Post & Schell P.C.
ATTORNEYS AT LAW

17 North Second Street
12th Floor
Harrisburg, PA 17101-1601
717-731-1970 Main
717-731-1985 Main Fax
www.postschell.com

Garrett P. Lent

glent@postschell.com
717-612-6032 Direct
717-731-1985 Direct Fax
File #: 205233

July 3, 2024

VIA ELECTRONIC FILING

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street, Second Floor
Harrisburg, Pennsylvania 17120

Re: Application of Mid-Atlantic Interstate Transmission, LLC Pursuant 52 Pa. Code Chapter 57, Subchapter G, for Approval of the Siting and Construction of the East Germantown-Germantown 115 Kilovolt Transmission Line Project Located in Mount Joy, Germany, and Union Townships, Adams County, Pennsylvania Docket No. A-2024-_____

Dear Secretary Chiavetta:

Enclosed for filing on behalf of Mid-Atlantic Interstate Transmission, LLC ("MAIT"), are the following:

1. The Application and the Exhibits in support of the Application;

2. The Direct Testimony in support of the Application; and

3. The Notice of Filing.

The associated $350.00 filing fee has been paid by Post & Schell, P.C. as of the time of the filing.

Copies of the Application and accompanying Exhibits, and Direct Testimony are being served by certified mail, return receipt requested, upon the parties indicated on the Certificate of Service associated with the Application.

Copies of the Notice of Filing are being served by certified mail, return receipt requested, upon the parties indicated on the Certificate of Service associated with the Notice of Filing.

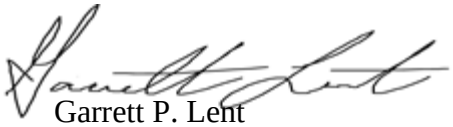
Subject to the Pennsylvania Public Utility Commission's approval, the Project has a scheduled construction date of May 12, 2025, for the proposed high-voltage transmission line to meet an in-service date of October 8, 2025. To support this construction timeline, MAIT respectfully requests that the MAIT respectfully requests that the Commission issue its final ruling by its public meeting on May 8, 2025.

Request for Special Treatment of Certain Information

Please note that the unredacted version of MAIT Exhibit 3 to the Application contains "Confidential Security Information" pursuant to Chapter 102 of the Commission's regulations, 52 Pa. Code §§ 102.1-102.4. and for the purposes of Chapter 102 of the Rules and Regulations of the Pennsylvania Public Utility Commission, 52 Pa. Code § 102.1-012.4, and should be afforded confidential treatment as described in the statue and regulation. This exhibit also contains privileged and confidential information and/or critical infrastructure information ("CEII") that should not be released pursuant to 18 C.F.R. §388.112. The unredacted version of MAIT Exhibit 3 is labelled "CONFIDENTIAL – CONTAINS CRITICAL ENERGY INFRASTRUCTURE INFORMATION" and will be provided separately to the Public Utility Commission and only shared with other parties to this proceeding pursuant to a Stipulated Protective Agreement or Protective Order entered in this proceeding.

If you have any questions pertaining to the matter, please contact me at the addresses or telephone numbers provided above.

Respectfully submitted,



Garrett P. Lent

GPL/dmc
Enclosures

cc: Deb Becker – Bureau of Technical Utility Services (via email)
Jordan Van Order – Bureau of Technical Utility Services (via email)
Certificates of Service

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing Application has been served upon the following persons, in the manner indicated, in accordance with the requirements of 52 Pa. Code § 57.74(b).

VIA CERTIFIED MAIL: RETURN RECEIPT REQUESTED

Pennsylvania Department of Environmental Protection
400 Market Street, 10th Floor
Rachel Carson State Office Building
Harrisburg, Pennsylvania 17101
Attn: Regional Permit Coordination Office

Bureau of Investigation and Enforcement
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street, 2nd Floor, Room-N201
Harrisburg, Pennsylvania 17120
Attn: Allison Kaster

Pennsylvania Office of Consumer Advocate
555 Walnut Street 5th Floor Forum Place
Harrisburg, Pennsylvania 17101-1923
Attn: Patrick Cicero, Consumer Advocate

Pennsylvania Office of Small Business Advocate
555 Walnut Street, 1st Floor Forum Place
Harrisburg, Pennsylvania 17101
Attn: NazAarah Sabree, Small Business Advocate

Adams County Board of Commissioners
117 Baltimore Street, Room 201
Gettysburg, PA 17325
Attn: Randy L. Phiel, Chairman

Adams County Conservation District
670 Old Harrisburg Road, Suite 201
Gettysburg, PA 17325
Attn: Mr. Adam McClain, District Manager

Adams County Office of Planning and Development
670 Old Harrisburg Road, Suite 100,
Gettysburg, PA 17325
Attn: Sherri Clayton-Williams

Germany Township Board of Supervisors
136 Ulricktown Road
Littlestown, PA 17340
Attn: Elwood Albin, Chair

Germany Township Planning Commission
136 Ulricktown Road
Littlestown, PA 17340
Attn: Bryan Gonnella, Chair

Mt Joy Township Board of Supervisors
902 Hoffman Home Road
Gettysburg, PA 17325
Attn: Bernard Mazer, Chair

Mt Joy Township Planning Commission
902 Hoffman Home Road
Gettysburg, PA 17325
Attn: Kim Birckhead, Chair

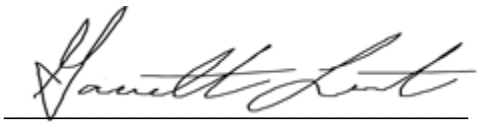
Mt Joy Township Zoning Board
902 Hoffman Home Road
Gettysburg, PA 17325
Attn: Nick Demas, Chair

Mt Joy Agricultural Security Area
902 Hoffman Home Road
Gettysburg, PA 17325
Attn: Chad Yingling, Advisory Committee Chairperson

Union Township Board of Supervisors
255 Pine Grove Road
Hanover, PA 17331
Attn: John Aldridge, Chair

Union Township Planning Commission
255 Pine Grove Road
Hanover, PA 17331
Attn: James Morhaleck, Chair

Date: July 3, 2024



Garrett P. Lent

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing Application has been served upon the following persons, in the manner indicated, in accordance with the requirements of 52 Pa. Code § 57.74(b).

VIA CERTIFIED MAIL: RETURN RECEIPT REQUESTED

Pennsylvania Department of Environmental Protection
400 Market Street, 10th Floor
Rachel Carson State Office Building
Harrisburg, Pennsylvania 17101
Attn: Regional Permit Coordination Office

Bureau of Investigation and Enforcement
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street, 2nd Floor, Room-N201
Harrisburg, Pennsylvania 17120
Attn: Allison Kaster

Pennsylvania Office of Consumer Advocate
555 Walnut Street 5th Floor Forum Place
Harrisburg, Pennsylvania 17101-1923
Attn: Patrick Cicero, Consumer Advocate

Pennsylvania Office of Small Business Advocate
555 Walnut Street, 1st Floor Forum Place
Harrisburg, Pennsylvania 17101
Attn: NazAarah Sabree, Small Business Advocate

Adams County Board of Commissioners
117 Baltimore Street, Room 201
Gettysburg, PA 17325
Attn: Randy L. Phiel, Chairman

Adams County Conservation District
670 Old Harrisburg Road, Suite 201
Gettysburg, PA 17325
Attn: Mr. Adam McClain, District Manager

Adams County Office of Planning and Development
670 Old Harrisburg Road, Suite 100,
Gettysburg, PA 17325
Attn: Sherri Clayton-Williams

Germany Township Board of Supervisors
136 Ulricktown Road
Littlestown, PA 17340
Attn: Elwood Albin, Chair

Germany Township Planning Commission
136 Ulricktown Road
Littlestown, PA 17340
Attn: Bryan Gonnella, Chair

Mt Joy Township Board of Supervisors
902 Hoffman Home Road
Gettysburg, PA 17325
Attn: Bernard Mazer, Chair

Mt Joy Township Planning Commission
902 Hoffman Home Road
Gettysburg, PA 17325
Attn: Kim Birckhead, Chair

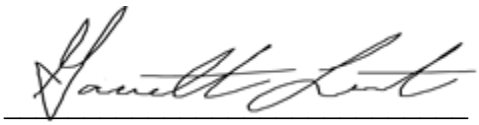
Mt Joy Township Zoning Board
902 Hoffman Home Road
Gettysburg, PA 17325
Attn: Nick Demas, Chair

Mt Joy Agricultural Security Area
902 Hoffman Home Road
Gettysburg, PA 17325
Attn: Chad Yingling, Advisory Committee Chairperson

Union Township Board of Supervisors
255 Pine Grove Road
Hanover, PA 17331
Attn: John Aldridge, Chair

Union Township Planning Commission
255 Pine Grove Road
Hanover, PA 17331
Attn: James Morhaleck, Chair

Date: July 3, 2024



Garrett P. Lent

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

APPLICATION OF MID-ATLANTIC INTERSTATE TRANSMISSION, LLC FILED PURSUANT TO 52 PA. CODE CHAPTER 57, SUBCHAPTER G, FOR APPROVAL OF THE SITING AND CONSTRUCTION OF THE EAST GERMANTOWN-GERMANTOWN 115 KILOVOLT TRANSMISSION LINE PROJECT LOCATED IN MOUNT JOY, GERMANY AND UNION TOWNSHIPS, ADAMS COUNTY, PENNSYLVANIA	:	**Docket No. A-2024-_____**

APPLICATION FOR THE EAST GERMANTOWN-GERMANTOWN 115 KILOVOLT TRANSMISSION LINE PROJECT OF MID-ATLANTIC INTERSTATE TRANSMISSION, LLC

TO THE PENNSYLVANIA PUBLIC UTILITY COMMISSION:

Mid-Atlantic Interstate Transmission, LLC ("MAIT"), a FirstEnergy Company, pursuant to the Pennsylvania Public Utility Commission's ("Commission") regulations at 52 Pa. Code § 57.72 *et seq*. and its Interim Guidelines for the Filing of Electric Transmission Line Siting Applications at 52 Pa. Code § 69.3101 *et seq*., requests the Commission's approval to locate, construct, operate and maintain a high-voltage ("HV") transmission line referred to as the "East Germantown-Germantown 115 Kilovolt ('kV') Transmission Line Project" (the "Project"). The proposed line is an approximately 3.5-mile single circuit, 115 kV transmission line to be located in Mount Joy, Germany and Union Townships in Adams County, Pennsylvania. The Project is needed to address a request for transmission service from FirstEnergy Pennsylvania Electric Company ("FE PA"), and to improve electric service reliability for customers located in Adams County, Pennsylvania.

In addition, MAIT is making this filing available to the public on its website. MAIT has included a link to this website in this Application and in the Notice of Filing. MAIT also intends to provide the URL address to the filing in the newspaper notice it publishes in newspaper(s) of general circulation in the area of the East Germantown-Germantown 115 kV Transmission Line Project.

Subject to the Commission's approval, construction on the Project is scheduled to begin on or about May 12, 2025, to meet an in-service date of October 8, 2025. To support this construction timeline, MAIT respectfully requests that the MAIT respectfully requests that the Commission issue its final ruling by its public meeting on May 8, 2025.

In support of this Application, MAIT states as follows:

I. INTRODUCTION

1. The name of the Applicant and the address of its principal business offices are:

Mid-Atlantic Interstate Transmission, LLC
76 South Main Street
Akron, OH 44308

2. MAIT's attorney in this matter authorized to receive notices and communications on its behalf:

Joey Chen
Attorney ID #334709
FirstEnergy Services Company
2800 Pottsville Pike
Reading, PA 19612
(610) 921-6784
jchen@firstenergycorp.com

David B. MacGregor (ID #28804)
Garrett P. Lent (ID #321566)
Megan Rulli (ID # 331981)
Post & Schell, P.C.

17 North Second Street
12th Floor
Harrisburg, PA 17101-1601
(717) 731-1970
dmacgregor@postschell.com
glent@postschell.com
mrulli@postschell.com

3. MAIT also requests that a copy of all notices and communications regarding this matter be sent to:

Mary E. Anderson
Transmission Siting Supervisor
FirstEnergy Service Company
76 South Main
Akron, OH 44308
mcargill@firstenergycorp.com

4. MAIT, a subsidiary of FirstEnergy Corp., is a public utility that provides interstate electric transmission services in the Commonwealth subject to the jurisdiction of the Federal Energy Regulatory Commission ("FERC"). MAIT also has been issued a certificate of public convenience as a Pennsylvania public utility pursuant to the Commission's Opinion and Order entered August 24, 2016, at Docket Nos. A-2015-2488903 et al. Accordingly, the Commission asserts jurisdiction over the siting and construction of transmission lines by MAIT in Pennsylvania pursuant to the Commission's regulations at 52 Pa. Code § 57.71 et seq.

5. In support of this Application, MAIT includes the written direct testimony of six witnesses, identified as MAIT Statement Nos. 1 through 6, and supporting exhibits. MAIT also includes with this submission a cross-reference document that lists provisions of the Commission's regulations and notes where they are referenced in this submission. *See* **Attachment 1**. Additionally, MAIT's witnesses sponsor the following exhibits, which are included with the filing and provide additional detailed information regarding the proposed Project:

- Mary E. Anderson (MAIT Statement No. 1) provides an introduction of MAIT's six witnesses, summarizes the Project's regulatory requirements, describes MAIT's outreach to the public, and sponsors MAIT Exhibits 1 and 2.
  - **MAIT Exhibit 1:** Project Fact Sheet
  - **MAIT Exhibit 2:** Proof of Publication for Public Meeting
- Melissa A. Smith (MAIT Statement No. 2) identifies the need to strengthen the service area of FE PA[1] and its regional electric system and sponsors MAIT Exhibits 3 and 4.
  - **MAIT Exhibit 3:** FE PA Distribution Substation One-Line Drawing
  - **MAIT Exhibit 4:** FE PA East Germantown PA Circuits
- Lawrence A. Hozempa (MAIT Statement No. 3) describes the need for the Project, the alternatives to the Project that were considered, and the PJM Interconnection, LLC regional transmission expansion planning process; provides an overview of the electromagnetic field ("EMF") calculations; and sponsors MAIT Exhibits 5 through 12.
  - **MAIT Exhibit 5:** Existing MAIT Transmission System Project Area Map
  - **MAIT Exhibit 6:** Proposed MAIT Transmission System Project Area Map
  - **MAIT Exhibit 7:** PJM Need Slide, dated April 16, 2020
  - **MAIT Exhibit 8:** PJM Solution Slide, dated November 18, 2020

[1] On December 7, 2023, the Pennsylvania Public Utility Commission approved, among other things, the merger of FirstEnergy's Pennsylvania operating companies—i.e., Metropolitan Edison Company, Pennsylvania Electric Company, Pennsylvania Power Company, and West Penn Power—into FirstEnergy Pennsylvania Electric Company ("FE Pennsylvania") The merger transaction closed on January 1, 2024. FE PA is a wholly owned subsidiary of FirstEnergy and provides distribution service to about 2,108,000 electric utility customers within approximately 32,400 square miles across Pennsylvania.

- **MAIT Exhibit 9:** Graph of Electric Field Calculations under normal loading for the proposed project when paralleling existing 500 kV circuit
- **MAIT Exhibit 10:** Graph of Magnetic Field Calculations under normal loading for the proposed project when paralleling existing 500 kV circuit.
- **MAIT Exhibit 11:** Graph of Electric Field Calculations under normal loading for the proposed project when only line present in right-of way ("ROW")
- **MAIT Exhibit 12:** Graph of Magnetic Field Calculations under normal loading for proposed project when only line present in ROW

- Barry A. Baker (MAIT Statement No. 4) describes the principal elements of the siting analysis, explains how the environmental assessment was conducted, discusses the reasons why the proposed route was selected, and sponsors MAIT Exhibits 13 through 16.
  - **MAIT Exhibit 13:** Topographic Overview Map Depicting the Location of the Proposed Project
  - **MAIT Exhibit 14:** Aerial Overview Map Depicting the Location of the Proposed Project
  - **MAIT Exhibit 15:** Transmission Line Route Selection Study
  - **MAIT Exhibit 16:** Government Agencies Contacted and List of Permit Requirements
- Lisa Marinelli (MAIT Statement No. 5) explains the process by which easements and other land rights were acquired for the Project, and sponsors MAIT Exhibits 17 through 18.
  - **MAIT Exhibit 17:** List of Property Owners Crossed by the Right-of-Way

- **MAIT Exhibit 18:** Code of Conduct

- Morgan Meehan (MAIT Statement No. 6) describes the design and engineering for the Project, how the Project will be constructed, MAIT's plans for operating and maintaining the proposed transmission line after it is constructed, including removing and controlling vegetation, and sponsors MAIT Exhibits 19 through 33.
  - **MAIT Exhibit 19:** General Layout of the Project
  - **MAIT Exhibit 20:** Typical ROW Cross Section for a Single Circuit 115 kV Transmission Line
  - **MAIT Exhibit 21:** Typical ROW Cross Section for a Single Circuit 115 kV Transmission Line Paralleling an Existing 500 kV Transmission Line
  - **MAIT Exhibit 22:** Depiction of a Typical 115 kV Single Circuit Wood Pole Suspension Horizontal 2-pole H-frame Structure
  - **MAIT Exhibit 23:** Depiction of a Typical 115 kV Single Circuit Wood Pole Suspension Horizontal 3-pole Structure
  - **MAIT Exhibit 24:** Depiction of a Typical 115 kV Single Circuit Wood Pole Strain Dead-End Horizontal 3-pole Structure
  - **MAIT Exhibit 25:** Depiction of a Typical 115 kV Single Circuit Steel Delta Suspension Structure
  - **MAIT Exhibit 26:** Depiction of a Typical 115 kV Single Circuit Steel Strain Dead-End Structure
  - **MAIT Exhibit 27:** Depiction of a Typical 115 kV Single Circuit Steel Dead-End Structure

- **MAIT Exhibit 28:** Depiction of a Typical 115 kV Single Circuit Steel Dead-End H-Frame Structure
- **MAIT Exhibit 29:** Depiction of a Typical 115 kV Single Circuit Direct Embed Steel 3-pole Switch Structure
- **MAIT Exhibit 30:** Depiction of a Typical 115 kV Single Circuit Steel Switch H-Frame Structure
- **MAIT Exhibit 31:** Copy of "Maintaining a Safe and Reliable Transmission System Vegetation Management for New Transmission Construction Projects" Document
- **MAIT Exhibit 32:** Copy of "Maintaining a Safe and Reliable Transmission System Tree Trimming and Comprehensive Vegetation Management" Brochure
- **MAIT Exhibit 33:** Copy of Vegetation Management for New Transmission Construction Projects Documents

6. This Application, inclusive of the accompanying Exhibits and Statements, which are incorporated herein by reference, contains all the information required by 52 Pa. Code §§ 57.72(c), 69.1101, 69.3101-.3107.

II. APPLICATION FOR SITING APPROVAL

A. General Description of the Project

7. FE PA has requested that MAIT provide transmission service to the proposed 115-13.2 kV East Germantown Mod Substation ("East Germantown Substation"). To accommodate FE PA's electricity needs, MAIT performed an evaluation of the existing 115 kV transmission

system in the area surrounding the proposed location for the East Germantown Substation in Adams County.

8. The proposed Project contemplates the construction of a new single circuit 115 kV transmission line from the existing Germantown Substation, located in Mount Joy Township, spanning approximately 3.5 miles to the proposed, new East Germantown Substation, located in Union Township, Pennsylvania.[2] As the proposed transmission line exits Germantown Substation, it will extend approximately 0.5 miles in a newly acquired 120-foot ROW and then utilize an existing 120-foot ROW for approximately 1.2 miles as it extends towards the existing Conastone-Hunterstown 500 kV 5013 Transmission Line ROW. At this juncture, the proposed transmission line will be located within the existing Conastone-Hunterstown 500 kV 5013 Transmission Line ROW as it extends generally east towards the proposed location for the East Germantown Substation for approximately 1.8 miles.

9. The proposed Project will provide FE PA with a new transmission source that will allow for increased capacity to support the load growth in the area on the existing distribution system. The Project will also improve reliability and enhance service for FE PA customers.

10. MAIT is providing with this Application several maps that either depict or aid in understanding the location and description of the Project. MAIT witness Lawrence Hozempa (MAIT Statement No. 3) sponsors **MAIT Exhibits 5** and **6,** which are, respectively, maps showing the existing transmission system in the Project Area as well as the proposed transmission system in the Project Area after completion of the Project. In addition, MAIT witness Barry Baker (MAIT Statement No. 4) sponsors **MAIT Exhibits 13** and **14,** which are, respectively, a topographic and an aerial map of the area encompassing the Project showing the proposed line route in relation to

[2] The existing Germantown Substation is jointly owned by MAIT and FE PA. The proposed East Germantown Mod Substation will be owned by FE PA.

major physical features. Mr. Baker also provides a narrative description of the proposed route in his direct testimony.

11. The entire Project will be located in Adams County, Pennsylvania. The proposed East Germantown-Germantown 115 kV Transmission Line will traverse approximately 0.8 miles in Mount Joy Township, approximately 1.3 miles in Germany Township, and approximately 1.4 miles in Union Township.

12. MAIT has an existing, generally 275-foot ROW that is partially occupied by the existing Conastone-Hunterstown 500 kV 5013 Transmission Line[3]. As shown in **MAIT Exhibit 21**, the existing 500 kV transmission line occupies the northern 200 feet of that existing ROW with an adjacent 75 feet of ROW along the southerly side. The existing 75-foot ROW that MAIT proposes to use for the Project satisfies the required ROW width to support the Project. MAIT witness Morgan Meehan (MAIT Statement No. 6) more fully describes the existing transmission line corridor used by the Project, and she sponsors several exhibits depicting the corridor and the typical structures that will support the proposed transmission line. The existing ROW agreements with the underlying landowners allow MAIT to install the proposed structures to support the proposed Project.

13. MAIT acquired four (4) new easements in support of the Project. Three (3) of the easements were acquired to support approximately 0.25 miles of transmission line as it exits the existing Germantown Substation. The fourth easement was acquired for the transmission line connection to the proposed East Germantown Substation.

[3] MAIT acquired the existing transmission line corridor from the former Metropolitan Edison Company ("Met-Ed") when Met-Ed and the former Pennsylvania Electric Company ("Penelec") transferred their transmission assets to MAIT with the prior approval of the Commission and the FERC. As part of that transaction, Penelec and Met-Ed leased to MAIT the land and land rights on which their transmission facilities were located.

14. The proposed transmission line will extend from the existing Germantown Substation generally in a northeasterly direction, crossing over the existing Germantown-Lincoln 115 kV 998 Transmission Line towards the existing Conastone-Hunterstown 500 kV 5013 Transmission Line. Once it reaches the Conastone-Hunterstown 500 kV 5013 Transmission Line, the proposed transmission line will parallel the existing 500 kV transmission line, in the existing ROW, generally in a southeasterly direction to the proposed new East Germantown Substation, which will be constructed adjacent to the southerly side of the existing 500 kV ROW. **MAIT Exhibit 19** provides a general layout for the proposed Project. Pursuant to 52 Pa. Code § 57.72(c)(3), a general description of the proposed route of the Project is attached hereto as **Appendix A**.

B. Engineering Description

15. The East Germantown-Germantown 115 kV Transmission Line is proposed to be constructed and operated as a single circuit transmission line extending approximately 3.5 miles. The proposed transmission line will be supported by multiple structure types as shown in **MAIT Exhibits 22** through **30** and more fully described in Ms. Meehan's direct testimony (MAIT Statement No. 6). Based on preliminary engineering, the proposed transmission line will require approximately 40 structures ranging in height from approximately 55 feet to approximately 125 feet above the ground, with an average height of approximately 68.5 feet. The average span length between structures will be approximately 465 feet. The majority of the structures are designed as wood pole structures, although steel structures are proposed in select locations to support design requirements.

16. The overhead 115 kV single circuit transmission line will utilize three conductors of 795 kcmil[4] 26/7 aluminum conductor, steel reinforced. A single 7#8 Alumoweld shield wire and optical ground wire will also be installed on the new transmission structures. The proposed Project will be designed and operated at 115 kV. The transmission maximum design operating temperature is 212 degrees Fahrenheit. The transmission line will meet or exceed all requirements of the current National Electrical Safety Code ("NESC") under all operating conditions.

C. Right-of-Way Assessment

17. The proposed East Germantown-Germantown 115 kV Transmission Line will be located within a 120-foot ROW for approximately 1.45 miles as it exits the existing Germantown Substation. The transmission line will be centered within the corridor approximately 60 feet from either edge of ROW as depicted in **MAIT Exhibit 20**. In the proposed Project Area, MAIT has an existing, generally 275-foot-wide corridor that presently contains the Conastone-Hunterstown 500 kV 5013 Transmission Line. The Conastone-Hunterstown 500 kV 5013 Transmission Line is situated approximately 100 feet from the northern edge of the existing ROW and has a dedicated 200-foot ROW within the existing 275-foot corridor, leaving 75 feet of the total corridor width available to accommodate the remaining approximately 1.75 miles of the proposed East Germantown-Germantown 115 kV Transmission Line as depicted in **MAIT Exhibit 21.**

D. Property Owners

18. The names and addresses of known persons, corporations and other entities of record who own property within the proposed transmission line route where the Project is proposed to be located are provided in **MAIT Exhibit 17**. There are no outstanding or unresolved real estate issues with these property owners.

[4] "Kcmil" stands for thousand circular mils. Kcmil wire size is the equivalent cross-sectional area in thousands of circular mils. A circular mil is the area of a circle with a diameter of one thousandth (0.001) of an inch.

E. Statement of Need

19. MAIT Witness Melissa Smith (MAIT Statement No. 2) explains that the need for the Project is based on FE PA's need to increase capacity to support the load in the area on the existing distribution system. Importantly, the existing Germantown Substation Distribution Bank #2 exceeded the transformer overload rating in 2018 based on load data, and the bank currently runs overloaded during peak loading times. FE PA lacks existing distribution lines in the area that could be tied into in order to pick up load. Due to this lack of capacity, the distribution system is unable to provide emergency switching for unplanned outages. The Project will relieve the overload on the Germantown Bank #2 transformer, and it will provide much needed emergency switching options.

20. In order to increase capacity on the distribution system and resolve the identified distribution reliability issues, FE PA has requested a new 115 kV transmission source to a proposed 115-13.2 kV mod substation (i.e., the new East Germantown Substation that will be owned and operated by FE PA). Where the Company also considered alternative solutions to the new East Germantown Substation, including upgrading or adding to the existing Germantown transformer, those alternatives were rejected because the existing transformer has already exceeded its limit, and the substation cannot accommodate an additional transformer. Furthermore, the existing Germantown Substation cannot feed other distribution circuits without triple circuiting the existing distribution poles out of the substation. The electrical need for the Project is further explained in Ms. Smith's direct testimony.

21. Mr. Hozempa (MAIT Statement No. 3) also explains that the need for MAIT to undertake this transmission Project is based on the Company's duty to serve customers in need of transmission service. While the Project is not necessary to address transmission planning criteria

violations, it is required to resolve distribution reliability issues. Therefore, the Project is needed to fulfill a customer request for 115 kV service. Specifically, FE Pennsylvania requested this service for its new distribution substation.

F. Safety Considerations

22. The proposed Project will not create any unreasonable risk of danger to the public health or safety. The design, construction, and operation of the Project will meet or exceed the requirements specified in the latest edition of the NESC and all applicable safety standards established by the Occupational Safety and Health Administration ("OSHA"). All work shall be done in accordance with NESC, OSHA and any applicable local, state or federal requirements.

23. The Project is being completed within new and existing transmission line corridors. FirstEnergy's vegetation management practices are described in **MAIT Exhibits 31** through **33** and discussed in Ms. Meehan's direct testimony (MAIT Statement No. 6).

24. An EMF study for the proposed transmission line was performed. Results of that study are provided in Table 1 and Table 2 of Mr. Hozempa's direct testimony (MAIT Statement No. 3) in response to Section 69.3107(b) of the Interim Guidelines.

25. No communication towers, pipelines, or other utilities will be affected by the proposed Project.

26. The proposed Project will involve one major road crossing—PA Route 97 (Baltimore Pike) will be spanned by the proposed East Germantown-Germantown 115 kV Transmission Line. MAIT will obtain the necessary Pennsylvania Department of Transportation ("PennDOT") Highway Occupancy Permits, or equivalent type permits for this major road crossing prior to construction.

27. MAIT will coordinate with the Federal Aviation Association ("FAA") and PA Bureau of Aviation, as needed, to assess potential interference with any air navigation facility before construction. Aviation coordination has been initiated through the FAA. MAIT will ensure that the pole locations and heights are properly recorded by the FAA. MAIT will comply with any additional lighting and other visual aids that may be required by these agencies to ensure aviation safety in the region.

G. Route Analysis

28. FirstEnergy Service Company, on behalf of MAIT, retained AECOM, an international Engineering and Environmental consulting firm, to prepare a comprehensive study of alternative routes and the potential impacts from the Project. The results of this study are set forth in the AECOM report titled, "Transmission Line Route Selection Study East Germantown-Germantown 115 kV Transmission Line Project" ("Route Selection Study"), which is provided as **MAIT Exhibit 15**. Of the four alternative routes evaluated, Alternative Route A was selected as the Proposed Route. The least attractive aspect of this alignment was the potential environmental impacts that would occur on the initial 0.50-mile section exiting the Germantown Substation. To minimize impacts to wetlands and riparian areas, a hybrid route utilizing a portion of Alternative Route B was identified to bypass this environmentally sensitive area. The basis for the final route selection is set forth in Section 6.0 and in Table 6-1 of the Route Selection Study and is also explained in Mr. Baker's direct testimony (MAIT Statement No. 4). The Route Selection Study and Mr. Baker's testimony also provide information regarding the alternative routes considered by MAIT.

H. Environmental Assessment

29. AECOM conducted a comprehensive review of the environmental constraints

located within the Project study area ("Study Area") that identified the environmental setting of the Study Area including the physiography, geology, soils, surface waters, wetlands, vegetation, wildlife, threatened and endangered species, and special use areas. The environmental constraints and impact assessment are set forth in Sections 4.1 and 5.2.2.2 of the Route Selection Study (**MAIT Exhibit 15**). No substantial impacts to these resources are anticipated as a result of constructing the Project.

30. As further explained in Mr. Baker's direct testimony, from an environmental perspective, the Proposed Route provides the best opportunity to avoid and minimize potential environmental impacts due to the optimizations made to the alignment near the existing Germantown Substation and the fact that a portion of the Proposed Route will be located within existing transmission line ROW.

31. MAIT will implement appropriate measures during construction and throughout the subsequent operation of the Project to avoid or minimize impacts to environmental resources. MAIT will obtain all the relevant state and federal permits needed to construct the Project and will adhere to the conditions set forth in those permits. As part of the permitting process, MAIT has conducted detailed ecological surveys of the line route. These surveys include wetland delineations, stream identifications, and threatened and endangered species surveys. MAIT will also implement an erosion and sediment control plan, spill prevention plan and contingency plan for the construction of the Project. MAIT will continue to coordinate with state and federal agencies to minimize the potential ecological impacts. No substantial environmental impacts are anticipated as a result of constructing the Project.

I. Social Assessment

32. The Route Selection Study considered social resources in or near the Study Area. The entire Study Area was evaluated based on land use, the presence of schools, churches and cemeteries, historic and cultural resources, proximity to residences and commercial buildings, number of parcels crossed, conserved lands and local comprehensive plans. In addition, a Virtual Public Open House was held to gather additional comments and opinions from affected landowners and the local community. Comments received from landowners were considered in the selection of the Proposed Route. The social/built environment constraints and impact assessment are set forth in Sections 4.2 and 5.2.2.1 of the Route Selection Study. A summary of the Public Open House is provided in Section 5.3 of the Route Selection Study.

33. From a social perspective, the Proposed Route provides the best opportunity as it would have the least amount of potential impact to the built and social environment. The Proposed Route would cross the least amount of parcels and avoid being within 1,000 feet of any schools, churches, cemeteries or National Register of Historic Places ("NRHP") Listed or Eligible resources. The Proposed Route would be within 300 feet of existing residential structures; however, the majority of those residential structures currently reside along the existing Conastone-Hunterstown 500 kV Transmission Line corridor. The Proposed Route also limits the amount of new ROW that is needed while balancing the consideration given to avoiding and minimizing impacts to environmental resources. Utilizing the existing parallel 75-foot ROW for the Proposed Route would not introduce a new visual element into the viewshed since there is an existing transmission line present in the corridor. The installation of the new structures is not anticipated to impact current land use. No substantial impacts to the social/built environment are anticipated as a result of constructing the Project.

J. Airports and Aircraft Facilities

34. The Kingsdale Air Park Airport is located approximately 2.2 miles southeast of the existing Germantown Substation. No potential aeronautical effects are anticipated as a result of the Project; however, MAIT will continue its coordination with the FAA and PA Bureau of Aviation, as necessary, to assess potential interference with any air navigation facility before construction.

K. Governmental Agency Requirements

35. A list of local, state and federal governmental agencies that have permitting or licensing requirements in connection with the construction or maintenance of the Project and a list of documents that have been, or are required to be, filed with those agencies in connection with the siting and construction for the Project are set forth in **MAIT Exhibit 16**. MAIT will inform the Commission in a timely manner of all changes in the status of all permits and licenses required for the Project.

36. To date, no comments have been received from Mount Joy, Union, or Germany Township officials; nor from Adams County officials in response to the proposed Project. FE-PA has been coordinating with Union Township for the subdivision of the property necessary for the East Germantown Substation.

L. Ownership, Cost and Construction Schedule

37. MAIT will own and construct the Project. The estimated cost to construct the Project is included in the breakdown below. Construction is scheduled to begin on or about May 12, 2025. The proposed in-service date for the Project is October 8, 2025. Estimated Project costs for the East Germantown-Germantown 115 kV Transmission Line Project are also provided below.

Transmission Line Costs:

Engineering	$885,000
Materials	$1,218,000
Construction	$9,614,000
Total	$11,717,000

M. Litigation

38. There is no litigation concluded or in progress concerning the construction of the Project.

N. Additional Information Required By Commission Guidelines

39. The Interim Guidelines for the Filing of Electric Transmission Line Siting Applications, 51 Pa. Code §§ 69.3101-.3107 ("Interim Guidelines"), contains guidelines for public notice of transmission line siting applications. A copy of MAIT's Project fact sheet is included as **MAIT Exhibit 1,** along with a copy of the proof of newspaper publication for the public information meeting included as **MAIT Exhibit 2**. A copy of the MAIT Code of Conduct is included as **MAIT Exhibit 18.**

40. Section 69.3103 of the Interim Guidelines provides that applications for eminent domain authority should be filed separately but may be filed simultaneously with the associated transmission siting application, or as soon as reasonably known. MAIT has acquired all the property rights it needs to complete the Project. MAIT does not anticipate the need to exercise eminent domain in connection with this Project.

41. Section 69.3104 of the Interim Guidelines lists information required for exemption from municipal zoning standards. The proposed transmission line Project does not rely upon any exemption from municipal zoning standards because there are no buildings associated with this Project. A list of municipal permits required for the Project, and their status, is contained in **MAIT Exhibit 16**.

42. Section 69.3105(1) of the Interim Guidelines provides that applications for siting electric transmission lines should utilize a combination of transmission route evaluation procedures, including high-level GIS data, traditional mapping (including U.S. Geological Survey data and compilation), aerial maps, and analysis of physical site-specific constraints raised by affected landowners. This information is included in the Route Selection Study Report (**MAIT Exhibit 15**).

43. Section 69.3105(2) of the Interim Guidelines provides that transmission applicants should summarize the status of property acquisitions and provide the current status of property acquisition litigation or settlements. MAIT has existing rights to support the Project. A list of property owners of which rights have previously been obtained is included in **MAIT Exhibit 17**. As previously mentioned, where the Proposed Route does not utilize existing ROW, MAIT has voluntarily secured the necessary (four) additional easements from those property owners traversed by the transmission line ROW.

44. Section 69.3105(3) of the Interim Guidelines states transmission applications should provide information regarding the reasonable alternative routes the utility actively considered in its final phase of the route selection process, and the relative merits of each, including:

i. The environmental, historical, cultural and aesthetic considerations of each route;

ii. The proximity of these alternative routes to residential and non-residential structures;

iii. The applicant's consideration of relevant existing ROWs; and

iv. The comparative construction costs associated with each route.

45. Items (i) through (iii) of Section 69.3105(3) are included as part of **MAIT Exhibit 15**. The comparative estimated construction costs (item iv) for the three alternative transmission line routes evaluated are shown below in Table 1.

Table 1: Alternative Route Cost Comparison

Route Alternative	Approximate Distance (miles)	Approximate Cost ($)
Preferred Route (Alternative Route A hybrid with Alternative Route B)	3.9	$11,717,000
Alternative Route B	3.4	$13,200,000
Alternative Route C	6.1	$20,925,000

46. Section 69.3106 of the Interim Guidelines provides that siting applications should include a matrix or list showing all expected federal, state and local government regulatory permitting or licensing approvals that may be required for the project at the time the application is filed, the issuing agency, the approximate timeframe for approval and current status. **MAIT Exhibit 16** contains a list of all local, state and federal agencies with requirements for permitting or licensing approvals. MAIT will inform the Commission in a timely manner of all changes in the status of all permits and licenses required for the Project.

47. Section 69.3107(a) of the Interim Guidelines provides that siting applications should contain a vegetation management plan. **MAIT Exhibit 31** is a copy of the FirstEnergy Vegetation Management for New Transmission Construction Projects Brochure. **MAIT Exhibit 32** is a copy of the FirstEnergy Tree Trimming and Comprehensive Vegetation Management Brochure. **MAIT Exhibit 33** is a copy of the FirstEnergy Transmission Vegetation Program Document. **MAIT Exhibits 31** through **33** collectively describe MAIT's vegetation plan, vegetation practices, and landowner notification procedures.

48. Section 69.3107(b) of the Interim Guidelines provides that siting applications should contain a description of electric and magnetic field mitigation procedures that the utility proposes to utilize along the transmission line. The Company's typical transmission line route selection process, which was employed for this Project, evaluates a number of factors to identify the appropriate location for the proposed Project. Among other things, this evaluation process identifies and considers residences and locations where large groups of people typically gather, such as school and places of worship. Although locating the transmission line in close proximity to these types of land uses is not precluded by state or federal rules or guidelines, providing the largest practical distance from residences, schools, places of worship and similar facilities is generally more acceptable to the local community and is an effective way to mitigate EMF.

49. As part of MAIT's approach to efficiently construct a transmission line project, the design of all or portions of a transmission line project will typically utilize a compact conductor arrangement. This approach has the added benefit of reducing EMF strengths.

50. As a point of reference, the Company is providing estimates of the EMF strengths for the Project. The estimates have been prepared utilizing the Electric Power Research Institute's EMF Workstation 2015 software program ("Program"). The Program relies on the law of Biot-Savart, an equation describing the magnetic field generated by a constant electric current. The law relates the magnetic field to the magnitude, direction, length, and proximity of the electric current. The EMF strengths directly beneath the centerline at mid-span of the 115 kV transmission line and at the edges of the ROW for the transmission lines have been calculated. These calculations were performed for two scenarios: (1) where the proposed 115 kV transmission line is within a shared 275-foot ROW with the Conastone-Hunterstown 500 kV Transmission Line; and (2) where the proposed 115 kV transmission line is independently within a 120-foot ROW. These calculations

have been estimated for the normal maximum load of both aforementioned scenarios and are provided in MAIT witness Lawrence Hozempa (MAIT Statement No. 3) in Table 1 and Table 2 and **MAIT Exhibits 9** through **12**.

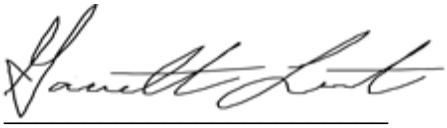
O. Service of Application

51. Copies of this Application and accompanying exhibits, or Notice of its filing, have been served upon all interested parties by certified mail, return receipt requested, as required by Commission's regulation at 52 Pa. Code § 57.74.

III. CONCLUSION

WHEREFORE, based on the forgoing, Mid-Atlantic Interstate Transmission, LLC requests that the Pennsylvania Public Utility Commission review and approve this application for the location and construction of the East Germantown-Germantown 115 kV Transmission Line Project.

Respectfully Submitted,



Joey T. Chen (ID #334709)
FirstEnergy Services Company
2800 Pottsville Pike
Reading, PA 19612
PH: (610) 921-6784
Fax: (330) 315-9657
E-mail: jchen@firstenergycorp.com

David B. MacGregor (ID #28804)
Garrett P. Lent (ID #321566)
Megan E. Rulli (ID # 331981)
Post & Schell, P.C.
17 North Second Street
12th Floor
Harrisburg, PA 17101-1601)
PH: (717) 731-1970
Fax: (717) 731-1985
E-mail: dmacgregor@postschell.com
E-mail: glent@postschell.com
Email: mrulli@postschell.com

Date: July 3, 2024

Attorneys for Mid-Atlantic Interstate Transmission, LLC

APPENDIX A

APPENDIX A

The following description of the Proposed Route is provided as required by PA Code § 57.72 (c)(3).

The Project, as shown on **MAIT Exhibits 13 and 14** will start at the proposed East Germantown Substation and will extend northwest then southwest for approximately 3.9 miles to the existing Germantown Substation. The Project will consist of a single-circuit transmission line on new transmission structures in a predominantly existing, unused FirstEnergy-owned wide right-of-way that varies between 75 and 120 feet wide and will require clearing. The East Germantown-Germantown 115 kV Transmission Line Project will cross approximately 0.75 miles of Mount Joy Township, approximately 1.25 miles of Germany Township, and approximately 1.5 miles of Union Township.

- From the proposed East Germantown Substation on Basehoar Road in Union Township, the route would extend northwest parallel to the Conastone-Hunterstown 500 kV corridor for 1.0 mile to Littlestown Road. The initial section of the route would extend across a large agricultural area but then come in close proximity to a home located along Littlestown Road.
- Continuing to the northwest, the Proposed Route would span Littlestown Road and extend for 0.20 miles to White Hall Road. This section would pass through a residential community bordering Spring Hill Lane.
- From White Hall Road, the route extends for 0.63 miles to a farm field north of Feeser Road, where the route turns to the southwest and away from the Conastone-Hunterstown 500 kV corridor. Most of this alignment spans agricultural lands and is located near two

farmhouse complexes, but it would also pass through a forested area near the Feeser Road crossing. Feeser Road marks the border into Germany Township.

- From this turn, the route extends southwest for 0.87 miles to Roberts Road, which is bordered by low density residential development. This section spans agricultural lands; Locust Lane, which is lined by a few residential homes; and an emergent wetland area. Roberts Road also marks the border with Mount Joy Township.
- Continuing to the southwest, the route extends for 0.80 miles to the existing Germantown Substation located on the south side of State Route 97 (Baltimore Pike). This section spans a short length of Alloway Creek, crosses over more agricultural lands, and continues through two forested areas. Several emergent and forested wetland areas are located along this alignment.

ATTACHMENT 1

ATTACHMENT 1
PUC REGULATION CROSS-REFERENCE MATRIX

Pennsylvania Code Section*	PUC Regulation Requirement	Location in Application	Associated Tables/Figures
57.72 (c)	Application shall contain		
57.72 (c)(1)	The name of the applicant and the address of its principal business office.	• Certification Application	
57.72 (c)(2)	The name, title and business address of the attorney of the applicant and the person authorized to receive notice and communications with respect to the application if other than the attorney of the applicant.	• Certification Application	
57.72 (c)(3)	A general description – not a legal or metes and bounds description – of the proposed route of the HV line, to include the number of route miles, the rights-of-way width and the location of the proposed HV line within each city, borough, town, and township traversed.	• Appendix A	
57.72 (c)(4)	The names and addresses of known persons, corporations, and other entities of record owning property within the proposed rights-of-way, together with an indication of HV line rights-of-way acquired by the applicant.	• Exhibit 17	
57.72 (c)(5)	A general statement of the need of the proposed HV line in meeting identified present & future demands for service, how the proposed line will meet that need, and engineering justifications	• Certification Application	
57.72 (c)(6)	A statement of the safety considerations which will be incorporated into the design, construction, and maintenance of the proposed HV line.	• Certification Application	
57.72 (c)(7)	A description of the studies which had been made as to the projected environmental impact of the HV line as proposed and of the efforts which have been and will be made to minimize the impact of the HV line upon the environment and upon scenic and historic areas.	• Exhibit 15	• Table 6-1

Pennsylvania Code Section*	PUC Regulation Requirement	Location in Application	Associated Tables/Figures
57.72 (c)(8)	A description of the efforts of the applicant to locate and identify archeologic, geologic, historic, scenic, or wilderness areas within 2 miles of the proposed right-of-way and the location and identity of the areas	• Exhibit 15	
57.72 (c)(9)	The location and identity of airports within 2 miles of the nearest limit of the right-of-way of the proposed HV line.	• Exhibit 15	• Figure 6-2
57.72 (c)(10)	A general description of reasonable alternative routes to the proposed HV line, including a description of the corridor planning methodology, a comparison of the merits and detriments of each route, and a statement of the reasons for selecting the proposed HV line route.	• Exhibit 15	
57.72 (c)(11)	A list of the local, state, and federal governmental agencies which have requirements that shall be met in connection with the construction or maintenance of the proposed HV line and a list of documents which have been or are required to be filed with those agencies.	• Exhibit 16	
57.72 c(12)	The estimated cost of construction of the proposed HV line and the projected date for completion.	• Exhibit 15	• Table 6-1
57.72 c(13)(i)	A depiction of the proposed route on aerial photographs and topographic maps of suitable detail.	• Exhibit 13 and Exhibit 14	
57.72 c(13)(ii)	A description of the proposed HV line, including the length of the line, the design voltage, the size, number, and materials of conductors, the design of the supporting structures and their height, configuration and materials of construction, the average distance between supporting structures, the number of supporting structures, the line to structure clearances and the minimum conductor to ground clearance at mid-span under normal load and average weather conditions and under predicted extreme load and weather conditions.	• Certification Application	

Pennsylvania Code Section*	PUC Regulation Requirement	Location in Application	Associated Tables/Figures
57.72 c(13)(iii)	A simple drawing of a cross section of the proposed rights-of-way of the HV line and any adjoining rights-of-way showing the placement of the supporting structures at typical locations, with the height and width of the structures, the width of the right-of-way and the lateral distance between the conductors and the edge of the right-of-way indicated.	• Exhibit 20 and Exhibit 21	
57.72 c(13)(iv)	A system map which shows in suitable detail the location and voltage of existing transmission lines and substations of the applicant and the location and voltage of the proposed HV line and associated substations	• Exhibit 5 and Exhibit 6	
57.72 (c)(14)	A statement identifying litigation concluded or in progress which concerns property or matter relating to the proposed HV line, right-of-way route, or environmental matters.	• Certification Application	
Chapter 69	Interim guidelines require		
69.3102 (a)(1)	A Code of Conduct/Internal Practices governing the manner in which public utility employees or their agents interact with landowners along proposed rights of way.	• Exhibit 18	
69.3102 (a)(2)	Copies of information provided to landowners by the public utility of any publicly disseminated notices advising landowners to contact the Commission or OCA in the event of improper land agent practices.	• Not Applicable	
69.3102 (a)(3)	Copies of all notices sent pursuant to §57.91 (relating to disclosure of eminent domain power of electric utilities).	• Not Applicable	
69.3102 (b)	Applicants for transmission siting authority should serve a copy of the Code of Conduct on all landowners along the proposed route whose property is to be purchased, subject to easement rights or borders the transmission corridor. The Code of Conduct should also be available on the applicant's website.	• Exhibit 18	

Pennsylvania Code Section*	PUC Regulation Requirement	Location in Application	Associated Tables/Figures
69.3102 (c)	Applicants for transmission siting authority should provide prior notice to the Commission's Office of Communications of informational presentations to community groups by the public utility scheduled after the filing of the transmission siting application so that the Commission, OCA and other interested parties can attend meetings or obtain copies of information being disseminated at the presentations.	• N/A - At this time, no informal presentations are scheduled for after the CPCN is filed.	
69.3103	**Eminent domain filing requirements**	• N/A – At this time	
69.3104	**Exemption from municipal zoning standards**	• N/A - At this time.	
69.3105 (1)	Transmission applicants should utilize a combination of transmission route evaluation procedures including high-level GIS data, traditional mapping (including US Geological Survey data and compilation), aerial maps and analysis of physical site-specific constraints raised by affected landowners.	• Exhibit 15	
69.3105 (2)	Transmission applicants should summarize the status of property acquisitions (including fee simple acquisitions and rights of way/easements) as part of the application. The applicant should provide the current status and continuing updates on property acquisition litigation or settlements during the course of the siting proceeding.	• Exhibit 17	
69.3105 (3)(i)	In providing information regarding the reasonable alternative routes the utility actively considered in its final phase of the route selection process, and the relative merits of each, in accordance with §57.72(c)(10), the applicant should include the following information: The environmental, historical, cultural and aesthetic considerations of each route.	• Certification Application • Exhibit 15	• Table 6-1

Pennsylvania Code Section*	PUC Regulation Requirement	Location in Application	Associated Tables/Figures
69.3105 (3)(ii)	The proximity of these alternative routes to residential and non-residential structures.	• Exhibit 15	• Table 6-1
69.3105 (3)(iii)	The applicant's consideration of relevant existing rights of way.	• Exhibit 15	
69.3105 (3)(iv)	The comparative construction costs associated with each route.	• Exhibit 15	• Table 6-1
69.3105 (4)	With reference to the proposed route, applicants should provide a summary of efforts made to contact and solicit assistance from local governments and non-governmental organizations regarding areas encompassed within the requirement of §57.72(c)(8).	• Exhibit 15	
69.3106 (1)	A matrix or list showing all expected federal, state and local government regulatory permitting or licensing approvals that may be required for the project at the time the application is filed, the issuing agency, approximate timeline for approval and current status. The applicant should provide an update on the status of the regulatory permitting/licensing approvals as the case progresses.	• Exhibit 16	
69.3107(a)(1)	Applicants for transmission line siting authority should provide a detailed vegetation management plan that includes the following components: A general description of the utility's vegetation management plan.	• Exhibit 31	
69.3107(a)(2)	Factors that dictate when each method, including aerial spraying, is utilized.	• Exhibit 32	
69.3107(a)(3)	Vegetation management practices near aquatic and other sensitive locations.	• Exhibit 32	
69.3107(a)(4)	Notice procedures to affected landowners regarding vegetation management practices.	• Exhibit 33	
69.3107(a)(5)	Provision of a copy of a landowner maintenance agreement that describes the duties and responsibilities of landowners and the utility for vegetation management to the extent utilized.	• Exhibit 33	

Pennsylvania Code Section*	PUC Regulation Requirement	Location in Application	Associated Tables/Figures
69.3107(b)(1)	Transmission siting applications should include the following: A description of the EMF mitigation procedures that the utility proposes to utilize along the transmission line route. This description should include a statement of policy approach for evaluating design and siting alternatives and a description of the proposed measures for mitigating EMF impacts.	• Certification Application	

*Pennsylvania Code 57.71 – 57.75 relates to "Commission Review of Siting and Construction of Electric Transmission Lines". Pennsylvania Code 69.3101 – 69.3107 relates to "General Orders, Policy Statements, and Guidelines on Fixed Utilities". Sections described within EXHIBIT 1 pertain specifically to those items required to be included for an application filing.

