff recommends that the Board find that the requirements specified in ORC Section 4906.10(A)(8) are not applicable to this project.

IV. RECOMMENDED CONDITIONS OF CERTIFICATE

Following a review of the application filed by American Transmission Systems, Incorporated 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 issuance of this report.

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 at the Applicant's Preferred Route, including the Common Route (Avon-Beaver #1 Relocation Route), as presented in the application, and as modified and/or clarified by the Applicant's supplemental filings and further clarified by recommendations in the *Staff Report of Investigation*.

(2) The Applicant shall utilize 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 the *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 the *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 all 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. 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 and acceptance, one set of detailed engineering drawings of the final project design, including the transmission line, electric tower and pole locations, 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) If any changes are made to the project layout after the submission of final engineering drawings, all changes shall be provided to Staff in hard copy and as geographically-referenced electronic data. All changes outside the environmental survey areas and any changes within environmentally-sensitive areas will be subject to Staff review and

acceptance, to ensure compliance with all conditions of the certificate, prior to construction in those areas.

(7) 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. The Applicant shall provide as-built drawings in both hard copy and as geographically-referenced electronic data.

(8) 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 journalization of the certificate.

(9) 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.

SOCIOECONOMIC CONDITIONS

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

(10) Prior to commencement of any construction, the Applicant shall prepare a Phase I cultural resources survey program for archaeological work within the construction disturbance area, in consultation with Staff and the OHPO. If the resulting survey work discloses a find of cultural or archaeological significance, or a site that could be eligible for inclusion in the National Register of Historic Places, then the Applicant shall submit an amendment, modification, or mitigation plan to the Board.

ECOLOGICAL CONDITIONS

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

(11) The Applicant shall have a construction access plan based on final plans for the access roads, transmission line, and types of equipment to be used, that addresses the concerns outlined in this *Staff Report of Investigation*. Prior to commencement of construction, the Applicant shall submit the plan to Staff, for review and confirmation that it complies with this condition.

(12) The Applicant shall have a vegetation management plan that addresses the concerns outlined in this *Staff Report of Investigation*. Prior to commencement of construction, the Applicant shall submit this plan to Staff, for review and confirmation that it complies with this condition.

(13) The Applicant shall have a streamside vegetation restoration plan for the clearing of any riparian vegetation adjacent to Quarry Creek for the placement of the electric transmission line that minimizes impacts associated with such activity and incorporates the planting of low growing, shrubby vegetation. At least 30 days prior to the commencement of clearing activities, the Applicant shall submit such plan to Staff, for review and confirmation that it complies with this condition.

(14) The Applicant shall have a Staff-approved environmental specialist on site during construction activities that may affect sensitive areas, as mutually agreed upon between the Applicant and Staff, and as shown on the Applicant's final construction access plan. Sensitive areas include but are not limited to areas of vegetation clearing, designated wetlands and streams, and locations of threatened or endangered species or their identified habitat. The environmental specialist shall be familiar with water quality protection issues and potential threatened or endangered species of plants and animals that may be encountered during project construction.

(15) The Applicant shall contact Staff, 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 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.

(16) The Applicant shall provide Staff and USFWS with the requested information listed in USFWS's August 7, 2012 letter to Staff. The Applicant shall then coordinate with Staff and USFWS for further mist net or emergence surveys that USFWS deems necessary; these surveys may only be completed between May 15 and August 15. In lieu of providing the information listed in the August 7, 2012 letter to Staff the Applicant may conduct a mist net survey on the property. If this option is selected, the Applicant shall contact USFWS immediately for a list of permitted Indiana bat surveyors and to ensure the appropriate survey protocol is implemented. Furthermore, if the requested information of the August 7, 2012 letter to Staff or the mist net surveys do not provide sufficient information, as determined by USFWS, to document a "not likely to adversely affect" determination, formal consultation under section 7 of the Endangered Species Act of 1973, as amended, will be necessary.

(17) The Applicant shall adhere to seasonal cutting dates of September 30 through April 1 for removal of suitable Indiana bat habitat trees, if avoidance measures cannot be achieved.

(18) If the golden-winged warbler preferred habitat types are present and will be impacted, then construction in this habitat is prohibited during the nesting period of May 15 to July 15.

(19) The Applicant shall avoid suitable habitat for the Kirtland's warbler during the spring from April 22 to June 1 and in the fall from August 15 to October 15.

(20) The Applicant shall consult with an ODNR-approved herpetologist to review the project area and construction access routes for impacts to the Blanding's turtle. Based on this consultation, the Applicant would need to complete the appropriate coordination with OPSB Staff and ODNR.