MAIT East Germantown-Germantown 115 kV Transmission Line Project

Exhibit 1

Energizing the FUTURE

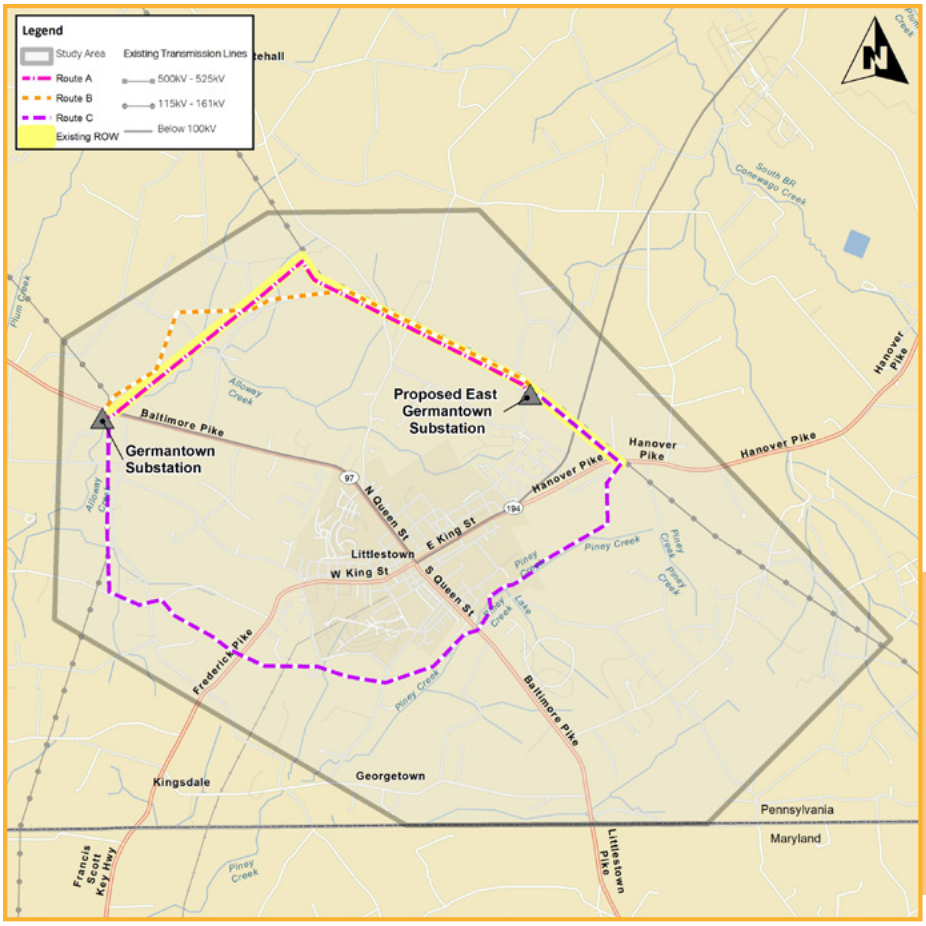
East Germantown-Germantown Reliability Project

At FirstEnergy, it's our responsibility to deliver the power our customers depend on in their daily lives. Mid-Atlantic Interstate Transmission LLC ("MAIT"), a FirstEnergy company, is planning to strengthen Metropolitan Edison Company's ("Met-Ed") regional electric system near Hanover, Pennsylvania to improve electric service reliability for approximately 2,250 Met-Ed customers in Adams County, including Hanover Hospital, Alpha Fire Company, and WellSpan Health.

Project Overview

MAIT completed an evaluation of the existing electric system in Adams County and identified a need to construct a 115 kilovolt ("kV") transmission line that will extend from the existing Germantown Substation to the proposed substation named East Germantown Substation. The transmission line will be supported primarily on wood pole structures and occasional steel structures where necessary.

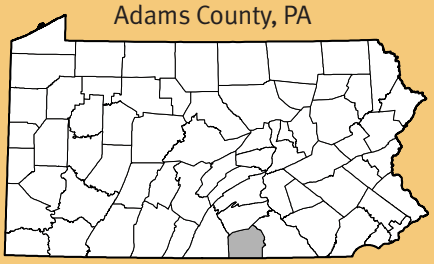
Construction of the new line and substation will improve reliability for customers in the area. Additionally, the project will increase switching opportunities to enable quicker service restoration during outages. This work will accommodate existing and future growth, provide an additional source of electricity to the area, and greatly improve the operational flexibility of the electric system in the project area.



PJM, the regional transmission system operator, and the PJM stakeholders have reviewed the proposed project and have assigned the supplemental upgrade identification number s2409. More information about the project can be found at www.pjm.com.

Continued on back

Project Location:
Adams County, PA



COMM9816-04-22-CV
Produced by FirstEnergy's Communications and Branding Department

FirstEnergy

Transmission Line Siting and Approvals

A detailed routing study was performed to identify potential routes for the proposed 115 kV transmission line that will connect to the proposed East Germantown Substation. These routes were carefully evaluated to minimize impacts to environmentally sensitive areas, property owners and communities. MAIT will seek approval from the Pennsylvania Public Utility Commission ("PaPUC") for the project.

Once the preferred route is selected, detailed wetland, stream and other environmental and cultural resource evaluations will be performed. Necessary permits will be secured from local, state and federal agencies before construction.

Easements

The proposed 115 kV transmission line will be located within a 65 foot right-of-way. Field representatives will contact property owners to discuss transmission line easements and/or any temporary access needed during construction.

Preliminary Project Timeline

Public Open House..... May 1-31, 2022

Anticipated Application Submittal Date..... Fourth Quarter 2022

Anticipated Approval Date..... Fourth Quarter 2023

Construction Start..... First/Second Quarter 2024

Project Complete & Placed in Service..... Fourth Quarter 2024

About Energizing the Future

Through *Energizing the Future*, FirstEnergy is upgrading and strengthening the transmission grid to meet the existing and future needs of our customers and communities. Projects are focused on upgrading or replacing aging equipment to strengthen our transmission infrastructure, reduce outages and cut maintenance costs; enhancing performance by building a smarter, more secure transmission system; and adding flexibility by building in redundancy and allowing system operators to react more swiftly to changing grid conditions.

For more information, visit firstenergycorp.com/transmission.

Energizing the FUTURE

FirstEnergy

MAIT East Germantown-Germantown 115 kV Transmission Line Project

Exhibit 2

Pennsylvania Department of State
PROOF OF PUBLICATION AFFIDAVIT

INSTRUCTIONS

PUBLISHER: Send this affidavit, with a copy of the final publication attached, to the Pennsylvania Department of State

Commonwealth of Pennsylvania

County of Adams

Before me, the undersigned Notary Public, this day, personally appeared Harry Hartman, known to me or satisfactorily proven, who being duly sworn, deposes that he or she is Publisher, of the Gettysburg Times, a general newspaper published at 1570 Fairfield Rd, Gettysburg, PA 17325 and that the advertisement, of which tearsheet attached hereto, was published in the regular advertising column of said newspaper, in the editions of said newspaper, in all respects as ordered and invoiced.

Sworn and subscribed before me this 15 day of November, 2022

Signature of Affiant

Notary Public

Commonwealth of Pennsylvania - Notary Seal
HARRY J HARTMAN - Notary Public
Adams County
My Commission Expires August 28, 2025
Commission Number 1276679

My commission expires

*This affidavit must be made by the Owner, Publisher, or the designated agent of the owner or publisher

Competing to sing at Pa. Farm Show; needs votes

Kiersten Englebert of Biglerville is one of 20 people selected from across the state to compete to sing the National Anthem at the 2023 Pennsylvania Farm Show. The top 12 videos with the most likes on Facebook will be selected to sing during the Farm Show. The public can vote for Englebert online through Facebook by going to the Pennsylvania Farm Show Facebook page and liking her video on the official post. she is 14 years old and a freshman at Biglerville High School. (Submitted Photo)

Breaking the Silence event set at seminary

Two members of the group Breaking the Silence will speak in Valentine Hall, at United Lutheran Seminary in Gettysburg Thursday, Nov. 17, at 7 p.m. at a free event sponsored by the Middle East Justice and Peace Group (MEJPG) of South Central PA, according to a release from the MEJPG.

"Come to hear former Israeli soldiers, Becca and Amir, share their experience of enforcing the Israeli military occupation of Palestine, and begin to ponder their thoughts about how to end the occupation peacefully," the release reads.

The event is open to the public. Parking is free and available in front of Valentine Hall; enter from Springs Avenue.

"Breaking the Silence is a group of former Israeli soldiers who are taking the harsh truth about the Israeli occupation of Palestine to the world. These former soldiers support an end to Israel's military occupation and support human rights for Palestinian people as a necessary part of a peaceful solution," according to the release.

American news media outlets pick and choose what they report to the public and how they report it, the release claims.

"If one listens to Fox News and then turns to MSNBC, one might think that the news was being reported from two different planets," the release reads.

News about complex issues impacting people's everyday lives is often reported in a couple of lines and with no background on how tax dollars are being used, according to the release.

"This is a particularly relevant subject for American taxpayers since $4B of our taxpayer money is given in military aid to Israel each year. This event offers an opportunity to learn a perspective not normally heard on American news outlets," the release claims.

Court News

The following actions were on file at Magisterial District Judge Matthew Harvey's office as of Sept. 21.

When cases are "waived" to Adams County Court of Common Pleas, a defendant has opted not to have a hearing before a magisterial district judge. Cases "held" means a magisterial district judge conducted a hearing and ruled the case would move forward to county court.

Anthony Kokoruda, 19, of Rocky Mount, N.C., was charged with one count each of possessing a small amount of marijuana for personal use and possession of drug paraphernalia May 26, in Straban Twp. The case was waived to county court.

Eric Pineiro, 26, of York, was charged with one count of failing to use low beams within 500 feet of an oncoming vehicle and three counts related to driving under the influence of a combination of alcohol and a controlled substance May 8, in Straban Twp. The case was waived to county court.

Trista Kelley, 38, of New Oxford, was charged with one count each of disregarding a traffic lane, failing to stop at a stop sign, unsafe driving under the influence, driving with a blood alcohol content (BAC) between .10%-.16% and four counts related to driving under the influence of a combination of alcohol and controlled substances May 8, in Straban Twp. The case was waived to county court.

Ashley Klingensmith, 24, of Gettysburg, was charged with one count of retail theft July 3, in Straban Twp. The case was waived to county court.

Varick Lloyd, 25, of York, was charged with one count each of operating a vehicle with unsafe equipment and possession of drug paraphernalia Aug. 6, in Straban Twp. The case was waived to county court.

Andres Santiago, 36, of Middletown, was charged with one count each of driving under the influence of a controlled substance, unsafe driving under the influence, operating a vehicle with illegal window tint, reckless driving and careless driving July 2, in Straban Twp. The case was waived to county court.

Elizabeth Peloquin, 28, of Mifflintown, was charged with one count of retail theft Aug. 29, in Straban Twp. The case was waived to county court.

Brandon Carter, 37, of York, was charged with one count each of operating a vehicle with illegal window tint, careless driving and four counts related to driving under the influence of a controlled substance April 21, in Straban Twp. The case was waived to county court.

William Hynosky, 49, of York Springs, was charged with one count each of driving with a BAC between .10%-.16%, unsafe driving under the influence, operating a vehicle without proper lighting and careless driving Aug. 6, in Straban Twp. The case was waived to county court.

Justin Winfield, 40, of Fairfield, was charged with one count each of driving under the influence of alcohol and failing to stop at a stop sign Aug. 13, in Gettysburg. The case was waived to county court.

Jared Smith, 38, of York, was charged with one count of littering on the roadway and two counts related to driving under the influence of a controlled substance June 3, in Gettysburg. The case was waived to county court.

Timothy Fernbaugh, 62, of Mechanicsburg, was charged with one count each of driving with a BAC between .10%-.16%, unsafe driving under the influence and failure to drive within a single lane June 4, in Straban Twp. The case was waived to county court.

Cheyenne Chastain, 22, of Carlisle, was charged with one count each of driving with a BAC greater than .16%, unsafe driving under the influence, disregarding a traffic lane, careless driving, making a U-turn unsafely, operating a vehicle with expired registration and four counts related to driving under the influence of alcohol April 16, in Straban Twp. The case was waived to county court.

Anatoliy Kolosov, 36, of State College, was charged with one count each of unsafe driving under the influence, possessing a small amount of marijuana for personal use, operating a vehicle without an ignition interlock system when required to and failure to obey a traffic sign Aug. 2, in Straban Twp. The case was waived to county court.

Logan Moose, 26, of Gettysburg, was charged with one count each of driving under the influence of controlled substances, operating a motorcycle without protective equipment, operating a motorcycle with a learner's permit after sunset, and operating a vehicle without an official certificate of inspection April 26, in Gettysburg. The case was waived to county court.

James Garretson, 64, of Pompano Beach, Fl., was charged with one count of driving with a BAC between .08-.10% and two counts of driving under the influence of a combination of alcohol and controlled substances May 31, in Straban Twp. The case was waived to county court.

Michael Dick, 29, of Westminster, Md., was charged with one count each of failure to drive within a single lane and driving under the influence of a combination of alcohol and a controlled substance May 8, in Gettysburg. The case was waived to county court.

Kaitlyn Butler, 18, of Gettysburg, was charged with one count of operating a vehicle without a muffler and two counts of driving under the influence of a controlled substance May 5, in Straban Twp. The case was waived to county court.

Reyanne Bartles, 21, of Carlisle, was charged with one count each of exceeding the maximum speed limit by 9 mph, turning without signaling and two counts of driving under the influence of a controlled substance May 20, in Straban Twp. The case was waived to county court.

Harvey Fawber, 74, of Biglerville, was charged with one count each of aggravated assault, terroristic threats with intent to terrorize another person and trespassing June 7, in Straban Twp. The case was waived to county court.

Amir Pearson, 27, of Hanover, was charged with two counts of driving under the influence of a controlled substance April 27, in Straban Twp. The case was waived to county court.

Melissa Barnes, 39, of Gettysburg, was charged with one count of retail theft July 22, in Straban Twp. The case was waived to county court.

Aubree Noble, 32, of Gettysburg, was charged with two counts of driving under the influence of a controlled substance May 11, in Straban Twp. The case was waived to county court.

Review panel probes lack of police at funeral before shots

PITTSBURGH (AP) — An independent review panel has opened an investigation into the lack of a police presence despite a request for it at a Pittsburgh funeral where a shooting left six people injured last month.

Two shooters opened fire outside the Destiny of Faith Church on Oct. 28, wounding five people and causing a melee that injured a sixth person. The funeral was for a man killed two weeks earlier in a shootout between two neighborhood groups, police said.

Pittsburgh officials said no officers were present although a police presence had been requested. Acting Police Chief Thomas Stangrecki on Thursday vowed discipline for any officers involved, but it wasn't immediately clear whether police failed to respond to the request or if they did respond and officers failed to show up.

Elizabeth Pittinger, executive director of the Citizens Police Review Board, said officers should have been there, request or no, "simply because of the assessment of intergroup tensions which is critically important to keep everyone safe."

She cited other incidents — including gunfire at a youth football game in August where officials said promised officers never came — and asked whether supervision, communication or insubordination was to blame. Such questions, and whether deeper problems are indicated, prompted the review panel to open the inquiry, she said.

Shawn Davis, 19, of McKees Rocks and a 16-year-old Pittsburgh youth both face attempted homicide, aggravated assault and weapons charges in the Oct. 28 shooting at the funeral for 20-year-old John Hornezes Jr., who was among three people killed in an Oct. 15 shooting. Authorities have repeatedly declined comment on whether Davis and the teen suspect had any connection to Hornezes or anyone attending his service.

1970s sandals worn by Steve Jobs auctioned for $218K

LOS ANGELES (AP) — The California house where Steve Jobs co-founded Apple is a historical site, and now the sandals he wore while pacing its floors have been sold for nearly $220,000, according to an auction house.

The "well used" brown suede Birkenstocks dating to the mid-1970s set a record for the highest price ever paid for a pair of sandals, Julien's Auctions said Sunday.

"The cork and jute footbed retains the imprint of Steve Jobs' feet, which had been shaped after years of use," the auction house said in the listing on its website.

The sandals were expected to bring $60,000, but the final sale price with an accompanying NFT was $218,750, Julien's said. The buyer was not named.

Jobs and Steve Wozniak cofounded Apple in 1976 at Jobs' parents' house in Los Altos, California. In 2013, the property was named a historic landmark by the Los Altos Historical Commission.

Jobs died in 2011 from complications of pancreatic cancer.

Lottery

Monday

Pa. Midday Pick 2.....6-1, Wild: 6
Pa. Evening Pick 2.....3-8, Wild: 4
Pa. Midday Pick 3.....5-0-7
Pa. Evening Pick 3.....9-0-6
Pa. Midday Pick 4.....5-5-7-2
Pa. Evening Pick 4.....8-0-3-0
Pa. Midday Pick 5.....9-4-1-6-3
Pa. Evening Pick 5.....0-1-6-0-7
Pa. Treasure Hunt.....07-13-15-20-28
Pa. Cash Five.....12-13-27-28-29
Pa. Match 6 Lotto.....07-09-24-33-38-45
Md. Midday Pick 3.....8-7-8
Md. Evening Pick 3.....1-4-0
Md. Midday Pick 4.....4-2-6-0
Md. Evening Pick 4.....5-3-1-8
Md. Midday Pick 5.....7-3-4-5-5
Md. Evening Pick 5.....2-0-9-4-0
Md. Bonus Match 5.....04-21-23-24-39, Bonus: 29

Evening Sun
PART OF THE USA TODAY NETWORK

FIRST ENERGY
154 EAST AURORA RD #174
NORTHFIELD, OH 44067
ATTN

Publication Cost: $1,110.44
Ad No: GCI0975095
Customer No: 104234
PO#: PUBLIC NOTICE
# of Affidavits 1

This is not an invoice

Affidavit of Publication

Proof of Publication
State of Pennsylvania

The Evening Sun is the name of the newspapers(s) of general circulation published continuously for more than six months at its principle place of business, 37 Broadway Street, Hanover, PA.

The printed copy of the advertisement hereto attached is a true copy, exactly as printed and published, of an advertisement printed in the regular issues of the said The Evening Sun published on the following dates, viz:

Date of Publication: 11/15/2022

I, being first duly sworn upon oath depose and say that I am a legal clerk and employee of The Evening Sun and have personal knowledge of the publication of the advertisement mentioned in the foregoing statement as to the time, place and character of publications are true, and that the affiant is not interested in the subject matter of the above mentioned advertisement.

Subscribed and sworn to before on November 15th, 2022:

Notary, State of Wisconsin, County of Brown

1-7-25
My commission expires

KATHLEEN ALLEN
Notary Public
State of Wisconsin

New exhibit aims to reflect slave auction block's weight

Adele Uphaus
The Free Lance-Star

FREDERICKSBURG, Va. – Fredericksburg's slave auction block is bigger than many people knew.

When it sat at the corner of William and Charles streets–its former location for more than 170 years–a significant portion of it was underground.

Now installed in a ground floor gallery at the Fredericksburg Area Museum, its true size is apparent–all 1,000 pounds of it.

But the single chunk of Aquia sandstone carries even more weight than that.

"The foundation of this exhibit is for people to understand the historical and emotional weight of the block," said Gaila Sims, FAM's new curator of African American history and special projects. "It is imbued with our feelings."

"A Monumental Weight" is the name of the new exhibit featuring the auction block that recently opened.

The block was on public display at the museum during the fall in 2020, several months after it was removed from its former location. At that time, it was blocked from being immediately visible by a partition.

Sims said that was because museum staff were worried about the profanity that was spray-painted on the block when it became a focus of the social justice protests that occurred after George Floyd's murder.

But Sims said all the conversations with community members she's had and all the volumes of reading she's done since starting in her position this past August led her to the conclusion that "people wanted the space to be more open."

In addition to reading and talking, Sims said she spent lots of time standing alone before the block, thinking, "How can we make this space what people want and need?"

The slave auction block that once sat on the corner of William and Charles Street sits in its new exhibit in the Fredericksburg Area Museum in Fredericksburg, Va., on Nov. 4. TRISTAN LOREI/THE FREE LANCE-STAR VIA AP

For the new exhibit, the partition has been removed and the block is in the open. Panels immediately surrounding it tell the story of its early history and what is known about the people who were bought and sold there, as well as about the domestic slave trade in Virginia, which after the 1808 abolishment of the international slave trade, became Virginia's largest industry.

Additional panels will describe the series of community conversations that took place from 2017 to 2019 and led to City Council's vote to move the block from its original location and the events of the summer of 2020, when the block became a symbol of racial oppression during the downtown Black Lives Matter protests.

Another wall of the gallery explores the auction block's emotional weight by presenting historical descriptions, first-person reflections, social media posts and news reports about the auction block over the years.

That part of the exhibit is "a living archive," Sims said. Visitors to the exhibit are invited to write down their own reflections and can choose to have those reflections added to the wall, she said.

Visitors can also write their reflections in a notebook or submit them online via a QR code.

The reflection space will also acknowledge everyone who helped Sims and the rest of the FAM staff develop the exhibit.

MAIT East Germantown-Germantown 115 kV Transmission Line Project

Exhibit 3

Exhibit 3

Exhibit 3 contains Confidential Security Information for the purposes of the Public Utility Confidential Security Information Act, 35 P.S. § 2141.1-2141.6, and for the purposes of Chapter 102 of the Rules and Regulations of the Pennsylvania Public Utility Commission, 52 Pa. Code § 102.1-012.4, and should be afforded confidential treatment as described in the statue and regulation. This exhibit also contains privileged and confidential information and/or critical infrastructure information ("CEII"). Do not release pursuant to 18 C.F.R. §388.112.

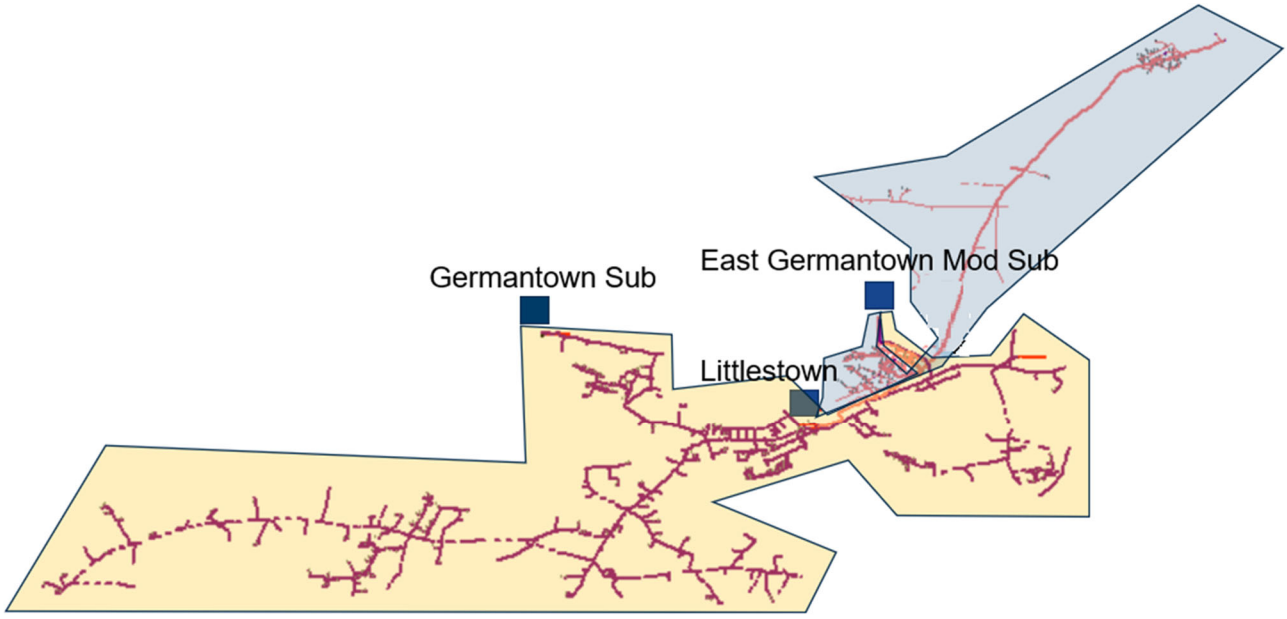
This exhibit has been redacted.

MAIT East Germantown-Germantown 115 kV Transmission Line Project

Exhibit 4

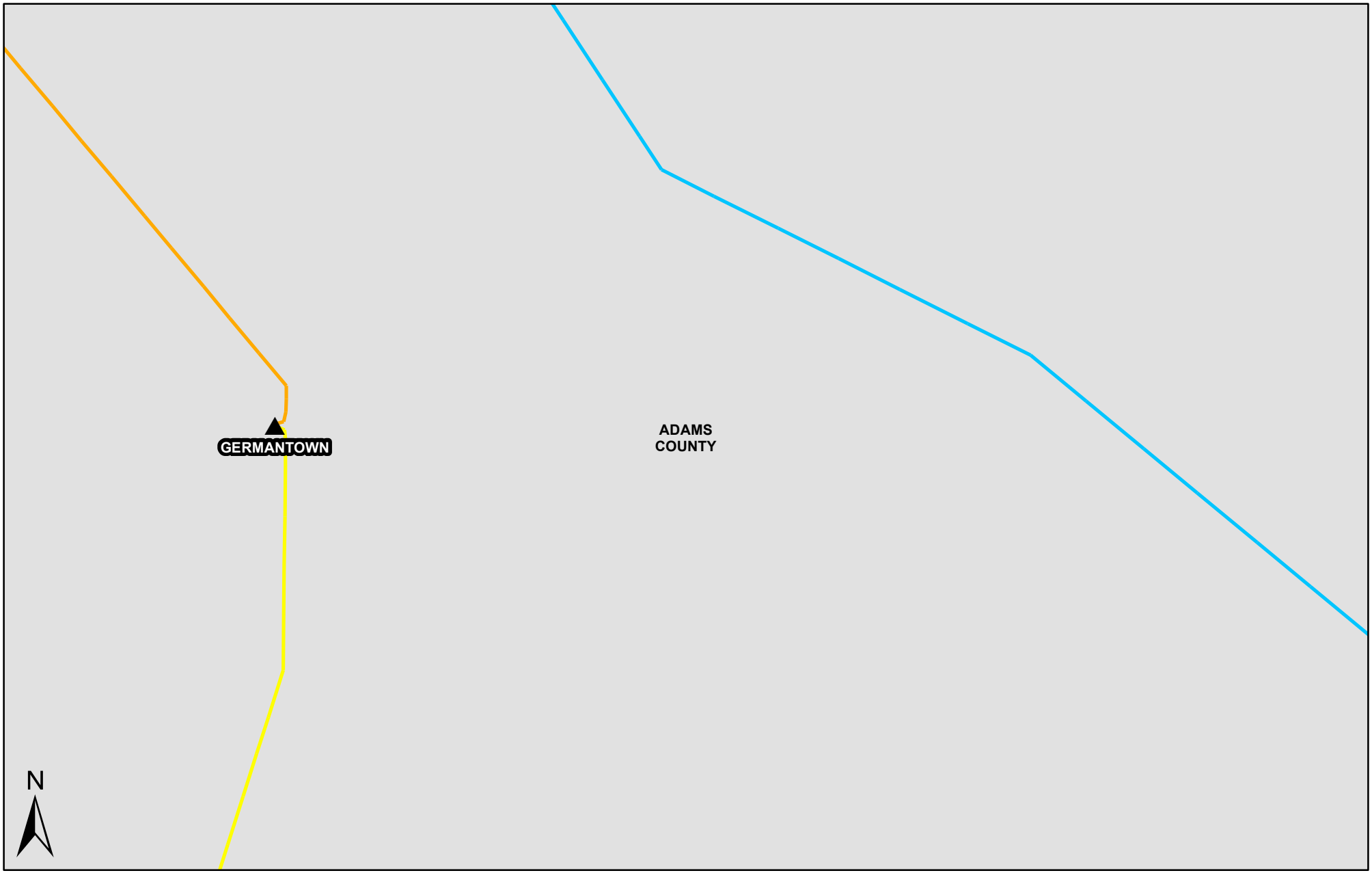
Exhibit 4 – FE Pennsylvania Distribution Circuits

East Germantown 115-13.2kV 14 MVA Mod Sub



MAIT East Germantown-Germantown 115 kV Transmission Line Project

Exhibit 5



LEGEND:

- ▲ Existing Substation
- County
- 115 kV
- 138 kV
- 500 kV

NOT TO SCALE

MAIT™

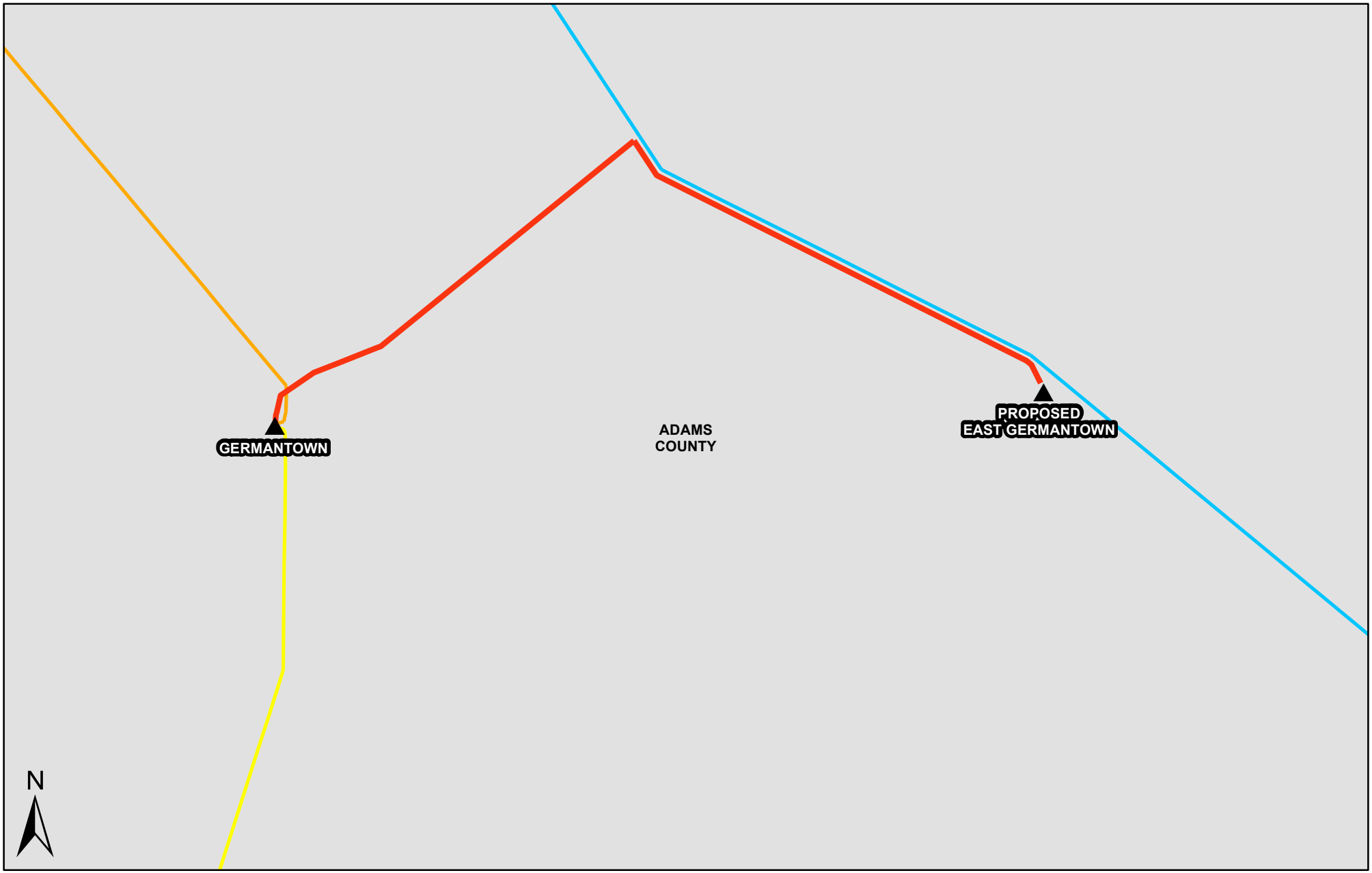
Mid-Atlantic Interstate Transmission, LLC
A FirstEnergy Company

MAIT EXISTING TRANSMISSION SYSTEM PROJECT AREA

EXHIBIT 5 - PAGE 1 OF 1

MAIT East Germantown-Germantown 115 kV Transmission Line Project

Exhibit 6



LEGEND:

- Substation
- County
- Proposed New Line
- 115 kV
- 138 kV
- 500 kV

NOT TO SCALE

MAIT™

Mid-Atlantic Interstate Transmission, LLC
A FirstEnergy Company

MAIT PROPOSED TRANSMISSION SYSTEM PROJECT AREA

EXHIBIT 6 - PAGE 1 OF 1

MAIT East Germantown-Germantown 115 kV Transmission Line Project

Exhibit 7

Met-Ed Transmission Zone M-3 Process

Need Number: ME-2020-006

Process Stage: Need Meeting 4/16/2020

Project Driver:

Customer Service

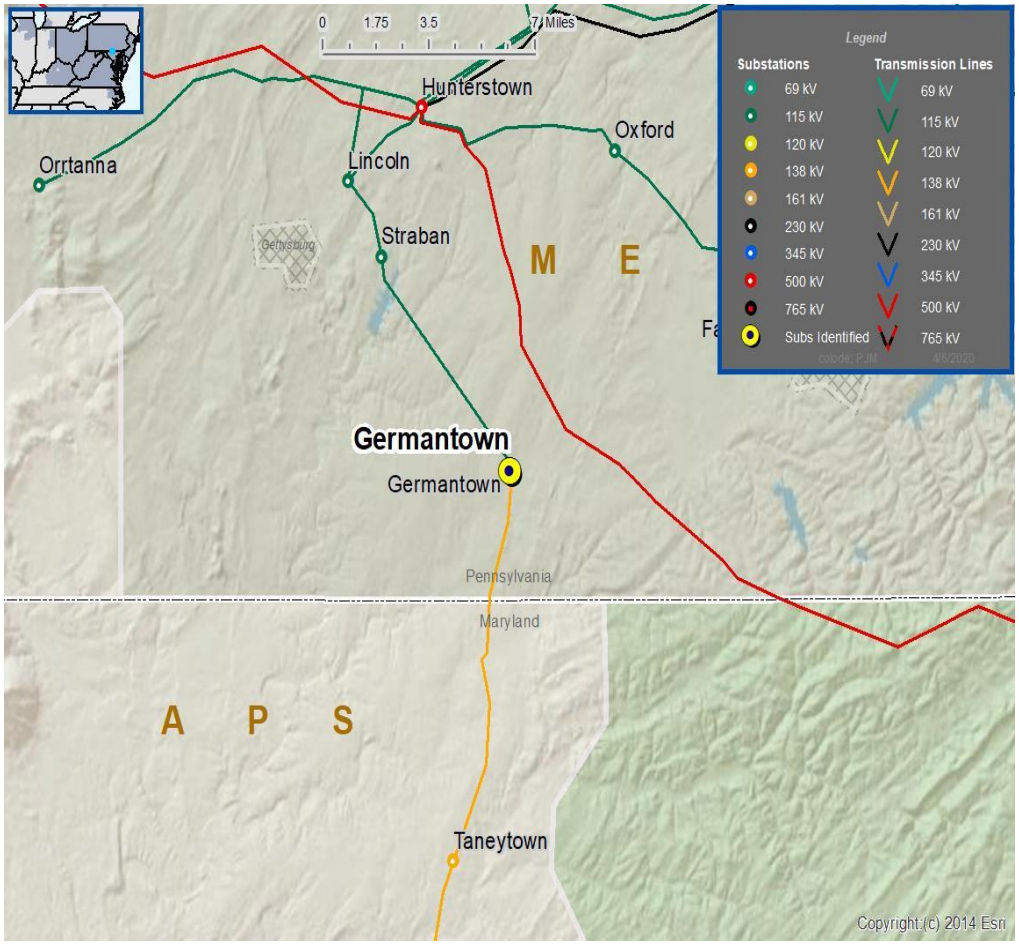
Specific Assumption Reference:

Customer request will be evaluated per FirstEnergy's "Requirements for Transmission Connected Facilities" document and "Transmission Planning Criteria" document.

Problem Statement:

New Customer Connection – A customer requested 115 kV service; anticipated load is 12 MVA; location is near the Germantown 115 kV substation

Requested in-service date is 6/1/2021



MAIT East Germantown-Germantown 115 kV Transmission Line Project

Exhibit 8

Met-Ed Transmission Zone M-3 Process
New Customer Substation

Need Number: ME-2020-006

Process Stage: Solution Meeting 11/18/2020

Proposed Solution:

- Add a new 115 kV line terminal to the Germantown 115 kV substation.
- Construct approximately 3.5 miles of 115 kV line to the customer substation.

Alternatives Considered:

- Tap the Germantown to Lincoln 115 kV line

Estimated Project Cost: $10.8M

Projected In-Service: 12/31/2022

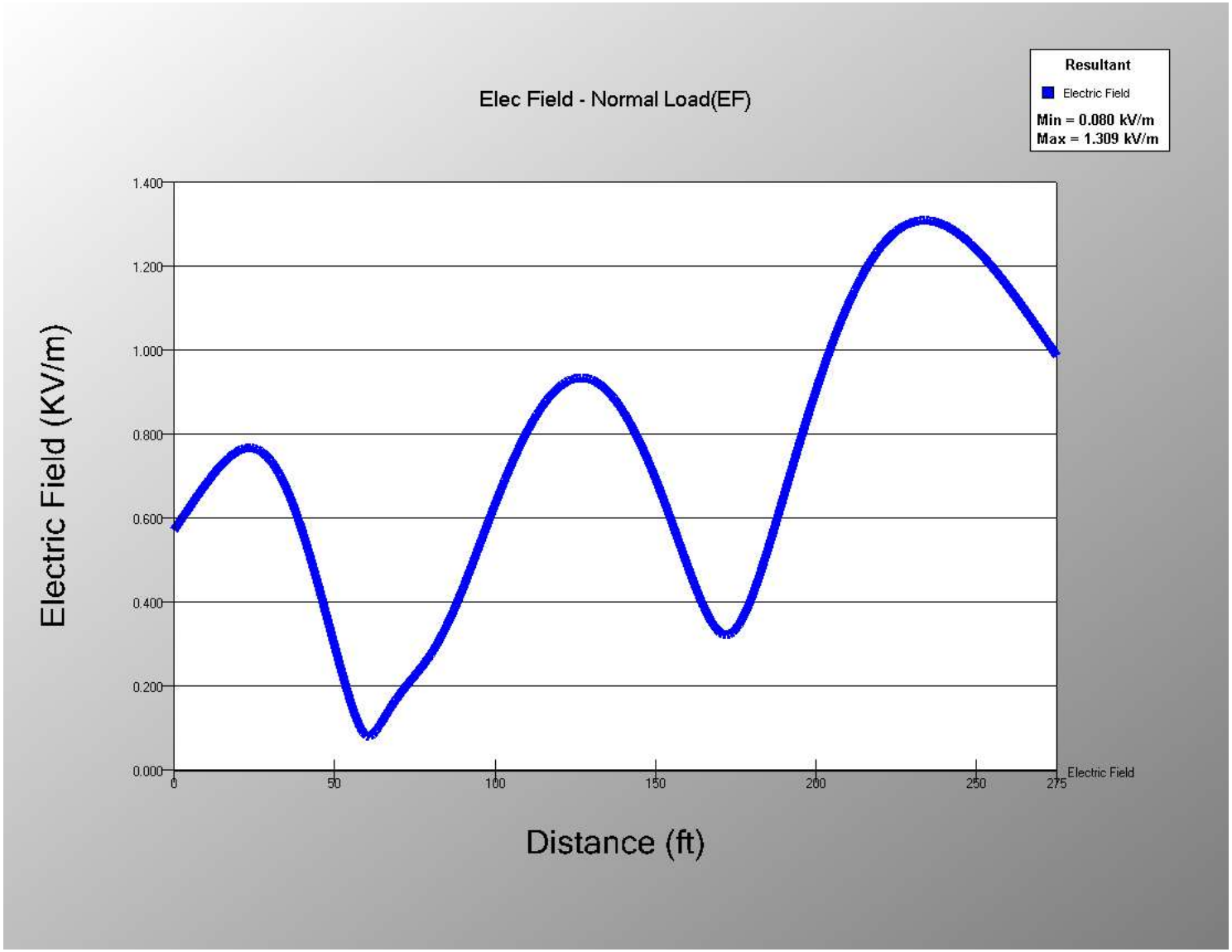
Project Status: Conceptual

Model: 2020 RTEP model for 2025 Summer (50/50)

Legend	
500 kV	
345 kV	
230 kV	
138 kV	
115 kV	
69 kV	
46 kV	
34.5 kV	
23 kV	
New	

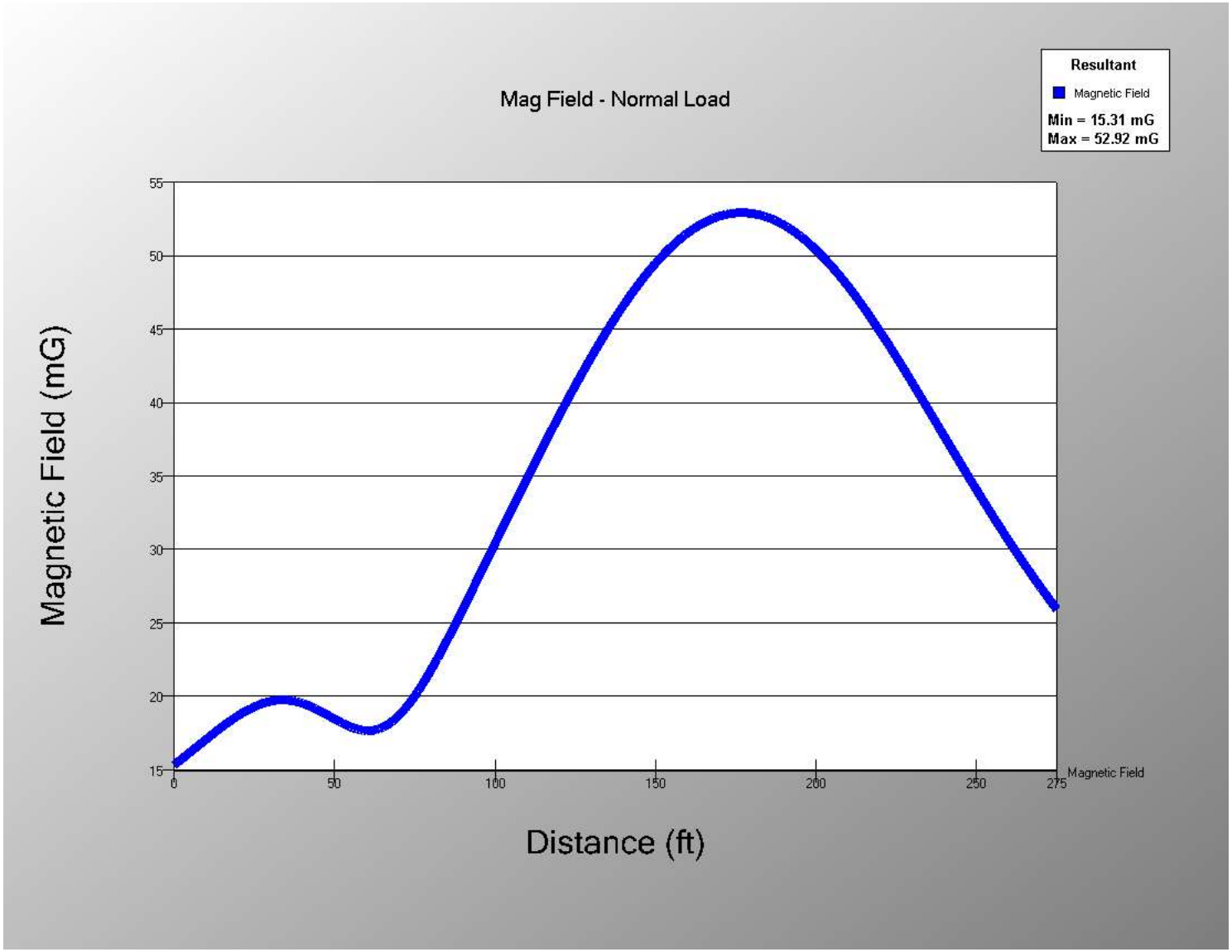
MAIT East Germantown-Germantown 115 kV Transmission Line Project

Exhibit 9


Elec Field - Normal Load(EF)
Resultant
Electric Field
Min = 0.080 kV/m
Max = 1.309 kV/m
Electric Field (KV/m)
1.400
1.200
1.000
0.800
0.600
0.400
0.200
0.000
0
50
100
150
200
250
275
Electric Field
Distance (ft)

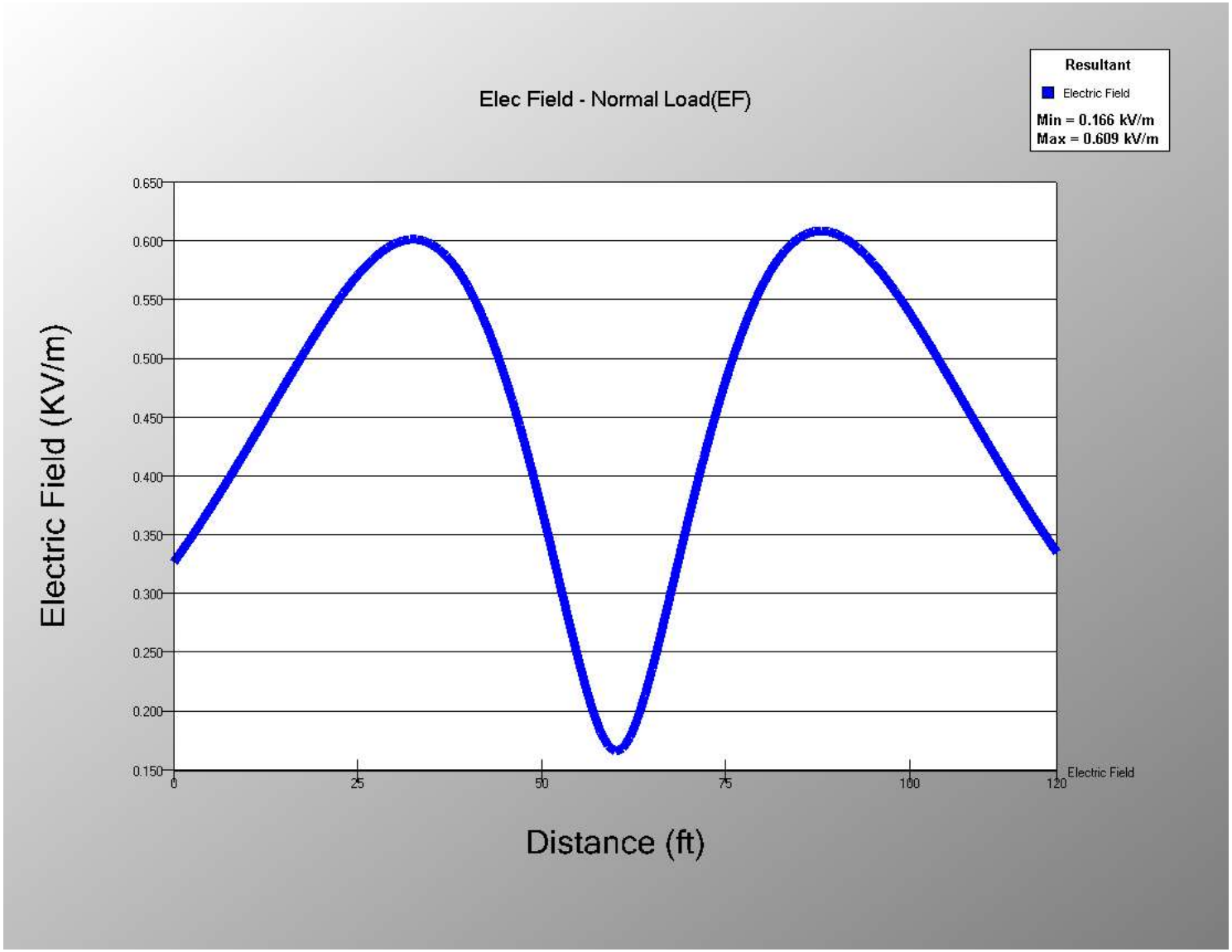
MAIT East Germantown-Germantown 115 kV Transmission Line Project

Exhibit 10


Mag Field - Normal Load
Resultant
Magnetic Field
Min = 15.31 mG
Max = 52.92 mG
Magnetic Field (mG)
55
50
45
40
35
30
25
20
15
0
50
100
150
200
250
275
Magnetic Field
Distance (ft)

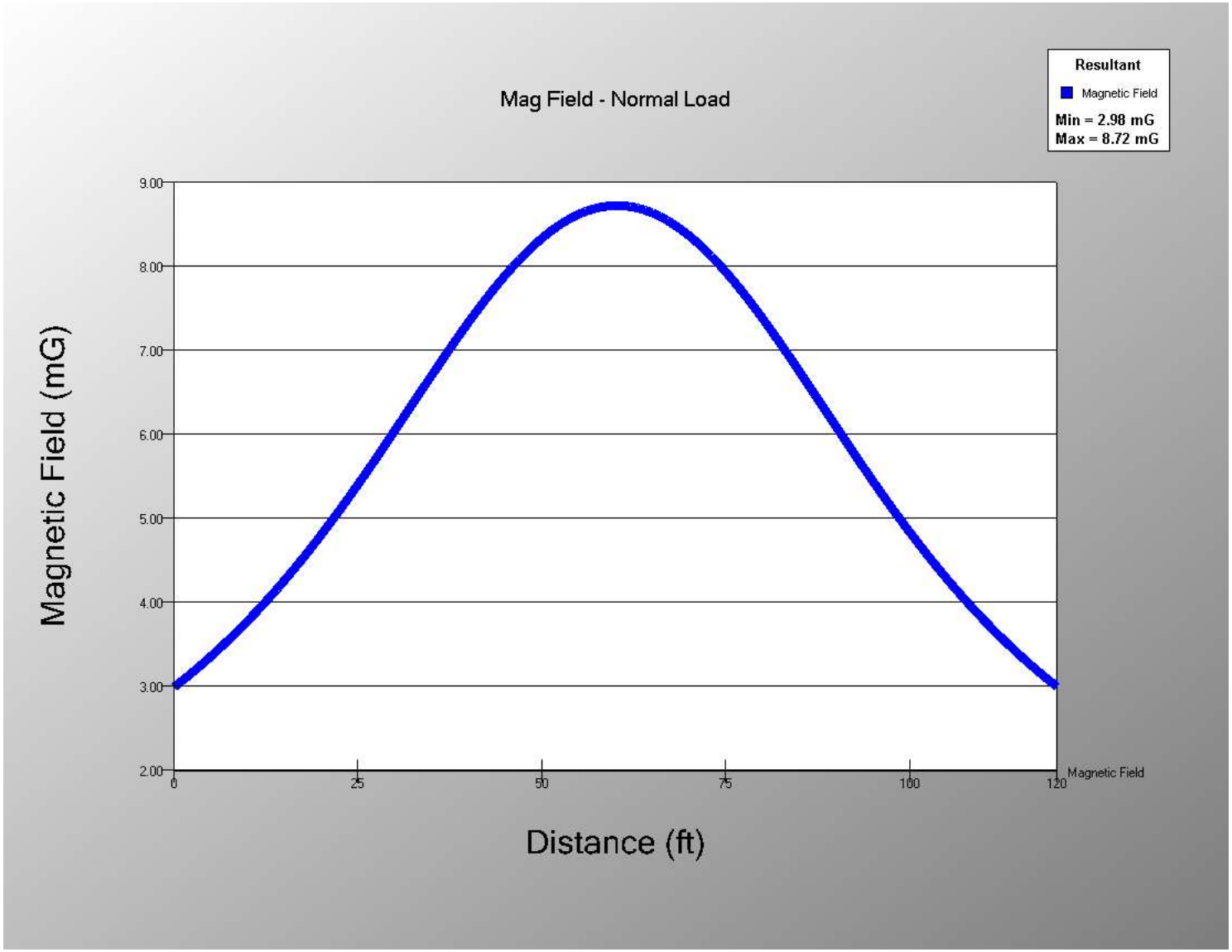
MAIT East Germantown-Germantown 115 kV Transmission Line Project

Exhibit 11


Elec Field - Normal Load(EF)
Resultant
Electric Field
Min = 0.166 kV/m
Max = 0.609 kV/m
Electric Field (KV/m)
0.650
0.600
0.550
0.500
0.450
0.400
0.350
0.300
0.250
0.200
0.150
0
25
50
75
100
120
Electric Field
Distance (ft)

MAIT East Germantown-Germantown 115 kV Transmission Line Project

Exhibit 12


Mag Field - Normal Load
Resultant
Magnetic Field
Min = 2.98 mG
Max = 8.72 mG
Magnetic Field (mG)
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
0
25
50
75
100
120
Magnetic Field
Distance (ft)

MAIT East Germantown-Germantown 115 kV Transmission Line Project

Exhibit 13

Germantown Substation

Proposed East Germantown Substation

Legend

- Proposed Centerline
- Proposed Route Right of Way

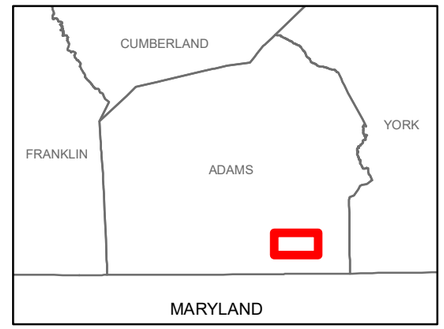
Notes

1. Proposed centerline digitized from proposed structure locations provided by First Energy November 2023.

NAD 1983 State Plane
Pennsylvania South FIPS 3702
Projection: Lambert Conformal Conic
Linear Unit: US Foot

References:
USA Topographic Basemap (ESRI)

0 750 1,500 3,000
Feet
1 inch = 1,500 feet



AECOM

MAIT EXHIBIT 13
Topographic Overview Map Depicting the Location of the Proposed Project

East Germantown - Germantown 115 kV Transmission Line Project
Adams County, Pennsylvania

FirstEnergy Corporation: Akron, Ohio

Prepared By: DJY/BSF	Checked By: BAB
Job: 60650969	Date: 1/31/2024

MAIT East Germantown-Germantown 115 kV Transmission Line Project

Exhibit 14

Legend

- Proposed Centerline
- Proposed Route Right of Way
- Parcel Boundary

Existing Transmission Lines

- 115kV - 161kV
- Below 100kV

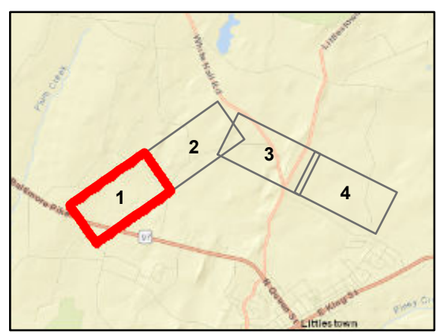
Notes

1. Proposed centerline digitized from proposed structure locations provided by First Energy November 2023.

NAD 1983 State Plane
Pennsylvania South FIPS 3702
Projection: Lambert Conformal Conic
Linear Unit: US Foot

References:
Parcel Boundaries (Adams County 2022)
ExistingTransmission Network (PowerMap 2012)
Google Maps Satellite (3/2020)

0 150 300 600
Feet
1 inch = 300 feet

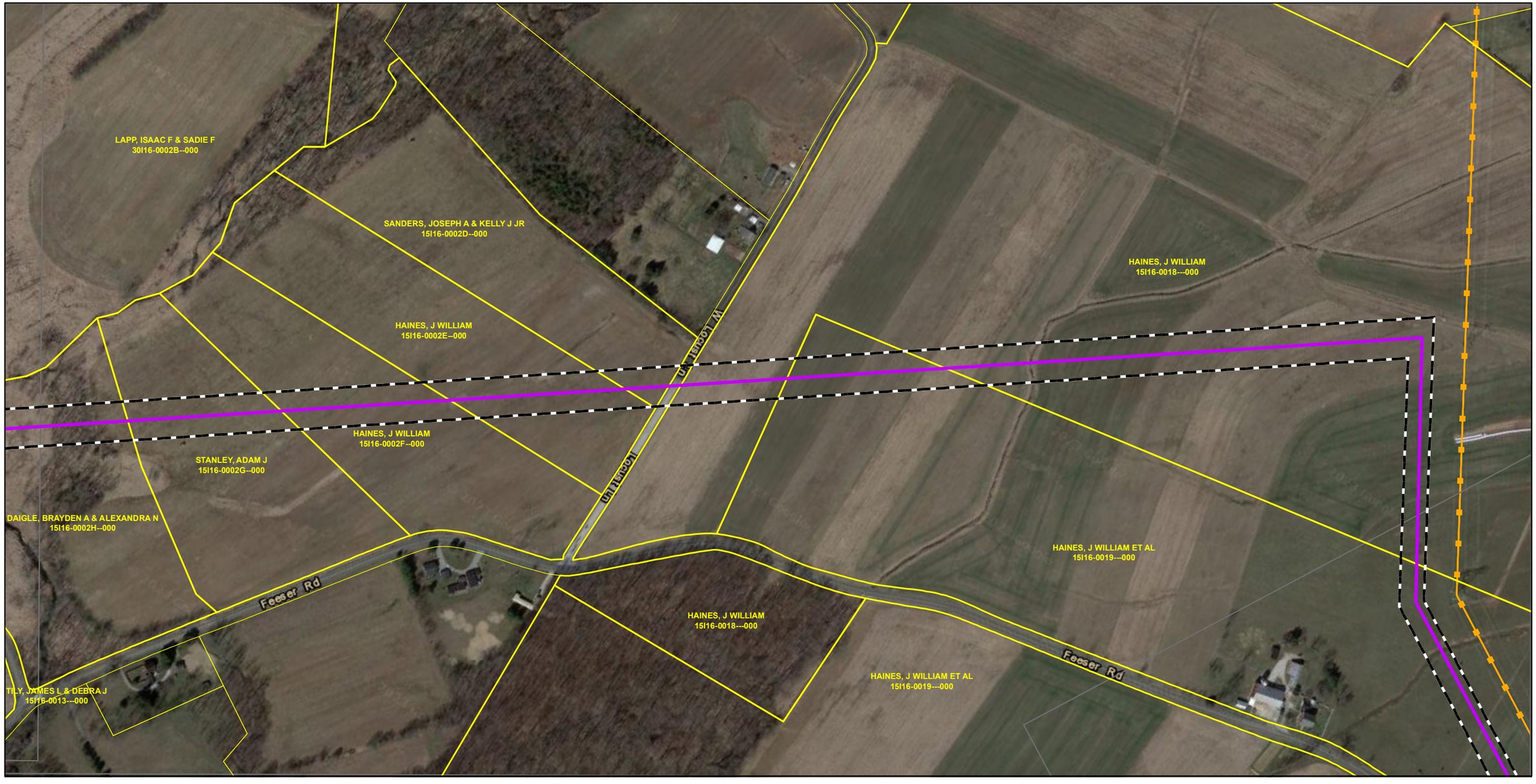


AECOM

MAIT EXHIBIT 14
Aerial Overview Map Depicting the Location of the Proposed Project
Sheet 1 of 4
East Germantown - Germantown 115 kV Transmission Line Project
Adams County, Pennsylvania

FirstEnergy Corporation: Akron, Ohio

Prepared By: DJY/BSF	Checked By: BAB
Job: 60650969	Date: 1/31/2024



Legend

- Proposed Centerline
- Proposed Route Right of Way
- Parcel Boundary

Existing Transmission Lines

- 500kV

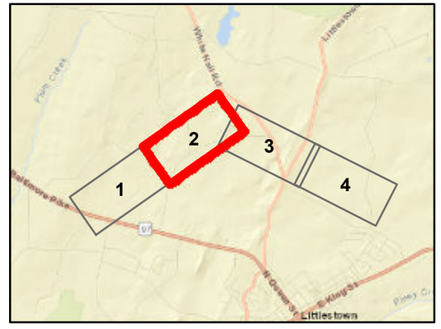
Notes

1. Proposed centerline digitized from proposed structure locations provided by First Energy November 2023.

NAD 1983 State Plane
Pennsylvania South FIPS 3702
Projection: Lambert Conformal Conic
Linear Unit: US Foot

References:
Parcel Boundaries (Adams County 2022)
ExistingTransmission Network (PowerMap 2012)
Google Maps Satellite (3/2020)

0 150 300 600
Feet
1 inch = 300 feet

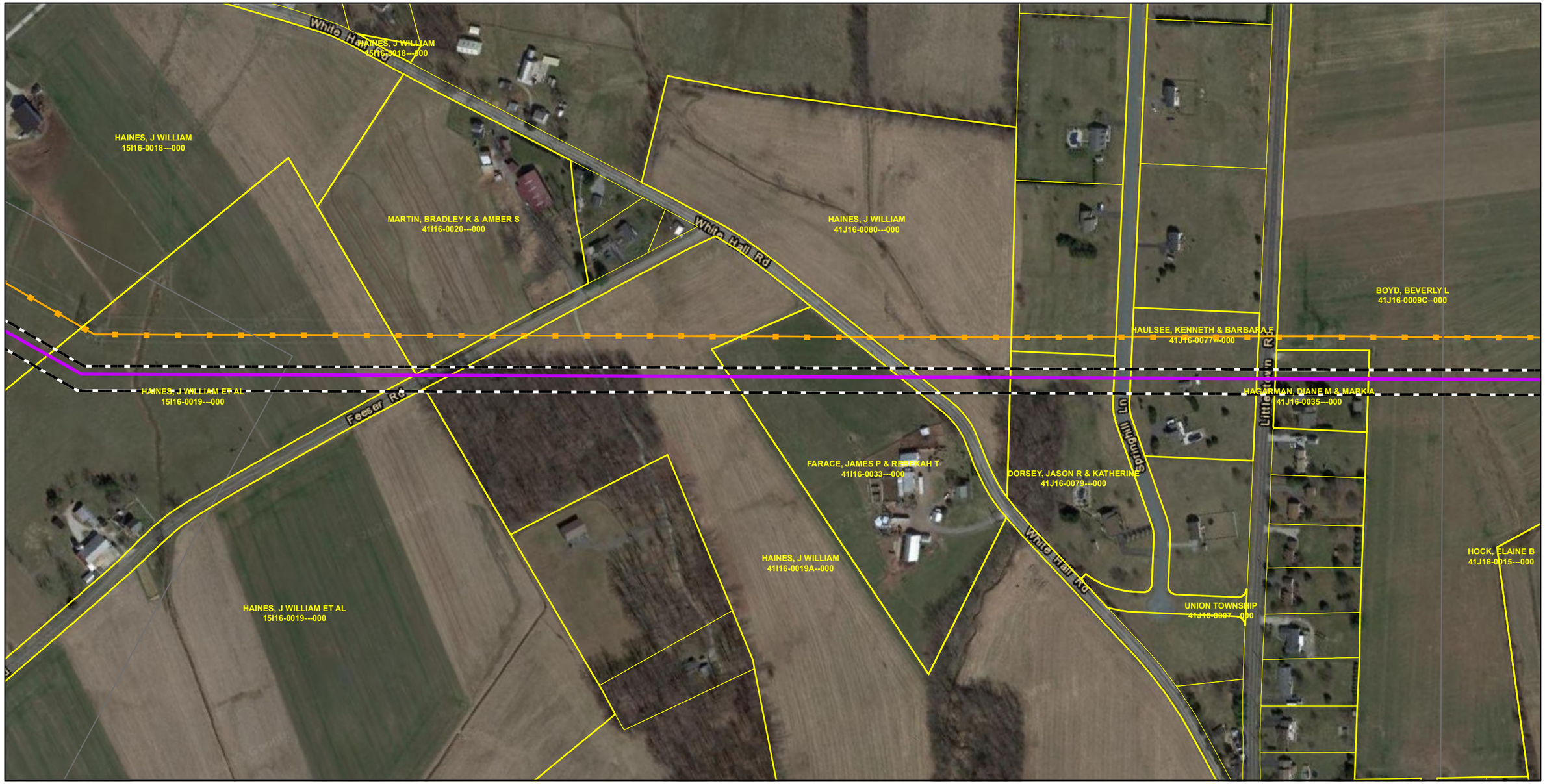


AECOM

MAIT EXHIBIT 14
Aerial Overview Map Depicting the Location of the Proposed Project
Sheet 2 of 4
East Germantown - Germantown 115 kV Transmission Line Project
Adams County, Pennsylvania

FirstEnergy Corporation: Akron, Ohio

Prepared By: DJY/BSF	Checked By: BAB
Job: 60650969	Date: 1/31/2024



Legend

- Proposed Centerline
- Proposed Route Right of Way
- Parcel Boundary

Existing Transmission Lines

- 500kV

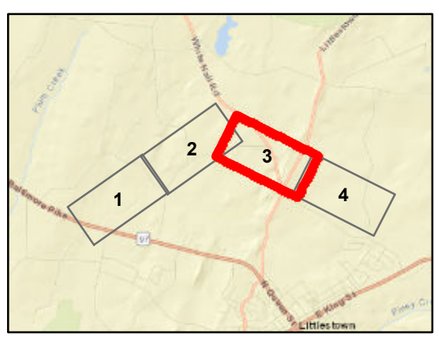
Notes

1. Proposed centerline digitized from proposed structure locations provided by First Energy November 2023.

NAD 1983 State Plane
Pennsylvania South FIPS 3702
Projection: Lambert Conformal Conic
Linear Unit: US Foot

References:
Parcel Boundaries (Adams County 2022)
ExistingTransmission Network (PowerMap 2012)
Google Maps Satellite (3/2020)

0 150 300 600
Feet
1 inch = 300 feet



AECOM

MAIT EXHIBIT 14
Aerial Overview Map Depicting the Location of the Proposed Project
Sheet 3 of 4
East Germantown - Germantown 115 kV Transmission Line Project
Adams County, Pennsylvania

FirstEnergy Corporation: Akron, Ohio

Prepared By: DJY/BSF	Checked By: BAB
Job: 60650969	Date: 1/31/2024

Legend

- Proposed Centerline
- Proposed Route Right of Way
- Parcel Boundary

Existing Transmission Lines

- 500kV

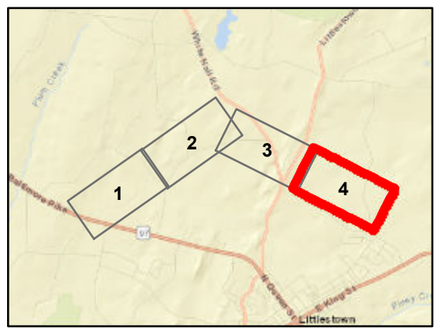
Notes

1. Proposed centerline digitized from proposed structure locations provided by First Energy November 2023.

NAD 1983 State Plane
Pennsylvania South FIPS 3702
Projection: Lambert Conformal Conic
Linear Unit: US Foot

References:
Parcel Boundaries (Adams County 2022)
ExistingTransmission Network (PowerMap 2012)
Google Maps Satellite (3/2020)

0 150 300 600
Feet
1 inch = 300 feet



AECOM

MAIT EXHIBIT 14
Aerial Overview Map Depicting the Location of the Proposed Project
Sheet 4 of 4
East Germantown - Germantown 115 kV Transmission Line Project
Adams County, Pennsylvania

FirstEnergy Corporation: Akron, Ohio

Prepared By: DJY/BSF	Checked By: BAB
Job: 60650969	Date: 1/31/2024

MAIT East Germantown-Germantown 115 kV Transmission Line Project

Exhibit 15

TRANSMISSION LINE ROUTE SELECTION STUDY

East Germantown-Germantown

115 kV Transmission Line Project

Adams County, Pennsylvania

DECEMBER 2023

Prepared For:

FirstEnergy Service Company

76 South Main Street

Akron, OH 44308

Prepared By:

AECOM - Conshohocken Office

625 West Ridge Pike, Suite E-100

Conshohocken, PA 19428

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

1.0 INTRODUCTION AND PROJECT NEED

This document presents the Route Selection Study (Study) conducted for Mid-Atlantic Interstate Transmission (MAIT), a FirstEnergy Service Company (FirstEnergy), to identify the potential route options for developing a new 115 kilovolt (kV) transmission line that will connect the proposed East Germantown 115/69 kV Substation to be built in Union Township, Adams County, to the existing Germantown 115/69 kV Substation, located within Mount Joy Township, Adams County, Pennsylvania (Project).

The straight-line distance between the proposed East Germantown Substation and the Germantown Substation is approximately 2.7 miles. The new transmission line is envisioned as consisting of a single-circuit 115 kV transmission line that would be located within a new approximately 65-foot wide right-of-way (ROW). Alternatively, the new transmission line could be located within the existing unused ROW that FirstEnergy obtained in the 1970's that extends from the Germantown Substation and ultimately crosses the property where the proposed East Germantown Substation will be built. The Study was conducted by AECOM, in consultation with MAIT, and is a component in the Application that will be submitted to the Pennsylvania Public Utilities Commission (PUC or Commission) for approval to construct the Project.

The routing study for the East Germantown-Germantown 115 kV Transmission Line Project was conducted using a methodology that integrates geographic information system (GIS) technology, quantitative and qualitative evaluation, and expert judgment into the decision-making process. Detailed desktop and field reviews were conducted for the Project to identify major opportunities and constraints and to better understand the landscape. The Proposed Route that would be developed will need additional detailed field reviews should this Project move forward. The overall objective of the routing study was to identify at least three transmission line route options that would best minimize impacts to communities and the environment while still being feasible to construct, and then select a Proposed Route for presentation to the PUC.

The purpose of this Study is to provide MAIT with several viable alternatives for a transmission line alignment that provides connection between the proposed East Germantown 115/69 kV Substation and the existing Germantown 115/69 kV Substation and a defendable assessment of major opportunities and constraints necessary to determine a Proposed Route.

1.1 Project Need

The proposed Project is needed to improve reliability for MAIT distribution customers presently served from the Germantown Substation by transferring customers to a new MAIT delivery point, specifically the proposed East Germantown Substation. The analysis completed by MAIT to support this need is provided in Exhibit 7 and Exhibit 8.

2.0 METHODOLOGY OVERVIEW

The methodology of the Study is designed to identify transmission line routes that minimize the overall impacts on social development, sensitive land uses, cultural features, and ecological areas to the greatest extent practicable while considering the economic and technical feasibility to construct the line. This process relies on analysis of current land use and ecological data collected from multiple public sources and commercial providers, which is confirmed and supplemented through field evaluations by AECOM scientists and engineers, and MAIT construction, real estate, and siting staff. The field evaluation also provides an opportunity to qualitatively assess the various routes. The result of this process is a detailed and comprehensive assessment of the study area and route alternatives that is compiled and summarized in the Study. The data and analysis in the Study is presented in such a manner as to allow consideration and comparison of additional route concepts and alternatives.

The Study consists of a multi-stage suitability analysis that identifies areas of opportunity and constraint and then directly compares the resultant feasible Alternative Routes. The Study is comprised of four main steps:

1. Definition of a Project Study Area;
2. Review of the Environmental Setting;
3. Identification of Alternative Routes; and
4. Quantitative and Qualitative Analysis of the Alternative Routes to Guide Selection of the Proposed Route by MAIT.

The primary goal for this siting effort was to identify a route for the Project that:

(1) reasonably minimizes adverse impacts on area land uses and the natural and cultural environment;

(2) minimizes special engineering design requirements and unreasonable costs; and

(3) can be constructed and operated in a timely, safe, and reliable manner.

Although no Proposed Route can optimally minimize impacts across all area resources, a series of general siting guidelines were used to direct the development, evaluation, and selection of routes toward this overall goal.

The following guidelines were considered for this effort:

- Maximize the use of any existing transmission line ROW and seek rebuild options;
- Maximize use of any existing unused ROW's;
- Consider parallel alignments along existing utility ROWs or other linear infrastructure
- Avoid or limit circuitous routes and special design requirements;

- Maximize the separation distance from and/or minimize impact on residential dwellings, schools, churches, cemeteries, and other socially sensitive facilities;
- Minimize visibility from populated areas, scenic roadways, and designated scenic resources;
- Minimize interference with economic activities, including agricultural practices;
- Minimize conflict with designated public resource lands such as local parks and other recreation lands, nature preserves or other conservation areas;
- Minimize environmental impact and construction/maintenance cost by selecting shorter, direct routes; route corridors through terrain where economical construction and environmental best management practices can be employed, and where line operational/maintenance is most feasible (e.g., use existing access roads where practicable);
- Minimize new crossings of large wetland complexes, critical habitat, and other unique or distinct natural resources; and
- Minimize habitat fragmentation and impacts on designated areas of biodiversity concern.

Significant barriers that should be identified, assessed, and where possible avoided, due to scenic impacts, administrative regulations, or where permitting would significantly delay the Project include:

- Crossing national and state forests or parks.
- U.S. Forest Service wilderness areas.
- National wildlife refuges.
- National Register of Historic Places (NRHP) listed or eligible historic districts or archaeological sites.
- EPA superfund sites.
- Military bases.
- Airports.
- Wild and scenic rivers.
- Quarries and mines.
- Sites of ritual importance.

Technical guidelines used in this analysis are driven by the physical characteristics and engineering limitations of the structures and lines themselves, and the design criteria necessary to meet MAIT design standards, North American Electric Reliability Corporation (NERC) reliability standards, National Electric Safety Code (NESC), and industry best practices for construction. The technical guidelines were informed by (1) the technical expertise of engineers and other industry professionals responsible for the reliable, safe and economical construction, operation, and maintenance of electric system facilities, (2) NERC reliability standards, and (3) industry best practices.

The methodology used on this analysis considered the following technical guidelines during the development, evaluation, and comparison of segments and Alternative Routes.

- Maximize paralleling existing transmission lines, roads and railroads to the extent practicable.
- Minimize crossing existing transmission lines.
- Minimize crossing existing interstate and multi-lane highways.
- Limit transmission line angles greater than 30 degrees.
- Limit areas across steep slopes.
- A 65-foot wide ROW is required to account for the clearing needed to safely operate the new 115 kV transmission line.

3.0 DEFINING THE PROJECT STUDY AREA

An initial task in the Study was the definition of the Project Study Area. The Project Study Area was selected based on professional judgment and the geographic characteristics of the region, as well as the physical endpoints of the Project (i.e., existing and proposed substations). In general, a selected study area should be within reasonable distance of the end points of the transmission line and it should provide the opportunity to identify multiple potentially feasible transmission line routes for further evaluation. In this case, the boundaries of the Project Study Area were developed based on a review of U.S. Geological Survey (USGS) maps, state and county road maps, aerial photographs, existing transmission line alignments, and the alignment of an existing unused ROW owned by FirstEnergy. Constraints such as topography, parks, suburban/developed areas, transportation routes, existing utility corridors, and the locations of the end points played key roles in determining the boundaries of the Project Study Area and alignments of the Alternative Routes.

With these criteria in mind, the northern and eastern boundaries were set to generally parallel the outer extents of the existing unused ROW. This existing unused ROW extends northeast from the Germantown Substation for approximately 1.6 miles before intersecting with the Conastone-Hunterstown 500 kV Transmission Line and then turns to the southeast and parallels the western side of this line past the proposed East Germantown Substation site and extends over 6 miles to the Pennsylvania / Maryland state line. This ROW was used as the boundary because any options further out from this alignment, as well as beyond the proposed East Germantown Substation site, would result in longer and potentially more impactful options. The Pennsylvania / Maryland state line was generally used as the southern boundary of the Project Study Area because crossing into Maryland would result in the need to involve another state's public utility review process and another state's permitting review process. The western boundary generally parallels the single-circuit Germantown-Carroll 138 kV Transmission Line, which extends south from the Germantown Substation. This area also includes a short portion of the single-circuit Germantown-Lincoln 115 kV Transmission Line that extends north from the Germantown Substation. This existing transmission line corridor and the existing Germantown Substation were used as boundaries because options further out from these features would result in longer and potentially more impactful options.

The resulting Project Study Area comprises approximately 14.8 square miles and covers portions of Mount Joy, Mount Pleasant, Germany, and Union Townships and all of Littlestown Borough in Adams County (**Figure 3-1**).

4.0 ENVIRONMENTAL SETTING OF THE PROJECT STUDY AREA

Information contained in this section was gathered from a variety of Federal, State, and local GIS databases, published reports and maps, and windshield surveys of the Project Study Area.

4.1 Natural Environment

Features of the natural environment are an important consideration in the routing process. Transmission line routing studies attempt to minimize impacts to the natural environment by avoiding regulated features such as wetlands, streams, and floodplains. This methodology minimizes project permitting issues and costs while preserving key natural habitats. This section provides a general description of the environmental setting of the Project Study Area including the physiography, geology, soils, surface waters, vegetation, special use areas, and wildlife habitat.

4.1.1 Physiographic Region and Topography

The Commonwealth of Pennsylvania is divided into several physical geographic regions, known as physiographic provinces, which are defined based on the terrain and geologic history of the landscape. The Project Study Area is located within three sections of the Piedmont Physiographic Province, specifically from west to east, the Gettysburg-Newark Lowland Section, the Piedmont Lowland Section, and the Piedmont Upland Section.

- The Gettysburg-Newark Lowland Section consists of rolling low hills and valleys developed on red sedimentary rock.
- The Piedmont Lowland Section consists of broad, moderately dissected karst valleys separated by broad low hills overlaying predominantly limestone bedrock.
- The Piedmont Upland Section consists of broad, rounded to flat topped hills and shallow valleys located on metamorphic schist, gneiss, and quartzite bedrock (Sevon 2000).

Topography in the Project Study Area is composed of rolling hills and shallow valleys. Elevations range from a high of 760 feet above sea level in the southeast corner of the Project Study Area near the Pennsylvania / Maryland state line to a low of 530 feet in the northwest corner along Alloway Creek near the Germantown Substation.

4.1.2 Bedrock Geology

The regional geology of the Project Study Area is composed of metamorphic and sedimentary rock units ranging from the Cambrian Age (500 million years ago) to the Triassic Age (250 million years ago). The western half of the Project Study Area is underlain by the New Oxford Formation from the Triassic Age,

which consists of sandstone, mudstone, and shale. Most of the eastern half is underlain by limestone associated with the Conestoga Formation or quartzite and schist associated with the Antietam and Harpers Formations. Information provided by the Pennsylvania Department of Environmental Protection's (PADEP) EMapPA website describing these bedrock units is listed in **Table 4-1** (PADEP 2021a). PADEP also notes that an area of karst topography (surface depressions) is located on the east side of the Project Study Area in the Conestoga, Kinzers, and Ledger Formation areas (PADEP 2021b).

TABLE 4-1: Summary of Bedrock Units in the Project Study Area

Bedrock Unit Symbol	Bedrock Unit Name	Age of Formation	Primary Composition
Cah	Antietam and Harpers Formations, undivided	Cambrian	Quartzite
Ca	Antietam Formation	Cambrian	Quartzite
OCc	Conestoga Formation	Ordovician and Cambrian	Limestone
Ck	Kinzers Formation	Cambrian	Shale
Cl	Ledger Formation	Cambrian	Dolomite
Trn	New Oxford Formation	Triassic	Arkosic sandstone
Trnc	New Oxford Conglomerate	Triassic	Quartz conglomerate

4.1.3 Soil Characteristics

Soils within the Project Study Area were reviewed using the U.S. Department of Agriculture's (UDSA) Natural Resources Conservation Service (NRCS) soil survey website (USDA/NRCS 2021a). Information on the hydric composition of the soil is listed in **Table 4-2** (USDA/NRCS 2021b). Hydric soils in the Project Study Area are composed of five major hydric map units and seventeen map units that consist of minor hydric inclusions. Hydric soils constitute approximately 50 percent of the Project Study Area. These soils are primarily located along the broad stream valleys but also extend up the adjacent hillslopes and into many of the agriculturally active fields (**Figure 4-1**).

TABLE 4-2: Summary of Soils in the Project Study Area

Map Unit Symbol	Map Unit Name	Hydric Soil
AbA	Abbottstown silt loam, 0 to 3 percent slopes	Minor
AbB	Abbottstown silt loam, 3 to 8 percent slopes	Minor
Ba	Baile silt loam	Major Hydric
BgB	Birdsboro silt loam, 3 to 8 percent slopes	Minor
Bo	Bowmansville silt loam	Major Hydric
CkA	Clarksburg silt loam, 0 to 3 percent slopes	Minor
CkB	Clarksburg silt loam, 3 to 8 percent slopes	Minor
Cm	Codorus silt loam	Minor
CnA	Conestoga silt loam, 0 to 3 percent slopes	NO

Map Unit Symbol	Map Unit Name	Hydric Soil
CnB	Conestoga silt loam, 3 to 8 percent slopes	NO
CnC	Conestoga silt loam, 8 to 15 percent slopes	NO
CrA	Croton silt loam, occasionally ponded, 0 to 3 percent slopes	Major Hydric
Dy	Dunning silty clay loam	Major Hydric
GbB	Glenelg channery loam, 3 to 8 percent slopes	NO
GbC	Glenelg channery silt loam, 8 to 15 percent slopes	NO
GdA	Glenville silt loam, somewhat poorly drained, 0 to 3 percent slopes	Minor
GdB	Glenville silt loam, 3 to 8 percent slopes	Minor
Hc	Hatboro silt loam	Major Hydric
KnB	Klinesville channery silt loam, 3 to 8 percent slopes	NO
KnC	Klinesville channery silt loam, 8 to 15 percent slopes	NO
KnD	Klinesville channery silt loam, 15 to 25 percent slopes	NO
LeB	Lansdale loam, 3 to 8 percent slopes	NO
LfC	Lansdale channery loam, 8 to 15 percent slopes	NO
LgB	Legore channery silt loam, 3 to 8 percent slopes	NO
LgC	Legore channery silt loam, 8 to 15 percent slopes	NO
MOB	Mt. Airy and Manor channery loams, 3 to 8 percent slopes	Minor
MOC	Mt. Airy and Manor channery loams, 8 to 15 percent slopes	Minor
MOD	Mt. Airy and Manor channery loams, 15 to 25 percent slopes	Minor
NaB	Neshaminy channery silt loam, 3 to 8 percent slopes	Minor
Pa	Penlaw silt loam	NO
PcB	Penn silt loam, 3 to 8 percent slopes	NO
PcC	Penn silt loam, 8 to 15 percent slopes	NO
PoB	Penn-Klinesville channery silt loams, 3 to 8 percent slopes	Minor
PoC	Penn-Klinesville channery silt loams, 8 to 15 percent slopes	Minor
Pt	Pits, quarry	NO
ReA	Readington silt loam, 0 to 3 percent slopes	Minor
ReB	Readington silt loam, 3 to 8 percent slopes	NO
Rw	Rowland silt loam	Minor
StB	Steinsburg channery sandy loam, 3 to 8 percent slopes	NO
StC	Steinsburg channery sandy loam, 8 to 15 percent slopes	NO
UeB	Urban land-Conestoga complex, 0 to 8 percent slopes	NO
UgB	Urban land-Penn complex, 0 to 8 percent slopes	Minor

4.1.4 Surface Waters

Eastern portions of the Project Study Area are located in the South Branch Conewago Creek watershed that is part of the larger Lower Susquehanna River watershed, which drains to the Chesapeake Bay. The central and western portions of the Project Study Area are located in the Alloway Creek and Piney Creek watersheds that are part of the larger Monocacy River watershed. The Monocacy River watershed extends south through Maryland to the Potomac River, which drains to the Chesapeake Bay. Major surface water features are depicted in **Figure 4-2** and discussed in detail below.

Streams

Surface water resources mapped within the Project Study Area include streams, floodplains, and open waters (**Figure 4-2**). The information presented in this section is based upon publicly available data provided by the USGS, the Federal Emergency Management Agency (FEMA), and PADEP.

Named steams within the Project Study Area that have been identified on relevant USGS maps are listed in **Table 4-3** (USGS 2021). According to Pennsylvania Code, Title 25, Chapter 93, PADEP has established narrative and numeric water quality criteria necessary to support a variety of protected water uses, which include protection uses for aquatic life (e.g., Cold Water Fishes (CWF), Warm Water Fishes (WWF), Trout Stocking (TSF), and Migratory Fishes (MF)) and special protection waters (e.g., High Quality (HQ) and Exceptional Value (EV)). PADEP assigns all streams in the Commonwealth a *Designated Use*, which is the water use goal for a particular stream segment, whether or not it is currently being attained. In contrast, a stream's *Existing Use* is the use actually attained by existing water quality. PADEP's antidegradation policy requires existing uses, and the level of water quality necessary to protect existing uses, shall be maintained and protected. As such, the water quality of a stream segment with an existing use that exceeds its designated use may not be degraded below the water quality levels protective of that existing use (PADEP 2021c). Designated stream classifications are illustrated on **Figure 4-2**. Designated Uses of the streams located in the Project Study Area are also noted in **Table 4-3**. Note that neither of the streams has an Existing Use status.

Further, the Pennsylvania Fish and Boat Commission (PFBC) provides additional protection (i.e., season restrictions) to streams that support trout populations. Specific classifications include Wild Trout Waters (Natural Reproduction) (PFBC 2021a), Approved Trout Stream (stocked) (PFBC 2021b) Class A Wild Trout Waters (PFBC 2021c), and Wilderness Trout Waters (PFBC 2021d). Neither of the streams in the Project Study Area are listed under these protected PFBC classifications (**Table 4-3**).

TABLE 4-3: Named Streams in the Project Study Area

Stream Name	Chapter 93 Designated Use*	Special PFBC Classification
Alloway Creek	WWF, MF	None
Piney Creek	WWF, MF	None

*MF – Migratory Fishes, WWF – Warm Water Fishes

PADEP's 2020 Integrated (303(d) and 305(b)) Water Quality Report summarizes the water quality conditions of surface water in the Commonwealth of Pennsylvania. The report classifies streams as impaired or non-impaired and further identifies the standards based on four designated uses: aquatic life, fish consumption, recreation use, and potable water supply (PADEP 2021d). Within the Project Study Area, the following streams are classified as impaired:

- Tributaries to the South Branch Conewago Creek – located in the southeastern corner of the Project Study Area, the recreational use aspects of these streams are classified as impaired due to pathogens from unknown sources.

There are no state-listed scenic rivers present within the Project Study Area based on review of the Pennsylvania Department of Conservation and Natural Resources (PADCNR) Scenic Rivers Program (PADCNR 2021a). None of the rivers in the Project Study Area are considered federally-listed wild and scenic rivers according to the National Wild and Scenic Rivers Program managed by the U.S. National Park Service (USNPS 2021a).

Floodplains

100-year floodplains are areas adjacent to streams which would be inundated by a flood elevation that has a 1-percent chance of being equaled or exceeded each year. FEMA delineates the extent of most 100-year floodplains. The 100-year floodplain boundaries are illustrated on **Figure 4-2** (FEMA 2021). Floodplains are located primarily along all of the named streams and several of their larger tributaries.

Lakes and Ponds

Numerous small agriculture-based ponds (0.5 to 2.0 acres) are located within the Project Study Area. The U.S. Fish and Wildlife Services (USFWS) National Wetlands Inventory (NWI) categorizes surface water resources such as open waters (e.g. streams, ponds, and lakes) and wetlands in accordance with the Cowardin system (Cowardin *et al.* 1979). These ponds are categorized by the NWI as palustrine unconsolidated bottom, permanently flooded, (PUBH) features, or freshwater ponds (USFWS 2021). These surface water features are illustrated on **Figure 4-2**.

4.1.5 Wetlands

Review of the NWI wetland maps indicates that numerous small (0.5 to 2.0 acres) and several moderate (2.0 to 44.0 acres) sized palustrine wetlands are located within the Project Study Area, primarily within floodplain areas (**Figure 4-2**). Palustrine systems include all non-tidal vegetated wetlands and are further classified based on the dominant plant type. These classifications include palustrine emergent (PEM) herbaceous systems, palustrine scrub-shrub (PSS) systems, and palustrine forested (PFO) systems. Wetlands classified as PEM or PSS are considered less of a constraint since the new transmission line may be able to span these areas or limit impacts to the proposed structure locations, whereas PFO wetlands are considered a constraint area because the tree clearing that would be required in these areas is considered an impact by the state and federal permitting agencies that would require mitigation.

Wetlands depicted on the NWI maps are based primarily on interpretation of aerial photographs taken in the 1980's, and were not field verified or delineated in accordance with standard methodologies. Hence, these data are suitable for planning purposes only.

4.1.6 Vegetation Communities

The Project Study Area lies within the Northern Appalachian Piedmont Section of the Eastern Broadleaf Forest Province (McNab 2005). This province has a continental-type climate of cold winters and warm summers. Annual precipitation is greater during summer and water deficits infrequent. Vegetation is a mixture of oak-hickory deciduous trees and short-leaf pines. According to Rhoads' and Block's *Trees of Pennsylvania*: *A Complete Reference Guide* (Rhoads & Block 2005), the Project Study Area is within the Appalachian Oak Forest, which is the dominant forest type in Pennsylvania. This forest type is characterized by the presence of red oak (*Quercus rubra*), white oak (*Quercus alba*), tulip tree (*Liriodendron tulipifera*), red maple (*Acer rubrum*), and hickory trees (*Carya* species). It also generally has a dense layer of shrubs including mountain laurel (*Kalmia latifolia*) and black huckleberry (*Gaylussacia baccata*).

The vegetation of the Project Study Area has been altered considerably by human disturbance. As a result, the landscape is a patchwork of residential and commercial areas, agricultural fields, open meadows, and pockets of forested areas. Vegetation within the socially developed areas around Littlestown consists of a wide variety of native and ornamental trees and shrubs planted by various property owners or part of municipal street scape design. Agricultural areas are noted across the entire Project Study Area and are dominated by crop species such as corn, wheat, or soybean; some agricultural areas are used for horses, cows, or other livestock. Most of the forested areas parallel the stream networks, but several large tracts of forest are noted on the border of Littlestown as well as mixed in with the surrounding agricultural lands. All of these forested areas are second and third growth forests; there are no known areas of old-growth forest in the area.

4.1.7 Wildlife

Typical wildlife species found within the Project Study Area include those found in wetlands, forested habitats, and open/agricultural lands. These habitats contain a diverse population of amphibians, fish, reptiles, and birds, but have a limited diversity of mammals. Common mammals within these habitats include raccoon (*Procyon lotor*), eastern cottontail rabbit (*Sylvilagus floridanus*), and white-tailed deer (*Odocoileus virginianus*) (Fergus 2000).

Important Bird Areas (IBA) are "designated by the Pennsylvania Ornithological Technical Committee (POTC), as the most critical regions in the Commonwealth for conserving bird diversity and abundance, and are the primary focus of Audubon Pennsylvania's conservation efforts" (Audubon Pennsylvania Birds Conservation 2021). The Southern Adams County Grasslands IBA is composed of extensive pastures, hayfields, and large yards that form open grassland habitat suitable for a diversity of grassland birds including upland sandpiper (*Bartramia longicauda*), loggerhead shrike (*Lanius ludovicianus*), and eastern meadowlark (*Sturnella magna*). Several large cattle-grazing operations have maintained the

open, untilled agriculture features attractive to grassland birds. This IBA extends east to west across most of Adams County and covers all of the Project Study Area (**Figure 4-2**).

4.1.8 Threatened and Endangered Species

A review of the PADCNR Natural Heritage Program Database would need to be conducted to determine the potential presence of threatened or endangered (T&E) species in the Project Study Area. The search would evaluate for federal (USFWS) and state (PADCNR, Pennsylvania Fish and Boat Commission (PFBC) and Pennsylvania Game Commission (PGC)) listed species. Further coordination with these agencies will be required to obtain specific T&E species data for the Proposed Route.

The Natural Heritage Inventory of Adams County, developed by The Nature Conservancy (TNC), identifies specific natural areas that may provide habitat for state or federal-listed T&E species. Review of these natural areas notes that none are located in the Project Study Area (TNC 2002).

4.1.9 Special Use Areas

Special use areas are defined as governmental owned or controlled lands that are publicly accessible and provide special conservations value and social service. Scenic vistas, wilderness areas, state game lands, and public parks are several examples of these lands.

Scenic Areas

The Project Study Area does not contain any state designated scenic areas (PADCNR 2021b). No federal or state scenic highways, as noted by the Federal Highway Administration (FHA) and the Pennsylvania Department of Transportation (PennDOT), are located in the Project Study Area (FHA 2021; PennDOT 2021).

Wilderness Areas

The Project Study Area is not located within a National Wilderness Preservation System (NWPS 2021).

State Game Lands

State Game Lands are managed by the Pennsylvania Game Commission (PGC) for hunting, trapping, and fishing. No State Game Lands are located in the Project Study Area (PGC 2021).

Park Lands

There are no national or state parks located within the Project Study Area (USNPS 2021b; PADCNR 2021c). Four local parks are located within Littlestown Borough that include the 45-acre Littlestown Community Park and three smaller neighborhood parks (**Figure 4-3**).

Natural Areas

There are no state-listed Natural Areas located within the Project Study Area (PADCNR 2021d).

4.2 Built Environment

Human impacts on the natural environment are represented by a number of land use patterns and development types. Evaluation of the land uses considered conventional classifications such as developed, forested, and agricultural uses. Additional evaluation assessed conserved lands, agricultural easements, comprehensive plans, historic and cultural resources, and hazardous material sites.

4.2.1 Land Use/ Land Cover

Land use within the Project Study Area is composed of a central core of residential and commercial development (Littlestown) that is surrounded primarily by agricultural land uses (**Figure 4-4**). Local and state transportation corridors bordered by pockets of residential and commercial development radiate from Littlestown and bisect the agricultural lands. Narrow forested stream valleys further bisect the area.

Residential Development

The dense residential development in Littlestown Borough dominates the central portion of the Project Study Area. This area consists of a town center that contains numerous apartments that is surrounded by blocks of single-family homes and further bordered by extensive areas of newer residential communities

Moderately less dense residential development is noted along the main highways specifically State Route 97 (SR 97) and SR 194 which intersect in downtown Littlestown. Scattered lower density residential development is located along many of the secondary roads that crisscross the area.
Residential facilities account for approximately 25% of the Project Study Area.

Institutional/Industrial/Commercial Development

Institutional facilities generally include schools, which are closely tied into the residential development pattern. A large complex consisting of an elementary, middle, and high school is located on the north side of Littlestown (**Figure 4-5**). These facilities involve large main building structures and surrounding open areas that contain ball fields. Other institutional lands include municipal facilities such as maintenance yards, office buildings, and water treatment areas.

Industrial lands in the Project Study Area are limited to a small industrial park located on the southeast side of Littlestown. No active railroads, large scale quarry, mining operations, or refineries are located in the area.

Commercial lands generally include common retail shops such as restaurants, gas stations, and markets, which are noted in concentrated areas in Littlestown and along the state and local roadways.

Institutional, industrial, and commercial lands account for approximately 2% of the Project Study Area.

Agricultural Land

Agricultural land is a dominant land use in the Project Study Area. As discussed in **Section 4.1.6** (Vegetation Communities), agricultural lands are generally used for the production of crops, but some areas are used for grazing. Many of these agricultural lands are associated with single farm complexes that may include several hundred acres; numerous others are smaller plots that may be used for grazing.

Agricultural lands account for approximately 60% of the Project Study Area.

Forested Lands

Forested lands are predominately located in the northern and western sections of the Project Study Area. Several large tracts of forest are noted on the border of Littlestown but larger tracts rim the streams that meander through the surrounding agricultural lands. Some are in upland areas between agricultural fields. These forests may not have been converted to agriculture due to steep slopes, rocky soils, or the presence of wetlands.

Forested lands account for approximately 10% of the Project Study Area.

Transportation and Utilities

The largest highways in the Project Study Area are SR 97 and SR 194, which intersect in the center and divide the area into four equal quadrants. Both roadways are two-lane highways. SR 97 extends from the northwest to the southwest corner and SR 194 extends from the southwest to the northeast. These main roads are supplemented with a network of secondary, residential, and agricultural roads.

There are no active railroads but an abandoned Penn Central railroad corridor parallels the alignment of SR 194 through the south side of downtown Littlestown. There are no known underground pipelines in the Project Study Area.

There are two main electrical transmission line corridors in the Project Study Area. The largest is the Conastone-Hunterstown 500 kV Transmission Line that extends from northwest to southeast through the eastern edge of the area. On the western edge, the existing single-circuit Germantown-Lincoln 115 kV extends to the northwest from the Germantown Substation and the single-circuit Germantown-Carroll 138 kV Transmission Line extends to the south from the substation.

Kingsdale Air Park Airport is located just outside the southwestern edge of the Project Study Area. The Federal Aviation Administration (FAA) monitored airspace extends into the area. The runway has a southwest to northeast alignment that would indicate the potential need for FAA coordination for routes that may extend through the southernmost section of the Project Study Area.

Transportation and utilities account for approximately 3% of the Project Study Area.

All of the aforementioned linear features are included on **Figure 4-5**.