PUBLIC SERVICES, FACILITIES, AND SAFETY CONDITIONS

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

(21) 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. Coordination shall include, but not be limited to, the county engineer, ODOT, local law enforcement, and health and safety officials. This coordination shall be detailed as part of a final traffic plan submitted to Staff prior to the preconstruction conference for review and confirmation that it complies with this condition.

(22) 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 and hoe ram 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.

(23) The Applicant is prohibited, under all circumstances, from blasting during the construction of the proposed facility.

AIR, WATER, SOLID WASTE, AND AVIATION CONDITIONS

Staff recommends the following conditions to address the requirements discussed in Air, Water, Solid Waste, and Aviation:

(24) Prior to the commencement of construction activities that require permits, licenses, or authorizations by federal or state laws and regulations, the Applicant shall obtain and comply with such permits, licenses, 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.

APPENDIX

1. DOCKETING RECORD

CASE NUMBER: 11-4248-EL-BTX
DESCRIPTION: Beaver-Brownhelm Junction 345 kV Transmission Line Project
FILINGS AS OF: 12/19/2012

12/11/2012	Proof of Pub Affidavit of Proof of Mailing of Notification Letters and Supporting Documents, electronically filed by Mr. Robert J Schmidt on behalf of American Transmission Systems Inc.
12/07/2012	Response to Data Requests with Clarification of Common Route electronically filed by Mr. Grant T Zeto on behalf of Staff of the Ohio Power Siting Board.
11/09/2012	Proof of Pub for Lorain County filed by R. Schmidt Jr. on behalf of ATSI.
10/18/2012	Service Notice
10/17/2012	Administrative Law Judge Entry ordered the hearings in this matter be scheduled at the times and places designated in Finding (5); the notices of the application and hearings be published by ATSI in accordance with Findings (7) and (8); that Staff file its Staff Report pursuant to Finding (9); and that all parties file their issues lists, and expert and factual testimony in accordance with Finding (9). - electronically filed by Sandra Coffey on behalf of Scott Farkas, Attorney Examiner, Public Utilities Commission of Ohio.
10/12/2012	Affidavit of Proof of Service of Complete and Accepted Application on Local Officials electronically filed by Mr. Robert J. Schmidt on behalf of American Transmission Systems Inc.
10/03/2012	Letter informing the Commission to the correction of a minor typographical error that occurred in the compliance letter for this case, filed on September 27, 2012 filed by Staff.
09/27/2012	Letter informing Mr. Parke that the application filed with the Ohio Power Siting Board has been found to comply with Chapters 4906-01, et seq., of the Ohio Administrative Code (OAC) filed by Staff.
09/11/2012	Service Notice
09/11/2012	Entry by Administrative Law Judge granting ATSI's waiver requests. - electronically filed by Sandra Coffey on behalf of Scott Farkas, Attorney Examiner, Public Utilities Commission of Ohio
08/30/2012	Letter of Notification electronically filed by Mrs. Tonnetta Y Scott on behalf of PUCO.
08/17/2012	Supplement continued. (part 3 of 3)
08/17/2012	Supplement continued . (part 2 of 3)
08/17/2012	Supplement to the application. (Part 1 of 3)
08/15/2012	Amendment to Motion for Waiver electronically filed by Ms. Catherine Darcy Copeland on behalf of American Transmission Systems, Incorporated.
08/09/2012	Motion For Certain Waivers and Memorandum in Support electronically filed by Ms. Catherine Darcy Copeland on behalf of American Transmission Systems, Incorporated
07/31/2012	Application For A Certificate of Environmental Compatibility and Public Need Beaver to Brownhelm Junction 345 kV Transmission Line Construction Project filed by Scott Humphrys on behalf FirstEnergy Service Company.
08/15/2011	In the matter of the pre-application notification for Beaver-Davis Besse # 2 345 kV Transmission Line Project filed on behalf of FirstEnergy Service Company by S. Humphrys.

2. REFERENCES

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PJM. (2012, May 10). *Transmission Expansion Advisory Committee*. Retrieved from PJM: http://pjm.com/committees-and-groups/committees/teac.aspx

PJM. (February 2012). *2011 Regional Transmission Expansion Plan.* Retrieved November 7, 2012, from http://pjm.com/documents/reports/rtep-report.aspx

PJM. (January 2012). *2012 Load Forecast Report.* Retrieved November 7, 2012, from http://pjm.com/~/media/documents/reports/2012-pjm-load-report.ashx

U.S. Census Bureau. (2010). 2010 Census Summary File 1. *Profile of General Demographic Characteristics*. Retrieved November 1, 2012, from http://factfinder2.census.gov

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Summary: Staff Report Filed electronically filed by Mr. Grant T Zeto on behalf of Staff of the Ohio Power Siting Board