4.2.2 Conservation Lands

Based on review of the National Conservation Easement Database (NCED), there are fourteen conserved lands located within the Project Study Area (NCED 2021).

Eleven of the conserved lands are agricultural conservation easements managed through the Adams County Agricultural Land Preservation Program (ACALPP). Agricultural easements restrict and limit the conversion of farmland to nonagricultural use. Money for this program is allocated from both the county and the state, with some federal funding from the USDA/NRCS. ACALPP oversees the terms and conditions of the permitted agricultural activities, as well as restrictions that are established by an easement. Such restrictions include development of buildings and other structures not related to agricultural production, subdivision of the parcel, and mining activities (ACALPP 2021). Based on easement information provided by Adams County, utilities are a permitted use within the ACALPP easements. Most of the agricultural conservation easements involve 100 to 150 acre active farms located in the eastern portion of the Project Study Area, but one large tract is located on the south side of Littlestown.

The remaining three conserved lands are preserved through the Land Conservancy of Adams County. Since their funding is provided by a variety of sources other than county, state or federal agencies, the Land Conservancy of Adams County provides more flexibility in the lands being preserved relative to the ACALPP. Based on information provided by the Land Conservancy of Adams County, their focus is on preserving the rural lands and character of Adams County. Most of the land conservancy parcels in the Project Study Area involve 50 to 100 acre lots that consist of natural environments and forested areas, with some areas being primarily agricultural in use. Land conservancy parcels are located in the southwestern portion of the Project Study Area. None of these land conservancy easements involve federal support through the USDA/NRCS.

Cumulatively, conserved lands in the Project Study Area account for just over 1,000 acres. All of these conserved lands are illustrated in **Figure 4-3**.

4.2.3 Comprehensive Plans

Adams County Planning Commission (ACPC) approved a comprehensive plan in 1991 that has not been updated since that time (ACPC 1991). This plan identifies specific concerns for the area including future development patterns, preservation of physical and environmental characteristics, and the coordination of growth management. The plans offer a series of Goals and Objectives identified by the county to be used as a guide by the local municipalities to minimize the impact of proposed growth and maximize the preservation of the natural and cultural aspects of the area. Specific goals provide strong support for the development of growth areas that will serve as the focus for infrastructure development and consequently direct residential, commercial, and industrial growth. The plan addresses utilities such as water supply and wastewater but does not address the need for additional electrical power.

In 2010, Adams County adopted the *Adams County Greenways Plan* that encourages "identifying areas that are inappropriate for development and areas that are already protected or publicly owned in order to develop an interconnecting system of greenways (Adams County Office of Planning and Development 2010)." The Greenways Plan complemented several of the goals identified in the comprehensive plan that were focused on defining a widespread pattern of parks, forests, game lands, protected environmental features, open space, and conservation areas to be preserved as the backbone of a permanent open space system. Although the focus of many potential greenway trails is on abandoned railroads and scenic byways, the plan does acknowledge that utility corridors, including electrical transmission lines, are options to be considered.

Aside from these county plans, the local municipalities within the Project Study Area have adopted their own comprehensive plans. In 2003, Mount Pleasant Township coordinated with Bonneauville Borough in the development of the *Bonneauville Borough and Mount Pleasant Township Comprehensive Plan* (Bonneauville Borough and Mount Pleasant Township 2003), and in 2008, Germany and Union townships coordinated with the Littlestown Borough in the development of the *Southeast Adams County Comprehensive Plan* (Germany Township, Littlestown Borough, and Union Township 2008). Similar to the county based plans, these documents focus on growth patterns, transportation networks, economic development, and the preservation of cultural and natural resources and provide further resolution to address the goals of the plans through local zoning changes and multi-municipality coordination. These plans do not discuss the potential need for additional transmission lines or any potential effect new lines may have on the surrounding environment, but the *Southeast Adams County Comprehensive Plan* does mention the public concern that has been expressed about electric service reliability in the area of Basehoar Road, which is near the site for the proposed East Germantown Substation. The plan also acknowledges that utility corridors, including electrical transmission lines, are options to be considered for walkways or trail systems.

4.2.4 Cultural Resources

A review of cultural resources within the Project Study Area is required by various state agencies to ensure their preservation. A desktop survey of existing historic structures, properties, and districts within the Project Study Area was conducted by accessing the Pennsylvania Historical and Museum Commission's (PHMC) Bureau of Historic Preservation's State Historic and Archaeological Resource Exchange (PA-SHARE) website to review available information on these historic resources (PHMC PA-SHARE 2021). Archaeological information was not included in this assessment due to the sensitive nature of disclosing the site locations. Evaluation for archaeological resources will be required regardless of the route chosen for the Project.

Four National Register of Historic Places (NRHP)-listed or eligible historic properties or districts were identified in the Project Study Area. Historic properties are defined as buildings, structures, objects, sites, and linear historic sites aged 50 years or more. Historic districts are groups of buildings, properties, or sites that are recognized for being historically or architecturally significant. These

properties and districts and their PHMC resource number are listed in **Table 4-4**. These resources are illustrated in **Figure 4-5**.

TABLE 4-4: NRHP-listed or eligible Historic Properties/Districts in the Project Study Area

Resource#	Historic Name	National Register Status	Municipality
2019RE20852	Beachtel Property	NRHP-Eligible	Germany Township
2018RE01140	Jonathan Forrest Farm	NRHP-Eligible	Germany Township
2010RE03887	Northern Central Railroad Historic District	NRHP-Eligible	Union and Germany Townships; Littlestown Borough
2004RE05720	Littlestown Historic District	NRHP-Eligible	Littlestown Borough

4.2.5 Hazardous Material Sites

A desktop review of the U.S. Environmental Protection Agency's (USEPA) Superfund National Priority List (NPL) indicated that no sites are located in the Project Study Area (USEPA 2021).

5.0 IDENTIFICATION AND ANALYSIS OF ALTERNATIVE ROUTES

The goal of the Study was to identify viable alternative routes based on reasonable physical placement of the proposed transmission line that avoided or limited impacts to sensitive land uses and ecological, social, and cultural features in the Project Study Area. In evaluating the routing criteria, it is generally considered desirable to maximize certain criteria along a given route, for instance, paralleling existing railroad or utility corridors. These more favorable criteria are known as opportunities. Undesirable criteria for routing, such as residences, wetlands, and historic properties, are generally referred to as constraints and the Study seeks to avoid or minimize their proximity to the Project where practicable.

When siting transmission lines, three main routing opportunities are generally focused on where viable. These opportunities include:

- Replacing or upgrading existing transmission lines,
- Corridor sharing/paralleling existing linear utilities or ROWs, or using existing unbuilt ROWs, and
- Crossing undeveloped lands.

Replacing or upgrading existing transmission lines typically minimizes natural and social impacts by using existing ROW corridors, thus eliminating, or reducing additional ROW clearing. For the East Germantown-Germantown 115 kV Transmission Line Project, options for replacing or upgrading are limited to short sections of the existing Germantown-Lincoln 115 kV and Germantown-Carroll 138 kV transmission lines, which extend north and south respectively from the Germantown Substation. Both lines are currently single-circuit design and could be upgraded to double-circuit. Upgrading these lines may not be preferential due to the need for system outages during construction and the potential long-term reliability concern of double-circuiting. MAIT determined that this was a viable option to be evaluated as part of the Study.

The corridor sharing scenario pairs the transmission line with an existing linear feature that it can parallel, which can include highways, railroads, gas pipelines, or other existing or unbuilt transmission line ROWs. These corridors are considered opportunity areas because locating a new transmission line parallel to them may require less ROW, concentrates linear land uses thus reducing fragmentation of the landscape, and creates an incremental impact rather than a new impact. Opportunity areas within the Project Study Area for the development of the new 115 kV transmission line included paralleling a portion of the Germantown-Carroll 138 kV transmission line south from the Germantown Substation or using the existing unused ROW that extends to the East Germantown Substation. The existing unused ROW currently parallels the west side of the Conastone-Hunterstown 500 kV Transmission Line, which is also located near the East Germantown Substation and would have been another linear resource to be considered for corridor sharing.

The third opportunity is to use undeveloped areas such as forests, fields, and agricultural areas to identify routes that cross open lands. Identifying these routes involves assessment of parcel boundaries and land use practices to define routes that minimize potential impacts to private properties and any agricultural or other farming activities such as orchards. Portions of the Project Study Area consists of agricultural crop lands and fields that provide opportunities for potential cross-country routes however large areas are also composed of residential development that will constrain options.

Using these fundamental considerations as guidance, information obtained during the environmental field reviews was used to develop an opportunity and constraint map of the Project Study Area using GIS software. Georeferenced data layers of the identified opportunities and constraints obtained from published State and Federal materials and local planning documents were superimposed on available current aerial photography. Evaluation of this desktop data in conjunction with field reviews of the Project Study Area resulted in the identification of four viable alternative routes that provide the required connectivity between the East Germantown Substation and the Germantown Substation. These routes include:

- Development of MAIT's existing unused ROW that extends north around Littlestown (Alternative Route 1 – Existing Unused Route),
- A cross-country alternative to portions of the existing unused ROW (Alternative Route 2 – Alternative Existing Unused Route),
- A cross-country route that extends through portions of Littlestown (Alternative Route 3 – Small Loop Route), and
- A cross-country route that extends south around Littlestown (Alternative Route 4 – Large Loop Route).

5.1 Description of the Alternative Routes

The four alternative routes are described below and illustrated in **Figure 5-1**.

5.1.1 Alternative Route 1 (Existing Unused Route)

Alternative Route 1 is approximately 3.40 miles in length.

- From the Germantown Substation, Alternative Route 1 extends to the east for 0.06 mile (350 feet) to the first proposed structure, which would be located south of State Route 97 (SR 97) and in the FEMA 100-year floodplain of Alloway Creek (WWF, MF). NWI identified palustrine scrub-shrub (PSS) wetlands are located in this floodplain area. The existing unused ROW does not extend onto this parcel, which is privately owned.
- Turning to the northeast, the route spans to the north side of SR 97 and extends 0.73 mile (3,860 feet) to Roberts Road. The existing unused ROW starts on the north side of SR 97 and is 120 feet wide in this section. This section extends longitudinally over portions of Alloway Creek, across areas of NWI-identified palustrine emergent (PEM) wetlands, through the FEMA 100-year floodplain, and through forested riparian areas adjacent to the creek. Roberts Road is bordered by several residential structures that are located on both sides of the existing unused ROW.
- Continuing to the northeast, Alternative Route 1 extends 0.87 mile (4.600 feet) to its intersection with the Conastone-Hunterstown 500 kV Transmission Line. Initial portions of this route are located in the FEMA 100-year floodplain of Alloway Creek, but most of the route crosses agriculturally active lands. The route spans Locust Lane, which is bordered by one residential structure. Lands on the west side of Locust Lane have been recently subdivided with the center of the existing unused ROW bisecting them on an angle.
- At the Conastone-Hunterstown 500 kV Transmission Line, the route turns sharply to the south and bends to the southeast for 0.36 mile (1,900 feet) to Feeser Road. The existing unused ROW narrows to 70 feet wide from this point on to the East Germantown Substation. This section crosses active agricultural lands and near a farmstead located on Feeser Road.
- From Feeser Road, Alternative Route 1 extends southeast for 0.48 mile (2,550 feet) to residence-lined Littlestown Road. This section extends through two small, forested areas, across some agricultural lands, and through a residential development located along Spring Hill Lane.
- Continuing to the southeast, the route extents 0.90 mile (4,750 feet) to the East Germantown Substation, which is located in an agricultural field on the south side of Basehoar Road. This section extends close to a residential structure along Littlestown Road and then across active agricultural lands that are preserved through an agricultural conservation easement.

5.1.2 Alternative Route 2 (Alternative Existing Unused Route)

Alternative Route 2 is approximately 3.35 miles in length.

- From the Germantown Substation, Alternative Route 2 extends to the northeast for 0.17 mile (865 feet) to a point in an agricultural field located north of SR 97. This section crosses over SR 97, over the Germantown-Lincoln 115 kV Transmission line, and over a section of the FEMA 100-year floodplain bordering Alloway Creek.
- From this point, the route turns toward the east and then back to the northeast for 0.70 mile (3,700 feet) to Roberts Road. This section also spans a section of FEMA floodplain and crosses through a small, forested area but mostly extends across undeveloped and agricultural lands. Roberts Road is bordered by a residential structure near the crossing location.
- Turning to the east, Alternative Route 2 extends across agricultural fields for 0.48 mile (2,560 feet) to Locust Lane. The alignment also crosses the existing unused ROW in the area. Alloway Creek and its FEMA floodplain area, as well as a potential PEM wetland area, are spanned along the alignment. Lands on the west side of Locust Lane have been recently subdivided with the center line of the route bordering two parcels.
- At Locust Lane, the route turns slightly to the northwest across agricultural lands for 0.63 mile (3,350 feet) to its intersection with the existing unused ROW, which is extending north to south parallel to the Conastone-Hunterstown 500 kV Transmission Line. This section parallels the north side of Feeser Road and then crosses the south side as it nears a farmstead located on the north side of the road.
- Once on the existing unused ROW, Alternative Route 2 turns south and extends for 1.37 miles (7,200 feet) to the East Germantown Substation. This section mirrors Alternative Route 1.

5.1.3 Alternative Route 3 (Small Loop Route)

Alternative Route 3 is approximately 6.12 miles in length.

- From the Germantown Substation, Alternative Route 3 extends to the south for 1.15 miles (6,075 feet) to the north side of Fish and Game Road. Most of this section would be as a second circuit on the existing single-circuit Germantown-Carroll 138 kV Transmission Line. The route spans to the east side of Alloway Creek near the substation, crossing the FEMA floodplain and potential PEM wetland areas. South of Updyke Road, the route passes several homes and spans another small stream and floodplain area. The route separates from the Germantown-Carroll 138 kV Transmission Line approximately 0.23 mile north of Fish and Game Road, with this section spanning agricultural lands.
- Turning to the southeast, the route extends for 0.99 mile (5,120 feet) to SR 194. The initial section parallels the north side of Fish and Game Road and crosses over Gettysburg Road before

crossing to the south side of Fish and Game Road. This area is predominantly agriculture but sparse residential development is located along the road. South of Fish and Game Road, the route parallels the boundary with the Littlestown Fish and Game Association and a large farm complex up to SR 194.

- After crossing SR 194, Alternative Route 3 extends to the southeast for 0.95 mile (5,040 feet) to Mengus Mill Road. Several homes border SR 194 and Mengus Mill Road but the majority of the route cross a mix of agricultural lands and narrow forested areas. An abandoned railroad grade and a rural driveway are also spanned.
- At this point, the route turns to the northeast and extends predominantly across agricultural lands for 0.71 mile (3,730 feet) to SR 97. Prior to crossing SR 97, the route spans Piney Creek (WWF, MF), which is bordered by a thin riparian woodland, narrow PEM wetland, and a FEMA floodplain area.
- Turning more to the northeast, Alternative Route 3 extends for 1.16 miles (6,100 feet) to a point in an agricultural field located on the southeastern corner of the town of Littlestown. The SR 97 crossing area is bordered by a mix of commercial and residential development that is an extension of the more developed areas of Littlestown located north of this point. Following this crossing, the route extends through an NWI-identified palustrine forested (PFO) wetland and recrosses to the north side of Piney Creek and then parallels the creek through Littlestown Park along a underground utility corridor. Options to avoid the PFO and park area are complicated by a nearby communications antenna and residential density along adjacent roads. Upon exiting the park, the route continues to parallel the creek in an agricultural field.
- From the point in the field, the route turns to the north and northwest for 1.16 miles (6,100 feet) to the East Germantown Substation. This section crosses agricultural lands and SR 194, which is bordered by a cluster of residential homes. The 0.74 mile section from SR 194 to the East Germantown Substation is within the existing unused ROW that parallels the Conastone-Hunterstown 500 kV Transmission Line.

5.1.4 Alternative Route 4 (Large Loop Route)

Alternative Route 4 is approximately 9.07 miles in length.

- From the Germantown Substation, Alternative Route 4 extends to the southeast for 3.07 miles (16,235 feet) to Mengus Mill Road mirroring the alignment of Alternative Route 3.
- From Mengus Mill Road, the route continues to the southeast for 1.54 miles (8,110 feet) to SR 97. This section spans Piney Creek and its bordering FEMA floodplain and extends across agricultural lands. Bittle Road is spanned along this section in a non-residential bordered area.
- Turning to the northeast, the route spans SR 97 and extends for 2.16 miles (11,400 feet) to the intersection with the existing unused ROW located adjacent to the Conastone-Hunterstown 500 kV Transmission Line. The section spans a PEM wetland area adjacent to SR 97 and then across predominantly agricultural lands. Mathias Road, which is bordered by a few residential properties, is spanned in the central section.

- At the intersection with the Conastone-Hunterstown 500 kV Transmission Line, Alternative Route 4 turns to the northwest and parallels the line for 2.30 miles (12,140 feet) to the East Germantown Substation within the existing unused ROW. This section extends across agricultural lands, spanning a rural section of Bollinger Road and SR 194 along the alignment.

5.2 Evaluation of the Alternative Routes

The Alternative Routes were evaluated and compared against each other to determine the Proposed Route. Evaluation of the Alternative Routes included a combination of *quantitative analysis* and *qualitative review*. This section describes the evaluation metrics and comparative analyses used to assess the four Alternative Routes. The quantitative analysis included evaluating the raw number counts to assess the potential impacts in accordance with three perspectives: built/social environment, natural environment, and engineering considerations. The qualitative analysis included an assessment of non-quantifiable factors such as visual concerns; community concerns; special permit requirements; construction, maintenance, and accessibility issues specific to each Alternative Route; and risk of schedule delay.

5.2.1 Evaluation Metrics

The process for identifying the Proposed Route involved quantitatively evaluating the advantages and disadvantages of the Alternative Routes. To evaluate and compare these routes, a table of metrics was developed which focused on the potential impacts of the Project to three general perspective areas: built/social environment, natural environment, and engineering considerations (**Table 5-1**). Examples of the built/social environment include factors such as number of parcels crossed by the Alternative Route ROW and length across conserved lands. The natural environment includes factors such as number of stream crossings and acres of forested wetland cleared. Comparative factors for engineering include for example, the number of roadway crossings and the number of hard angle turns, which may involve larger and stronger structures.

TABLE 5-1: Quantitative Routing Metrics

Built/Social Metrics
Number of Schools, Churches, or Cemeteries within 1,000 feet of Transmission Center Line: Sensitive receptors (e.g., schools, churches) within 1,000 feet of the Alternative Route.
Number of National Register of Historic Places (NRHP) - listed Sites within 1,000 feet of Transmission Center Line: Number of archaeological or historic sites/structures/districts located within 1,000 feet of the Alternative Route.
Number of Residential Structures on Parcels Currently Crossed or within 300 feet of an Existing Utility ROW (Current): Identifies the number of residences on parcels currently crossed or located adjacent to an existing utility ROW.
Number of Residential Structures on Parcels Proposed to be Crossed or within 300 feet of the Transmission Center Line (Proposed): Identifies the number of residences on parcels that would be crossed or located adjacent to the new transmission line ROW.
Number of Parcels Crossed by the Transmission Line ROW: Number of parcels that would be crossed by the proposed ROW of the Alternative Route.

Number of Commercial Buildings within 300 feet of Transmission Center Line: Number of structures in close proximity to the Alternative Route, including retail stores, restaurants, and service garages.
Length of State-owned and Conserved Lands Crossed: Identifies the length (miles) of parks or other conserved lands crossed by the proposed Alternative Route.
Natural/Ecological Metrics
Area of Natural Forests Crossed: Acres of forest requiring clearing that are crossed by the Alternative Route.
Area of Potential PFO Wetlands Crossed: Acres of forested (PFO) wetlands requiring clearing that are crossed by the Alternative Route. Forested wetlands were determined based on USFWS NWI mapping.
Area of Potential PEM or PSS Wetlands Crossed: Acres of potential emergent (PEM) or shrub (PSS) wetlands that would be crossed by the Alternative Route. Potential wetlands were determined based on USFWS NWI mapping
Number of Stream/River Crossing: Number of streams that would be crossed by the Alternative Route. Values were based upon use of USGS National Hydrography Dataset (NHD) stream data. Smaller tributaries are often not identified in the GIS database; thus, the actual number of crossings may be higher than indicated.
Area of FEMA 100-year Floodplain Crossed: Acres of floodplains that would be crossed by the Alternative Route. Values based on GIS-mapped FEMA floodplains, as available in state databases.
Engineering Metrics
Length Parallel to an Existing Utility Corridor (Inverted): Length (miles) of the Alternative Route located parallel to the ROW of an existing pipeline or transmission/distribution line. These areas may have fewer impacts compared to developing completely new right-of-way, but require additional coordination and may involve more engineering analysis to ensure safe co-location with the other utility.
Length Parallel to a Road (Inverted): Length (miles) of the Alternative Route adjacent to (within 100 feet) of roadways. These areas have easier access for construction and maintenance. Conversely, lines routed distant from these features have higher engineering constraints.
Number of Road Crossings: Number of public roads crossed by the Alternative Route. These areas would have engineering constraints due to height and other requirements.
Number of Turns Greater Than 60 Degrees: Number of times the Alternative Route would need to make a turn greater than 60 degrees. Turns place tension on the tower structures, which may require additional support or engineering to support the stress.
Length Along Existing Unused ROW: Length (miles) that the Alternative Route is within an existing unused ROW easement area
Estimated Cost to Site, Design and Construct Transmission Facilities ($): Values were estimated based on typical project-specific cost per mile. Estimates do not include new ROW, Licensing and Permitting and other miscellaneous costs.

The quantitative evaluation process also addressed the opportunity scenarios such as paralleling roadways or utility corridors and proximity to roads. Construction along these corridors concentrates potential impacts into an already affected area and has the potential to reduce environmental impacts by overlapping ROWs where feasible and using existing access roads in undeveloped areas and hard top roads in developed areas. The relative ease of accessibility and potential lower level of permitting involved typically makes these conditions more favorable compared to being further from these features.

Initial steps in this process involved determining the raw number values for each Alternative Route for each metric. These data were then summarized in tabular form organized by evaluation metrics for each of the Alternative Routes and by the three perspectives (**Tables 5-2, 5-3, and 5-4**).

5.2.2 Review of Alternative Routes

The following provides a comparative review of the quantitative metrics determined for each Alternative Route for each of the perspectives evaluated. A qualitative assessment of the Alternative Routes is also incorporated into this review to address the non-tangible factors involved in the transmission line routing process such as community concerns, visual impacts, ROW easement acquisition, permitting, constructability, and long-term accessibility and maintenance.

5.2.2.1 Built/Social Environment Review

The results of the comparative review of the built/social metrics are listed in **Table 5-2**.

TABLE 5-2: Built/Social Metric Summary

MATRIX/CORRIDOR		Alternative Route A (Existing Unused ROW)	Alternative Route B (ALT Existing Unused ROW)	Alternative Route C (Small Loop)	Alternative Route D (Large Loop)
BUILT/SOCIAL	Schools, Churches, and Cemeteries,within 1,000 feet of Transmission Center Line (#)	0	0	2	2
	NRHP (Listed & Eligible) Properties and Districts within 1,000 feet of Transmission Center Line (#)	0	0	0	0
	Number of Residential Structures on Parcels Currently Crossed or within 300 feet of an Existing Utility ROW (#)	16	16	24	30
	Number of Residential Structures on Parcels Proposed to be Crossed or within 300 feet of the Transmission Center Line (#)	9	9	65	46
	Number of Parcels Crossed by the Transmission Line ROW (#)	23	19	39	49
	Commercial/Industrial Buildings within 300 feet of the Transmission Center Line (#)	1	1	8	3
	Length of State-owned and Conserved Lands Crossed (miles)	0.56	0.56	1.52	2.53

Review of the metrics notes that Alternative Routes C and D would be in close proximity to two churches, whereas Alternative Routes A and B would not be near any of these sensitive areas.

The metrics also note that Alternative Route C would be in close proximity to the most residential structures (89). This is a combination of the residential structures that are currently located near an existing transmission line (24), which may be considered an incremental impact, and those that would be near sections of this proposed transmission line where no line exists today (65), which may be consider more impactful. Alternative Route D would be in close proximity to fewer residential structures (76), of which only 46 would be near sections of this proposed transmission line where no line exists today.

Alternative Routes A and B generally follow similar alignments across the Project Study Area, with most of their alignment parallel to the Conastone-Hunterstown 500 kV Transmission Line being identical. As such, both routes are located near a similar number of residential structures (25), with most being along the section parallel to the Conastone-Hunterstown 500 kV line (16).

Further review notes that Alternative Route D would cross the most parcels (49) with Alternative Route C involving slightly fewer (39). Acquisition of new ROW easements along these two routes can be complex and a source of social concern as landowners decide whether to negotiate or oppose the request for easement rights, with each landowner decision putting additional pressures on their neighbors. Due to the relatively high number of parcels crossed by these alternatives, public opposition may be further elevated by the anticipated visual impact of the new line across these private lands where no large transmission infrastructure currently exists. The process of securing the necessary easements can also affect the Project schedule if public opposition and legal processes slow down the negotiations.

Compared to Alternative Route B, the number of parcels crossed is higher for Alternative Route A (23) because it spans several recently subdivided parcels near Locust Lane. Alternative Route B avoids some of these parcels by spanning the subdivided lands parallel to one of the new parcel lines. The alignment of Alternative Route A across these subdivided parcels may be a source of social concern as it is on an angle that may affect the placement of new homes on the parcels. In addition, the alignment of Alternative Route A extends to the north and then along the east side of the large farmstead along Feeser Road, which may have a negative effect on the farmers land management processes. Alternative Route B was aligned to extend to the south of the farmstead and along Feeser Road, which may be a more acceptable alignment for the farmer and provide easier access for construction and long-term maintenance of the line. Public opposition for both alignments due to the anticipated visual impact of the new line may be limited due to the existence of large transmission infrastructure along portions of these routes.

Both Alternative Routes C and D would cross long lengths of conserved lands (1.52 and 2.53 miles respectively). Some of these preserved farms are currently crossed by sections of the existing unused ROW or the Germantown-Carroll 138 kV Transmission Line ROW where rights for the proposed line may have been in place prior to the farm preservation, but considerable sections of these two options would cross preserved farms where new easement would need to be acquired. Conversely, Alternative Routes A and B span a similar length of conserved agricultural lands (0.56 mile) that are already crossed by the existing unused ROW and the existing Conastone-Hunterstown 500 kV line. These lands are located near the East Germantown Substation.

Most of the conserved lands crossed by Alternative Routes C and D are protected by county based agricultural conservation easements or by land conservancy easements. Agricultural conservation easements are managed by a county agency that works in conjunction with the state agricultural department to purchase the development rights on specifically defined agricultural lands. The process of securing agricultural conservation easements involves assessment of soils, review of the annual

production of a farm, and evaluation of the farming means and methods. The farmer benefits from the lower land assessment which results in lower taxes, but they are limited by what can be done with the land including excluding subdivision of the land and no construction of new residential structures. Crossing these lands with public utilities is often considered permissible since the utility does not affect the ability of the land to be used for agricultural production.

Land conservation easements are managed by local conservancies who focus on protecting agricultural and natural lands to preserve the character of the area. There are differences between the two easement processes specifically in terms of approval and funding sources, but the benefits and restrictions are similar. A key difference in terms of the siting process is that land conservancies protect some lands that are forested and crossing these lands with a transmission line ROW would have an effect on its ability to function as desired. Acquisition of new rights across privately conserved lands may involve legal review of the easement language and negotiations with the easement holders, which may delay the Project schedule.

A section of Alternative Route C would also extend through Littlestown Community Park and parallel to Piney Creek. Community concerns may be raised by the proposed alignment of Alternative Route C through the community park and the effect on the forested riparian area around the creek. The alignment of the route would not have a long-term effect on any of the activity areas within the park but would result in a visual impact due to the removal of trees and would temporarily restrict access to certain areas during construction.

From a built/social perspective, Alternative Route B provides the best opportunity as the Proposed Route. This route would involve the fewest landowners, many of which are currently crossed by the existing unused ROW. The alignment would extend along a 2,000 foot length of one parcel where the existing unused ROW only minimally crosses onto the property and across a second parcel where the existing unused ROW is not located, so new easements would be required for these parcels. The rest of the alignment is located on parcels that include the existing unused ROW and sections of this alternative that differ from that alignment may be negotiated with these landowners. The alignment of Alternative Route B also reduces the potential effect of the new line on the subdivided parcels by crossing the property parallel to a property line versus diagonally across several parcels.

5.2.2.2 Natural/Ecological Review

The results of the comparative review of the natural/ecological metrics are listed in **Table 5-3**.

TABLE 5-3: Natural Metric Summary

	MATRIX/CORRIDOR	Alternative Route A (Existing Unused ROW)	Alternative Route B (ALT Existing Unused ROW)	Alternative Route C (Small Loop)	Alternative Route D (Large Loop)
NATURAL ENVIRONMENT	Area of Natural Forests Crossed (acres)	2.72	2.03	7.59	8.76
	Area of Potential PFO Wetlands Crossed (acres)	0.14	0.13	0.23	0.00
	Area of Potential PEM or PSS Wetlands Crossed (acres)	0.38	0.19	2.74	0.52
	Number of Stream/River Crossing (#)	6	7	7	11
	Area of FEMA 100-year Floodplain Crossed (acres)	3.57	1.37	4.98	3.24

In terms of forest clearing, review of the metrics notes that Alternative Route D (8.76 acres) and Alternative Route C (7.59 acres) would involve the most clearing as these alignments extend for longer distances across less developed areas of the Project Study Area. Alternative Routes A and B would involve considerably less forest impacts (2.72 and 2.03 acres respectively) due to their relatively shorter lengths.

Alternative Route C would extend across the most emergent (PEM) or shrub (PSS) based wetland areas (2.74 acres) as well as the most forested (PFO) wetland area (0.23 acre). Alternative Route D would involve less wetland impacts but would span the most streams (11). Both of these alternatives would be required to span large areas of floodplains, many of which are wooded. The environmental impact of these two options may trigger the need for extensive state and federal permitting, which may delay the project schedule. Constructability and long-term access to these lines may also be complicated by these environmental constraint areas.

Alternative Routes A and B would affect relatively less PFO wetlands and cross less PEM/PSS wetlands compared to Alternative Route C. Although the alignment of Alternative Route A would span one less stream compared to Alternative Route B, it would span one of the streams (Alloway Creek) longitudinally for several hundred feet and need to cross three times as much floodplain area, most of which is wooded. The alignment of Alternative Route A would likely result in more direct impacts to forested wetlands, forested floodplains, and the riparian area bordering Alloway Creek compared to Alternative Route B. As a result, permitting requirements for Alternative Route A would be more complex relative to Alternative Route B and may involve the need to mitigate the wetland and riparian impacts. Constructability and long-term access for Alternative Route A would also be more complicated due to the probable need to cross streams and be within wetland and floodplain areas.

From a natural environment perspective, Alternative Route B provides the best opportunity as the Proposed Route. The alignment of Alternative Route B was guided by the goal of reducing the potential environmental impact that may be generated by Alternative Route A. The western half of Alternative Route A extends in a direct line from the Germantown Substation to the Conastone-Hunterstown 500 kV line, which places the alignment directly down the center of Alloway Creek and through considerable sections of the surrounding wetland, floodplain, and riparian areas. Alternative Route B avoids these resource areas where feasible and crosses Alloway Creek at a less impactful location.

5.2.2.3 Engineering Considerations Review

The results of the comparative review of the engineering metrics are listed in **Table 5-4.**

TABLE 5-4: Engineering Metric Summary

MATRIX/CORRIDOR		Alternative Route A (Existing Unused ROW)	Alternative Route B (ALT Existing Unused ROW)	Alternative Route C (Small Loop)	Alternative Route D (Large Loop)
ENGINEERING	Length Parallel to an Existing Utility Corridor (Inverted) (miles)	1.74	1.37	1.89	3.42
	Length Parallel to a Road (Inverted) (miles)	0.00	0.63	0.36	0.36
	Number of Road Crossings (#)	8	8	8	14
	Number of Turns Greater Than 60 Degrees (#)	1	1	5	4
	Length Along Existing Unused ROW (Inverted) (miles)	3.27	1.32	0.70	1.20
	Estimated Cost to Site, Design and Construct Transmission Facilities ($)	3.40	3.35	6.12	9.07

Review of the metrics notes that Alternative Route D would parallel the longest length of existing utility corridor (3.42 miles) and Alternative Route C would parallel the second longest length (1.89 miles), however, these lengths only represent approximately one-third of the total length of these two options. Conversely, Alternative Route A has a shorter parallel length (1.74 miles), but it represents nearly half of the total length of this option. Alternative Route B has the shortest length parallel to an existing utility corridor (1.37 miles) but it has the longest length parallel to a roadway (0.63 mile).

Alternative Route D is the longest of the four options and would cross over the most roadways (14) and have a high number (4) of hard angle turns (>60 degrees). Alternative Route C is approximately 3-miles shorter and crosses fewer roadways (8) but it would involve the most (5) hard angle turns. Alternative Routes A and B would involve a similar number of road crossings (8) but significantly less hard angle turns (1).

Roadway crossings can affect the engineering of the transmission line by complicating the pole placement, modifying the pole spacing, and adjusting pole heights to avoid other utilities that are generally focused along roadway corridors. Hard angles place more tension on the electrical wires, which then need to be supported by stronger and more complex structures. Some of the structures may require concrete foundations, which are potentially more impactful relative to the direct embed

process involved for the tangent (in-line) structures. Other options may involve three-pole structures that could be direct embed but usually involve guide wires that could present challenges to the landowner or create more impacts in wetland areas. Both of these options will be difficult to access and construct due to the complexity of securing access rights from numerous landowners, some of which may not be located along the new ROW, as well as the longer lengths and complex alignments of the routes.

Overall, Alternative Routes A and B are relatively shorter and less complicated compared to Alternative Routes C and D. Alternative Route A uses the existing unused ROW for nearly its full length, but as noted, this alignment may result in undesirable environmental impacts. Alternative Route B uses less of the existing unused ROW but these areas were purposefully avoided to minimize the environmental impacts. The realignment of Alternative Route B also had the effect of making it slightly shorter than Alternative Route A. Access and construction of Alternative Route B may be less challenging relative to Alternative Route A due to the avoidance of the environmental constraint areas and the alignment of the route along sections of roadways.

From an engineering considerations perspective, Alternative Route B provides the best opportunity as the Proposed Route. The cumulative length of Alternative Route B parallel to the utility corridor and roadway may make this option easier to access and construct. The route would involve only one hard angle turn and is the most direct route between the East Germantown and Germantown substations.

5.3 Virtual Public Open House Summary

In light of the social concerns of holding in-person public meetings, MAIT provided Project related information to the general public through a virtual open house forum that was accessible via the internet. Close consideration was given to which routes would be presented at the open house. Due to the longer length and potential magnitude of impacts of Alternative Route D and the fact that the route does not provide any additional benefit relative to Alternative Route C, Alternative Route D was removed from the open house materials, which focused on Alternative Routes A, B, and C. MAIT accumulated contact information for landowners within 500 feet of the alternative routes and sent letters to these landowners to introduce the Project and provide guidance on accessing the virtual open house presentation.

On May 1, 2022, MAIT placed the virtual public open house presentation on the internet for public review at https://firstenergy.consultation.ai/eastgermantown-germantown. The presentation included a series of stations that provided information on the Project needs and benefits, alternative routes, engineering and design, vegetation management, real estate negotiations, environmental permitting, a Project schedule, and contact information. Also included was a link to an interactive map that illustrated the alternative routes and parcel boundary information so that landowners could identify their location relative to the proposed alternative routes. Other links provided the public with options to download maps and project information as well as leave a comment. Comments submitted through the website

were combined with other comments provided through a Project hotline phone number and reviewed by MAIT. The virtual public open house forum was closed to public comment on May 31, 2022.

Project feedback was submitted by thirteen landowners with most of the comments provided by landowners along Alternative Route C. All of these comments stated opposition to Alternative Route C with specific focus on topics such as electro-magnetic fields (EMF), cancer, proximity to homes, property values, and crop damages. Several of the landowners also noted the much longer length relative to Alternative Routes A and B. Due to the close proximity of Alternative Routes A and B to each other, they cross many of the same landowners. Comments provided by some of these landowners voiced opposition to Alternative Route B due to its alignment outside the existing unused ROW. Specifically, the landowner of the large farmstead on Feeser Road opposed the alignment of Alternative Route B noting that the route would pass closer to his farm house and bisect other areas of his property in a fashion that would affect his long term plans. Opposition to Alternative Route A was voiced by one landowner who purchased a recently subdivided parcel that contains the existing unused ROW. All of these comments were followed up by MAIT representatives who discussed the Project further with the various landowners.

6.0 PROPOSED ROUTE DISCUSSIONS

A summary of the metrics identified for the Project is located in **Table 6-1**. Based on the landowner feedback and the analysis conducted in **Section 5.0**, MAIT has determined that Alternative Route A, with the incorporation of an approximately 0.50 mile section of Alternative Route B, is the Proposed Route for the East Germantown-Germantown 115 kV Transmission Line (**Figure 6-1**). The rationale for dismissing Alternative Routes C and D and identifying the combination of Alternative Routes A and B as the Proposed Route is as follows:

TABLE 6-1: Project Metric Summary

	MATRIX/CORRIDOR	Alternative Route A (Existing Unused ROW)	Alternative Route B (ALT Existing Unused ROW)	Alternative Route C (Small Loop)	Alternative Route D (Large Loop)
BUILT/SOCIAL	Schools, Churches, and Cemeteries,within 1,000 feet of Transmission Center Line (#)	0	0	2	2
	NRHP (Listed & Eligible) Properties and Districts within 1,000 feet of Transmission Center Line (#)	0	0	0	0
	Number of Residential Structures on Parcels Currently Crossed or within 300 feet of an Existing Utility ROW (#)	16	16	24	30
	Number of Residential Structures on Parcels Proposed to be Crossed or within 300 feet of the Transmission Center Line (#)	9	9	65	46
	Number of Parcels Crossed by the Transmission Line ROW (#)	23	19	39	49
	Commercial/Industrial Buildings within 300 feet of the Transmission Center Line (#)	1	1	8	3
	Length of State-owned and Conserved Lands Crossed (miles)	0.56	0.56	1.52	2.53
NATURAL ENVIRONMENT	Area of Natural Forests Crossed (acres)	2.72	2.03	7.59	8.76
	Area of Potential PFO Wetlands Crossed (acres)	0.14	0.13	0.23	0.00
	Area of Potential PEM or PSS Wetlands Crossed (acres)	0.38	0.19	2.74	0.52
	Number of Stream/River Crossing (#)	6	7	7	11
	Area of FEMA 100-year Floodplain Crossed (acres)	3.57	1.37	4.98	3.24
ENGINEERING	Length Parallel to an Existing Utility Corridor (Inverted) (miles)	1.74	1.37	1.89	3.42
	Length Parallel to a Road (Inverted) (miles)	0.00	0.63	0.36	0.36
	Number of Road Crossings (#)	8	8	8	14
	Number of Turns Greater Than 60 Degrees (#)	1	1	5	4
	Length Along Existing Unused ROW (Inverted) (miles)	3.27	1.32	0.70	1.20
	Estimated Cost to Site, Design and Construct Transmission Facilities ($)	3.40	3.35	6.12	9.07

- **Alternative Route C**: This Alternative Route was not considered the Proposed Route due to the following:
    - The alignment would require new ROW easements across 39 parcels;
    - The alignment would be in close proximity to 65 residential structures that currently are not located near a transmission line and be cumulatively near the most residential structures (89);
    - The alignment would cross the second longest length (1.52 miles) of conserved lands, portions of which are forested lands under a land conservancy easement;
    - The alignment would extend through portions of the Littlestown Community Park;
    - The alignment would involve the second largest area of forest clearing (7.59 acres), portions of which are potentially forested wetlands (0.23 acres);
    - The alignment would have the potential to impact a large area of riparian forest along Piney Creek;
    - The alignment would involve of the most heavy angle turns (5);
    - The alignment would be relatively costly to construct due to the long length (6.12 miles) and the need to acquire new ROW easements along most of the alignment.
- **Alternative Route D**: This Alternative Route was not considered the Proposed Route due to the following:
    - The alignment would require new ROW easements across 49 parcels;
    - The alignment would be in close proximity to 46 residential structures that currently are not located near a transmission line;
    - The alignment would cross the longest length (2.53 miles) of conserved lands, portions of which are forested lands under a land conservancy easement;
    - The alignment would involve a relatively large area of forest clearing (8.76 acres);
    - The alignment would span the most stream features (11);
    - The alignment would involve the most road crossings (14) and a high number of heavy angle turns (4);
    - The alignment would be the costliest to construct due being the longest option (9.07 miles) and the extent of new ROW easements that would need to be acquired.

Qualitatively, the Alternative Routes C and D were considered potentially more problematic based on the following:

- Both alignments may lead to a high level of community concerns regarding easement acquisitions, as well as new land use impacts and viewshed concerns.
- Impacts to environmental and cultural features may result in complex permitting conditions or local approval processes for both alignments.
- The longer alignments for both routes will be more difficult to construct and maintain, as well as involve more complex accessibility issues.

- **Alternative Route B:** Most of this Alternative Route was not considered the Proposed Route due to the following:
    - Feedback provided during the public open house by the landowners crossed by Alternative Routes B and A indicated that they would prefer the alignment of the existing unused ROW (Alternative Route A) across their property.
    - Specific impacts of Alternative Route B voiced by the landowners included visual concerns, land use concerns, and reduction of value in subdivided lands.
    - Adjacent landowners who would be crossed by Alternative Route B noted that the new alignment would have negative impacts on their ability to use their lands, whereas use of Alternative Route A would not have any effects.

Alternative Route A, with a section of Alternative Route B, was selected as the Proposed Route. The 0.50 mile section of Alternative Route B that was incorporated into the Proposed Route extends north from the Germantown Substation in an alignment that avoids the potential environmental impacts to Alloway Creek and the surrounding forested and emergent wetland complex that would be crossed by Alternative Route A. This adjusted alignment will use agricultural and other undeveloped lands to bypass around the stream corridor and over narrower sections of the forested and emergent wetland complex. The Proposed Route will involve the acquisition of a new easement from one landowner and the approval of existing ROW easement modifications from three other landowners.

In addition to the reduction in environmental impacts, the Alternative Route A/B combination was selected because of the following:

- Most of the alignment will be located in an existing unused ROW.
- The alignment will be located near relatively few residential structures (25), most (16) of which are along the section that parallels the Conastone-Hunterstown 500 kV Transmission Line;
- The alignment will cross the shortest length of conserved lands (0.56 mile) and the easement across these lands has been approved;
- The alignment will involve the least forest clearing (2.03 acres)
- The alignment will involve the least potential forested wetland clearing (0.13 acre);
- The alignment will span stream features in a perpendicular fashion which will result in lower riparian impacts;
- A considerable length of the alignment will be built adjacent to an existing cleared ROW that will provide construction access and long-term maintenance benefits;
- The alignment will be less complex for engineering to design as it will be relatively direct with few heavy angle turns.

Based on these observations, the Alternative Route A/B combination was determined to be the Proposed Route for the East Germantown-Germantown 115 kV Transmission Line Project as this alignment will have the least impact on the social/built and natural environment and be feasible to construct.

6.1 Proposed Route Assessment and Summary

The following provides an assessment of the Proposed Route in regard to compliance with zoning, comprehensive plans, and permitting requirements. The East Germantown-Germantown 115 kV Transmission Line Project will cross 1.36 miles of Union Township, 1.28 miles of Germany Township, and 0.77 miles of Mount Joy Township.

6.2 Review of Proposed Route

Per Pennsylvania Public Utility Commission (PUC) guidelines found at 52 Pa. Code, § 69.1101 (2)(3) and § 69.3104 (1), a review of the potential effect of the Proposed Route on local comprehensive plans and zoning ordinances was conducted (**Section 6.2.1**). Based on the requirements of § 69.3106 (1), an assessment of the potential environmental and cultural mitigation measures and permit requirements anticipated for the Proposed Route is also provided (**Section 6.2.2**). PUC regulation § 69.3105 (2) also requires that the status of the property acquisition process be provided as part of the route selection study (**Section 6.2.3**). PUC regulation § 57.72 (c)(8) requires that a report of the efforts to locate and identify archaeological, geologic, historic, scenic, and wilderness areas within 2 miles of the Proposed Route also be submitted as part of the route selection study (**Section 6.2.4**).

6.2.1 Review of Township Zoning and County Comprehensive Plans

Public utility features, such as transmission lines and substations are generally exempt from local municipal authority. To further the Commonwealth's goal of making agency actions consistent with sound land use planning by considering the impact of its decision upon local comprehensive plans and zoning ordinances, the PUC adopted a policy on January 11, 2001 that requires the public utility to review local zoning ordinances and comprehensive land use plans to evaluate the impact of proposed projects on these items (See 52 Pa. Code § 69.1101, 31 Pa. Bull. 951 (Feb. 17, 2001)). Local zoning ordinances and comprehensive land use plans were reviewed to evaluate the impact of the proposed East Germantown-Germantown 115 kV Transmission Line Project on these local ordinances and plans.

The route selection study for the East Germantown-Germantown 115 kV Project has concluded that the new 115 kV transmission line should extend approximately 3.41 miles northwest then southwest from the proposed East Germantown Substation to the existing Germantown Substation as a single-circuit system within a ROW that varies between 70 and 120-foot wide. The new transmission line alignment will cross portions of Union, Germany, and Mount Joy Townships. Construction of the new East Germantown-Germantown 115 kV Transmission Line Project will provide a reliable electrical supply to the East Germantown Substation and thereby address the Project's goals.

In adherence to PUC regulations, MAIT evaluated the Project's consistency with the zoning ordinances and comprehensive plans of the government entities through which the Proposed Route would pass.

Township Zoning

Two of the three townships crossed by the Proposed Route have adopted local zoning ordinances; one township (Germany Township) is currently using the Adams County Zoning ordinances for their zoning review process. Generally, these ordinances are used to guide future land use in the townships by encouraging development of desirable residential, commercial, agricultural, and industrial areas with appropriate groupings of compatible and related land uses.

These ordinances normally define the allowances and restrictions associated with the various zoning districts and typically identify "Essential Services" or "Public Utilities", which include distribution, transmission, or collection systems associated with utilities such as water, gas, and electric, to be conditionally exempt from local regulations, as long as the required actions are approved by the Pennsylvania PUC. In townships that lack local zoning ordinances, county-level land use regulations regarding subdivision and land development supervene.

A list of the zoning districts that will be crossed by the Proposed Route in each of the townships is provided in Table 6-2. Although the zoning district naming conventions vary by township, the predominant zoning category that will be crossed is agriculture, with other areas zoned as residential, industrial, or conservation. Also included in Table 6-2 is a summary of the township's and county's policy regarding public utilities within these specific zoning districts. This summary indicates that one of the townships (Germany Township (Adams County Zoning)) does not address the potential for public utilities in the zoning districts.

TABLE 6-2: Township Zoning Summary

Township	Zoning District	Length	Zoning Summary
Union	Residential Medium-Density (R-2)	0.46 mile	Union Township defines "Public Utility Facilities" and notes that development of public utilities in these zoning districts may require a special exemption review by the township.
	Residential Low-Density (R-1)	0.05 mile	
	Agricultural (A)	0.85 mile	
Germany	Land Conservation (LC)	1.28 miles	Germany Township (Adams County Zoning) does not address public utilities in zoning districts.
Mount Joy	Baltimore Pike Corridor (BPC)	0.47 mile	Mount Joy Township defines "Public Utility" and notes that development of electrical power lines that are approved by the Pennsylvania PUC are exempt from local zoning requirements.
	Agricultural (AG)	0.30 mile	

Based on this review, the proposed East Germantown-Germantown 115 kV Transmission Line Project will not have any effect on zoning within any of the townships crossed.

Comprehensive Plans

Adams County has prepared a comprehensive plan for their area. In general, comprehensive plans are intended to serve as a means to review the assets and pressures within the county and provide guidance for future development and preservation; they are not intended to regulate and have no official authority. According to the *Adams County Comprehensive Plan*, prepared by the Adams County Planning Commission (ACPC), "*The Comprehensive Plan is a blueprint for the future for Adams County, showing how growth can be managed - to preserve farmland, to conserve historic and rural landscapes, and to provide new economic opportunities* (ACPC 1991)."

Adams County's comprehensive plan was adopted in 1991. The *Adams County Comprehensive Plan* provides an assessment of the natural, historic, and agricultural resources within the county, as well as an analysis of the population, employment, circulation, and housing trends. Goals identified by the *Adams County Comprehensive Plan* focus on addressing development patterns, area economics, housing, circulation, natural resource protection, agricultural resources, and community services. Implementation strategies focus on a Land Use Plan that incorporates a growth-area concept to provide for an orderly extension of development. Specific polices would involve assisting municipalities in the preparation and adoption of local comprehensive plans and land use controls consistent with the Land Use Plan, planning for additions to existing built-up areas and new residential, employment, and mixed-use areas, consistent with the Land Use Plan, and promoting the establishment of a permanent, designated, interconnected open space network throughout the county.

Review of the proposed Land Use Plan map provided in the *Adams County Comprehensive Plan* indicates that the Proposed Route would be located within the Agriculture, Resource Conservation & Very Low Residential, Parks, Permanent Open Space & Preservation, and Residential Medium-Low Density land use categories. The purpose of the Agriculture, Resource Conservation & Very Low Residential area is to provide areas that limit *"development outside the growth zones and encouraging continuing agricultural production, as well as the protection of the county's historic and rural landscape*." The Parks, Permanent Open Space & Preservation areas are focused primarily along stream corridors and would provide for "*low-intensity recreation and open space uses, limited agriculture, and forest management*." The Proposed Route will be located predominantly within an existing unused ROW across these areas and will result in incremental impacts to the proposed land uses by reducing some agricultural production, removing some forest resources, and limiting residential growth at specific road crossing areas.

In terms of the goals identified in the *Adams County Comprehensive Plan*, the Proposed Route will not affect local cultural or historic resources, the expansion of community and economic opportunities, or the availability of community services and facilities. MAIT has sited the route to avoid as many dense residential and culturally sensitive areas as possible. Potential effects of the Proposed Route on the

county's natural resources have been minimized through the identification of a Proposed Route that has been modified to reduce potential environmental impacts. The *Adams County Comprehensive Plan* identifies streams, wetlands, and woodlands as key components of its natural resources. Development of the Proposed Route will require crossing streams and wetlands. MAIT has minimized the impacts to streams by siting the route to cross at right angles and adjusting the alignment of the route to avoid specific riparian buffer areas, which naturally help maintain the stream's water quality. During construction, however, FirstEnergy is aware that it will also be required to develop and implement stormwater erosion and control plans that will protect these waterways from runoff that could negatively affect water quality. Wetlands are another natural resource that MAIT will minimize impacts to by adjusting monopole positions to allow the resource to be spanned where feasible. The Proposed Route will have a nominal effect on the county's woodlands due the safety regulations involved with transmission lines that require forest clearing in the ROW.

The two multi-municipal comprehensive plans reviewed do not provide any specific guidance or objection for the development of electrical transmission lines. Similar to the county comprehensive plan, these multi-municipal plans focus on growth planning, resource protection, and preservation of the agricultural character of the area. Goals and objectives noted in these plans focus on the means of controlling growth and protecting resources primarily through the use of ordinances and zoning policies.

Based on this review, the proposed East Germantown-Germantown 115 kV Transmission Line Project will not affect the ability of the county or townships from meeting the goals of their comprehensive plan.

6.2.2 Compliance with Potential Permit and Mitigation Requirements

The following is a discussion of the anticipated Project impacts and potential permit and mitigation requirements of the proposed East Germantown-Germantown 115 kV Transmission Line Project. This discussion is based upon the engineering design of the Proposed Route that was developed in November 2022.

Efforts were made during the transmission line routing and engineering design process to avoid sensitive natural resources such as wetlands and streams, as well as minimize impacts on existing and future land uses. The natural resources avoidance effort was supported through the completion of a delineation that defined the boundaries of the wetlands and streams around Alloway Creek in the area near the Germantown Substation. During the engineering design process, the alignment of the Proposed Route was adjusted to avoid the longitudinal span of Alloway Creek and minimize the impacts to the adjacent riparian floodplain, and forested wetland (PFO) areas. Engineering also avoided placement of a structure in a wetland area.

As part of the permitting process, any required wetland or stream encroachment permits will be obtained from PADEP and the U.S. Army Corps of Engineers (USACE) prior to construction and FirstEnergy will comply with all special conditions placed on the permits. Where potential impacts are

unavoidable, mitigating factors will be employed. In addition, to address water quality standards within the watersheds crossed by the Project corridor, MAIT will comply with the regulations of the National Pollutant Discharge Elimination Systems (NPDES) permit program, obtain the required soil erosion and sedimentation control permits, and follow the specified conditions required for the permit.

Land Use

Siting analysis for the Proposed Route was conducted with acknowledgement of existing and proposed land uses. Some impact on existing and future land use may occur, including clearing of forest areas and reducing potential areas for agricultural uses. The existing ROW easement areas located along the Proposed Route corridor currently preclude certain uses such as constructing structures, installing swimming pools, or establishing fruit orchards and tree farms within the easement area.

The Proposed Route was also designed to avoid conflicts with the existing transportation network and other utilities currently located or proposed along the route. One major roadway (SR 97) will be spanned by the Project. Pennsylvania Department of Transportation (PennDOT) Highway Occupancy Permits or equivalent type permits will be acquired by MAIT for work that may need to be done within this highway ROW area and all other state road access points prior to construction. PennDOT permit processes will be followed to coordinate the actual crossing of the highway with the conductor wires, which often requires the temporary closure of the highway.

If required, aviation coordination will be conducted through the Federal Aviation Association (FAA) and the Pennsylvania Aviation Association (PAA). To assure that the poles are properly recorded by these agencies, information on the location and height of the new poles will be provided to these agencies through use of Form 7460-1 and AV-57 (Notice of Proposed Construction or Alteration), respectively. MAIT will comply with any additional lighting or other visual aids that may be required by these agencies to assure aviation safety in the region.

Natural Features

Vegetation clearing is required to ensure the safe and reliable operation of the line on the Proposed Route. MAIT's vegetation management practices will allow for the re-generation of compatible species of low growing trees, shrubs, and grasses where practicable. Herbicides used on the ROW will be EPA-approved and will be applied selectively in accordance with all label instructions. Determination of the mitigation requirements for the forest impacts, as well as for impacts to the other natural resources, will be part of the permit review process.

Wetlands along the Proposed Route have been delineated. This task was accomplished using PADEP and USACE approved methodologies based on the "*Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region*" (USACE 2012). Most of the wetlands along the Proposed Route consist predominantly of emergent vegetation that will be spanned by the new conductor wires and possibly crossed by temporary timber-matted access roads during construction. Based on the wetland delineation information, development of the Proposed Route will require one structure in an emergent wetland and the clearing of approximately 0.25 acre of

PFO wetlands. None of the wetlands are considered Exceptional Value (EV) wetlands since the waterways are not classified by PADEP as EV nor are they PFBC-classified wild trout streams.

Streams along the Proposed Route have also been delineated using PADEP and USACE approved methodologies. Long-term impacts to these watercourses are expected to be minimal, as they will be spanned perpendicularly by the proposed transmission line, but some mitigation efforts may be required as a result of the reduction in riparian buffer along these features. A General NPDES permit will be required to mitigate any potential short-term impacts of erosion and sedimentation during construction. As part of the General NPDES process, Best Management Practices (BMPs) are required during construction to maintain the water quality levels in the watersheds.

FEMA and state-identified 100-year floodplains and floodways are found adjacent to watercourses and identify the areas that routinely flood during heavy rain events. Encroachment within a floodplain area is discouraged by the regulatory agencies due to the potential of the structure to increase the flooding hazard in the local area. According to PADEP's Title 25, Chapter 106 *Floodplain Management*, floodways are more specifically "*The channel of the watercourse and those portions of the adjoining floodplains which are reasonably required to carry and discharge the 100-year flood. The boundary of the 100-year floodway is as indicated on the maps and flood insurance studies provided by FEMA. In an area where neither FEMA maps nor studies have defined the boundary of the floodway, it is assumed, absent evidence to the contrary, that the floodway extends from the stream to 50 feet landward from the top of the bank of the stream*" (PADEP 2021e). No FEMA defined floodways are located in the study area. Where practicable, transmission structures will be constructed outside the FEMA floodplain and PADEP 50-foot floodway areas. Modification of the route alignment near the Germantown Substation provided an opportunity to avoid the FEMA floodplains in that area but other sections of the Alloway Creek floodplain were unavoidable. For those locations where the FEMA floodplains were not avoidable, additional analysis of the proposed structures may be required by PADEP to confirm the activity will not create flooding conditions in the local area. Due to the shallow valleys associated with other waterways along the Proposed Route, the FEMA floodplains and PADEP 50-foot floodways will be relatively narrow and are spanned by the transmission line. No structures will be located in the PADEP 50-foot floodway of any stream.

All required permits for impacts to these regulated resources will be obtained from the PADEP and the USACE prior to construction.

Threatened and Endangered Species

Coordination with state and federal agencies regarding potential threatened and endangered (T&E) species along the Proposed Route was completed in April 2023. Responses from the various state and federal agencies have been received through the Pennsylvania Natural Diversity Inventory (PNDI) review process. No T&E species under their jurisdiction are known to be located near the Proposed Route.

Cultural Resources

Cultural resource coordination with the Pennsylvania Historical and Museum Commission (PHMC) was

initiated in October 2023. Initial coordination involved submission of information about the Project and a summary of the known aboveground and belowground cultural resources within a 0.5 mile radius of the Project. PHMC has responded with requests for additional studies for both architectural history and archaeology. MAIT is committed to working with the PHMC to complete any required studies and address any potential impacts and required mitigation activities.

Community Features and Conserved Lands

Community features, which include schools, churches, and cemeteries, were identified and effectively avoided during the route selection process. The Proposed Route will be located within an existing unused ROW that does not pass near any of these features.

Conserved lands involve areas preserved as private or public open space. One parcel protected through the Adams County Agricultural Land Preservation Program will be crossed by the Proposed Route. This parcel is currently spanned by the Conastone-Hunterstown 500 kV Transmission Line and the existing unused ROW that will be the alignment for the new East Germantown-Germantown 115 kV Transmission Line. Since the transmission line and ROW were in place prior to the implementation of the conservation easements, no effect is anticipated to these conserved lands.

Anticipated Agency Requirements and Permits

In summation of the items reviewed above, coordination with PHMC will be conducted in the near future that may provide information on possible avoidance and impact areas along the Proposed Route. Limited impacts are anticipated for the stream and wetland crossings required for the Project, which may be permitted through the use of a combined USACE and PADEP Joint Permit Application or various PADEP General Permits. As a result of the limited water quality standards of the streams in the Project Study Area, a General NPDES permit is expected from PADEP for erosion and sedimentation control during construction.

6.2.3 Sensitive Features within 2 Miles

Desktop and field efforts were conducted to locate and identify archaeological, geologic, historic, scenic, and wilderness areas within 2 miles of the Proposed Route. Most of the scenic and historic areas were addressed during initial analysis of the Project Study Area and were incorporated into the route selection analysis conducted for the Proposed Route. **Figure 6-2** provides an overview of the culturally and environmentally sensitive features within 2-miles of the Proposed Route.

7.0 REFERENCES

Adams County Agricultural Land Preservation Program (ACALPP). http://www.adamscounty.us/Dept/Planning/Pages/AgEasements.aspx. Accessed December 2021.

Adams County Office of Planning and Development. *The Adams County Greenways Plan*. 2010

Adams County Planning Commission (ACPC). *Adams County Comprehensive Plan*. 1991

Audubon Pennsylvania Birds Conservation. The Important Bird Area Program in Pennsylvania. http://pa.audubon.org/iba/. Accessed December 2021.

Bonneauville Borough and Mount Pleasant Township. *Bonneauville Borough and Mount Pleasant Township Comprehensive Plan*. 2003.

Cowardin, L.M., V. Carter, F.C. Golet & E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. United States Fish and Wildlife Service. FWS/OBS-79/31. 103 pp.

Federal Emergency Management Agency (FEMA). 100-year floodplains. https://msc.fema.gov/portal. Accessed December 2021.

Federal Highway Administration (FHA). America's Byways. http://www.fhwa.dot.gov/byways/byways. Accessed December 2021.

Fergus, C. 2000. *Wildlife of Pennsylvania and the Northeast*. Mechanicsburg ,PA.

Germany Township, Littlestown Borough, and Union Township. *Southeast Adams County Joint Comprehensive Plan*. 2008

McNab, W.H.; Cleland, D.T.; Freeouf, J.A.; Keys, Jr., J.E.; Nowacki, G.J.; Carpenter, C.A., comps. 2005. Description of ecological subregions: sections of the conterminous United States [CD-ROM]. Washington, DC: U.S. Department of Agriculture, Forest Service. 80 p.

National Conservation Easement Database (NCED). https://www.conservationeasement.us/interactivemap/. Accessed December 2021.

National Wilderness Preservation System (NWPS). List/Map of Wilderness Areas. http://www.wilderness.net/index.cfm?fuse=NWPS&sec=static. Accessed December 2021.

Pennsylvania Department of Conservation and Natural Resources (PADCNR). Scenic Rivers Program. http://www.dcnr.state.pa.us/brc/conservation/rivers/scenicrivers/ index.htm. Accessed December 2021a.

PADCNR. Scenic and Historic Places. http://www.dcnr.state.pa.us/stateparks/recreation/sightseeing/index.htm. Accessed December 2021b.

PADCNR. State Parks. http://www.dcnr.state.pa.us/stateparks/index.htm. Accessed December 2021c.

PADCNR. Natural Areas. http://www.dcnr.state.pa.us/stateparks/recreation/naturalareas/. Accessed December 2021d.

Pennsylvania Department of Environmental Protection (PADEP). EmapPA Website. http://www.emappa.dep.state.pa.us/emappa/viewer.htm. Accessed December 2021a.

PADEP. Sinkholes in Pennsylvania. https://www.dcnr.pa.gov/Geology/GeologicHazards/Sinkholes/Pages/default.aspx. Accessed December 2021b.

PADEP. Chapter 93 *Water Quality Standards*. http://www.pacode.com/secure/data/025/chapter93/chap93toc.html. Accessed December 2021c.

PADEP. 2020 Integrated Water Quality Report. https://www.dep.pa.gov/Business/Water/CleanWater/WaterQuality/IntegratedWatersReport/Pages/2020-Integrated-Water-Quality.aspx. Report.aspx. Accessed December 2021d.

PADEP. Chapter 106 *Floodplain Management.* http://www.pacode.com/secure/data/025/chapter106/chap106toc.html. Accessed December 2021e.

Pennsylvania Department of Transportation (PennDOT). Scenic Byways. https://www.visitpa.com/article/scenic-byways-pennsylvania-beauty-drive. Accessed December 2021.

Pennsylvania Fish and Boat Commission (PFBC). Wild Trout Waters (Natural Reproduction). November 2021. (http://fishandboat.com/trout_repro.pdf). Accessed December 2021a.

PFBC. Trout Stocked Streams. (http://fishandboat.com/county.htm). Accessed December 2021b.

PFBC. Class A Wild Trout Waters. (http://fishandboat.com/classa.pdf). Accessed December 2021c.

PFBC. Wilderness Trout Waters. (http://fishandboat.com/wild98.htm). Accessed December 2021d.

Pennsylvania Game Commission (PGC). State Game Lands. http://pgcmaps.pa.gov/pgcpublicviewer/. Accessed December 2021.

Pennsylvania Historic and Museum Commission (PHMC). State Historic and Archaeological Resource Exchange (PA-SHARE). Accessed December 2021.

Rhoads, A.F., and Block, T.A. 2005. *Trees of Pennsylvania: A Complete Reference Guide*. Philadelphia, PA: University of Pennsylvania.

Sevon, W.D. 2000. Physiographic Provinces of Pennsylvania, Map 13. Pennsylvania Geologic Survey. Harrisburg, PA.

The Nature Conservancy (TNC). Updated 2002. *The Natural Areas Inventory of Adams County, Pennsylvania*. Middletown, Pennsylvania.

United States Army Corps of Engineers (USACE). 2012. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0)*, ed. J. F. Berkowitz, J. S. Wakeley, R. W. Lichvar, C. V. Noble. ERDC/EL TR-12-9. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

United States Department of Agriculture/Natural Resources Conservation Service (USDA/NRCS) Web Soil Survey. http://websoilsurvey.nrcs.usda.gov/app/. Accessed December 2021a.

USDA/NRCS. Hydric Soils List. https://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/. Accessed December 2021b

United States Environmental Protection Agency (USEPA). Mid-Atlantic Superfund Sites – Pennsylvania. https://www.epa.gov/cleanups/cleanups-my-community#map. Accessed December 2021.

United Stated Fish and Wildlife Service (USFWS). National Wetlands Inventory (NWI). http://www.fws.gov/ wetlands/Data/Mapper.html. Accessed December 2021.

United States Geological Survey (USGS). National Map Viewer. https://apps.nationalmap.gov/viewer/. Accessed December 2021.

United States National Park Service (USNPS). National Wild and Scenic Rivers System, Pennsylvania. http://www.rivers.gov/pennsylvania.php. Accessed December 2021a.

USNPS. Parks. http://www.nps.gov/index.htm. Accessed December 2021b.

FIGURES

MAIT East Germantown-Germantown 115 kV Transmission Line Project

Exhibit 16

EXHIBIT 16
LIST OF GOVERNMENTAL AGENCIES CONTACTED FOR APPROVALS TO CONSTRUCT AND MAINTAIN THE LINE

FEDERAL – a list of federal permit/approval requirements is provided in the matrix below

U.S. Army Corps of Engineers (USACE)
Baltimore District Office
2 Hopkins Plaza
Baltimore, MD 21201
Contact: Mike Danko, Chief Pennsylvania Section

U.S. Fish and Wildlife Service (USFWS)
Pennsylvania Field Office
110 Radnor Rd, Suite 101
State College, PA 16801-4850
Contact: Robert Anderson

Federal Aviation Administration (FAA)
Eastern Obstruction Evaluation (OE) Team Manager
FAA Eastern Regional Office
1 Aviation Plaza
Jamaica, NY 11434-4809
Contact: Marie Kennington-Gardiner

STATE – a list of state permit/approval requirements is provided in the matrix below

Pennsylvania Department of Environmental Protection (PADEP)
South-central Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110
Contact: Nathan Phillips, P.E. – Permits Section

Pennsylvania Department of Conservation and Natural Resources (PADCNR)
Rachel Carson State Office Building
PO Box 8552
Harrisburg, PA 17105-8767
Contact: Rebecca Bowen

Pennsylvania Fish and Boat Commission (PFBC)
Natural Diversity Section
450 Robinson Lane
Bellefonte, PA 16823-9620
Contact: Chris Urban

Pennsylvania Game Commission (PGC)
2001 Elmerton Avenue
Harrisburg, PA 17110-9797
Contact: Stephen Smith

Pennsylvania Historical and Museum Commission (PHMC)
Bureau for Historic Preservation
Commonwealth Keystone Building, Second Floor
400 North Street
Harrisburg, PA 17120-0053
Contact: Emma Diehl, Division Manager

Pennsylvania Department of Transportation (PennDOT)
Commonwealth Keystone Building
400 North Street, 6th Floor
Harrisburg, Pennsylvania 17120
Contact: Jeffrey Spotts, Chief Counsel

COUNTY – a list of county permit/approval requirements is provided in the matrix below

Adams County Conservation District
670 Old Harrisburg Road
Suite 201
Gettysburg, Pennsylvania 17325
Contact: Adam McClain – District Manager

LIST OF AGENCY PERMIT/APPROVAL REQUIREMENTS

Agency	Permits, Approvals, or Documentation	Anticipated Approval Date	Status of Permit or Approval	Regulated Activity
Federal Permits & Authorizations				
U.S. Army Corps of Engineers (USACE)	Clean Water Act Section 404/401 permits for regulated waters/wetlands encroachments (State Programmatic General Permits [PASPGP-6] from USACE and PADEP).	April 2025	Permits in Development. To be submitted July 2024	Dredge and fill in Waters of the U.S.
U.S. Fish & Wildlife Service (USFWS)	Federal threatened and endangered species reporting and compliance with Section 7 of Endangered Species Act for federal permits.	4/5/2023	PNDI Coordination Complete. No species of concern in project area and no additional coordination required.	Determination of potential impact to Federal listed and candidate threatened and endangered species and habitat if present and impacted.
Federal Aviation Administration (FAA)	FAA Notification FAA 7460-1	TBD	Not yet submitted.	Notice of Proposed Construction.
State Permits & Authorizations				
Pennsylvania Department of Environmental Protection (PADEP)	Waters/wetland obstruction and encroachment permits or waivers (PA code, Title 25, Chapter 105).	April 2025	Permits in Development. To be submitted July 2024	Activities in watercourses, floodways, bodies of water (incl. wetlands)

Agency	Permits, Approvals, or Documentation	Anticipated Approval Date	Status of Permit or Approval	Regulated Activity
Pennsylvania Department of Environmental Protection (PADEP)	General NPDES Permit and Post-Construction Stormwater Review (PA code, Title 25, Chapter 92, 93, 96, 102, and 106.)	April 2025	Permits in Development. To be submitted July 2024	Activities that require earth disturbance must institute practices that minimize accelerated erosion and resulting sediment pollution to the waters of the Commonwealth or U.S. Discharge of storm water associated with construction activities.
Pennsylvania Department of Conservation & Natural Resources (PADCNR) – Bureau of Forestry	State rare threatened & endangered species (T&E) consultation and approvals.	4/5/2023	PNDI Coordination Complete. No species of concern in project area and no additional coordination required.	Determination of potential impact to state listed and candidate threatened and endangered species and habitat if present and impacted (plants only.)
Pennsylvania Fish and Boat Commission (PFBC)	State rare threatened & endangered species (T&E) consultation and approvals.	4/5/2023	PNDI Coordination Complete. No species of concern in project area and no additional coordination required.	Determination of potential impact to state listed and candidate threatened and endangered species and habitat if present and impacted (reptiles, amphibians, fish)

Agency	Permits, Approvals, or Documentation	Anticipated Approval Date	Status of Permit or Approval	Regulated Activity
Pennsylvania Game Commission (PGC)	State rare threatened & endangered species (T&E) consultation and approvals.	4/5/2023	PNDI Coordination Complete. No species of concern in project area and no additional coordination required.	Determination of potential impact to state listed and candidate threatened and endangered species and habitat if present and impacted (birds and mammals only)
Pennsylvania Historical and Museum Commission (PHMC)	Consultation, cultural resources (archaeology & historic structures) investigation and associated approvals as part of federal and state permits; compliance with Section 106 of National Historic Preservation Act; Federal and state listed or eligible cultural resources consultation.	March 2025	PHMC has requested archaeological and above ground historical surveys, which will be completed in 2024.	Historic and cultural resources listed or eligible for listing on the State and/or Federal National Register of Historic Places.
Pennsylvania Department of Transportation (PennDOT)	PennDOT Access Road Permits	March 2025	Not yet submitted	Construction access off of state highways.
Pennsylvania Department of Transportation (PennDOT)	PennDOT Aerial Crossing Permits	Not Applicable	Not Applicable	Construction of an aerial crossing over a limited- access state highway.

Agency	Permits, Approvals, or Documentation	Anticipated Approval Date	Status of Permit or Approval	Regulated Activity
County				
Local Conservation Districts (CCDs)	General NPDES Permit and Post-Construction Stormwater Review (PA code, Title 25, Chapter 92, 93, 96, 102, and 106)	April 2025	Permits in Development. To be submitted July 2024	Activities that require earth disturbance must institute practices that minimize accelerated erosion and resulting sediment pollution to the waters of the Commonwealth or U.S. Discharge of storm water associated with construction activities.

MAIT East Germantown-Germantown 115 kV Transmission Line Project

Exhibit 17

Exhibit 17
List of Property Owners

George A. Basehoar
14280 S Yale Avenue
Bixby, OK 74008

Clayton Wood
2382 Strong Road
Delevan, NY 14042

Robert Edwin Betz
243 Kindig Road
Littlestown, PA 17340

Ronald J. & Rebekah L. Smith
1406 Germany Road
East Berlin, PA 17316

Robert H. & Darlene J. Trimper
160 Feeser Road
Littlestown, PA 17340

James L. & Debra J. Tily
335 Roberts Road
Littlestown, PA 17340-9187

Kostas H. & Antonia K. Kranias
132 Buckley Drive
Harrisburg, PA 17112

Joseph A. & Kelly J. Sanders
103 Los Alamitos Circle
Hanover, PA 17331

William J. Haines
1001 Green Hill Farm Road
Reisterstown, MD 21136

William J. Haines
Po Box 21
Littlestown, PA 17340

Adam J. Stanley
23 Jackson Road
Gettysburg, PA 17325

Brayden A. & Alexandra N. Daigle
Po Box 82
Westminster, MD 21158

Bradley K. & Amber S. Martin
1545 White Hall Road
Littlestown, PA 17340

James P. & Rebekah T. Farace
1685 White Hall Road
Littlestown, PA 17340-9404

Jason R. & Katherine Dorsey
215 Spring Hill Lane
Littlestown, PA 17340

Kenneth & Barbara F. Haulsee
206 Spring Hill Lane
Littlestown, PA 17340

Beverly Boyd
355 Basehoar Road
Littlestown, PA 17340

Diane M. & Mark A. Hagarman
121 Littlestown Road
Littlestown, PA 17340-9636

Elaine B. Hock
1334 Kiner Boulevard
Carlisle, PA 17015

MAIT East Germantown-Germantown 115 kV Transmission Line Project

Exhibit 18

Code of Conduct
For
Right-of-Way Agents and Subcontractor Employees

To Property Owner and any affected adjacent Property Owner on the Transmission Line Project:

This Code of Conduct applies to all communications and interactions with property owners and occupants of property by all right-of-way agents and subcontractor employees representing Mid-Atlantic Interstate Transmission LLC (MAIT), a FirstEnergy Company in the negotiation of right-of-way, subsequent acquisition of property rights, including the performance of surveying, environmental assessments and other activities for the East Germantown-Germantown 115kV Line Project ("Project") on property not owned by MAIT.

Property owners may report improper public utility employee/land agent practices to the following agencies:

Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street
Harrisburg, PA 17120
1-800-692-7380 (Utility Customer Hotline)

Pennsylvania Office of Consumer Advocate
555 Walnut Street
5th Floor Forum Place
Harrisburg PA 17101-1923
717-783-5048
1-800-684-6560 (PA Only)

CODE OF CONDUCT

1. **All communications with property owners and occupants must be factually correct and made in good faith.**

    a. Do provide maps and documents necessary to keep the landowner properly informed
    b. Do not make false or misleading statements.
    c. Do not misrepresent any fact.

d. If you do not know the answer to a question, do not speculate about the answer. Advise the property owner that you will investigate the question and provide an answer later.
e. Follow-up in a timely manner on all commitments to provide additional information.
f. Do not suggest that the Project is required for national or homeland security reasons or has been authorized by the federal government.
h. Do not send written communications suggesting an agreement has been reached when, in fact, an agreement has not been reached.
i. If information provided is subsequently determined to be incorrect, follow up with the property owner as soon as practical to provide the corrected information.
j. Do provide the property owner with appropriate contact information should additional contacts be necessary.

2. **All Communications and interactions with property owners and occupants of property must be respectful and reflect fair dealing**.
    a. MAIT and display your Company photo ID badge.
    b. When contacting a property owner by telephone, promptly identify yourself as representing MAIT.
    c. Do not engage in behavior that may be considered harassing, coercive, manipulative, intimidating or causing undue pressure.
    d. All communications by a property owner, whether in person, by telephone or in writing, in which the property owner indicates that he or she does not want to negotiate or does not want to give permission for surveying or other work on his or her property, must be respected and politely accepted without argument. Unless specifically authorized by MAIT, do not contact the property owner again regarding negotiations or requests for permission.
    e. When asked to leave property, promptly leave and do not return unless specifically authorized by MAIT
    f. If discussions with the property owner become acrimonious, politely discontinue the discussion and withdraw from the situation.
    g. Obtain permission to enter property for purposes of surveying or conducting environmental assessments or other activities. Clearly explain to the property owner the scope of the work to be conducted based on the permission given. Attempt to notify the occupant of the property each time you enter the property based on this permission.
    h. Do not represent that a relative, neighbor and/or friend have signed a document or reached an agreement with MAIT.
    i. Do not ask a relative, neighbor and/or friend of a property owner to convince the property owner to take any action.
    j. Do not represent that a relative, neighbor and/or friend supports or opposes the Project.

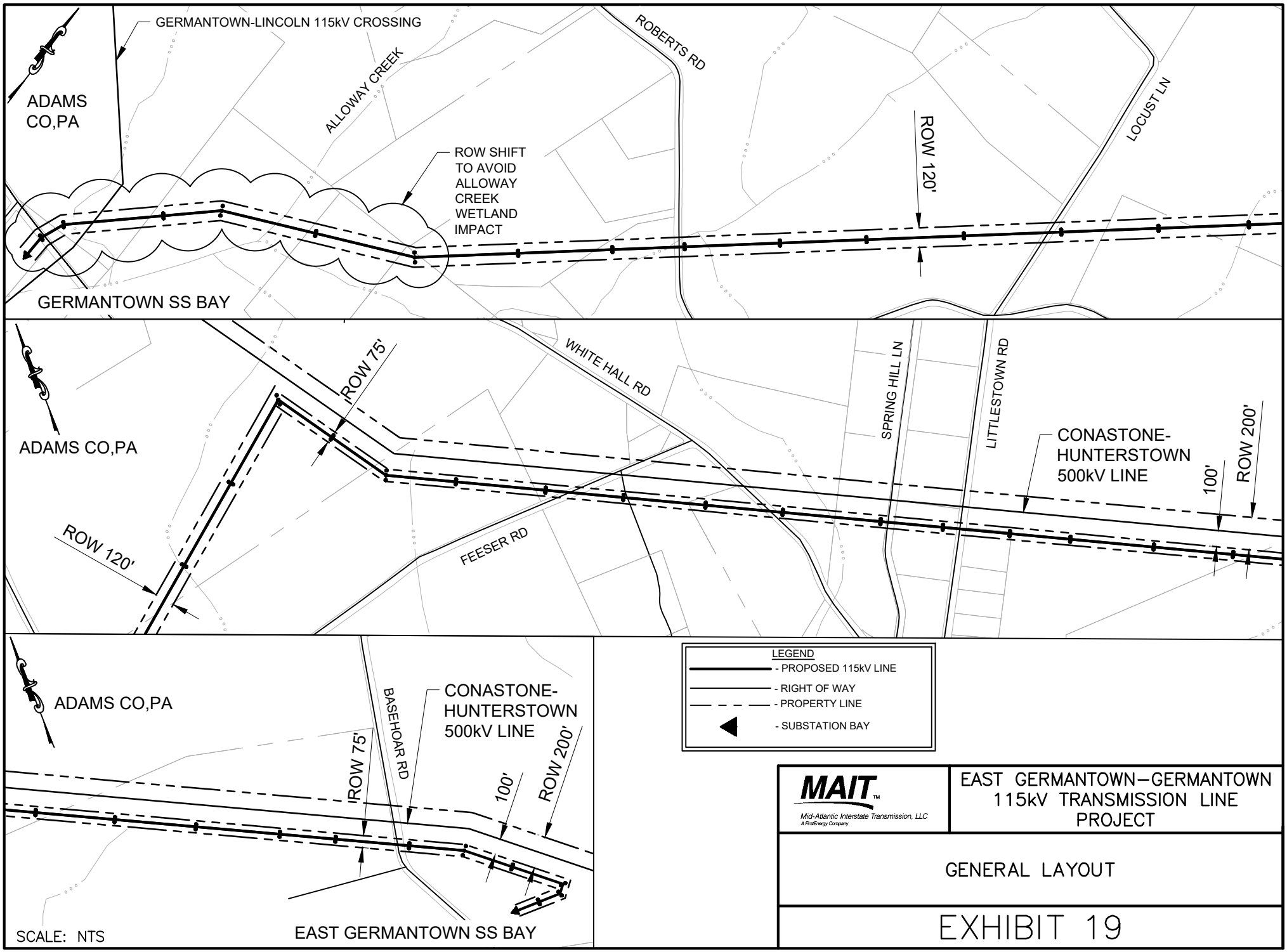
k. Do not suggest that any person should be ashamed of or embarrassed by his or her opposition to the Project or that such opposition is inappropriate.
l. Do not argue with property owners about the merits of the Project.
m. Do not suggest that an offer is “take it or leave it.”
n. Do not threaten to call law enforcement officers or obtain court orders.
o. Do not threaten the use of eminent domain.
p. Do not suggest that MAIT will seek federal authorization to construct the Project.
q. Avoid discussing a property owner’s failure to note an existing easement when purchasing the property and other comments about the property owner’s acquisition of the property.

3. **All communications and interactions with property owners and/or their representatives of property must respect the privacy of property owners and other persons.**

a. Discussions with property owners and/or their representatives are to remain confidential
b. Do not discuss your negotiations or interactions with other property owners or other persons.
c. Do not ask relatives, neighbors and/or friends to influence the property owner or any other person.
d. Avoid discussions of personal matters about the property owner, others and yourself.

MAIT East Germantown-Germantown 115 kV Transmission Line Project

Exhibit 19



MAIT™
Mid-Atlantic Interstate Transmission, LLC
A FirstEnergy Company

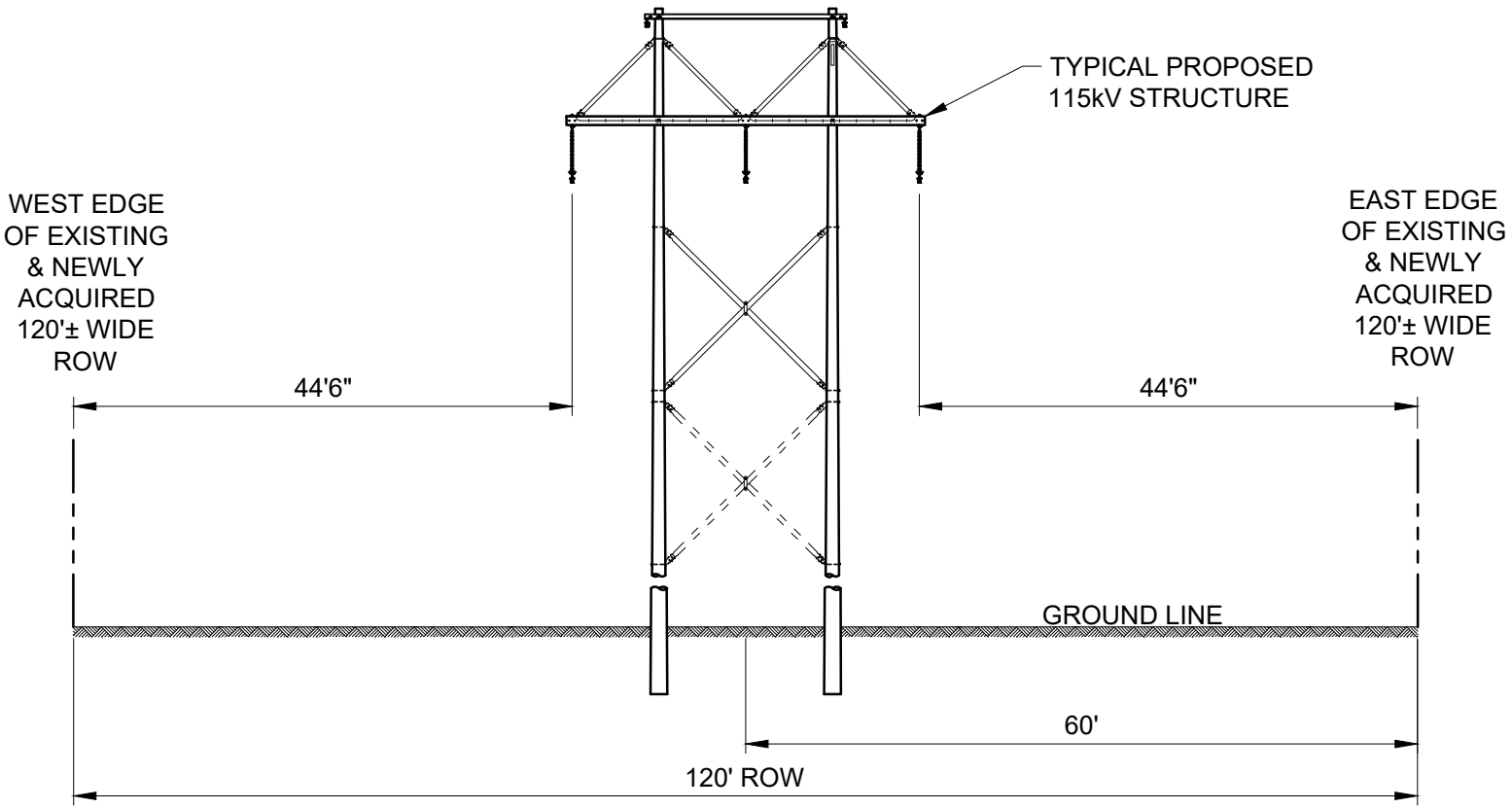
EAST GERMANTOWN–GERMANTOWN 115kV TRANSMISSION LINE PROJECT

GENERAL LAYOUT

EXHIBIT 19

MAIT East Germantown-Germantown 115 kV Transmission Line Project

Exhibit 20



MAIT
Mid-Atlantic Interstate Transmission, LLC
A PetEnergy Company

EAST GERMANTOWN–GERMANTOWN 115kV
TRANSMISSION LINE PROJECT

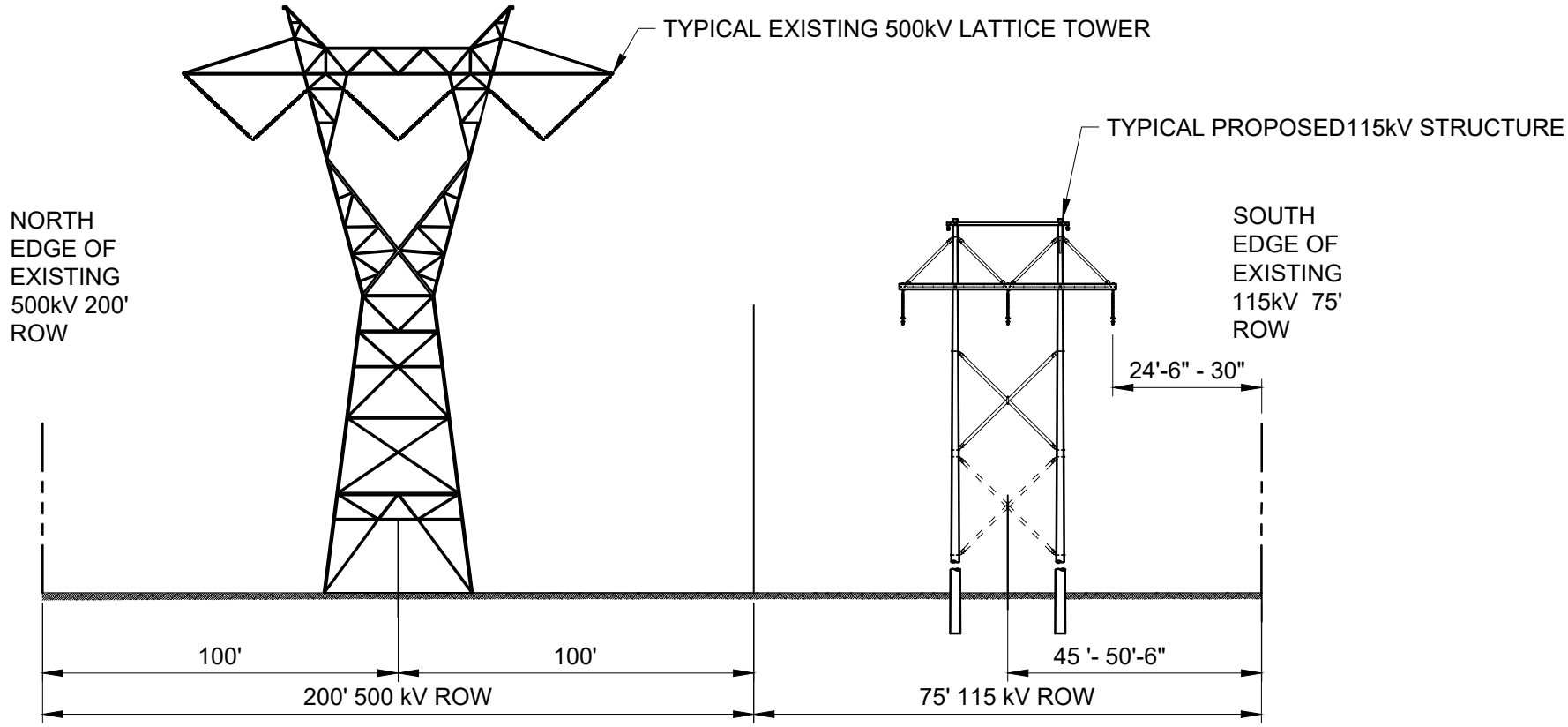
TYPICAL RIGHT OF WAY
CROSS SECTION

EXHIBIT 20

SCALE: NTS

MAIT East Germantown-Germantown 115 kV Transmission Line Project

Exhibit 21



MAIT
Mid-Atlantic Interstate Transmission, LLC
A FirstEnergy Company

EAST GERMANTOWN–GERMANTOWN 115kV TRANSMISSION LINE PROJECT

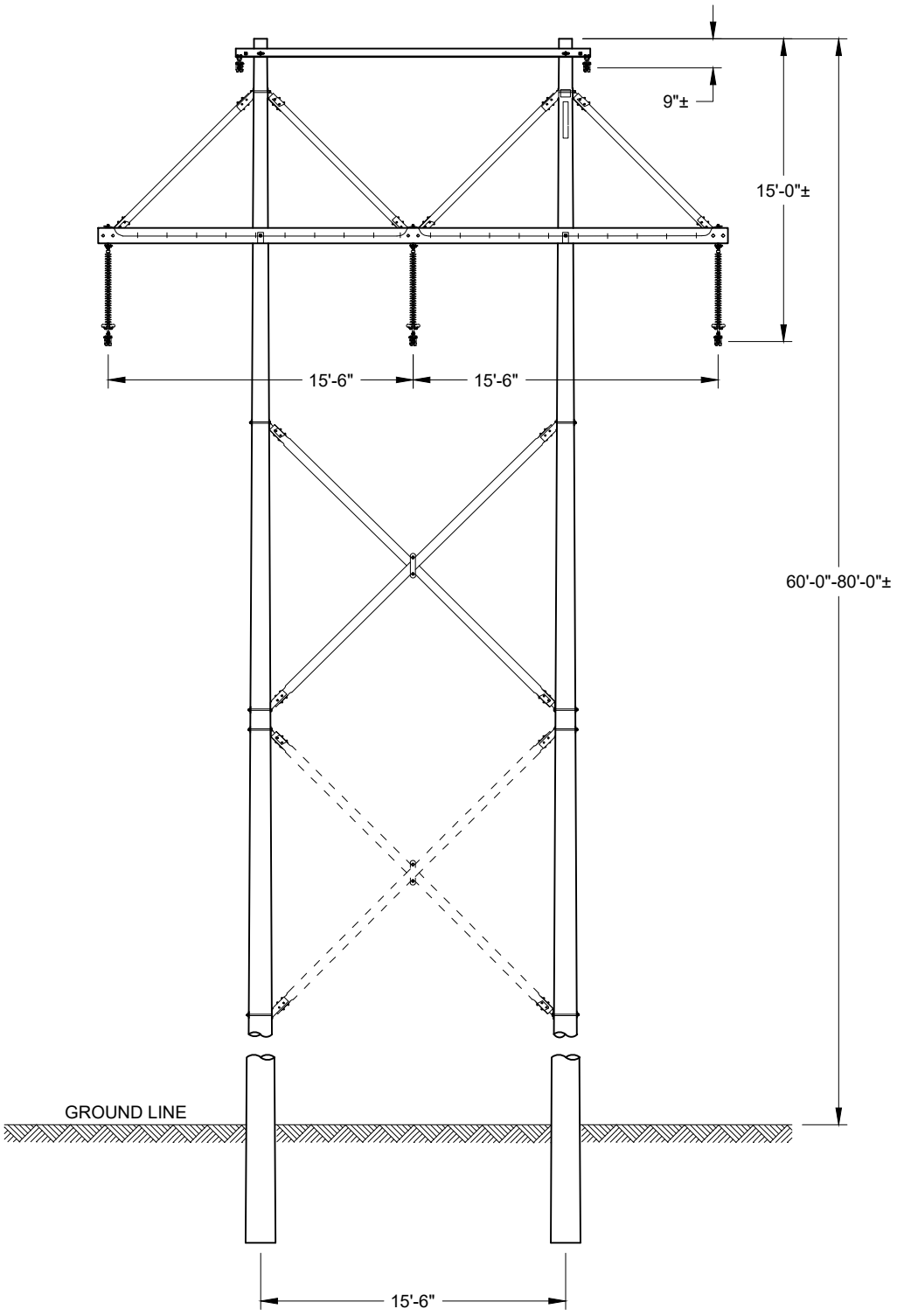
500kV PARALLEL TYPICAL RIGHT OF WAY CROSS SECTION

EXHIBIT 21

SCALE: NTS

MAIT East Germantown-Germantown 115 kV Transmission Line Project

Exhibit 22



MAIT™
Mid-Atlantic Interstate Transmission, LLC
A FirstEnergy Company

EAST GERMANTOWN–GERMANTOWN
115kV TRANSMISSION LINE
PROJECT

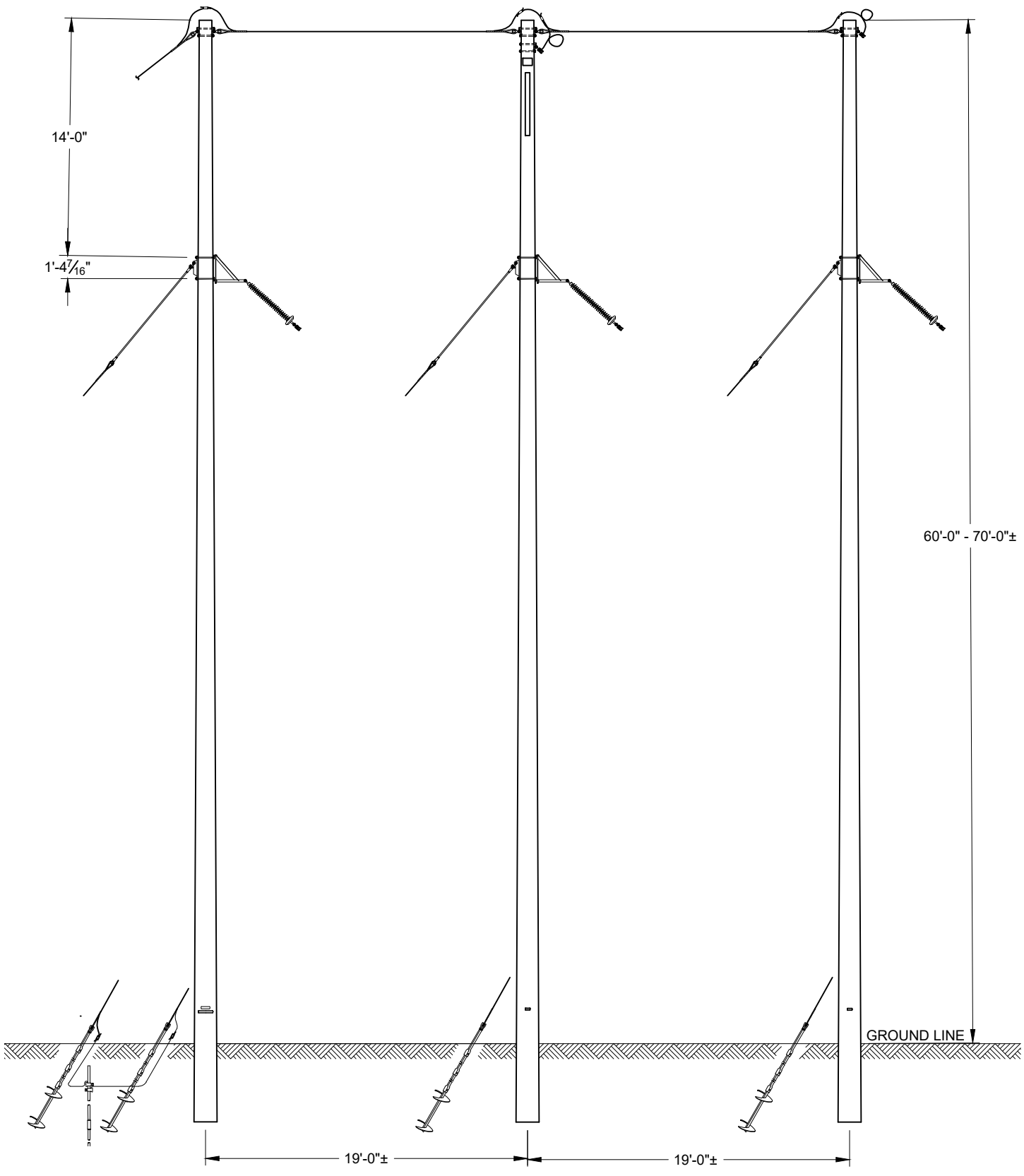
115kV SINGLE CIRCUIT WOOD POLE STRUCTURE
SUSPENSION HORIZONTAL TWO POLE H–FRAME
ANGLES 0° TO 5°

EXHIBIT 22

SCALE: NTS

MAIT East Germantown-Germantown 115 kV Transmission Line Project

Exhibit 23



MAIT™
Mid-Atlantic Interstate Transmission, LLC
A FirstEnergy Company

EAST GERMANTOWN–GERMANTOWN 115KV
TRANSMISSION LINE PROJECT

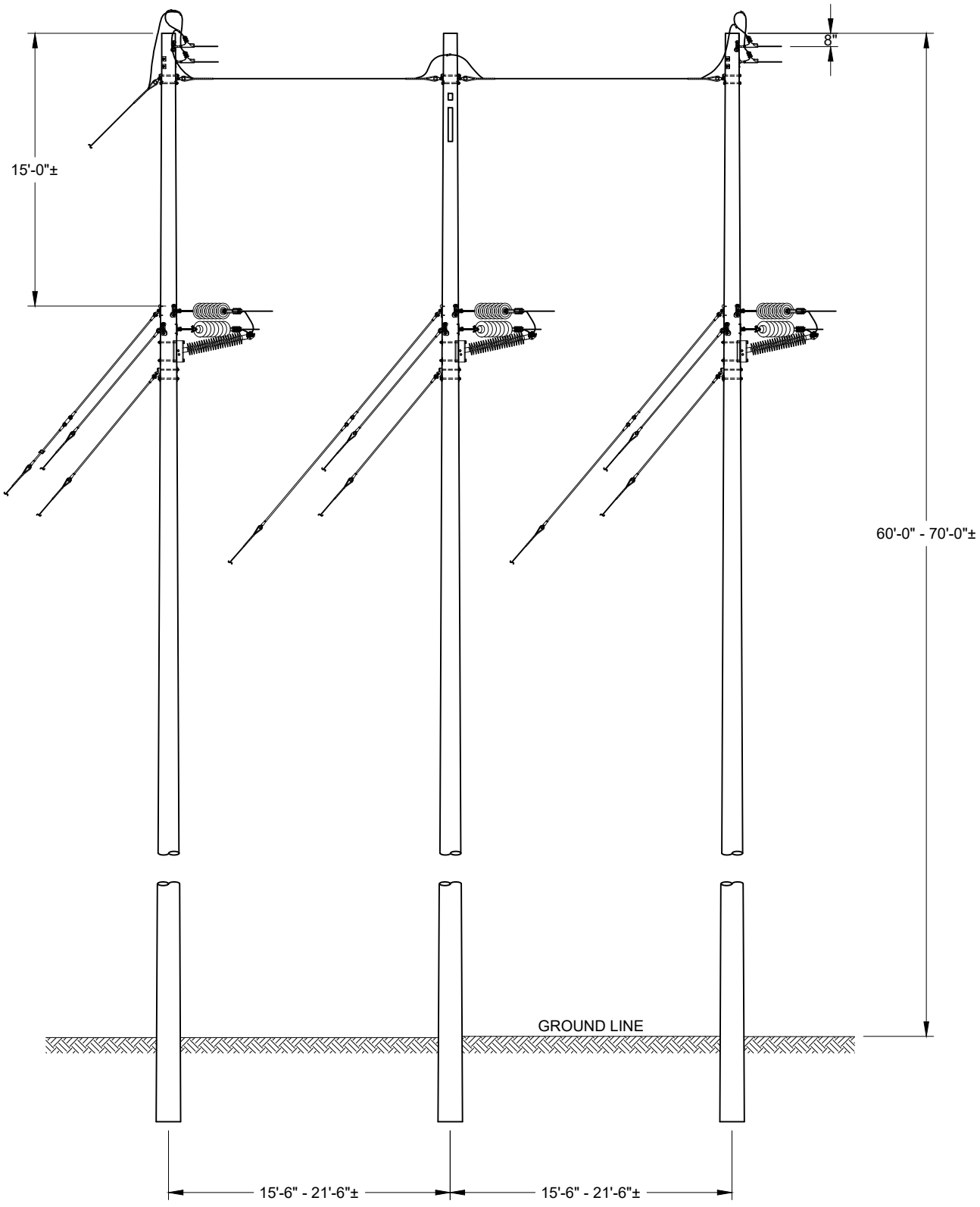
115kV SINGLE CIRCUIT WOOD POLE STRUCTURE
SUSPENSION HORIZONTAL THREE POLE ANGLE

SCALE: NTS

EXHIBIT 23

MAIT East Germantown-Germantown 115 kV Transmission Line Project

Exhibit 24



MAIT™
Mid-Atlantic Interstate Transmission, LLC
A FirstEnergy Company

EAST GERMANTOWN–GERMANTOWN 115kV TRANSMISSION LINE PROJECT

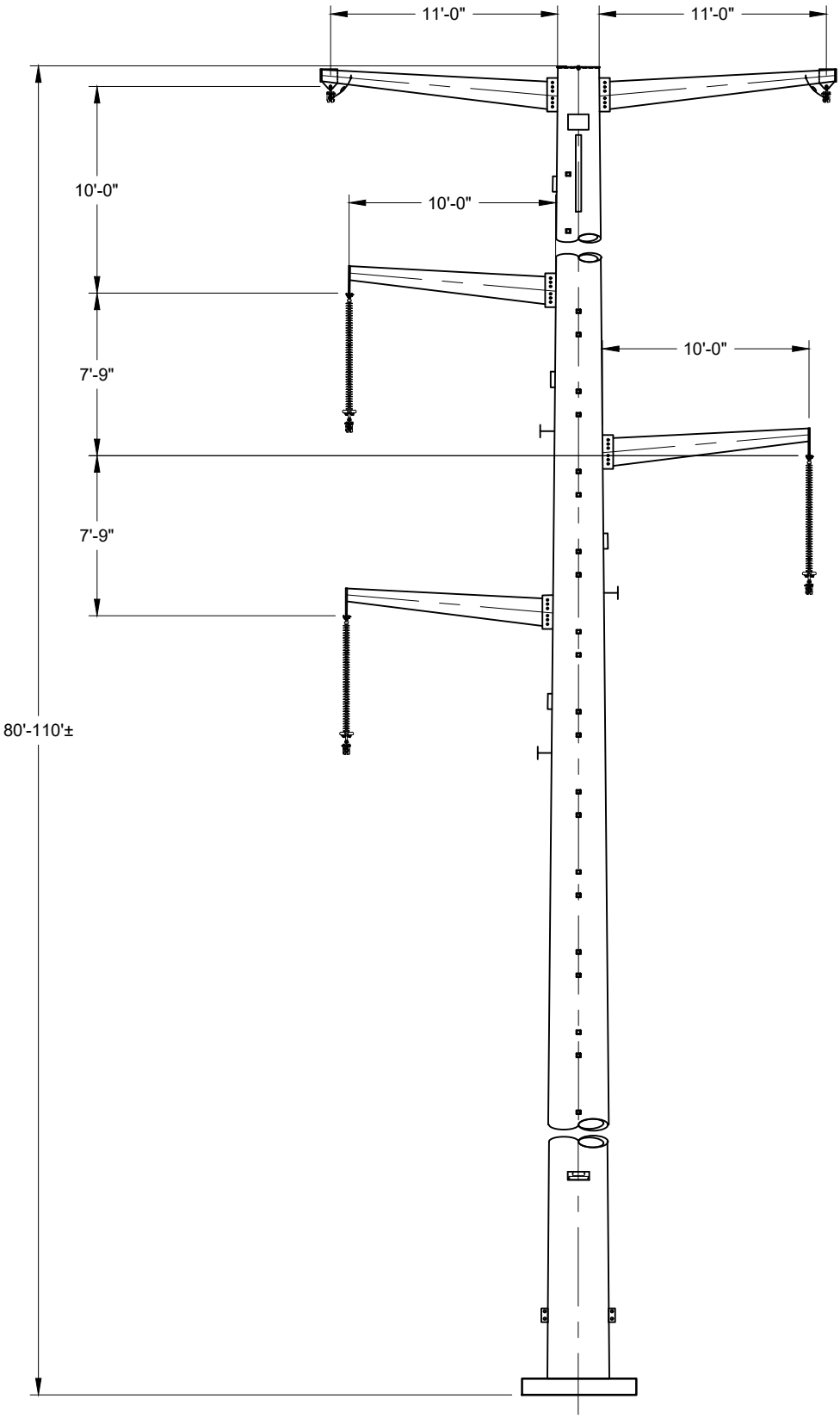
115kV SINGLE CIRCUIT WOOD POLE STRUCTURE
STRAIN DEADEND HORIZONTAL THREE POLE

EXHIBIT 24

SCALE: NTS

MAIT East Germantown-Germantown 115 kV Transmission Line Project

Exhibit 25



MAIT™
Mid-Atlantic Interstate Transmission, LLC
A FirstEnergy Company

EAST GERMANTOWN–GERMANTOWN 115KV
TRANSMISSION LINE PROJECT

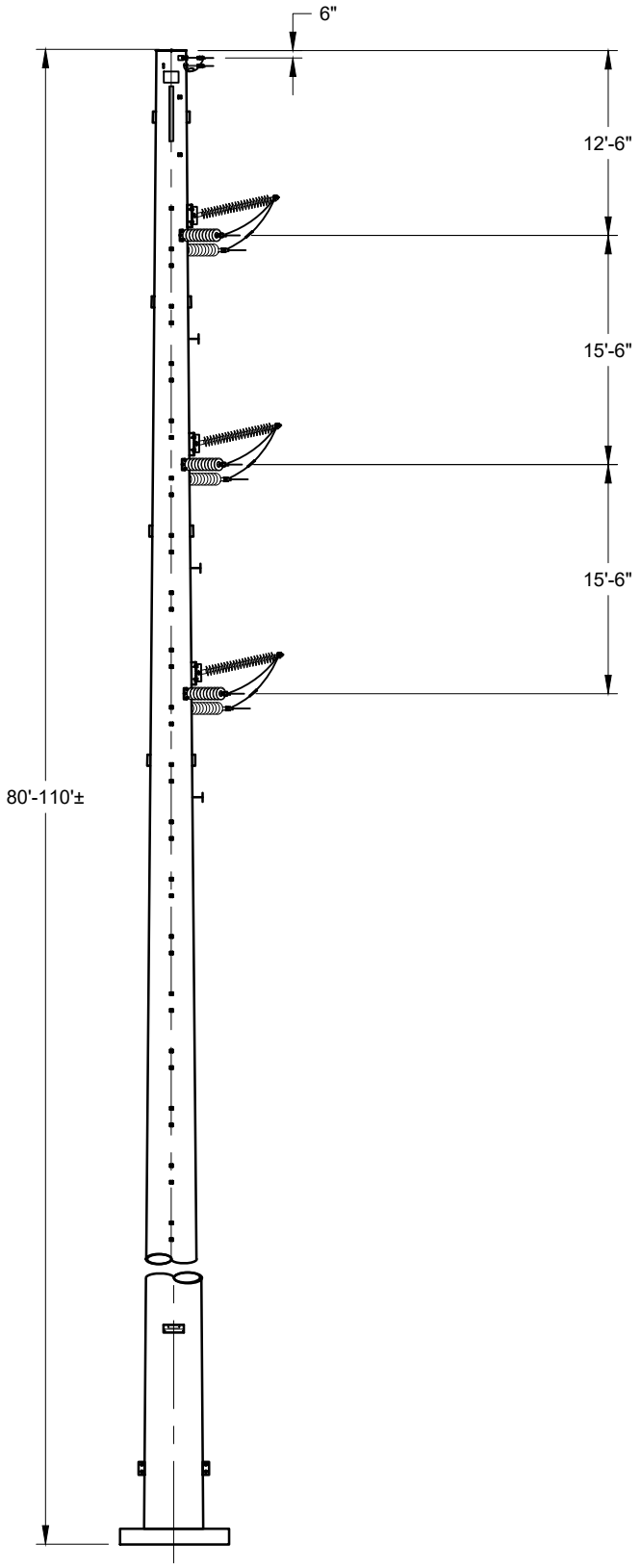
115kV SINGLE CIRCUIT TUBULAR STEEL STRUCTURE
DELTA SUSPENSION SINGLE POLE
ANGLES 0° TO 5°

EXHIBIT 25

SCALE: NTS

MAIT East Germantown-Germantown 115 kV Transmission Line Project

Exhibit 26



MAIT™
Mid-Atlantic Interstate Transmission, LLC
A FirstEnergy Company

EAST GERMANTOWN–GERMANTOWN 115kV
TRANSMISSION LINE PROJECT

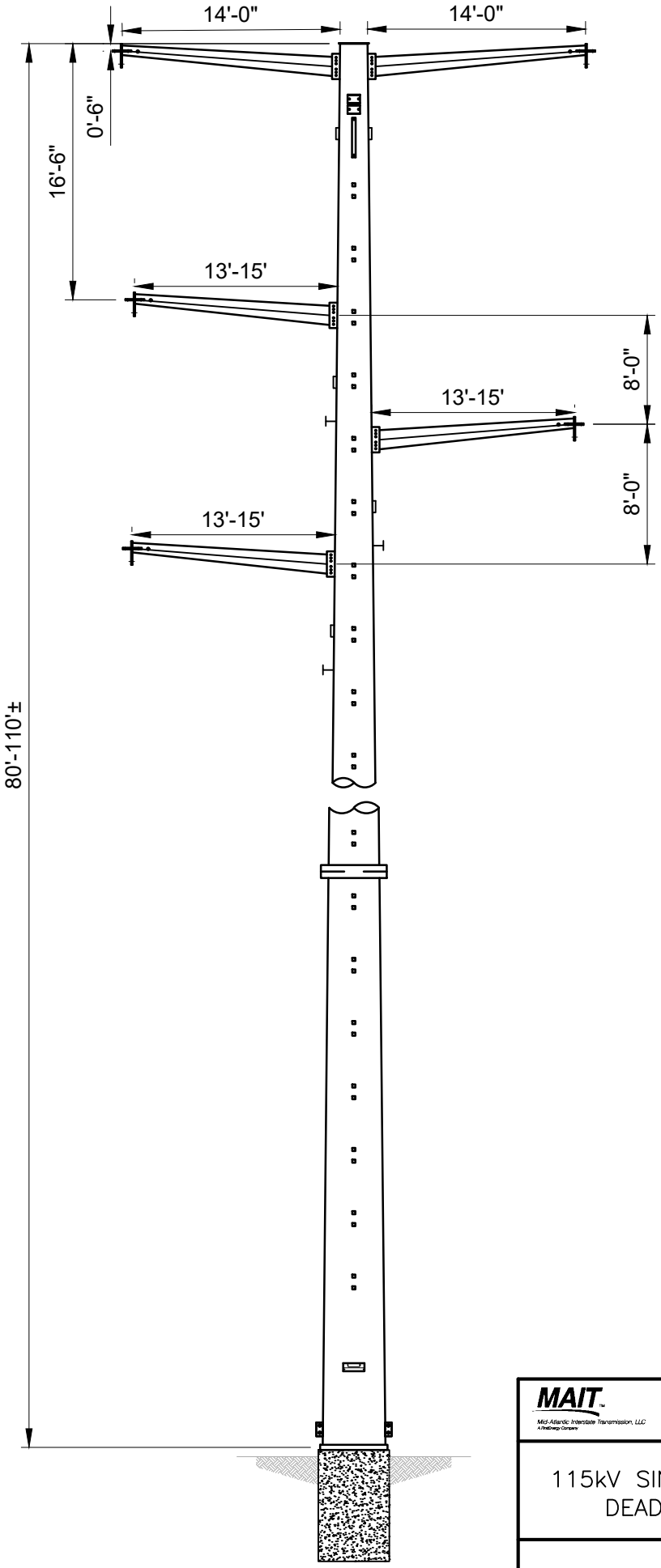
115kV SINGLE CIRCUIT TUBULAR STEEL STRUCTURE
STRAIN/DEADEND SINGLE POLE
ANGLES 0° TO 60°

EXHIBIT 26

SCALE: NTS

MAIT East Germantown-Germantown 115 kV Transmission Line Project

Exhibit 27



SCALE: NTS

MAIT™
Mid-Atlantic Interstate Transmission, LLC
A FirstEnergy Company

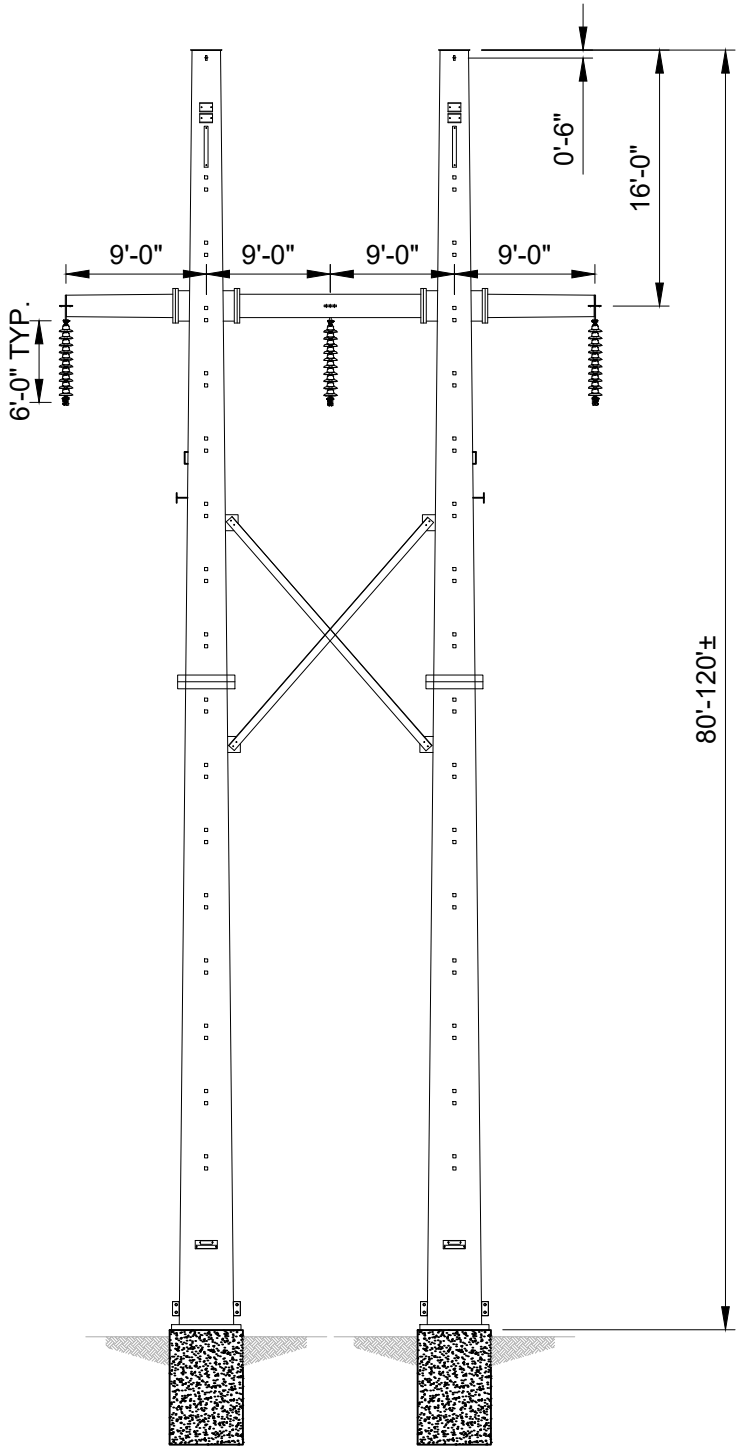
EAST GERMANTOWN–GERMANTOWN 115kV TRANSMISSION LINE PROJECT

115kV SINGLE CIRCUIT TUBULAR STEEL STRUCTURE
DEADEND SINGLE POLE ANGLES 0° TO 90°

EXHIBIT 27

MAIT East Germantown-Germantown 115 kV Transmission Line Project

Exhibit 28



MAIT™
Mid-Atlantic Interstate Transmission, LLC
A FirstEnergy Company

EAST GERMANTOWN–GERMANTOWN 115kV
TRANSMISSION LINE PROJECT

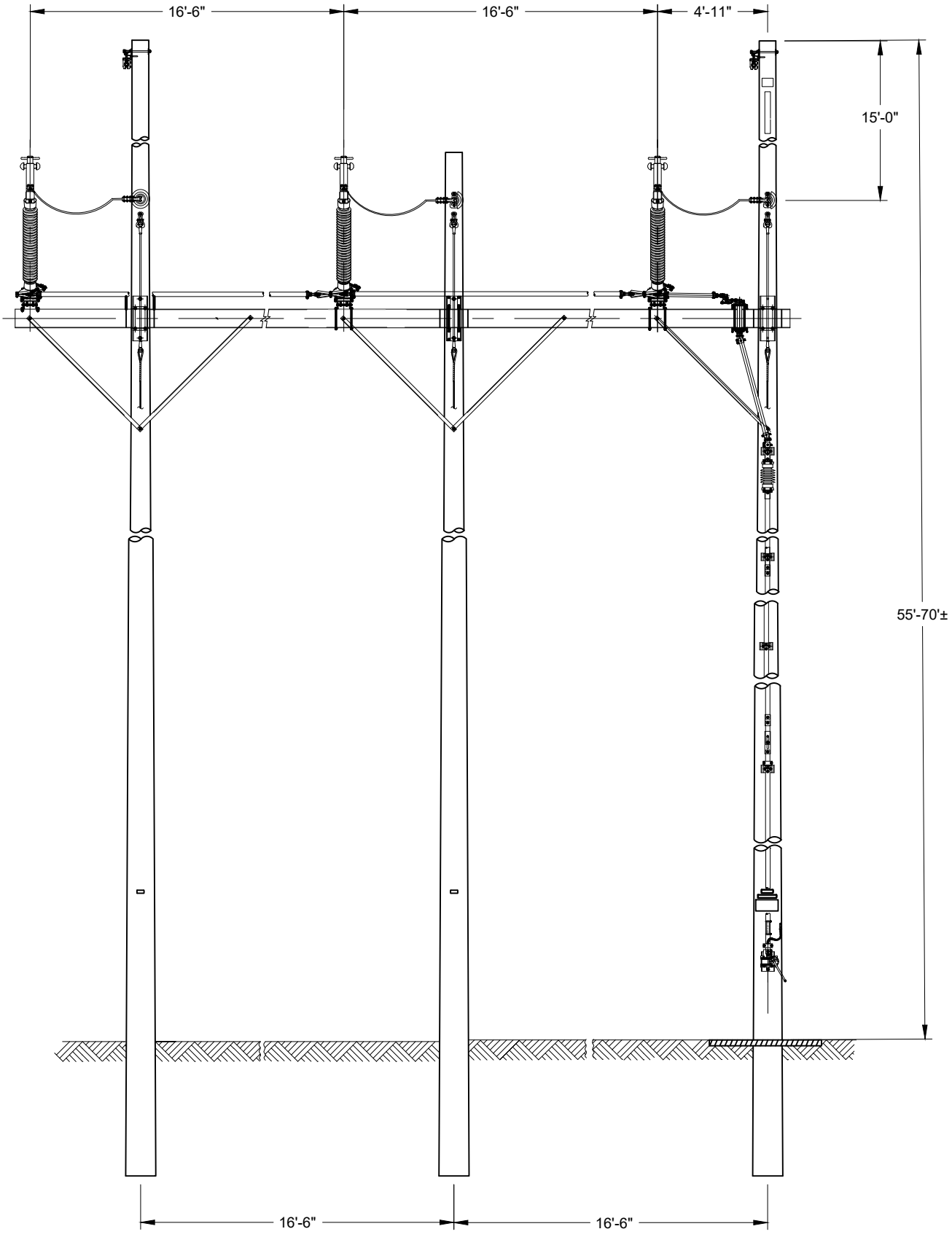
115kV SINGLE CIRCUIT TUBULAR STEEL STRUCTURE
DEADEND H FRAME ANGLES 0° TO 90°

EXHIBIT 28

SCALE: NTS

MAIT East Germantown-Germantown 115 kV Transmission Line Project

Exhibit 29



MAIT™
Mid-Atlantic Interstate Transmission, LLC
A FirstEnergy Company

EAST GERMANTOWN–GERMANTOWN
115kV TRANSMISSION LINE
PROJECT

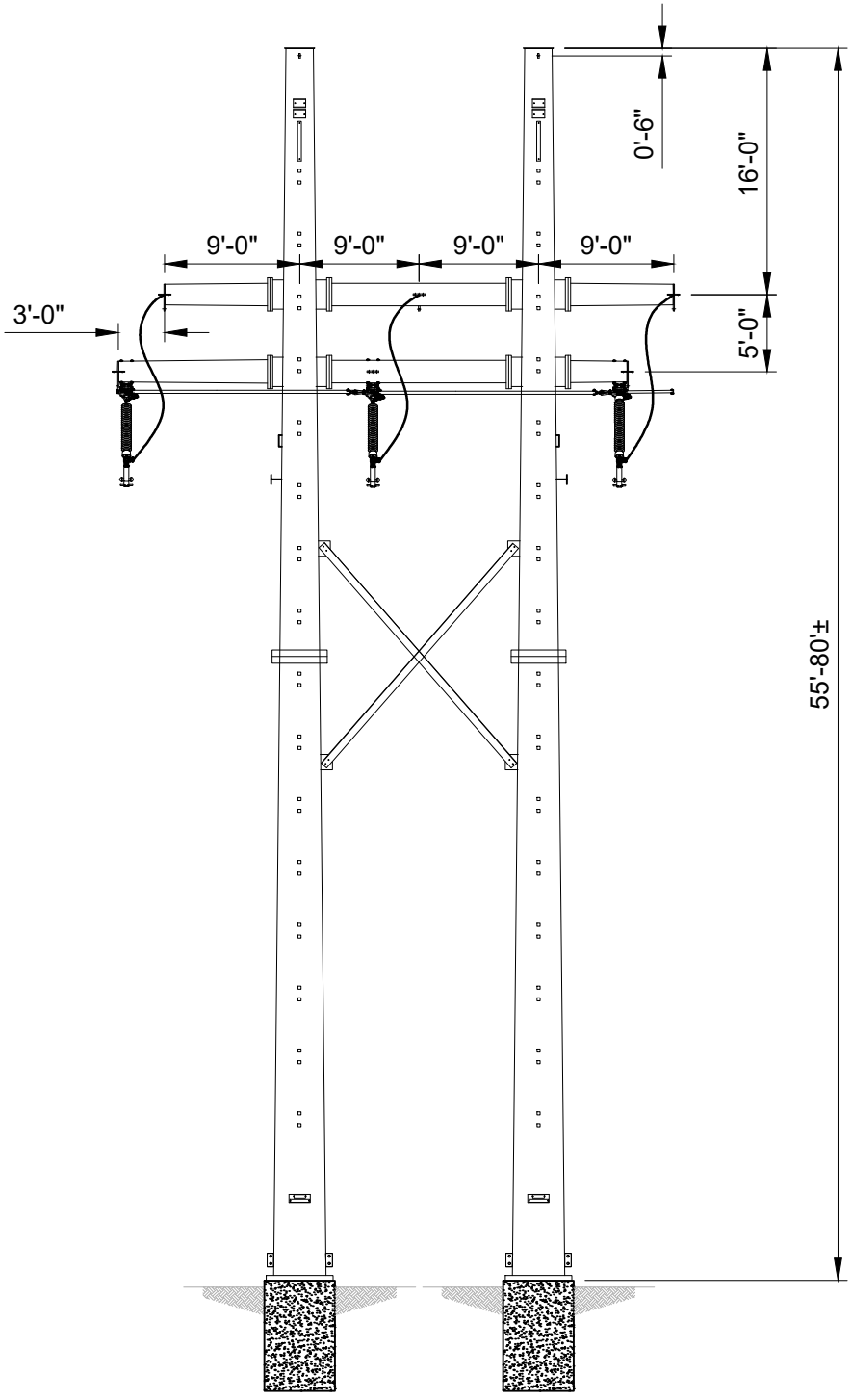
115kV SINGLE CIRCUIT DIRECT EMBED STEEL UNITIZED
SWITCH STRUCTURE HORIZONTAL
THREE POLE STRUCTURE ANGLES 0° TO 3°

EXHIBIT 29

SCALE: NTS

MAIT East Germantown-Germantown 115 kV Transmission Line Project

Exhibit 30



MAIT™
Mid-Atlantic Interstate Transmission, LLC
A FirstEnergy Company

EAST GERMANTOWN–GERMANTOWN 115kV
TRANSMISSION LINE PROJECT

115kV SINGLE CIRCUIT TUBULAR STEEL UNITIZED
SWITCH HORIZONTAL H–FRAME STRUCTURE

EXHIBIT 30

SCALE: NTS

MAIT East Germantown-Germantown 115 kV Transmission Line Project

Exhibit 31

MAINTAINING A
SAFE AND RELIABLE

TRANSMISSION SYSTEM

VEGETATION MANAGEMENT FOR NEW
TRANSMISSION CONSTRUCTION PROJECTS

FirstEnergy®

EXHIBIT 24

Transmission lines are considered the “superhighway” of the electric grid, moving large amounts of energy across our region from where it is generated to where it is needed.

Safely operating the power grid is a cornerstone of delivering reliable and affordable energy to our customers. An easement gives FirstEnergy the right to build, maintain and safely operate transmission lines, which includes removing trees and managing vegetation. The width of a transmission line right-of-way (ROW) varies according to the voltage of the lines and the easement rights originally negotiated with property owners. An easement agreement with a property owner remains in place even if the property is transferred or sold to a new owner.

ENSURING SERVICE RELIABILITY

Unless properly maintained by FirstEnergy, trees have the potential to come in contact with power lines and other electric facilities and cause power outages, especially during severe weather. We’re aware that tree trimming and tree removal can sometimes be a sensitive issue for property owners, but the work must be done to comply with reliability mandates established by the Federal Energy Regulatory Commission (FERC), the North American Electric Reliability Corporation (NERC), and state public utility commissions.

FirstEnergy employees and forestry contractors follow strict safety precautions and are committed to managing vegetation in ways that have a minimal impact on the environment.

Creating and sustaining compatible, stable and low-growing habitat on the ROW is a key component of a successful vegetation management program. A properly maintained transmission line corridor should include a diverse mixture of grasses, low-growing shrubs and other ground cover preferred by birds, deer and other wildlife to promote a thriving habitat. A well-managed ROW provides food and cover wildlife need to survive, and the electric service reliability our customers require.

FirstEnergy’s policy regarding transmission lines includes the removal of all trees, regardless of height, to the edge of the ROW. This may include removing trees where pruning was completed.

We also inspect areas adjacent to the ROW. Trees that are dead, dying, diseased, structurally defective, leaning or significantly encroaching the ROW may be removed if they pose a danger of falling into or near a transmission line. Strict vegetation management practices are followed for new transmission projects as well as scheduled maintenance work.

A properly maintained transmission line corridor should include a diverse mixture of grasses, low-growing shrubs and other ground cover preferred by birds, deer and other wildlife to promote a thriving habitat.

NEW TRANSMISSION CONSTRUCTION PROJECTS

FirstEnergy's *Energizing the Future* program is a long-term transmission initiative that involves upgrading and modernizing the grid to meet the future demands of our customers and communities.

This initiative includes the construction of new transmission lines as well as the rebuilding of existing lines. These projects require the removal of vegetation in the ROW to ensure proper clearance for overhead lines. Vegetation also is frequently removed in areas where construction activities occur. In some cases, FirstEnergy may need to acquire tree-removal rights from property owners for projects that do not require additional ROW.

FirstEnergy's policy is to make every reasonable effort to notify property owners before vegetation management work begins along a new or existing transmission corridor. During construction projects, our contractors generally use tree-marking paint and flagging to identify trees and brush that require removal or pruning. Our crews attempt to make follow-up contact with property owners after trees are marked to address questions or concerns.

MANUAL REMOVAL AND TRIMMING

For as long as there have been power lines, forestry personnel have used manual saws and bucket trucks to remove trees and limbs. Manual tree work requires a forestry professional to climb a tree and remove limbs or use a chainsaw to remove the tree at ground level. In recent years, the forestry industry has moved toward mechanical techniques to increase worker safety, improve crew efficiency and enhance quality.

MECHANICAL REMOVAL

Qualified professionals determine the techniques and equipment used to get the job done based on site conditions and accessibility. Some of the tools commonly used during mechanical removal operations to cut, transport and stack trees include harvesting equipment, skidders, chippers, excavators, log trucks, bucket trucks and large brush-mowing equipment.

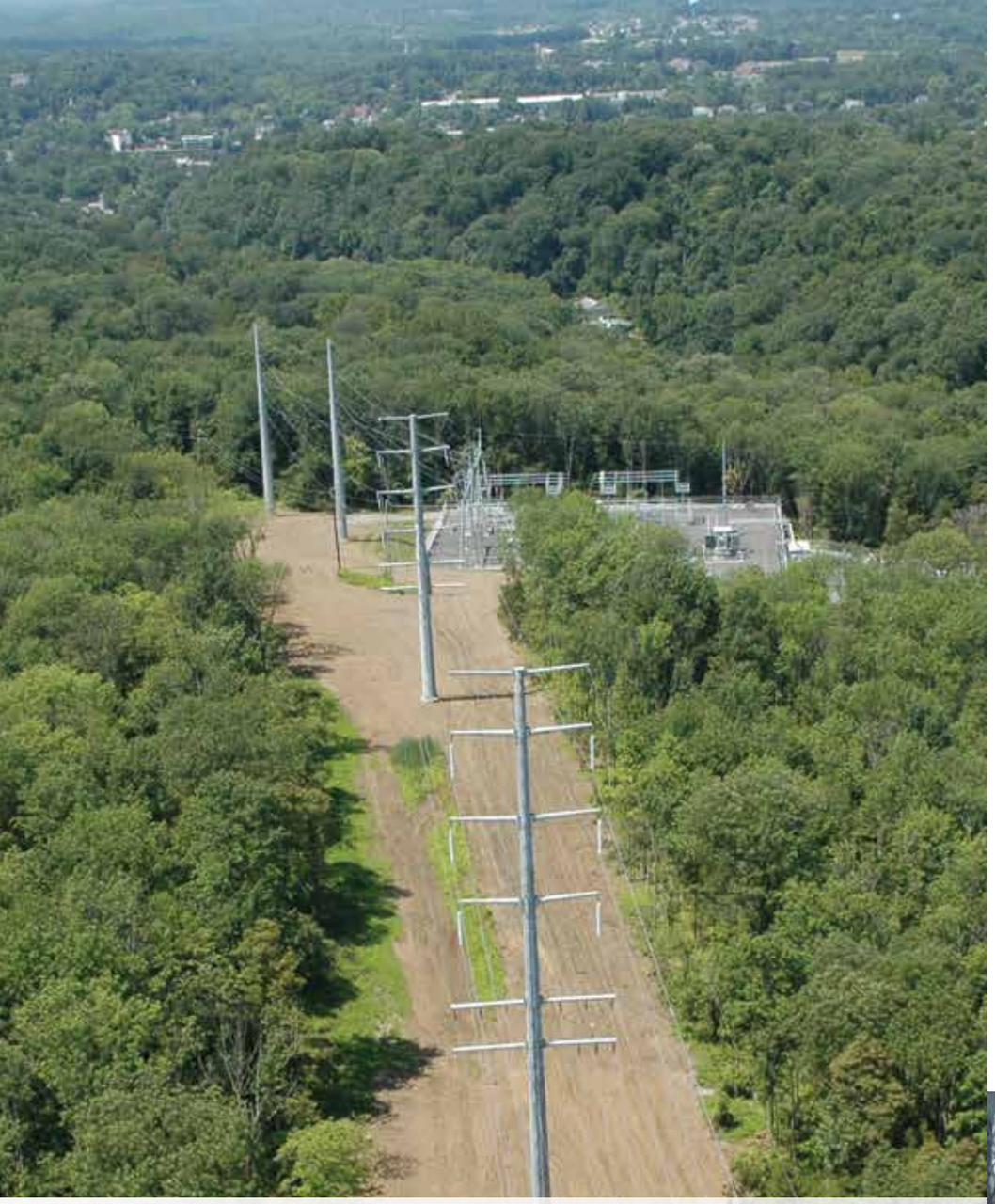
Construction matting is often installed in the work area to support equipment, protect underground infrastructure and minimize damage to private property and sensitive areas.

AERIAL SAW

Manual tree trimming is limited by the reach of a bucket truck or a tree climber, which can make trimming the very top of the tree a challenge. Another way to trim along the edge of a ROW is by using helicopters equipped with an aerial saw, which consists of multiple 24-inch rotary blades powered by a motor suspended on a vertical boom beneath the helicopter. FirstEnergy has been safely using aerial tree trimming since 1988, in accordance with American National Standards Institute tree-pruning standards.

As the helicopter slowly flies along the ROW, the aerial saw trims trees and other vegetation efficiently and thoroughly. Tree limbs are neatly cut without tearing, and typically fall straight down, assisted by air blasts from the helicopter rotors.

The aerial saw eliminates the risk of injury to workers using bucket trucks or climbing trees near energized lines. It is most commonly used in remote areas or places inaccessible by vehicles. In addition, this method helps protect private land and roads from damage by heavy equipment during the course of the vegetation management work. The aerial saw can perform work quickly, trimming both sides of a 10- to 12-mile ROW in one week. It also is an effective tool to use in environmentally sensitive areas because it eliminates the use of heavy equipment to perform the work. This method is not typically used to trim trees in residential areas unless safety buffers are used.



CLEAN UP

FirstEnergy contractors clean up debris following clearing, trimming or aerial saw work. Debris is removed from maintained yards, agricultural fields, access roads and environmentally sensitive areas. In unmaintained forested areas, debris is stacked in piles along the edge of the ROW. This practice is used where appropriate to minimize impacts associated with debris disposal, and also benefits the environment by leaving material for wildlife habitat and nutrient recycling.

EPA-APPROVED HERBICIDE APPLICATION

Once the ROW is cleared of trees, it is important to take steps to prevent future growth of unwanted trees, shrubs and other incompatible plants. This is most effectively accomplished by using herbicides approved by the Environmental Protection Agency and authorized for use on utility ROW.

The EPA approves these products only after determining they will not adversely affect people, animals or the environment when properly applied. EPA-approved products have undergone significant testing. In fact, some of the products our contractors use are the same as those commonly used by homeowners to control weeds and other vegetation. Herbicide application is the preferred method to control immature trees or brush. Herbicide-control options are determined by terrain, brush height and density, and are designed to control only incompatible vegetation.

While mechanical methods such as cutting and mowing might appear to be less harmful compared with herbicide use, these methods have some disadvantages. For example, cutting and mowing vegetation may have the undesired effect of causing it to grow back thicker and fuller, requiring repeated and more frequent maintenance.

In subsequent years, once the preferred low-growing vegetation becomes dominant, less herbicide is needed for maintenance as incompatible species become less prevalent. Herbicide use also eliminates the need for much more frequent mechanical treatments, like tree trimming and mowing – meaning vegetation management crews are needed less often.

Herbicides also are important vegetation management tools to stop the spread of invasive plant species. Using herbicides helps control weeds and other nuisance plants from overtaking the ROW, and will stop the spread to adjacent areas, including private property.

Herbicides are applied by state-certified applicators, or under the supervision of a certified applicator. Herbicide application methods include individual cut-stump treatments directly applied to the stump; low-volume applications using a backpack spray kit; high-volume applications using off-road vehicles; and in some instances in remote areas and difficult terrain, the use of helicopters to apply an aerial spray. FirstEnergy vegetation managers and contractors are trained and certified in the use of herbicides.

An EPA-registered herbicide is applied to a freshly-cut stump to prevent regrowth.

INSPECTING AND MAINTAINING TRANSMISSION CORRIDORS

Inspections are a key component of FirstEnergy's comprehensive vegetation management program.

Twice a year, helicopters fly low over our transmission line corridors to inspect the condition of the electrical equipment and monitor any ROW encroachments from trees, shrubs or other vegetation.

In addition to the inspections, most of FirstEnergy's transmission corridors are maintained on a five-year cycle, based on expected growth rates. In New Jersey and certain areas of Pennsylvania, the vegetation maintenance work is done every four years. If a helicopter inspection uncovers an issue with a leaning tree or fast-growing vegetation, the problem will be addressed immediately rather than waiting until the next regularly scheduled vegetation management cycle.

During regularly scheduled maintenance cycles, FirstEnergy contractors perform detailed inspections of the corridor and identify areas where tree trimming, tree removal and brush control are required. FirstEnergy's policy is to make every reasonable effort to notify property owners before vegetation management work takes place along a ROW. However, in the event of storms or other emergencies, advance notice may not always be possible.

FirstEnergy employs integrated vegetation management (IVM) techniques, which involve evaluating the ROW to identify incompatible vegetation, the timeframe for control and the evaluation and selection of control options. These options include manual operations, mechanical methods, and the selective use of EPA-approved herbicides. Site characteristics, environmental impact and safety are analyzed to determine the most effective control options. The goal of IVM is to create and sustain stable and compatible vegetation within and along the transmission corridor.

Before

After

EXHIBIT 24
Page 5 of 7

GUIDELINES FOR PLANTING ON RIGHTS-OF-WAY

Before planting shrubs or other vegetation in or near any ROW, please contact a member of FirstEnergy's transmission forestry staff to determine if the species is compatible.

Remember, it's important to select the right plant for the right location. Planting proper vegetation in and around a ROW can help provide a sustainable and compatible plant community. However, the vegetation must be limited to low-growing plants – such as grasses, herbs and shrubs – that are less than 5 feet high when fully grown. Vegetation also must be planted at least 10 feet away from any pole, tower or guy wire and should not hinder access to the transmission line.

FirstEnergy foresters plant low-growing milkweed on a ROW as part of a demonstration project to encourage the growth of plant species that could help rejuvenate declining populations of bees, monarch butterflies and other pollinating insects.

FirstEnergy customer service phone numbers

During construction projects, FirstEnergy and its affiliates typically develop a project hotline number that can be used to reach the project team directly with questions or concerns. This number is generally provided to all property owners well in advance of construction. If customers need to contact FirstEnergy and a project hotline number is not available, these Customer Service numbers may be used.

THE ILLUMINATING COMPANY	1-800-589-3101
JCP&L	1-800-662-3115
MET-ED	1-800-545-7741
MON POWER	1-800-686-0022
OHIO EDISON	1-800-633-4766
PENELEC	1-800-545-7741
PENN POWER	1-800-720-3600
POTOMAC EDISON	1-800-686-0011
TOLEDO EDISON	1-800-447-3333
WEST PENN POWER	1-800-686-0021

Information about FirstEnergy's tree trimming and vegetation management program for its transmission system is available online at www.firstenergycorp.com/help/brochures.html.

EXHIBIT 24
Page 6 of 7

EXHIBIT 24

Page 7 of 7

MAIT East Germantown-Germantown 115 kV Transmission Line Project

Exhibit 32

Maintaining a Safe and Reliable **Transmission System**

Comprehensive Vegetation Management

FirstEnergy®

Managing Vegetation Along FirstEnergy's Transmission System

Transmission lines are considered the "super highway" of the electric grid, allowing large amounts of electricity to be moved across the country from power plants to end-use customers.

As part of its ongoing efforts to enhance service reliability, FirstEnergy has a comprehensive, year-round program to remove and trim trees and manage vegetation along more than 13,000 miles of transmission line corridors in six states.

FirstEnergy's transmission system includes lines ranging in size from 69,000 to 500,000 volts. The width of transmission line rights-of-way (ROW) vary according to the voltage of the lines and the easement rights that were negotiated with the property owner prior to the lines being constructed.

Easements give FirstEnergy the right to build, operate and maintain transmission lines, which includes removing trees and managing vegetation. While many easements were negotiated by previous property owners, the terms of the agreement remain in place even if the property is transferred or sold.

Unless properly maintained by FirstEnergy, trees have the potential to come in contact with power lines and other electric facilities and can be a major cause of power outages, especially during severe weather.

As utilities look to enhance reliability and safety, it is important that existing vegetation management easement rights are enforced. The removal of trees under high-voltage lines rather than pruning serves to minimize the chance of any vegetation contact.

FirstEnergy is aware that this can be an emotional issue for property owners – but the work must be done to remain in compliance with reliability mandates established on the federal level by the Federal Energy Regulatory Commission (FERC) and the North American Electric Reliability Council (NERC), and by state public utility commissions.

Proper vegetation management does not always involve the removal of all vegetation. Compatible shrubs that do not have the potential to interfere with electric facilities are typically retained depending on site conditions.

Ultimately, transmission line corridors should include a diverse mixture of grasses, low growing shrubs and other ground cover preferred by birds, deer and small animals to promote a thriving wildlife habitat. In this way, a well-managed ROW provides food and cover wildlife need to survive, and the reliability electric customers require.

Ensuring **Service Reliability**

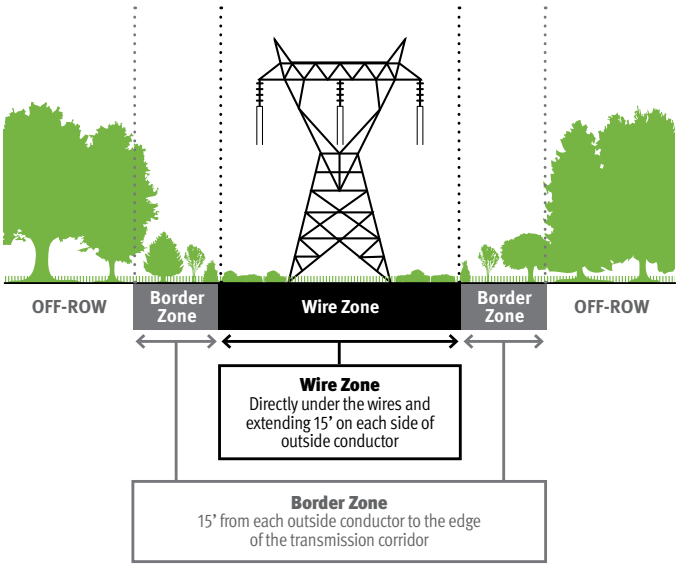
FirstEnergy has a comprehensive vegetation management program designed to maintain its transmission ROW. As part of this program, all safety precautions are utilized by FirstEnergy employees and forestry contractors. We are committed to managing vegetation in ways that will have a minimal impact on our environment.

Creating and sustaining a compatible, stable and low-growing plant community on the ROW is a key component to a successful vegetation management program.

FirstEnergy's policy regarding transmission lines includes the removal of all trees, regardless of height, to the edge of the ROW. This could include removing trees where pruning was done in the past.

In order to perform vegetation maintenance, FirstEnergy also requires a clear path for trucks and other heavy equipment to access the ROW and transmission structures. As a result, we focus on removing or controlling vegetation that may impede access and affect our ability to inspect transmission equipment for maintenance work.

When site conditions permit, FirstEnergy utilizes the "wire zone-border zone" approach to perform vegetation maintenance on the



actively maintained right-of-way. All trees and incompatible vegetation are removed and controlled in both zones. In the "wire zone," which extends about 15 feet beyond each side of where the wires are attached to tower or structure, efforts are made to encourage a low growing plant community of grasses, herbs, and shrubs that mature at less than five feet tall. In the "border zone," which extends beyond the wires to the edge of the ROW, a plant community of forbs and taller shrubs that mature at 15 feet or less may be allowed to grow depending on site conditions.

We also inspect the areas beyond the ROW. Trees that are dead, dying, diseased, structurally defective, leaning or significantly encroaching may be removed if they are determined to pose a danger of arcing or falling into the transmission line or facilities.

Inspecting the **Corridors**

Inspections are a key component of FirstEnergy's comprehensive vegetation management program.

Twice a year, helicopters fly low over our transmission line corridors to inspect the condition of the electrical equipment and monitor any ROW encroachments from trees, shrubs or other vegetation.

In addition to annual inspections, work activities are performed under established four- or five-year maintenance cycles, based on expected growth rates and other factors.

However, if a mid-cycle inspection uncovers an issue with a leaning tree or fast growing vegetation, the problem will be addressed immediately rather than waiting until the next regularly scheduled vegetation management cycle.

Multiple Options Can Be Used to Control Trees and Vegetation

FirstEnergy's policy is to make every reasonable effort to notify property owners prior to vegetation management work taking place along the transmission ROW. However, in the event of storms or other emergencies, advance notice may not always be possible.

FirstEnergy utilizes integrated vegetation management (IVM) techniques, which involve evaluating the transmission ROW to identify incompatible vegetation, the timeframe for control, and evaluation and selection of control options. These options include manual, mechanical and chemical methods that are used to prevent encroachments from vegetation located on and adjacent to transmission corridors. Site characteristics, environmental impact and worker/public safety are analyzed to determine the most effective control options.

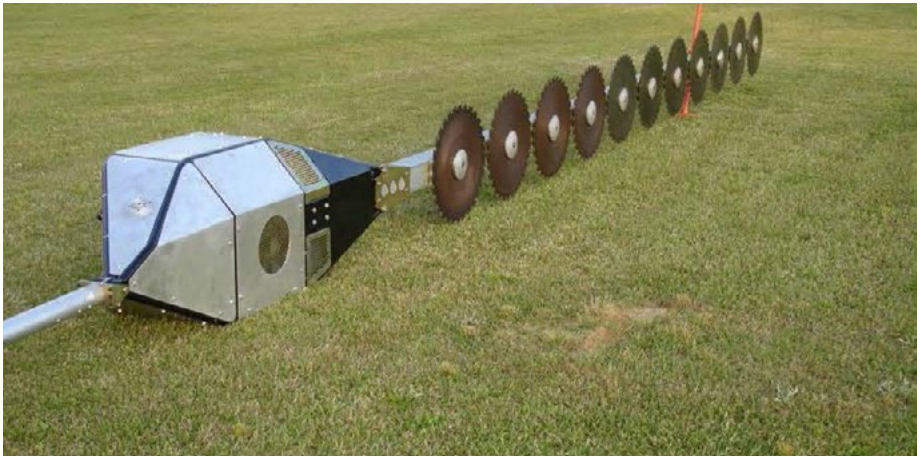
The goal of using IVM techniques is to create a sustainable and compatible vegetated plant community within and along the transmission corridor. IVM also provides a unique opportunity to create pollinator-friendly habitats that sustain healthy populations of bees, butterflies and other pollinating insects.

Depending on the location and the voltage of the transmission line, FirstEnergy and its tree contractors can utilize specific control methods – manual saws, aerial saws or herbicides – or a combination of methods, to safely and effectively remove and control vegetation.

Manual Trimming

For as long as there have been power lines, forestry personnel have used manual saws and bucket trucks to remove trees and limbs. However, using this method is very labor intensive and some transmission lines are not easily accessible by foot or in a vehicle.

Manual tree trimming also is limited by the reach of the bucket truck or ladder, which can make trimming the very top of the tree a challenge.



Aerial Saw

Another way to trim along the edge of a ROW is using helicopters equipped with aerial saws. The saw attachment consists of multiple 24-inch rotary blades powered by a motor suspended on a vertical boom beneath the helicopter. The company has been safely using aerial tree-trimming since 1988 and aerial saws are in accordance with American National Standards Institute (ANSI) A300 tree pruning standards.

As the helicopter flies slowly along the ROW, the aerial saw cuts and trims trees and other vegetation rapidly and cleanly. Tree limbs 8 to 10 inches are neatly cut without tearing, and typically fall straight down, assisted by the air blasts from the rotors of the helicopter.

Benefits

The aerial saw eliminates the risk of injury to workers using bucket trucks or climbing trees near energized lines. The aerial saw can be used in remote areas or places inaccessible to a vehicle. In addition, this method helps protects private land and roads from damage by

heavy equipment making repeated trips during the course of the work schedule.

The aerial saw can perform work quickly, side-trimming both sides of a 10-to-12 mile right-of-way in one week. It also is an effective tool to use in environmentally sensitive areas since it is not necessary to take equipment in to perform the work.

Clean Up

Brush that has fallen onto access roads, maintained yards, agricultural fields or in streams will be moved to adjacent wooded areas by a ground crew shortly after the aerial saw has been used. The ground crew also will identify and remove individual dead trees found along the ROW that potentially threaten the transmission line.

The aerial saw is not a replacement for conventional tree-trimming methods, but it is very effective on hard-to-reach transmission and sub-transmission lines. This method is not used to trim trees in residential areas unless safety buffers are utilized.

Using an aerial saw allows subsequent maintenance work to focus on the removal of "priority" trees off the ROW. By using the aerial saw, we expect to extend the length of our tree-trimming cycle in rural areas.

EPA-Approved Herbicide Application

Once the ROW is cleared of trees, it is important to take steps to prevent future growth of incompatible vegetation. U.S. Environmental Protection Agency (EPA)- approved herbicides for use on utility ROW provide the most effective means of controlling unwanted trees, shrubs and other incompatible plants.

Safe and Effective

The EPA approves such products for use only after determining that they will not adversely affect people, animals or the environment when properly applied. Nearly 60 years of university and industry research also has shown that herbicide use on ROWs can help create optimum plant and wildlife habitats.

These products have undergone significant testing. In fact, some of the materials our contractors use are the same as those commonly used by homeowners to control weeds and other vegetation.

Herbicide application is the preferred method to control immature trees or brush. Herbicide control options are determined by terrain, brush height, and density and are designed to control only incompatible vegetation.

Multiple Options Can Be Used to Control Trees and Vegetation (continued)

While mechanical methods such as cutting and mowing might appear to be less harmful compared to herbicides, these methods have many disadvantages. For example, cutting and mowing vegetation have the undesired effect of causing vegetation to grow back thicker and fuller, requiring repeated and often more frequent trimming.

Less Needed Over Time

In subsequent years, once the preferred low-growing shrub/herb community becomes dominant, less herbicide will be needed for future maintenance as incompatible species are brought under control.

Ultimately, herbicides eliminate the need for much more frequent mechanical treatments, like tree trimming and mowing — meaning you'll see our crews much less often.

Professional Application

All herbicides used on ROWs are applied by state-certified applicators or under the supervision of a certified applicator using best management practices. FirstEnergy vegetation managers and its contractors are trained and certified in the use of herbicides.

Herbicides can be applied using several methods:

1.) Aerial applications using a helicopter are used in less populated areas where terrain and accessibility make it difficult and dangerous for ground-based crews to safely apply herbicides.

2.) Trucks or ATVs with spray tanks can be used in areas with accessible ROW.

3.) Backpack sprayers can be used in populated areas, as well as near parks, ponds and other sensitive areas.

Herbicides are important vegetation management tools to stop the spread of invasive plant species. Using herbicides helps control these weeds and other nuisance plants from overtaking ROWs, and will stop the spread to adjacent areas, including your property.

Guidelines for Planting Near Rights-of-Way

If you are considering planting shrubs or other plants on any transmission ROW, please contact a member of FirstEnergy's transmission forestry staff using the customer service numbers listed on the following page. You also can consult your local arborist, nursery professional or cooperative extension agent for more information regarding compatible plant species.

It is important to select the right plant for the right place.

Planting proper vegetation in and around transmission ROW can help provide a sustainable and compatible plant community. However, the vegetation must be limited to low-growing plants – such as grasses, herbs and shrubs – that are less than five feet high at mature height. Plus, vegetation must be planted at least 10 feet away from any pole, tower or guy wire and should not hinder access to the transmission line.

FirstEnergy **Customer Service** Phone Numbers

The Illuminating Company	1-800-589-3101
JCP&L	1-800-662-3115
Met-Ed	1-800-545-7741
Mon Power	1-800-686-0022
Ohio Edison	1-800-633-4766
Penelec	1-800-545-7741
Penn Power	1-800-720-3600
Potomac Edison	1-800-686-0011
Toledo Edison	1-800-447-3333
West Penn Power	1-800-686-0021

This brochure is provided for informational purposes only. Vegetation management programs require a structure that allows flexibility in order to accommodate each situation's unique characteristics, so specific work plans may vary.

Information about FirstEnergy vegetation management is available online at **www.firstenergycorp.com/help/brochures.html**.

FORM 1189 (02-20) ID No. 100094305
COMM4263-02-20-CV-DP
Produced by FirstEnergy's Communications and Branding Department

FirstEnergy®

MAIT East Germantown-Germantown 115 kV Transmission Line Project

Exhibit 33

FirstEnergy

Energy Delivery & Customer Service

FirstEnergy Transmission Vegetation FAC-003 Program Document

Table of Contents

I Overview

FirstEnergy (FE) Transmission Vegetation Management (TVM) uses a defense-in-depth strategy to manage vegetation located on transmission rights of way (ROW) and minimize encroachments from vegetation located adjacent to the ROW, thus preventing the risk of those vegetation-related outages that could lead to Cascading. FE TVM employs a vegetation-to-conductor distance maintenance strategy which utilizes a variety of work methods to control vegetation. FE TVM incorporates maintenance strategies, vegetation inspections, and Target Clearances that exceed the Minimum Vegetation Clearance Distances (MVCD) contained in FAC-003 Table 2 into a comprehensive vegetation management program. The maintenance strategies and procedures in the vegetation management program are elements of an annual work plan that is deployed to ensure full compliance with the FAC-003 Transmission Vegetation Management Standard.

It is important to reiterate that FE TVM has established vegetation Targets Clearances which *exceed* the MVCD as a best practice. This ensures that FirstEnergy will avoid encroachments into the MVCD, in accordance with the requirements in the FAC-003 Standard.

II Applicable Transmission and Generation Owner Facilities

FE TVM maintains communication with FE's Energy Delivery Planning and Protection and Generation departments to perform a periodic review of the transmission and generation facilities that are in scope for the FAC-003 Standard. A periodic review of PJM Manual 3 and Manual 37 determines which transmission lines are identified as an element of an Interconnection Reliability Operating Limit (IROL). FE's Transmission and Generation Facilities subject to the FAC-003 may be referred to in this document, collectively, as "Applicable Lines," or individually as an "Applicable Line."

FirstEnergy Transmission Owner (TO) Facilities

- Overhead transmission lines operated at 200kV and Above
- Overhead transmission lines operated below 200kV identified as an element of an Interconnection Reliability Operating Limit (IROL) under NERC Standard FAC-014 by PJM
    - All above-referenced lines located outside the fenced area of the switchyard, station, or substation or crossing the substation fence

FirstEnergy Generation Owner (GO) Facilities

- Overhead transmission lines that extend greater than one mile or 1.609 kilometers beyond the fenced area of the generating station switchyard to the point of interconnection with the TO's facility and are 200kV and Above or 138kV IROL
- Overhead transmission lines that do not have clear line of sight[1] from the generating station switchyard fence to the point of interconnection with the TO's facility and are 200kV and Above or 138kV IROL

III FAC-003 Requirements

1. Preventing Encroachments into the MVCD (R1 & R2)

The objective of the vegetation management program is to ensure that vegetation with the potential to encroach FE's Vegetation Target Clearances is identified and mitigated, that vegetation clearances are achieved at the time of maintenance to prevent encroachments into the MVCD, and to ensure safe and reliable operation of the electric transmission system.

FirstEnergy accomplishes this through the use of Targets Clearances that exceed the applicable MVCD, which allows FirstEnergy to avoid all types of potential encroachment into the MVCD and prevent sustained, vegetation caused outages, on Applicable Lines.

> *NOTE: FE Target Clearances **exceed** FAC-003-Table 2-Minimum Vegetation Clearance Distances (MVCD).*

Encroachments are defined as follows[2]:

1. An encroachment into the MVCD as shown in FAC-003-Table 2 (Exhibit 1), observed in Real-time[3], absent a Sustained[4] Outage

[1] FAC-003-4 Footnote 3 page 2 of standard: "Clear line of sight" means the distance that can be seen by the average person without special instrumentation (e.g., binoculars, telescope, spyglasses, etc.) on a clear day.
[2] See FAC-003-4 Requirement 1 and Requirement 2 in the standard (page 4).
[3] NERC Glossary definition: Real-Time: Present time as opposed to future time. (From Interconnection Reliability Operating Limits standard.)
[4] NERC Glossary definition: Sustained Outage: The deenergized condition of a transmission line resulting from a fault or disturbance following an unsuccessful automatic reclosing sequence and/or unsuccessful manual reclosing procedure.

2. An encroachment due to a fall-in from inside the ROW that caused a vegetation-related Sustained Outage (Categories 2A, 2B, and 3 for Periodic Data Submittals in Section 3 below)
3. An encroachment due to the blowing together of Applicable Lines and vegetation located inside the ROW that caused a vegetation-related Sustained Outage (Categories 4A and 4B)
4. An encroachment due to vegetation growth into the MVCD that caused a vegetation-related Sustained Outage (Categories 1A and 1B)

2. Documented Maintenance Strategies, Procedures, Processes, Specifications (R3)

FE's vegetation maintenance strategies, procedures, processes, and specifications are designed to prevent both encroachments of vegetation into the MVCD and vegetation related outages. FE uses Integrated Vegetation Management (IVM) techniques to create and sustain a stable and compatible vegetated community within and along the transmission corridor.

The approach that FirstEnergy employs is the control or removal of all incompatible vegetation in the Wire Zone and Border Zone (further defined in Table 1 below) that has the potential to interfere with the safe and efficient operation of the transmission system. This is accomplished through either removal by mechanical means or the application of herbicides. The goal in the Wire Zone is to promote a low growing plant community of grasses, herbs, and low growing shrubs, and in the Border Zone, to support a plant community of forbs and compatible shrubs.

Along the transmission corridor, Priority Trees are also identified and removed to prevent encroachments into the MVCD. Priority Trees include those trees that are dead, dying, diseased, structurally defective, leaning or significantly encroaching where the transmission facilities are at risk of arcing or failing should the tree or portions of the tree (i) fall near or into the transmission facilities or (ii) grow towards or into the transmission facilities.

Work activities are performed under established vegetation management cycles, considering the inter-relationships between vegetation growth rates, vegetation control methods, local conditions, and inspection frequency. These cycles also take into consideration vegetation conditions,

species characteristics, and the movement of applicable line conductors under their Rating and all Rated Electrical Operating Conditions, as well as terrain.

The vegetation management program also acknowledges legal, safety, and environmental requirements during maintenance activities; including, but not limited to:

- Interconnection Reliability Operating Limit (IROL) designation
- Easement rights and limitations
- State, Federal and Local laws and requirements as well as statutes, regulations, ordinances, and standards
- Public, FirstEnergy employee, and contractor safety
- Environmental restrictions and guidelines
- NESC Clearances
- Worker approach distance requirements
- Fire risk

A. Integrated Vegetation Management (IVM) Methods (R3)

FirstEnergy utilizes IVM methods to manage vegetation, which requires the evaluation of the transmission corridor to identify incompatible vegetation, defining the timeframe for control, and performing an evaluation and selection of control options. IVM control options include manual, mechanical, cultural, and chemical methods that are used to prevent encroachments from vegetation located on and adjacent to transmission corridors. The choice of control options considers site characteristics, environmental impact, and worker/public safety. The goal of using IVM techniques is to create and sustain a stable and compatible vegetated community within and along the transmission corridor.

B. Vegetation Management Cycles (R3)

- New Jersey Operating Company (Board of Public Utilities mandate) – Four Years
- Ohio Operating Companies, Pennsylvania Operating Companies, Maryland Operating Company, West Virginia Operating Company and Virginia Operating Company – Four to Five Years

C. Transmission Vegetation Management (TVM) Procedures (R3)

FirstEnergy has established vegetation maintenance and target clearances to prevent encroachments between vegetation and overhead conductors, taking into consideration transmission line voltage, the effects of ambient temperature on conductor sag under maximum design loading, and the effects of wind velocities on conductor blowout. TVM procedures are to be implemented at the time of maintenance, as demonstrated below in Table 1: Vegetation Maintenance Implementation. The required maintenance clearances are demonstrated in Table 2: Required Maintenance Clearance by Voltage.

Target Clearances, a FirstEnergy established best practice, are target vegetation clearances that exceed the MVCD, allowing FirstEnergy to avoid encroachments into the MVCD for Applicable Lines. The vegetation Target Clearances are shown in Table 3: Target Clearance by Voltage and are based on vegetation to conductor distances.

i. Vegetation Maintenance (R1, R2, & R3)

Table 1: Vegetation Maintenance Implementation	
Procedures to Implement[5]	
1	**Typical ROW Width:** The transmission corridor typical ROW widths by Operating Company, Voltage, and Facility are identified, and all vegetation management work is completed within the corridor.
2	**Wire Zone:** All incompatible vegetation is controlled in the entire wire zone to promote a low-growing plant community dominated by grasses, herbs, and low growing shrubs (approximately 3 – 5'); the wire zone is the section of the transmission corridor directly under the wires, and extending outward to 15' on each side of the wires.
3	**Border Zone:** All incompatible vegetation is controlled in the border zone to support a plant community of forbs and compatible shrubs (approximately 12-15'); the border zone is the section of the transmission corridor that extends from 15' outside the wires to the ROW edge.
4	**Wire Zone Border Zone Concept:** The wire zone border zone concept is the preferred method of controlling incompatible vegetation, however, in some instances, it may not be suitable due to topography; for these locations, all incompatible vegetation is controlled on the transmission corridor, edge to edge.
5	**Limited Width Corridors:** In locations where the transmission corridor width is limited (typically 100' or less), all incompatible vegetation is controlled from edge to edge.
6	**Tree Pruning:** To the greatest extent possible, all branches overhanging the transmission corridor are to be pruned to ANSI A300 standards or removed back to the main stem. Tree Pruning is to be performed back to the typical ROW width via mechanical or manual methods.
7	**Priority Tree:** Trees that are dead, dying, diseased, structurally defective, leaning or significantly encroaching where the transmission facilities are at risk of arcing or failing should the tree or portions of the tree (i) fall near or into the transmission facilities or (ii) grow towards or into the transmission facilities.
8	**Pruning (no-easement):** In cases where FirstEnergy does not have an easement authorizing it to control vegetation and cannot otherwise obtain permission from the landowner, then vegetation shall be pruned following directional pruning methods, as defined in the ANSI 300 Standards and Amendments.
9	**Maintenance Clearance by Voltage:** Maintenance Clearance is the appropriate clearance distance to be minimally achieved between vegetation and any overhead ungrounded supply conductors at the time of vegetation maintenance, which is based upon local conditions and time frame of the next scheduled maintenance cycle.

[5] Vegetation management programs require a structure that allows the ability to be flexible, to adjust to differences in territories and changing conditions, taking into consideration factors such as tree species, growth rates, terrain, electric infrastructure, environmental factors, regulation, easement rights, and customer needs and expectations. Appropriate procedures will be determined based on existing vegetation conditions so some of the procedures identified above may not be utilized based on voltage and other operational characteristics.

Table 2: Required Maintenance Clearance by Voltage	
Voltage	**Required Clearance**
138kV IROL	Shall be cleared 25' or greater from conductor
200kV and Above	Shall be cleared 30' or greater from conductor

Note: Pruning for the transmission corridor is dependent on the voltage of the conductor and shall be done in such a manner to achieve the clearances listed in Table 2.

ii. Vegetation Target Clearance (R1, R2 & R3)

As part of performing annual work plan maintenance activities, it is critical that encroaching vegetation be identified and mitigated. During the course of performing vegetation inspections, initial work identification, and marking the transmission corridor, vegetation within a specified distance of a transmission conductor is identified, classified, and reported as vegetation that does not meet the specified Target Clearance. As a best practice, FE set target clearances which exceed the MVCD, as shown in Table 3: Target Clearance by Voltage:

Table 3: Target Clearance by Voltage*	
Voltage	**Target Clearance**
138kV IROL	Vegetation less than 12' from conductor
230kV	Vegetation less than 15' from conductor
345kV	Vegetation less than 20' from conductor
500kV	Vegetation less than 25' from conductor

**Target Clearances are based on conditions As Observed: the visual inspection that occurs at the time an FE Representative is on the transmission corridor.*

- Observer considers and anticipates growth through the current growing season to prevent close vegetation from encroaching in the Target Clearance
  - Corrective action is performed for vegetation identified during this review

D. Vegetation Work Procedures and Specifications (R1, R2, & R3)

Vegetation management is required to prevent the encroachment of vegetation into the MVCD. Vegetation control is the removal of vegetation that has the potential to interfere with the safe and efficient operation of the transmission system. Methods used to manage and control vegetation include manual control methods, such as using hand-operated tools, mechanical control methods, such as using equipment-mounted saws, mowers or other devices, and various herbicide application techniques, such as selective basal, stem foliage, and cut stubble.

i. Tree Pruning

All pruning shall be done in accordance with modern arboricultural standards using the current ANSI A300 Standards and Amendments. Directional pruning is the preferred method of line clearance pruning and involves removing entire branches and limbs back to the main trunk of the tree that is growing under, beside and over the electric conductors. Pruning shall be done in a manner that will promote growth away from the power lines. Branches that are growing away from the electrical facilities are usually undisturbed unless they impede access to facilities.

ii. Tree Removal

Trees that are expected to be removed or controlled are:

- Incompatible trees located within the transmission corridor
- Dead or defective trees which pose a threat to the conductor or facilities (i.e., guy wires, poles, or structures)
- Priority Trees: trees that are dead, dying, diseased, structurally defective, leaning or significantly encroaching where the transmission facilities are at risk of arcing or failing should the tree or portions of the tree (i) fall near or into the transmission facilities or (ii) grow towards or into the transmission facilities.
- When using tree removal as a control method, the worker will consider relevant factors pertaining to the tree and site and shall take appropriate actions by selecting and cutting a notch that is best suited to allow the tree to fall safely in the

desired direction ensuring a safe removal operation (ANSI Z133 - Safety Requirements for Arboricultural Operations)

iii. Brush Removal

Brush that may grow tall enough to interfere with overhead electric facilities or impedes access and/or the ability to visually inspect the transmission corridor is removed and/or treated with an herbicide.

- Mowing of brush on the transmission corridor may be utilized, at times, for sites where vegetation heights and densities exceed requirements for other vegetation management methods.
- Mowing may be required on company-owned properties that are subject to local maintenance ordinances.

iv. Herbicide Applications

Herbicide application is the preferred method to control brush within the transmission corridor. Herbicide control options are determined by site condition, including terrain, brush height, and density, with emphasis placed on preserving a low-growing plant community dominated by grasses, herbs, and low growing shrubs. In cases where a landowner will not allow the application of herbicide on the transmission corridor for purposes of controlling incompatible vegetation, FirstEnergy will explore and fully exercise legal rights and options regarding herbicide refusals.

Herbicide application methods are:

1) Cut Stubble Treatment

- Cut stubble is used in areas that have been mowed for access or because vegetation was too dense or too tall to foliar treat
- A broadcast treatment is made over areas that were just mowed

2) High Volume Foliage applications

- High volume applications usually cover large areas of incompatible brush
- This control method is best suited for medium to high-density incompatible vegetation species

3) Low Volume Foliage applications

- This selective method of application targets specific incompatible vegetation species by spraying the herbicide directly on the foliage of the target vegetation
- This control method is best suited for low density incompatible brush

4) Basal Herbicide applications

- This control option may be used in highly visible areas and sometimes is the only method allowed in sensitive areas such as parks or large tracts of government land use
- This control method is used where there is low-density incompatible brush

5) Stump applications

- The herbicide mixture is applied to the freshly cut stump so as to completely wet the cambium area, which is the area next to the bark

E. Vegetation Inspection Frequency (R3 & R6)

Maintenance inspections are scheduled annually for those corridors that are scheduled for vegetation maintenance based on their established vegetation management cycle. Aerial and/or associated ground inspections are conducted on 100% of FE's Applicable Lines, at least once per calendar year but with no more than 18 calendar months between inspections on the same ROW[6].

F. Imminent Threat Procedure (R4)

The Imminent Threat procedure serves to notify FirstEnergy's System Control Center (SCC), without intentional delay, of a confirmed vegetation condition that is likely to cause a fault at any moment. In the event of a confirmed Imminent Threat on an Applicable Line, the SCC will notify PJM per the SCC-NOP-112 Vegetation Related Transmission Outages procedure without intentional time delay. See Exhibit 2 to view the Imminent Threat Procedure Flow Chart.

[6] FAC-003-4 Footnote 14: When the applicable Transmission Owner or applicable Generator Owner is prevented from performing a Vegetation Inspection within the timeframe in R6 due to a natural disaster, the TO or GO is granted a time extension that is equivalent to the duration of the time the TO or GO was prevented from performing the Vegetation Inspection.

TVM Implementation Steps

Assess Personal Safety First

1. Call SCC without intentional time delay. State:
   "This is <NAME> from <COMPANY> and I have identified an Imminent Threat from Vegetation that is likely to cause a fault at any moment at: <CIRCUIT NAME, STRUCTURE NUMBER, LAT/LONG>."
2. SCC will repeat the information back and TVM Representative will confirm (3-Part Communication)
3. SCC will promptly contact PJM as described in the SCC-NOP-112
4. TVM Representative will notify TVM Supervisor (or above) that procedure has been initiated
5. SCC and TVM will determine if Clearance is needed
6. If grounding is needed, the Switching Control will be transferred to Tx line crew
7. TVM Representative will notify SCC once the threat has been mitigated
8. TVM Representative will notify TVM Supervisor (or above) that procedure is complete and submit Form X-4335 to TVM Compliance for NERC Lines

G. Constraints [FE Mitigation Measures] (R5)

Constraints on FirstEnergy's transmission corridors are documented and referred to as "Mitigation Measures" under the Mitigation Measure procedure. Mitigation Measure inspections are performed in addition to the annual work plan and annual transmission inspections, based on an appropriate inspection cycle. The purpose of the Mitigation Measure procedure is to document areas where FirstEnergy is constrained from performing vegetation work, and where the constraint may lead to a vegetation encroachment into the FE Target Clearance distances (see Table 3) prior to the next established maintenance cycle. Pursuant to the Mitigation Measure procedure, vegetation that is encroaching the Target Clearances is removed or controlled. Since FE Target Clearances **exceed** the Minimum Vegetation Clearance Distances (MVCD), by creating mitigation measures, which generate more frequent inspections, and completing the work necessary to remove vegetation that may encroach the Target Clearance, FE avoids the potential encroachments into the MVCD.

FE Mitigation Measures can be classified into three categories. A Mitigation Measure will be created when a condition in one or more of the following categories is identified:

1) Operations distinguishes a location that requires inspections more frequently than the normal corridor maintenance cycle. For example, easement restrictions.
2) A location with inadequate clearance due to terrain or the construction of the transmission facility. For example, low conductor clearance areas.
3) Constraints on the annual work plan which could not be resolved within the maintenance year. For example, property owner refusals that are unresolved at year-end.

H. Vegetation Management Program Inspections (R6)

FE vegetation management program inspections consist of both aerial and ground inspections as described below.

i. Aerial Inspection

Aerial and/or associated ground inspections are conducted on 100% of FirstEnergy Applicable Lines, at least once per calendar year but with no more than 18 calendar months between inspections on the same ROW. FirstEnergy performs two annual inspections:

- TVM Specialist Inspection
- TVM Supervisor Inspection
  - The second inspection conducted provides an additional field inspection and observation by a Supervisor to ensure the system does not have vegetation conditions which could lead to an encroachment into FE Target Clearances.

The primary purpose of the aerial inspections is to identify spans requiring vegetation maintenance in order to ensure adequate conductor to vegetation clearances beyond FE Target Clearances, to prevent and/or avoid encroachments into the MVCD. This includes identifying incompatible brush and trees on the corridor and Priority Trees adjacent to the corridor that may warrant further inspection from the ground and require potential corrective actions.

1) Ground Inspection

Sections of line that cannot be inspected from the air for various reasons are identified and inspected from the ground and documented as complete. At times, a ground inspection may be performed in lieu of an aerial inspection, to review current vegetation conditions, to ensure adequate conductor to vegetation clearances on the electric transmission system, and to avoid encroachments into the MVCD.

I. Annual Work Plan (R7)

The creation of the FE annual work plan involves scheduling transmission corridors every year for vegetation management based on the next vegetation management cycle date. The priority of each corridor is based on current conditions. The transmission corridors are designed and tracked to completion based on their overall mileage. The completion of the annual work plan is measured in units of corridor miles actually completed divided by the number of corridor miles in the final amended plan. The work plan is flexible enough to adjust to changing conditions, taking into consideration anticipated growth of vegetation, and all other environmental factors that may impact the reliability of the transmission system.

i. Modifications to the Annual Work Plan

The FE annual work plan may be modified during the year to address changing conditions related to vegetation located on or adjacent to the transmission corridor. Modifications to the annual work plan are tracked and documented until completed.

Consideration for annual work plan modifications encompass, but are not limited to, changing conditions and environmental factors such as:

- Initiation of an emergency aerial patrol after major weather events
- Additional vegetation management work due to high rate of tree mortality caused by insect infestations, disease, or storm damage
- Work refusals that are not resolved within the calendar year of the annual work plan, yet have adequate clearance, and will be tracked and monitored using the annual work plan until completed. In circumstances where the affected property owner refuses to allow FirstEnergy to exercise its legal rights, the TVM representative will contact FirstEnergy's legal counsel for assistance to take legal

action to reach resolution. If the refusal property becomes an immediate threat likely to cause a fault, FirstEnergy will implement its imminent threat procedure.

- In the event of severe weather, vegetation maintenance work may be postponed or accelerated, and will be reflected in the work plan.
- Time required to make contacts with landowners or obtain permits from regulatory authorities.
- Change in expected growth rate/ environmental factors
- Circumstances that are beyond the control of the TO or GO
- Rescheduling work between growing seasons
- Crew or contractor availability/ Mutual assistance agreements
- Identified unanticipated high priority work
- Weather conditions/Accessibility
- Permitting delays
- Land ownership changes/Change in land use by the landowner
- Emerging technologies

ii. Annual Work Plan Documentation

Completed vegetation maintenance cycle activities are documented in FirstEnergy's annual work plan. Work activities are documented in the TVM Application, FE TVM's work management software, through to completion. Work activities are also entered on FE weekly timesheets by the contractors and are entered into the Vegetation Management System (VGMS).

iii. TVM Work Verification

FirstEnergy TVM specialists inspect and approve all planned work performed by TVM contractors to ensure compliance with FirstEnergy's work procedures and specifications, as defined in the FE FAC-003 Vegetation Management Program. Constraints on the annual work plan which could not be resolved within the maintenance year will be tracked via the Mitigation Measure Process through to completion. The TVM Application is the final repository for documenting the completion of the annual work plan.

3. Periodic Data Submittal (R1 & R2)

Quarterly outage reports are submitted to ReliabilityFirst (RF), identifying all Sustained Outages of applicable lines operated within their Rating and all Rated Electrical Operating Conditions to have been caused by vegetation. This reporting requirement does not apply to circumstances that are beyond the control of the TO or GO, as defined in FAC-003[7]. Quarterly and 48-Hour outage reporting is submitted in accordance with the RF vegetation outage reporting guidelines pursuant to the SCC-NOP-112.

[7] FAC-003-4 Footnote 4 page 4 of standard: This requirement does not apply to circumstances that are beyond the control of an applicable Transmission Owner or applicable Generator Owner subject to this reliability standard, including natural disasters such as earthquakes, fires, tornados, hurricanes, landslides, wind shear, fresh gale, major storms as defined either by the applicable Transmission Owner or applicable Generator Owner or an applicable regulatory body, ice storms, and floods; human or animal activity such as logging, animal severing tree, vehicle contact with tree, or installation, removal, or digging of vegetation. Nothing in this footnote should be construed to limit the Transmission Owner's or applicable Generator Owner's right to exercise its full legal rights on the ROW.

IV Exhibits

Exhibit 1: Minimum Vegetation Clearance Distances (MVCD) Table 2 – FAC-003-4

FAC-003 — TABLE 2 — Minimum Vegetation Clearance Distances (MVCD)[17]

For **Alternating Current** Voltages (feet)

(AC) Nominal System Voltage (KV)†	(AC) Maximum System Voltage (KV)[18]	MVCD (feet) Over sea level up to 500 ft	MVCD feet Over 500 ft up to 1000 ft	MVCD feet Over 1000 ft up to 2000 ft	MVCD feet Over 2000 ft up to 3000 ft	MVCD feet Over 3000 ft up to 4000 ft	MVCD feet Over 4000 ft up to 5000 ft	MVCD feet Over 5000 ft up to 6000 ft	MVCD feet Over 6000 ft up to 7000 ft	MVCD feet Over 7000 ft up to 8000 ft	MVCD feet Over 8000 ft up to 9000 ft	MVCD feet Over 9000 ft up to 10000 ft	MVCD feet Over 10000 ft up to 11000 ft	MVCD feet Over 11000 ft up to 12000 ft	MVCD feet Over 12000 ft up to 13000 ft	MVCD feet Over 13000 ft up to 14000 ft	MVCD feet Over 14000 ft up to 15000 ft
765	800	11.6ft	11.7ft	11.9ft	12.1ft	12.2ft	12.4ft	12.6ft	12.8ft	13.0ft	13.1ft	13.3ft	13.5ft	13.7ft	13.9ft	14.1ft	14.3ft
500	550	7.0ft	7.1ft	7.2ft	7.4ft	7.5ft	7.6ft	7.8ft	7.9ft	8.1ft	8.2ft	8.3ft	8.5ft	8.6ft	8.8ft	8.9ft	9.1ft
345	362[19]	4.3ft	4.3ft	4.4ft	4.5ft	4.6ft	4.7ft	4.8ft	4.9ft	5.0ft	5.1ft	5.2ft	5.3ft	5.4ft	5.5ft	5.6ft	5.7ft
287	302	5.2ft	5.3ft	5.4ft	5.5ft	5.6ft	5.7ft	5.8ft	5.9ft	6.1ft	6.2ft	6.3ft	6.4ft	6.5ft	6.6ft	6.8ft	6.9ft
230	242	4.0ft	4.1ft	4.2ft	4.3ft	4.3ft	4.4ft	4.5ft	4.6ft	4.7ft	4.8ft	4.9ft	5.0ft	5.1ft	5.2ft	5.3ft	5.4ft
161*	169	2.7ft	2.7ft	2.8ft	2.9ft	2.9ft	3.0ft	3.0ft	3.1ft	3.2ft	3.3ft	3.3ft	3.4ft	3.5ft	3.6ft	3.7ft	3.8ft
138*	145	2.3ft	2.3ft	2.4ft	2.4ft	2.5ft	2.5ft	2.6ft	2.7ft	2.7ft	2.8ft	2.8ft	2.9ft	3.0ft	3.0ft	3.1ft	3.2ft
115*	121	1.9ft	1.9ft	1.9ft	2.0ft	2.0ft	2.1ft	2.1ft	2.2ft	2.2ft	2.3ft	2.3ft	2.4ft	2.5ft	2.5ft	2.6ft	2.7ft
88*	100	1.5ft	1.5ft	1.6ft	1.6ft	1.7ft	1.7ft	1.8ft	1.8ft	1.8ft	1.9ft	1.9ft	2.0ft	2.0ft	2.1ft	2.2ft	2.2ft
69*	72	1.1ft	1.1ft	1.1ft	1.2ft	1.2ft	1.2ft	1.2ft	1.3ft	1.3ft	1.3ft	1.4ft	1.4ft	1.4ft	1.5ft	1.6ft	1.6ft

* Such lines are applicable to this standard only if PC has determined such per FAC-014 (refer to the Applicability Section above)

† *Table 2 – Table of MVCD values at a 1.0 gap factor (in U.S. customary units), which is located in the EPRI report filed with FERC on August 12, 2015. (The 14000-15000 foot values were subsequently provided by EPRI in an updated Table 2 on December 1, 2015, filed with the FAC-003-4 Petition at FERC)*

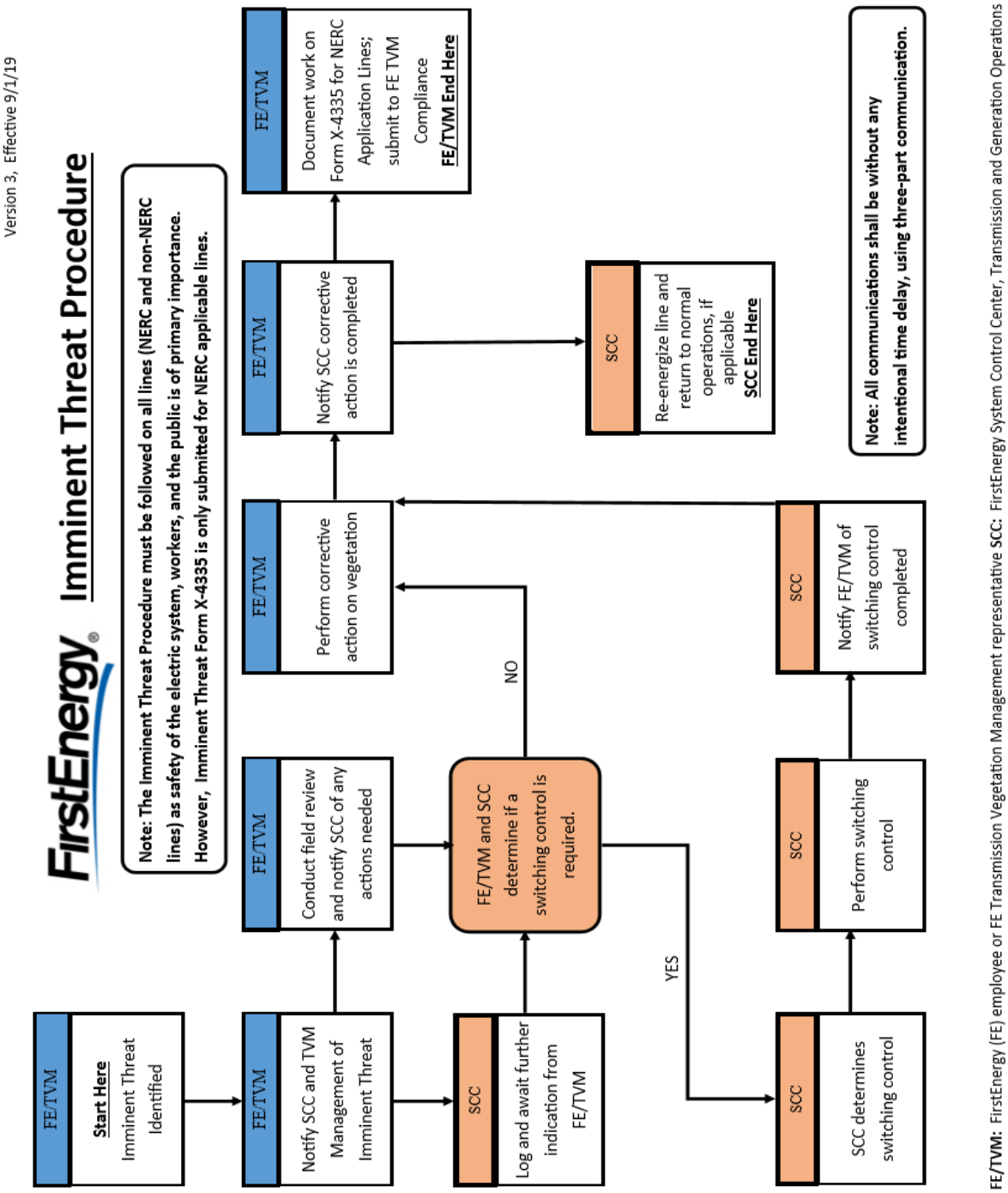
---

[17] The distances in this Table are the minimums required to prevent Flash-over; however prudent vegetation maintenance practices dictate that substantially greater distances will be achieved at time of vegetation maintenance.

[18] Where applicable lines are operated at nominal voltages other than those listed, the applicable Transmission Owner or applicable Generator Owner should use the maximum system voltage to determine the appropriate clearance for that line.

[19] The change in transient overvoltage factors in the calculations are the driver in the decrease in MVCDs for voltages of 345 kV and above. Refer to pp.29-31 in the Supplemental Materials for additional information.

Exhibit 2: Imminent Threat Procedure Flow Chart



V Additional Information

References

- ANSI-A300 – Part 1 American National Standard for Tree Care Operations – Tree, Shrub and Other Woody Plant Maintenance – Standard Practice - Pruning
- ANSI-A300 – Part 7 American National Standard for Tree Care Operations – Tree, Shrub and Other Woody Plant Maintenance – Standard Practice – (Integrated Vegetation Management a. Electric Utility Rights-of-Way)
- Best Management Practices – Integrated Vegetation Management – Companion Publication to ANSI A300 – Part 7
- ANSI-Z133.1 – American National Standard for Arboricultural Operations – Safety Requirements
- Standard FAC-003-4 – Transmission Vegetation Management Standard
- NESC – National Electrical Safety Code
- SCC-NOP-112 Vegetation Related Transmission Outages procedure

Compliance Monitoring Process

In accordance with NERC Reliability Standard FAC-003-4 Compliance Section C - 1.2 Evidence Retention, at a minimum, data or evidence records showing compliance with R1, R2, R3, R5, R6, and R7 are required to be retained for 3 calendar years. Data or evidence records showing compliance with R4 are required to be retained for the most recent 12 months of operator logs or most recent 3 months of voice recordings or transcripts of voice recordings. This data or evidence is required to be retained for the time period above, unless directed by the Compliance Enforcement Authority to retain specific evidence for a longer period of time.

However, in further consideration of the above requirements, data or evidence records shall be retained since the last audit conducted by ReliabilityFirst or if there are any additional legal holds and/or obligations to do so, whichever is longer.

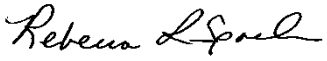
Review

FE TVM performs a periodic review of the FAC-003 Program Document. The periodic review is performed when substantive changes are required, but no more than every five years.

Revision History

Rev. No.	Date	Name	Comments/Change Description
0	6/30/14	Bill Boyd, Rebecca Spach and Katrina Schnobrich	The document was updated to be compliant with FAC-003-3. This version will be effective 07/01/2014.
1	7/28/14	Bill Boyd, Rebecca Spach and Katrina Schnobrich	Minor edit 7/28/14-removed non-pertinent words on page 11-no content change. No signatures required.
2	10/1/16	Rebecca Spach, Mark Contat, Shawn Standish, Katrina Schnobrich, Crystal Kenmuir	Modified to comply with FAC-003-4 new MVCD table, updated associated procedures/forms, updated language throughout
3	06/01/20	Rebecca Spach, Mark Contat, Shawn Standish, Crystal Kenmuir, Geoffrey Weyburne	Removed reference to specific facilities and added to RSAW, updated Imminent Threat Procedure and flowchart, added SCC-NOP-112 reference, removed 138kV IROL specific information throughout
4	03/17/21	Rebecca Spach, Mark Contat, Shawn Standish, Crystal Kenmuir, Geoffrey Weyburne	Amended Section G. Constraints to better explain FE target clearances and identify the three classifications of Mitigation Measures. Amended Section I. Annual Work Plan to clarify the need for Specialists to verify the creation of mitigation measures for adjustments to the annual work plan. Created a new Review Section that specifies the need to review this document at least every five years.

APPROVAL SIGNATURES:

Title	Signature	Date
General Manager, TVM		03/17/21
Director, Vegetation Management		03/17/21

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

APPLICATION OF MID-ATLANTIC INTERSTATE TRANSMISSION, LLC FILED PURSUANT TO 52. PA. CODE CHAPTER 57, SUBCHAPTER G, FOR APPROVAL OF THE SITING AND CONSTRUCTION OF THE EAST GERMANTOWN-GERMANTOWN 115 KILOVOLT TRANSMISSION LINE PROJECT IN MOUNT JOY, GERMANY AND UNION TOWNSHIPS, ADAMS COUNTY, PENNSYLVANIA	:	**DOCKET NO. A-2024-_____**

VERIFICATION

I, Mary Anderson, state that I am a Transmission Siting Supervisor at FirstEnergy Service Company; that I am authorized to make this Verification on behalf of Mid-Atlantic Interstate Transmission, LLC and that the facts set forth are true and correct to the best of my knowledge, information and belief. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. §4904 (relating to unsworn falsification to authorities).

July 3, 2024

Mary E. Anderson

Mary E. Anderson

STATEMENT NO. 1

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

APPLICATION OF MID-ATLANTIC INTERSTATE TRANSMISSION, LLC FILED PURSUANT TO 52 PA. CODE CHAPTER 57, SUBCHAPTER G, FOR APPROVAL OF THE SITING AND CONSTRUCTION OF THE EAST GERMANTOWN-GERMANTOWN 115 KILOVOLT TRANSMISSION LINE PROJECT LOCATED IN MOUNT JOY, GERMANY AND UNION TOWNSHIPS, ADAMS COUNTY, PENNSYLVANIA	**:**	**Docket No. A-2024-_____**

Direct Testimony
of
Mary E. Anderson

MAIT Statement No. 1

List of Topics Addressed

Introduction of Witnesses; Overview of Regulatory Requirements; Out-Reach to Public; and Public Comments

Dated: July 3, 2024

I. RESPONSIBILITIES, EXPERIENCE AND EDUCATION

Q. Please state your name and business address.

A. My name is Mary E. Anderson, and my business address is 76 South Main Street, Akron, Ohio 44308.

Q. By whom are you employed and in what capacity?

A. I am employed by FirstEnergy Service Company ("FESC") as Supervisor, Transmission Siting East. In that capacity, my primary responsibility is oversight of the siting of transmission facilities for the utility subsidiaries of FirstEnergy Corp. ("FirstEnergy") that provide service in Pennsylvania, Maryland, New Jersey, Virginia and West Virginia and obtaining necessary siting and other related approvals from the utility regulatory authorities in those states for transmission facilities.

Q. What are your current responsibilities?

A. My responsibilities generally consist of supervising a team of individuals responsible for siting new or modified existing transmission facilities, oversight of transmission line route selection studies performed by consultants, and development of associated regulatory filings.

Q. Please provide your educational background.

A. I graduated from Ashland University in 2012 with a Bachelor of Science Degree in Biology and Environmental Science.

Q. Please describe your professional experience.

A. I have been employed by FESC since September 2019. I was a Transmission Specialist III in Transmission Siting from September 2019 through July 2022. From July 2022 to present, I've been employed as the Supervisor for Transmission Siting East. Prior to working for FESC, I was employed by GPD Group as an Environmental Scientist from September 2012 through September 2019, where I supported FirstEnergy transmission line siting efforts as a contractor.

Q. **Have you testified previously before the Pennsylvania Public Utility Commission ("Commission") or other regulatory agencies?**

A. Yes. I provided written testimony to the Commission in the following docketed cases:

1. Mid-Atlantic Interstate Transmission, LLC's ("MAIT") Hunterstown-Orrtanna 115 Kilovolt ("kV") Transmission Line Project (Docket No. A-2021-3025450); and
2. Joint Letter Notification of MAIT and PPL Electric Utilities Corporation for the Martins Creek-Siegfried #2 230 kV Transmission Line Loop to Klecknersville 230 kV Substation Project and the associated Joint Petition of MAIT and Metropolitan Edison Company regarding the shelter control structures at the proposed Klecknersville substations (Consolidated Docket Nos. A-2022-3036551 and P-2022-3036554).

II. PURPOSE OF TESTIMONY

Q. On whose behalf are you providing this testimony?

A. I am testifying in support of MAIT's Application for approval to locate and construct the East Germantown-Germantown 115 kV Transmission Line Project ("Project").

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to provide an overview of the Project, describe my role in the siting process, provide an overview of the findings that the Commission is required to make to approve the siting of a high voltage ("HV") transmission line, and finally, to describe the public information outreach that MAIT conducted prior to selecting its proposed route for the Project.

III. INTRODUCTION OF OTHER WITNESSES

Q. Please identify the other witnesses who will be providing direct testimony on behalf of MAIT in this proceeding and the topics they address.

A. In addition to me, five other witnesses are submitting direct testimony on MAIT's behalf in support of its Application:

> **Melissa A. Smith (MAIT Statement No. 2)** is an engineer for the Engineering Services department for FESC. Ms. Smith will describe the proposed Project and the distribution facilities FirstEnergy Pennsylvania Electric Company ("FE PA") proposes, explain the electrical need for the Project, describe impact of load transfer from related distribution facilities, and describe distribution alternatives considered for the Project.

> **Lawrence P. Hozempa (MAIT Statement No. 3)** is the General Manager, Transmission Planning, for FESC. Mr. Hozempa will describe the electrical need for the Project, the alternatives to the

Project that were considered, the FE Transmission Load Connection Process, the PJM Interconnection, LLC regional transmission expansion planning process as well as the electromagnetic field ("EMF") calculations.

Barry A. Baker (MAIT Statement No. 4) is the Vice President and Eastern United States Regional Practice Lead for the Environmental Planning & Permitting Practice of AECOM. Mr. Baker will describe the principal elements of MAIT's siting analysis, explain how the environmental assessment was conducted, and discuss the reasons why the proposed route was selected.

Lisa Marinelli (MAIT Statement No. 5) is a Senior Real Estate Representative in Right of Way Services for FESC. Ms. Marinelli will explain the process by which easements and other land rights were acquired for the Project.

Morgan Meehan (MAIT Statement No. 6) is a Supervisor, Transmission Design for FESC. Ms. Meehan will describe the design and engineering for the Project and how the Project will be constructed. Ms. Meehan will also describe MAIT's plans for operating and maintaining the proposed transmission line after it is constructed, including removing and controlling vegetation.

Each of these witnesses is also sponsoring various exhibits that accompany the Application, as identified in their respective written direct testimonies.

IV. APPLICATION

Q. Please describe MAIT.

A. MAIT is a Pennsylvania public utility that was issued a Certificate of Public Convenience pursuant to the Commission's final order entered on August 24, 2016, at Docket Nos. A-2015-2488903 *et al*. Accordingly, the Commission has already found and determined that MAIT has the technical, financial, and legal fitness to own and operate transmission facilities and to provide transmission service in Pennsylvania.

Q. What is your role with regard to the Project?

A. I am responsible for coordinating MAIT's efforts to obtain the Commission's approval to locate and construct the Project. In that role, I provided input and overall coordination regarding the Transmission Line Route Selection Study and MAIT's Application. I will also act as MAIT's lead technical representative throughout the regulatory process for obtaining siting approval.

Q. Are you sponsoring any exhibits associated with your direct testimony?

A. Yes. I am sponsoring MAIT Exhibits 1 and 2, which are attached to my testimony.

Q. Do you have final decision-making authority for the Project?

A. No. Final decision-making authority for the Project lies with MAIT's management. My role is to assess issues and formulate recommendations for executive review and approval, and to implement management's decisions and guidance. As such, I am responsible for identifying issues that require management's prior approval, presenting those issues to management, answering questions from management, and executing management's decisions and directions. For this Project, I was the project lead in charge of preparing the Application and presenting it for management's authorization. Once MAIT's management approved the filing of the Application, I became responsible for serving as MAIT's lead representative to the Commission throughout the regulatory process.

Q. What are the fundamental requirements an applicant must satisfy to obtain siting approval for an HV transmission line?

A. The Commission's regulations at 52 Pa. Code § 57.71 require prior Commission approval to locate and construct an HV (greater than 100 kV) transmission line. To obtain such approval, an applicant must file an application that contains the information specified in 52 Pa. Code § 57.72 and must serve the application or provide the requisite notice of its filing as specified in 52 Pa. Code § 57.74. In order to grant approval to locate and construct an HV transmission line, the Commission must make four findings, as set forth in 52 Pa. Code § 57.76:

(1) That there is a need for the line.
(2) That it will not create an unreasonable risk of danger to the health and safety of the public.
(3) That it is in compliance with applicable statutes and regulations providing for the protection of the natural resources of this Commonwealth.
(4) That it will have minimum adverse environmental impact, considering the electric power needs of the public, the state of available technology and the available alternatives.

Q. Do MAIT's Application and its accompanying exhibits and direct testimony include the information required by the Commission's regulations and needed by the Commission to make the findings and determinations required by its regulations?

A. Yes, they do. MAIT's Application and its accompanying direct testimony and supporting exhibits provide the information specified in the Commission's regulations and provide evidence that will support all of the findings required by 52 Pa. Code § 57.76. As explained in the Application, MAIT has also satisfied all service and notice requirements imposed by the Commission's regulations.

Q. Do MAIT's Application and the accompanying exhibits and direct testimony demonstrate that the proposed Project is in the public interest and should be approved?

A. Yes.

V. PUBLIC INFORMATION

Q. Did MAIT hold public information meetings for the Project?

A. Yes. MAIT held a virtual public information meeting ("Virtual Open House") for the Project area from May 1, 2022 through May 30, 2022. Landowners, public officials, and the general public were invited to attend to learn about the need for the Project; the alternative line routes that were studied; MAIT's construction, engineering, tree clearing and maintenance practices; MAIT's approach to negotiating with landowners to obtain necessary rights-of-way ("ROW"); and the environmental impacts of the Project. Landowners and the public were also given the opportunity to comment on the Project.

Q. How were landowners informed of the public information meeting?

A. On April 26, 2022, MAIT mailed letters to those landowners owning properties that would be crossed by the alternative routes studied for the Project. These letters informed the landowners of the Project and provided instructions on how to access the Virtual Open House platform. In addition, the letters were accompanied by a fact sheet setting forth relevant facts about the Project. Aa copy of the fact sheet is attached to my testimony as MAIT Exhibit 1.

Q. How were public officials notified of the public information meeting?

A. FirstEnergy's External Affairs Manager for Adams County provided notice by telephone, electronic mail, and United States mail to public officials in the county and townships that are within the Project area. These public officials were notified of the dates of the Virtual Open House. In addition, the External Affairs Manager provided the public officials with a copy of the fact sheet for the Project.

Q. How was the general public informed of the public information meeting?

A. A Notice of Proposed Utility Facility was published in The Gettysburg Times and the Hanover Evening Sun on November 15, 2022, notifying the general public of the Project. I have provided a copy of the proof of publication for the public information meeting as MAIT Exhibit 2.

Q. Did MAIT consider the comments received from landowners, public officials and the general public as part of the siting process?

A. Yes, it did. The comments MAIT received were evaluated and addressed as part of the siting process.

Q. Has there been any further communication with landowners since the public information meeting?

A. Ongoing communication with landowners will be discussed in MAIT Statement No. 5 by Lisa Marinelli.

Q. Does this conclude your direct testimony?

A. Yes, it does. However, I reserve the right to file such additional testimony or exhibits as may be necessary or appropriate.

STATEMENT NO. 2

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

APPLICATION OF MID-ATLANTIC INTERSTATE TRANSMISSION, LLC FILED PURSUANT TO 52 PA. CODE CHAPTER 57, SUBCHAPTER G, FOR APPROVAL OF THE SITING AND CONSTRUCTION OF THE EAST GERMANTOWN-GERMANTOWN 115 KILOVOLT TRANSMISSION LINE PROJECT LOCATED IN MOUNT JOY, GERMANY AND UNION TOWNSHIPS, ADAMS COUNTY, PENNSYLVANIA	**:**	**Docket No. A-2024-_____**

Direct Testimony
of
Melissa A. Smith

MAIT Statement No. 2

List of Topics Addressed

Distribution Need for the Project; Proposed Distribution Facilities; and Distribution Alternatives Considered

Dated: July 3, 2024

I. RESPONSIBILITIES, EXPERIENCE AND EDUCATION

Q. Please state your name and business address.

A. My name is Melissa A. Smith, and my business address is 2800 Pottsville Pike, Reading, Pennsylvania 19605.

Q. By whom are you employed and in what capacity?

A. I am employed by FirstEnergy Service Company ("FESC") as an Engineer for Engineering Services for PA Planning & Protection.

Q. Please provide a summary of your education and professional work experience.

A. I received a Bachelor of Science Degree in Electrical Engineering from Penn State University. My professional experience began in 2003, and my professional experience with the former Met-Ed, now FirstEnergy Pennsylvania Electric Company ("FE PA"), began in 2017 as a distribution planning and protection engineer.

Q. Have you previously testified in public utility commission proceedings or other regulatory agencies?

A. No, I have not testified before the Pennsylvania Public Utility Commission or other regulatory agencies.

II. PURPOSE OF TESTIMONY

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to describe the electrical need for the East Germantown-Germantown 115 kilovolt ("kV") Transmission Line Project ("Project"). On behalf of Mid-Atlantic Interstate Transmission, LLC ("MAIT"), I will:

- Describe the Project in general terms and the associated electric distribution facilities FE PA plans to construct;
- Explain the electrical need for the Project from a distribution perspective;
- Describe need for the proposed FE PA-owned 115 kV-13.2 kV East Germantown Mod Substation ("East Germantown Substation") facilities; and,
- Describe the alternatives considered from the perspective of electric distribution planning.

Although I will describe the distribution substation and facilities, the details of the specific transmission route proposed by MAIT for the Project are described and supported by MAIT witness Lawrence P. Hozempa in his direct testimony (MAIT Statement No. 3).

Q. Please describe FE PA's involvement with the MAIT application.

A. FE PA has requested MAIT to provide 115 kV transmission service to the proposed East Germantown Substation.

Q. Please identify and describe the exhibits you are sponsoring and summarize the contents of those exhibits.

A. I am sponsoring two exhibits with my direct testimony:

- MAIT Exhibit 3 is a one-line diagram overview of the proposed FE PA East Germantown Substation; and
- MAIT Exhibit 4 is an overview of the service areas for the proposed FE PA East Germantown distribution circuits.

III. PROJECT OVERVIEW AND NEED

Q. Please describe the project from an electrical perspective.

A. The proposed Project involves construction of a new single circuit 115 kV transmission line. The contemplated transmission line will be approximately 3.5 miles long, extending from the existing MAIT and FE PA jointly-owned Germantown 115 kV Substation to the new FE PA-owned distribution East Germantown Substation, which is located east of the Germantown Substation. The East Germantown Substation will have one 22 MVA nameplate transformer with two 13.2 kV distribution circuits to support existing load in the Germantown Substation service area.

Q. Please explain why FE PA requested 115 kV service from MAIT.

A. FE PA needs to increase capacity to support the load in the area on the existing distribution system. A new distribution-level 115kV-13.2 kV Mod Substation will provide the necessary capacity to serve the customer load in the area east of the existing MAIT-owned Germantown Substation.

Q. Please describe the electrical need for the project.

A. Germantown Substation distribution Bank #2 ("Germantown Bank #2") exceeded the transformer overload and moderate loss of life rating starting in 2018 based on load data. Germantown Bank 2 is projected to exceed the moderate loss of life rating during summer months, which is when peak loading typically occurs. Without the added substation facilities, the area served by the Germantown Substation will continue to risk overload situations under current and future load, which strains the equipment and degrades the life of the transformer. The proposed Project includes a new 115 kV transmission line extending from the existing Germantown Substation approximately 3.5 miles east to the proposed East Germantown Substation. By adding the new transformer and two additional 13.2 kV sources at the East Germantown Substation, the current load on Germantown Bank #2 will be relieved. The new distribution circuits will provide greater switching flexibility, greater reliability, and greater source diversity in the area. The Project will also provide additional capacity to help support potential new customers in the area.

Q. Explain in further detail the possible impacts of the overload scenario.

A. When a transformer is overloaded, exceeding the moderate loss of life rating, we risk transformer degradation and premature failure. There is limited switching capacity in the Germantown area. At summer peak, when the transformer is at the greatest risk of failure, no distribution lines would be able to pick up the existing customer load on this substation. If this transformer fails, there is the risk of an outage for about 3,246 customers until the mobile substation is installed (best case 48-hour installation time). Under the existing

transformer overloading condition, there is also the risk the of being unable to serve any new load in the area, which will prohibit economic growth. Germantown Bank #2 feeds both the primary and secondary feed of the Germany AEC delivery points. Loss of the Germantown transformer would be a permanent loss of the source to the AEC Germany delivery points.

Q. Is load growth a factor driving the need for the project?

A. Although there is gradual area load growth, the primary driver for this Project is relieving the current load at Germantown Substation distribution Bank #2 by transferring it to East Germantown Substation. Future gradual increase in load demand will further exacerbate transformer overload and degradation.

Q. Are any of the loads served by the distribution facilities to be transferred considered to be critical customers?

A. Yes. There are several critical customers currently served by the existing distribution facilities that will be transferred to the new East Germantown Substation facilities, including York Hospital facilities, Adams County emergency facilities, Littlestown Borough facilities such as the pumpstations, a U.S. Post Office branch location, the YMCA, and Germany Township offices.

Q. Have you quantified the anticipated reliability benefits that the project would create?

A. There is a potential for outage for approximately 3,200 customers (all customers on the existing Germantown Substation transformer) with the loss of the Germantown Bank #2

transformer until a mobile substation is installed. This would result in a collective interruption of approximately 1,558,000 customer minutes for the loss of the transformer (assuming an 8-hour outage for an available mobile installation). If a mobile substation is not available, however, this outage might extend to (or exceed) 48 hours.

Summarized below are the System Average Interruption Duration Index ("SAIDI"), System Average Interruption Frequency Index ("SAIFI"), and Customer Average Interruption Duration Index ("CAIDI") impacts relative to the Commission's benchmarks for this type of outage. These reliability calculations are based on all approximately 3,200 customers being out of service for 8 hours. Eight hours is a standard duration used to calculate the reliability metrics. If the outage is longer than 8 hours, anticipated at 48 hours due to the dependency on the availability and time to install a mobile substation, I would anticipate these metrics to worsen.

	Benchmark	**Outage Impact**	**Effect on Otherwise Benchmark Performance**
SAIDI	138	2.73	135.0
SAIFI	1.16	0.01	1.15
CAIDI	119	2.17	117.4

IV. ALTERNATIVES CONSIDERED

Q. Were electrical alternatives on the distribution system considered?

A. Yes, the Company explored upgrading the existing Germantown transformer, but the limit of 27 MVA is already exceeded at the existing Germantown Substation. Its standard size transformers are not large enough to cover the load. This solution would not address the limited circuit ties in this area. The Company also considered adding an additional

transformer at the existing Germantown Substation. Within that facility's existing footprint and layout, an additional transformer would not fit, and there would be no way to feed any other distribution circuits out of Germantown substation without triple circuiting the existing distribution poles along the road out of the substation. Triple circuiting is a reliability concern because of the potential of an outage for all three circuits in the event of a car pole accident or equipment failure. There are also safety concerns working on a triple circuit that would require an outage for all three circuits for maintenance or repairs. Lastly, transferring load to nearby adjacent substation circuits was also considered but determined to be unfeasible. Large distribution circuit customer counts, long circuits, and existing loading prevent the addition of more load to the adjacent circuits and substations. The details of alternatives considered at the transmission level by MAIT are described and supported by Mr. Hozempa in his direct testimony (MAIT Statement No. 3).

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does. However, I reserve the right to file such additional testimony as may be necessary or appropriate.

STATEMENT NO. 3

MAIT Statement No. 3

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

APPLICATION OF MID-ATLANTIC INTERSTATE TRANSMISSION, LLC FILED PURSUANT TO 52 PA. CODE CHAPTER 57, SUBCHAPTER G, FOR APPROVAL OF THE SITING AND CONSTRUCTION OF THE EAST GERMANTOWN-GERMANTOWN 115 KILOVOLT TRANSMISSION LINE PROJECT LOCATED IN MOUNT JOY, GERMANY AND UNION TOWNSHIPS, ADAMS COUNTY, PENNSYLVANIA	**:**	**Docket No. A-2024-_____**

Direct Testimony
of
Lawrence A. Hozempa

MAIT Statement No. 3

List of Topics Addressed

Project Need, PJM Interconnection Process, Transmission Alternatives Considered and Electromagnetic Field ("EMF") Information

Dated: July 3, 2024

I. RESPONSIBILITIES, EXPERIENCE AND EDUCATION

Q. Please state your name and business address.

A. My name is Lawrence A. Hozempa and my business address is 1910 West Market Street, Akron, Ohio 44313.

Q. By whom are you employed and in what capacity?

A. I am employed by FirstEnergy Service Company ("FESC") as the General Manager, Planning in the Transmission Planning and Protection department. In this proceeding, I am testifying on behalf of Mid-Atlantic Interstate Transmission, LLC ("MAIT").

Q. Please provide a summary of your education and professional work experience.

A. I received a Bachelor of Science Degree in Electrical Engineering from the Pennsylvania State University. I am a registered Professional Engineer in the Commonwealths of Pennsylvania and Virginia, and in the states of Maryland, New Jersey and West Virginia. My professional experience includes distribution planning, distribution operations and maintenance, and transmission planning and operations. My professional experience began in 1987 as an Engineer for the West Penn Power Company ("West Penn"). During the merger and reorganization of West Penn with Allegheny Power Service Corporation ("Allegheny Power") in 1996, I was assigned to the Planning department as an Engineer with responsibilities for several service centers located in the Northern Region of Allegheny Power's service territory. I moved into the Transmission Planning group of Allegheny Power in 2000 where I was responsible for planning the company's electric transmission system for southwestern Pennsylvania. In 2004, I was named Service &

Design Manager in the Jeannette Region. In 2005, I returned to the Transmission Planning group as a Senior Engineer with the responsibility for planning the company's extra high voltage system, and while in the group I was promoted to Consulting Engineer in 2008. After the merger with FirstEnergy Corp. ("FirstEnergy") was completed in 2011, I was named Supervisor of the Transmission Planning and Protection group. In 2015, I was promoted to Manager of Transmission Planning followed by a promotion to Manager of Transmission Operations in the FirstEnergy South Transmission Operations Control Center in 2016. In 2018, I was promoted to my current role of General Manager, Planning, with responsibilities including the oversight of transmission network planning activities. My education, experience and qualifications are fully set forth in Appendix A to my testimony.

Q. Have you previously testified in public utility commission proceedings or other regulatory agencies?

A. Yes, I have testified before the Commission in the proceedings at Docket Nos. A-110172, A-110172F0002, A-110172F0003, A-110172F0004, and G-00071229, in support of the need for the Trans Allegheny Interstate Line and the Prexy facilities in 2007. I have also testified before the Commission in the proceeding at Docket No. A-2021-3025450 in support of the need to construct the Hunterstown-Orrtanna 115 kV transmission line. In addition, I have testified before the Federal Energy Regulatory Commission and other state regulatory agencies as listed in Appendix A.

II. PURPOSE OF TESTIMONY

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to describe the electrical need for the East Germantown-Germantown 115 kilovolt ("kV") Transmission Line Project ("Project"). On behalf of MAIT, I will:

- Describe the Project;
- Explain the electrical need for the Project from a transmission perspective;
- Describe the PJM Interconnection, LLC ("PJM") regional transmission expansion planning process; and
- Describe the Company's electromagnetic field ("EMF") mitigation procedures that will be utilized along the proposed transmission line.

Although I will describe the general route of the transmission facilities that will be constructed as a part of the Project, the details of the specific route proposed by MAIT, along with the alternative routes considered, are described and supported by MAIT witness Barry A. Baker in his direct testimony (MAIT Statement No. 4).

Q. Please identify and describe the exhibits you are sponsoring and summarize the contents of those exhibits.

A. I am sponsoring the following exhibits with my direct testimony:

- **MAIT Exhibit 5** is a map of the existing MAIT transmission system in the Project area;
- **MAIT Exhibit 6** is a map of the proposed MAIT transmission system in the Project area;

- **MAIT Exhibit 7** is the Need slide from the PJM April 16, 2020 Subregional Transmission Expansion Plan ("RTEP") Committee Mid-Atlantic meeting, where the need for the Project was presented;
- **MAIT Exhibit 8** is the Solution slide from the PJM November 18, 2020 Subregional RTEP Committee Mid-Atlantic meeting;
- **MAIT Exhibit 9** is a graph noting Electric Field Calculations under normal loading for the proposed Project when it parallels the existing 500 kV circuit; and,
- **MAIT Exhibit 10** is a graph noting Magnetic Field Calculations under normal loading for the proposed Project when it parallels the existing 500 kV circuit.
- **MAIT Exhibit 11** is a graph noting Electric Field Calculations under normal loading for the proposed Project when it is the only line present in the right-of-way ("ROW"); and
- **MAIT Exhibit 12** is a graph noting Magnetic Field Calculations under normal loading for the proposed Project when it is the only line present in the ROW.

III. PROJECT OVERVIEW AND NEED

Q. Please describe the Project from an electrical perspective.

A. The proposed Project involves construction of a new single circuit 115 kV transmission line. The proposed transmission line will be approximately 3.5 miles long, extending from the existing Germantown Substation[1], to a new FirstEnergy Pennsylvania Electric Company ("FE PA") distribution substation in the East Germantown area. The new 115

[1] The existing Germantown Substation is jointly owned by MAIT and FE PA.

kV transmission line will be constructed using 795 aluminum conductor steel reinforced ("ACSR") conductors. MAIT Exhibit 5 depicts the existing transmission system in the Project Area whereas MAIT Exhibit 6 depicts the proposed transmission system in the Project Area upon completion of the Project.

Q. Please explain why MAIT is proposing the project.

A. The Project is required to address a specific request from FE PA to provide transmission service to a new distribution substation that will be constructed in the East Germantown area. MAIT has a duty to serve customers in need of transmission service.[2] The proposed Project is necessary to provide a transmission source to the proposed East Germantown Substation by constructing a new transmission line from an existing transmission facility (i.e., the Germantown Substation) that is closest in proximity to the proposed East Germantown Substation other than the Conastone–Hunterstown 500 kV Line. The Conastone–Hunterstown 500 kV Line is not a practical or reasonable alternative to provide transmission service to the East Germantown Substation. The 500 kV transmission system is considered the backbone of the transmission system and is not used to provide transmission service to distribution substations.

Q. Please describe the electrical need for the project.

A. The details of the electrical need for the Project are described and supported by MAIT witness Melissa A. Smith in her direct testimony (MAIT Statement No. 2).

[2] *See* PJM Open Access Transmission Tarriff, Part III, available at https://www.pjm.com/directory/merged-tariffs/oatt.pdf.

Q. Please describe the methodology used by MAIT in assessing its transmission facilities.

A. As previously mentioned, MAIT is proposing the Project in order to comply with its duty to serve a customer's request to connect to the transmission system. Transmission load connections are studied by MAIT in accordance with FirstEnergy's Transmission Load Connection Process and the Transmission Planning Criteria. Assessment of the load connection did not result in any planning criteria violations.

Q. Were any planning criteria violations identified when performing planning assessments?

A. No. Where, as here, a customer requests connection to the transmission system, MAIT performs assessments of all transmission load connection requests prior to submitting the project to PJM. MAIT's assessment for the proposed Project did not result in any planning criteria violations. PJM performs a No Harm Analysis on all Supplemental Projects to identify planning criteria violations that may develop as a result of the project. The East Germantown-Germantown 115 kV Transmission Line Project connection to FE PA's proposed East Germantown Substation did not result in any North American Electric Reliability Corporation ("NERC"), PJM, or FirstEnergy planning criteria violations.

Q. Were electrical alternatives to the project considered?

A. Yes, other electrical alternatives were considered but determined to be not feasible or reasonable. The Germantown Substation is geographically the closest transmission substation located approximately 3.0 miles directly west of the proposed FE PA East

Germantown Substation. There are no other transmission facilities that would provide a feasible alternative. The proposed East Germantown Substation is located directly adjacent to the existing Conastone-Hunterstown 500 kV Transmission Line. However, customers are not served directly from the 500 kV transmission system. This would require building a substation that would step the voltage down from 500 kV to 115 kV in order to provide the requisite 115 kV source to the East Germantown Substation. The increased cost for this alternative would be substantially greater than the proposed Project and, therefore, is not considered a feasible alternative.

The details of alternatives considered at the distribution level by FE PA are described and supported by MAIT witness Melissa A. Smith in her direct testimony (MAIT Statement No. 2).

IV. THE PJM PLANNING PROCESS

Q. Please describe PJM's role in planning for the project.

A. PJM, in its capacity as the regional planning coordinator, transmission planner and transmission operator, identifies the need and timing for mandatory transmission system upgrades as part of the reliability planning, economic planning, and interconnection planning processes to preserve the reliability of the electricity grid that is under its operational control as the regional transmission organization. The PJM planning process is an 18-month cycle starting in September of every calendar year. The process ultimately produces a PJM Board-approved RTEP 18 months later (in February). The RTEP identifies transmission system upgrades and enhancements to provide for the operational, economic, and reliability requirements of PJM customers. The RTEP consists of system

upgrades produced from one or more of four planning processes: reliability planning, economic planning, interconnection planning, and local planning.

Supplemental projects are upgrades initiated by a transmission owner ("TO") and are part of the local planning process. In accordance with Attachment M-3 of its PJM Open Access Transmission Tariff ("OATT'), FirstEnergy provides information regarding the criteria used to plan and identify supplemental projects at an assumptions meeting. The process for developing supplemental projects includes identification and review of system needs at a separate needs meeting and provides an opportunity for stakeholders to comment. Next, there is a solutions meeting where potential solutions are discussed, and any alternatives are identified. Stakeholders may then provide comments on the potential solutions.

Q. Please describe supplemental project upgrades.

A. FirstEnergy supplemental project upgrades are typically: (i) a request for electric service from new or existing customers; and/or, (ii) a project identified pursuant to FirstEnergy's Reliability Enhancement methodology. This methodology and any identified projects are presented to PJM and its stakeholders in accordance with the PJM OATT, Attachment M-3. MAIT projects, like the proposed Project, are presented at the PJM Sub Regional RTEP Committee - Mid-Atlantic meetings, which occur monthly. Supplemental project upgrades that have been reviewed through the Attachment M-3 process are identified with an "s" followed by a four-digit number.

Q. Are supplemental project upgrades mandated by PJM?

A. Supplemental project upgrades are not mandated or directed by PJM but are necessary in order to address planning functions not transferred to PJM (e.g., asset management and customer interconnections). These projects reflect the TOs' obligation to reliably serve its local service territory and are grounded in Good Utility Practice[3].

Q. Has PJM included the Project in its RTEP?

A. Yes. The Project need was subsequently presented to PJM on April 16, 2020 (MAIT Exhibit 7), with the solution being presented on November 18, 2020 (MAIT Exhibit 8). It has since been assigned upgrade ID s2409.

Q. Was the proposed project part of the PJM competitive planning process?

A. No. PJM supplemental projects do not take part in the PJM competitive planning process. However, MAIT does have a resource strategy to ensure project costs are competitive. Major projects are competitively bid. Smaller projects are assigned to MAIT's Contractor of Choice with pre-negotiated terms and rates. For example, transmission line projects with an estimated cost of over $5M will be competitively bid. If the cost is less than $5M, the project will be assigned to MAIT's Contractor of Choice.

[3] Good Utility Practice is defined in the PJM Operating Agreement, available at https://agreements.pjm.com/oa/18380.

V. ELECTROMAGNETIC FIELD STUDY

Q. Please describe MAIT's procedures to mitigate EMF along the proposed East Germantown-Germantown 115 kV transmission line.

A. MAIT's typical transmission line route selection process, which was employed on this Project, evaluates a number of factors to identify the appropriate location for the proposed Project. This evaluation process includes identifying and considering residences and locations where large groups of people typically gather, such as schools and places of worship. Although locating the transmission line in close proximity to these types of land uses is not precluded by state or federal rules or guidelines, providing the largest practical distance from residences, schools, places of worship and similar facilities is generally more acceptable to the local community and is an effective way to mitigate EMF.

Q. Does the project utilize specific design features to reduce EMF strength?

A. Yes. As part of MAIT's approach to efficiently construct a transmission line project, the design of all or portions of a transmission line project will typically utilize a compact conductor arrangement. This has the added benefit of reducing electric and magnetic field strengths.

Q. Did MAIT prepare an EMF study as a part of this Project?

A. As a point of reference, the Company is providing estimates of the electric and magnetic field strengths for the Project. The estimates have been prepared utilizing the Electric Power Research Institute's EMF Workstation 2015 software program ("Program"). The Program relies on the law of Biot-Savart, an equation describing the magnetic field

generated by a constant electric current. The law relates the magnetic field to the magnitude, direction, length, and proximity of the electric current. The electric and magnetic field strengths directly beneath the centerline at mid-span of the 115 kV transmission line and at the edges of the ROW for the transmission lines within a shared 275-foot ROW with the Conastone-Hunterstown 500 kV Transmission Line have been estimated for the normal maximum load of both transmission lines and are provided in Table 1 below. Typical structures, conductor arrangements, and average span lengths of sections of the transmission lines that are greater than one mile in length have been modeled and are reported in Table 1. The typical structures for the Conastone-Hunterstown 500 kV Transmission Line used in the model for calculations is a tangent 500 kV steel lattice tower with an average span length of 1,270 feet and the average conductor height of 118 feet from ground at the structure, with a conductor sag of 31 feet. The typical structures for the East Germantown-Germantown 115 kV Transmission Line are a 115 kV tangent wood H-frame with an average span length of 465 feet and the average conductor height of 65 feet from ground at the structure, with a conductor sag of 23 feet. The model used a separation of 125 feet between the 500 kV and 115 kV structures. Graphs of the electric and magnetic field calculations are attached as MAIT Exhibits 9 and 10.

Table 1: Electric and Magnetic Field Calculations: H-Frame Tangent to H-Frame Tangent

EMF CALCULATIONS		Electric Field kV/meter	Magnetic Field mGauss
Conastone-Hunterstown 500 kV Transmission Line	Under Lowest Conductors	1.309	52.92
East Germantown-Germantown 115 kV Transmission Line	At Right-of-Way Edge	0.575 / 0.98	15.31 / 25.65

The electric and magnetic field strengths directly beneath the centerline at mid-span and at the edges of the ROW for the 115 kV transmission line within a 120-foot ROW have been estimated for the normal maximum load of the transmission line and are provided in Table 2 below. Typical structures, conductor arrangements, and average span lengths of sections of the transmission lines that are greater than one mile in length have been modeled and are reported in Table 2. Graphs of the electric and magnetic field calculations are attached as MAIT Exhibits 11 and 12.

Table 2: Electric and Magnetic Field Calculations: H-Frame Tangent to H-Frame Tangent

EMF CALCULATIONS		Electric Field kV/meter	Magnetic Field mGauss
East Germantown-Germantown 115 kV Transmission Line	Under Lowest Conductors	0.609	8.72
	At Right-of-Way Edge	0.326 / 0.328	2.98

Q. Does this conclude your direct testimony?

A. Yes, it does. However, I reserve the right to file such additional testimony as may be necessary or appropriate.

Appendix A

LAWRENCE (LARRE) ANTHONY HOZEMPA

76 S. Main Street, Akron, OH 44308| 330.384.5231 | lhozemp@firstenergycorp.com

EDUCATION

The Pennsylvania State University, University Park, PA

B.S. in Electrical Engineering **1986**

PROFESSIONAL ENGINEERING LICENSES

State of Maryland (35630)	June 2008 – Present
State of New Jersey (24GE05204100)	March 2015 – Present
Commonwealth of Pennsylvania (PE055087E)	Sept 1999 – Present
Commonwealth of Virginia (0402043567)	June 2007 – Present
State of West Virginia (017150)	March 2007 – Present

PROFESSIONAL MEMBERHIPS

IEEE Power & Energy Society July 2021 – Present

ENGINEERING EXPERIENCE

FirstEnergy Service Company 76 South Main Street, Akron, OH 44308

General Manager, Planning **2018-Present**

Oversee the network planning activities of the Transmission Planning department. Coordinate transmission projects and programs with other departments and the regions to insure transmission reliability and resiliency is improved. Interact with PJM Interconnection, LLC and other regulatory agencies to exchange information on the state of the transmission system and planned enhancements to the transmission system.

FirstEnergy Service Company 76 South Main Street, Akron, OH 44308

Manager, Transmission Operations, System Operations-South **2016-2018**

Manage the operation of the transmission and sub-transmission systems for the Monongahela Power Company, The Potomac Edison Company, and the West Penn Power Company regions within the FirstEnergy footprint. Oversee coordination of the operation of the transmission system with PJM, neighboring control areas and regional personnel. Insure Transmission System Operators are knowledgeable of and follow FirstEnergy, PJM, and NERC procedures.

FirstEnergy Service Company 76 South Main Street, Akron, OH 44308

Manager, Transmission Planning **2015-2016**

Manage the transmission planning function for the Jersey Central Power & Light, Monongahela Power Company, and The Potomac Edison Company regions. Provide technical guidance to staff engineers. Coordinate the planning function with regional and corporate personnel. Write and review reports on planning studies including generation interconnection studies, load connection studies, and annual transmission system assessments. Provide written and oral testimony as necessary to support transmission projects. Meet with public, government officials, and regulators to support transmission projects.

FirstEnergy Service Company 76 South Main Street, Akron, OH 44308
Supervisor, Transmission Planning and Protection **2011-2015**
Supervise the transmission planning function for the Jersey Central Power & Light, Monongahela Power Company, and The Potomac Edison Company regions. Provide technical guidance to staff engineers. Coordinate the planning function with regional and corporate personnel. Write and review reports on planning studies including generation interconnection studies, load connection studies, and annual transmission system assessments. Provide written and oral testimony as necessary to support transmission projects. Meet with public, government officials, and regulators to support transmission projects.

Allegheny Power Service Company 800 Cabin Hill Drive, Greensburg, PA 15601
Senior Engineer / Consulting Engineer **2005-2011**
Performed planning studies on the EHV and transmission system in the Allegheny Power transmission zone. Member of the Reactive Support / Voltage Profile Task Force at PJM Interconnection, LLC. Major projects: Provided technical studies and testimony to support the Trans-Allegheny Interstate Line (TrAIL) and the Potomac Appalachian Transmission Highline (PATH) including meeting with the public, government officials, and regulators; preparing written testimony and exhibits; and providing oral testimony during the court proceedings.

Allegheny Power Service Company 800 Cabin Hill Drive, Greensburg, PA 15601
Service & Design Manager **2004-2005**
Managed 12 Lines Engineering Designers in the Jeannette Operations Region. Supervised engineering for new service, rehabilitation work, and upgrades and reinforcements to the distribution and subtransmission lines. Prepared the capital and operations budgets, had oversight for manpower allocation, managed process improvements, and reviewed audit controls.

Allegheny Power Service Company 800 Cabin Hill Drive, Greensburg, PA 15601
Engineer, Planning **2000-2004**
Performed planning studies on the transmission system in southwestern Pennsylvania. Performed generation interconnection studies including coordination of planning studies with PJM Interconnection, LLC. Major projects: generation interconnection studies for Allegheny Energy Supply, Dominion Resources, and Duke Energy North America.

Allegheny Power Service Company 800 Cabin Hill Drive, Greensburg, PA 15601
Engineer, Planning **1996-2000**
Performed planning studies and overcurrent protection coordination on the distribution system. Prepared capital and operations budgets for division work.

West Penn Power Company 800 Cabin Hill Drive, Greensburg, PA 15601
Engineer, Division Planning **1987-1996**
Responsible for planning studies and overcurrent protection coordination on the distribution system. Major projects: Cheswick substation rebuild, 4 kV to 12 kV conversions in Natrona Heights, Cheswick and Springdale, installation of 138-12 kV substations in North Washington, Ethel Springs, and Silverville

TESTIMONY AND PROCEEDINGS

Docket No. ER02-136 before the Federal Energy Regulatory Commission
Provided written and oral testimony on behalf of Allegheny Power before the Federal Energy Regulatory Commission regarding the direct assigned facilities charges to Allegheny Electric Cooperative. 2002

Case No. 07-0508-E-CN before the Public Service Commission of West Virginia
Provided written and oral testimony on behalf of Trans Allegheny Interstate Line Company before the Public Service Commission of West Virginia to support the need for the Trans Allegheny Interstate Line. 2007

Case No. PUE-2007-00033 before the State Corporation Commission of Virginia
Provided written and oral testimony on behalf of Trans Allegheny Interstate Line Company before the State Corporation Commission of Virginia to support the need for the Trans Allegheny Interstate Line. 2007

Docket Nos. A-110172, A-110172F0002, A-110172F0003, A-110172F0004, and G-00071229 before the Pennsylvania Public Utility Commission
Provided written and oral testimony on behalf of Trans Allegheny Interstate Line Company before the Public Utility Commission of Pennsylvania to support the need for the Trans Allegheny Interstate Line and the Prexy facilities. 2007

Case No. PUE-2009-00043 before the State Corporation Commission of Virginia
Provided written testimony on behalf of PATH Allegheny Virginia Transmission Corporation before the State Corporation Commission of Virginia to support the need for the Potomac Appalachian Transmission Highline. 2009

Case No. 09-0770-E-CN before the Public Service Commission of West Virginia
Provided written testimony on behalf of PATH West Virginia Transmission Company and PATH Allegheny Transmission Company before the Public Service Commission of West Virginia to support the need for the Potomac Appalachian Transmission Highline. 2009

Case No. 9223 before the Maryland Public Service Commission
Provided written testimony on behalf of The Potomac Edison Company before the Public Service Commission of Maryland to support the need for the Potomac Appalachian Transmission Highline. 2009

Case No. PUE-2010-00115 before the State Corporation Commission of Virginia
Provided written testimony on behalf of PATH Allegheny Virginia Transmission Corporation before the State Corporation Commission of Virginia to support the need for the Potomac Appalachian Transmission Highline. 2010

Case No. 9239 before the Maryland Public Service Commission
Provided written testimony on behalf of The Potomac Edison Company before the Public Service Commission of Maryland to support the modified scope of the Monocacy-Ringgold-Carroll Transmission line project. 2012

Case No. 9309 before the Maryland Public Service Commission
Provided written testimony on behalf of The Potomac Edison Company before the Public Service Commission of Maryland to support the need to rebuild the Maryland segments of the Doubs-Mt. Storm 500 kV transmission line. 2012

Case No. PUE-2014-00070 before the State Corporation Commission of Virginia
Provided written testimony on behalf of The Potomac Edison Company before the State Corporation Commission of Virginia to support the need for reconductoring/rebuilding the Millville-Old Chapel 138 kV line. 2014

Docket No. EO14030281 before the State of New Jersey Board of Public Utilities
Adopted the written testimony of Jeffrey Goldberg on behalf of Jersey Central Power & Light Company before the Board of Public Utilities of New Jersey to support the need for constructing the Oceanview 230 kV transmission project. 2014

Before the Jefferson Township Planning Board, Morris County, New Jersey
Provided oral testimony on behalf of Jersey Central Power & Light Company before the Jefferson Township Planning Board to support the need for constructing the West Wharton Static var Compensator (SVC). 2014

Before the Township of Rockaway Board of Adjustment, Morris County, New Jersey
Provided oral testimony on behalf of Jersey Central Power & Light Company before the Township of Rockaway Board of Adjustment to support the need for constructing the West Wharton Static var Compensator (SVC). 2015

Before the Township of Old Bridge Zoning Board of Adjustment, Middlesex County, New Jersey
Provided oral testimony on behalf of Jersey Central Power & Light Company before the Township of Old Bridge Zoning Board of Adjustment to support the need for expanding the Deep Run Substation. 2015

Docket No.EO15030383 before the State of New Jersey Board of Public Utilities
Provided written and oral testimony on behalf of Jersey Central Power & Light Company before the Board of Public Utilities of New Jersey to support the need for constructing the Montville-Whippany 230 kV transmission project. 2015

Civil Action No.15-C-128-2 before the Circuit Court of Harrison County, West Virginia
Provided oral testimony on behalf of Trans-Allegheny Interstate Line Company before the Circuit Court of Harrison County to support the need for constructing the Oak Mound-Waldo Run 138 kV transmission project. 2015

Docket No.PUE-2016-00077 before the State Corporation Commission of Virginia
Provided written testimony on behalf of The Potomac Edison Company before the State Corporation Commission of Virginia to support the need for reconductoring/rebuilding the Double Toll Gate-Riverton 138 kV transmission project. 2016

Docket No. EO16080750 before the State of New Jersey Board of Public Utilities
Provided written and oral testimony on behalf of Jersey Central Power & Light Company before the Board of Public Utilities of New Jersey to support the need for constructing the Monmouth County Reliability Project. 2016

Docket No. 12-SU-00-0644 and 12-SU-00-0645 before the Maryland Tax Court
Reviewed list of assets of transmission and distribution equipment owned by Potomac Edison in Maryland for use of the assets regarding use in a production activity. Provided oral testimony in a deposition and in a hearing to support my conclusions. 2018

Case No. 9669 before the Maryland Public Service Commission
Provided written testimony on behalf of The Potomac Edison Company before the Public Service Commission of Maryland to support the need to rebuild the Maryland segments of the Doubs-Goose Creek 500 kV transmission line. 2021

Docket No. A-2021-3025450 before the Pennsylvania Public Utility Commission
Provided oral testimony on behalf of Mid-Atlantic Interstate Transmission, LLC before the Pennsylvania Public Utility Commission to support the need for constructing the Hunterstown-Orrtanna 115 kV transmission line. 2021

Before the Borough of Allenhurst Planning Board, Monmouth County, New Jersey
Provided oral testimony on behalf of Jersey Central Power & Light Company before the Borough of Allenhurst Planning Board to support the need for constructing the new Allenhurst-Oceanview 34.5 kV line. 2023

PUBLICATIONS

2022 IEEE Power & Energy Society General Meeting (PESGM)
Article Title:
Accurate Calculation of VAR Demand for a fleet of Power Transformers
Authors:
Dr. Ramsis Girgis, Mats Bernesjo, Chris Pilch, Craig Fraley, Larre Hozempa 2021

STATEMENT NO. 4

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

APPLICATION OF MID-ATLANTIC INTERSTATE TRANSMISSION, LLC FILED PURSUANT TO 52 PA. CODE CHAPTER 57, SUBCHAPTER G, FOR APPROVAL OF THE SITING AND CONSTRUCTION OF THE EAST GERMANTOWN-GERMANTOWN 115 KILOVOLT TRANSMISSION LINE PROJECT LOCATED IN MOUNT JOY, GERMANY AND UNION TOWNSHIPS, ADAMS COUNTY, PENNSYLVANIA	:	**Docket No. A-2024-_____**

Direct Testimony Of

Barry A. Baker

On Behalf Of

Mid-Atlantic Interstate Transmission LLC

MAIT Statement No. 4

List of Topics Addressed

Line Route Study
Environmental Assessment

Dated: July 3, 2024

I. RESPONSIBILITIES, EXPERIENCE AND EDUCATION

Q. Please state your name and business address.

A. My name is Barry Alan Baker. My business address is 625 West Ridge Pike, Suite E-100, Conshohocken, Pennsylvania 19428.

Q. By whom are you employed and in what capacity?

A. I am employed by AECOM Technical Services Corporation ("AECOM") as a Vice President and Eastern United States (U.S.) Regional Practice Lead for the Environmental Planning & Permitting Practice. I also serve as a Senior Project Manager and Technical Lead in the AECOM energy market sector.

Q. What are your principal responsibilities in these positions?

A. In these roles, I am a Certified Project Manager and manage projects for siting and permitting of new transmission lines, power plants, and other facilities. I manage a practice of approximately three hundred and fifty individuals responsible for environmental, cultural resources, and information technology services. Additionally, I serve as a Technical Lead for transmission and distribution services on the east coast of the U.S.

Q. Please provide a summary of your education and professional work experience.

A. I received a Bachelor of Science with Honors degree in Environmental Science from the University of East Anglia in Norwich, England in 1996. A key focus was on the use of Geographic Information Systems ("GIS") and computer applications for environmental

problem solving. My additional continuing education experience relevant to my current position includes the following courses and programs:

- Approximately 50 Project Management Classes necessary for formal certification;
- Creating and Integrating Data for Natural Resource Applications (Environmental Systems Research Institute, Inc. ("ESRI"));
- Geoprocessing with ArcGIS Desktop (ESRI);
- Spatial Hydrology Using ArcView (ESRI);
- Introduction to ArcIMS (ESRI); and
- System Architecture Design for GIS (ESRI).

I have been employed by AECOM for the last eighteen years in the roles previously discussed. In these positions, I have been responsible for siting studies both as a Project Manager and as a technical lead for transmission line siting as well as new power development throughout the eastern region of the U.S., including PA, NJ, MD, NY, CT, OH, IL, VA, FL, DE, RI, and MA. Additionally, I am an AECOM Technical Lead designated for supporting and developing major transmission opportunities in the U.S. Prior to joining AECOM, I held GIS and environmental development positions for other environmental and government consultants.

Q. Have you previously testified in public utility commission proceedings?

A. Yes, I have provided siting testimony before the Pennsylvania Public Utility Commission ("Commission") for:

- Transource – Independence Energy Connection Project;
- FirstEnergy – Hunterstown-Orrtanna Project;

- FirstEnergy – Bedford North-Central City West Project;
- PPL Electric Utilities – Northeast Pocono Project;
- PPL Electric Utilities – Blooming Grove-Jackson Project;
- PPL Electric Utilities – Effort Mountain Project; and
- PPL Electric Utilities – Appenzell Project.

Q. Have you testified in proceedings before other utility regulatory commissions?

A. Yes, I have provided siting testimony before the New Jersey Board of Public Utilities ("BPU") for:

- PSE&G – North Central Reliability Project; and
- New Jersey Natural Gas – Southern Reliability Link Project.

I also provided siting testimony before the Maryland Public Service Commission for:

Transource – Independence Energy Connection Project.

II. PURPOSE OF TESTIMONY

Q. Please describe the purpose of your testimony.

A. My testimony explains the selection of the route for the East Germantown-Germantown 115 kV transmission line ("Project").

Q. Were any portions of the siting application prepared by you or under your supervision?

A. Yes. I am sponsoring certain attachments to Mid-Atlantic Interstate Transmission LLC's ("MAIT") Siting Application for this project filing. Specifically, I am responsible for portions of the following attachments to the Siting Application:

Attachment 1 is a Pennsylvania Public Utility Commission Regulation Cross-Reference Matrix Table;

MAIT Exhibit 13 is a Topographic Overview Map Depicting the Location of the Proposed Project;

MAIT Exhibit 14 is an Aerial Overview Map Depicting the Location of the Proposed Project;

MAIT Exhibit 15 is a Transmission Line Route Selection Study; and

MAIT Exhibit 16 is a List of Government Agencies Contacted and Permit Requirements.

I was integrally involved in preparing these attachments to the Siting Application or otherwise provided oversight to AECOM technical staff who prepared them. I also provided review for the complete Siting Application prior to assembly and submission to the Commission.

Q. What are your responsibilities in connection with theProject?

A. I serve as AECOM's Project Manager, on behalf of MAIT, for the siting and permitting components of the East Germantown-Germantown 115 kV Transmission Line. My responsibilities on the Project began in July 2020 and have involved oversight of the AECOM routing efforts that identified four potential routes, including three alternative routes (Existing Unused Right-of-Way ("ROW") Route, Small Loop Route, and Large

Loop Route) and the Proposed Route (Alternative Existing Unused ROW Route) that is presented here for Commission approval. I oversee the scientists, biologists, planners, cultural resource specialists, GIS analysts, and other technical specialists that have helped define the routes considered for the proposed transmission line. I also attend numerous teleconferences that take place concerning project-related routing, permitting, and public outreach efforts.

For project environmental consultation, I reviewed and helped coordinate the initial agency consultation and survey efforts on behalf of MAIT. These include submission of a Pennsylvania Natural Diversity Inventory ("PNDI") large project review to the U.S. Fish and Wildlife Service ("USFWS"), Pennsylvania Department of Conservation and Natural Resources ("DCNR"), Pennsylvania Game Commission ("PGC"), and Pennsylvania Fish and Boat Commission ("PFBC"); and wetland delineation activities along the Proposed Route ROW.

III. ROUTE SELECTION STUDY

Q. Please explain how the project study area was determined and the development of potential and alternative routes.

A. The MAIT Routing Team conducted a detailed siting analysis to determine a location for the East Germantown-Germantown 115 kV transmission line that best balances social, environmental, engineering and economic considerations. This analysis included the determination of a Project Study Area; the compilation of an environmental inventory; the identification and analysis of alternative line routes; and finally, the selection of a Proposed Route.

The Project Study Area is the region in which transmission line route alternatives could be sited to practicably meet the Project's functional requirements and, at the same time, minimize potential environmental impacts and Project costs. The Project Study Area was selected based on professional judgment and the geographic characteristics of the region, as well as the physical endpoints of the Project (*i.e.*, the Germantown Substation and the proposed East Germantown Substation). In this case, the boundaries of the Project Study Area were developed based on the alignment of a MAIT-owned existing but unused ROW; other existing MAIT transmission lines; and review of United States Geological Survey ("USGS") maps, state and county road maps, and aerial photographs. Constraints such as topography, parks, suburban/developed areas near the town of Littlestown, transportation routes, existing utility corridors, and the locations of the end points played key roles in determining the boundaries of the Project Study Area and alignments of the alternative routes.

Given these considerations, the Routing Team identified a Project Study Area encompassing about 9,450 acres or 14.8 square miles centered around Littlestown in Adams County, Pennsylvania. The northern and eastern boundaries of the Project Study Area were set to be generally 0.5 to 0.75 miles perpendicular to the outer extents of the existing unused ROW, which extends northeast from the Germantown Substation, and the existing Conastone-Hunterstown 500 kV Transmission Line, which extends in a north-to-south alignment past the proposed location of the East Germantown Substation. The Pennsylvania/Maryland state line was generally used as the southern boundary of the Project Study Area. The western boundary is located 0.25 miles west of and parallel to the existing Carroll-Germantown 138 kV Transmission Line, which extends south out of the

Germantown Substation. Using this established Project Study Area, the Routing Team began its efforts to determine Potential Routes for the line.

Q. What guidelines were used to analyze potential alternative routes?

A. The Routing Team developed basic route selection criteria that would be used to select and analyze potential Alternative Routes. These guidelines included the following criteria:

- Consider parallel alignments along existing utility ROWs or other linear infrastructure;
- Maximize the use of any existing transmission line ROW and seek rebuild options;
- Maximize use of any existing unused ROWs;
- Avoid or limit circuitous routes and special design requirements;
- Maximize the separation distance from and/or minimize impact on residential dwellings, schools, churches, cemeteries, and other socially sensitive facilities;
- Minimize visibility from populated areas, scenic roadways, and designated scenic resources;
- Minimize interference with economic activities, including agricultural practices;
- Minimize conflict with designated public resource lands such as local parks and other recreation lands, nature preserves or other conservation areas;
- Minimize environmental impact and construction/maintenance cost by selecting shorter, direct routes; route corridors through terrain where economical construction and environmental best management practices can be employed, and where line operational/maintenance is most feasible (e.g., use existing access roads where practicable);
- Minimize new crossings of large wetland complexes, critical habitat, and other unique or distinct natural resources; and
- Minimize habitat fragmentation and impacts on designated areas of biodiversity concern.

Using these established routing guidelines, the Routing Team identified opportunity and constraint features within the Project Study Area that would take advantage of existing corridors to the extent practicable and minimize potential impacts to the natural and human (or built) environment. A key existing corridor for the Project is a MAIT-owned 75- to 120-foot wide unused ROW that extends between the Germantown Substation and the existing Conastone-Hunterstown 500 kV Transmission Line and then parallels the 500 kV line south toward the Pennsylvania/Maryland border. This existing ROW is currently unoccupied. The option to use this existing unused ROW was a primary consideration in the routing assessment, as using this ROW would potentially alleviate the need for new easement agreements, reduce impact to new landowners, and reduce total project costs. This existing unused ROW has sufficient space to build a new single-circuit 115 kV line. The Routing Team used this information to develop alternative routes following the general routing and technical guidelines described above. Details of the opportunity and constraints used to develop the alternative routes are included in the Project Route Selection Study, which is attached as MAIT Exhibit 15 to the Application.

Q. Can you describe how the routing team identified the alternative routes?

A. When siting transmission lines, three main routing opportunities are generally focused on where viable. These opportunities include:

- Replacing or upgrading existing transmission lines;
- Corridor sharing/paralleling existing linear utilities or ROWs, or using existing unbuilt ROWs; and
- Crossing undeveloped lands.

Replacing or upgrading existing transmission lines typically minimizes natural and social impacts by using the existing ROW, thus eliminating or reducing additional ROW clearing. For the East Germantown-Germantown 115 kV Transmission Line Project, rebuilding a portion of the existing single-circuit Carroll-Germantown 138 kV Transmission Line to double-circuit was evaluated by MAIT. MAIT determined that this was a viable option for alternative routes extending south from the Germantown Substation.

The corridor-sharing scenario pairs the transmission line with an existing linear feature that it can parallel, which can include highways, railroads, gas pipelines, or other existing or unbuilt transmission line ROWs. These corridors are considered opportunity areas because locating a new transmission line parallel to them may require less ROW; concentrates linear land uses, thus reducing fragmentation of the landscape; and creates an incremental impact rather than a new impact. Opportunities for corridor sharing within the Project Study Area for the development of the new 115 kV transmission line was limited to paralleling the existing Conastone-Hunterstown 500 kV Transmission Line, which is currently paralleled by the existing unused ROW.

The third opportunity is to use undeveloped areas such as forests, fields, and agricultural areas to identify routes that cross open lands. Identifying these routes involves assessment of parcel boundaries and land use practices to define routes that minimize potential impacts to private properties and any agricultural or other farming activities, such as orchards. Portions of the Project Study Area consist of agricultural crop lands and fields that provide opportunities for potential cross-country routes.

Using these fundamental considerations as guidance, information obtained during the environmental field reviews was used to develop an opportunity and constraint map of the Project Study Area using GIS software. Georeferenced data layers of the identified opportunities and constraints obtained from published State and Federal materials and local planning documents were superimposed on available current aerial photography. Evaluation of this desktop data in conjunction with field reviews of the Project Study Area resulted in the identification of four viable alternative routes that provide the required connectivity between the existing Germantown Substation and the proposed East Germantown Substation site. These routes include the following:

- Development of MAIT's existing unused ROW that extends north around Littlestown (Alternative Route A – Existing Unused ROW Route);
- A cross-country alternative to portions of the existing unused ROW (Alternative Route B – Alternative Existing Unused ROW Route);
- A cross-country route that extends through portions of Littlestown (Alternative Route C – Small Loop Route); and
- A cross-country route that extends south around Littlestown (Alternative Route D – Large Loop Route).

Q. Did MAIT consider local comprehensive plans and zoning ordinances in selecting the proposed route?

A. Yes. Preliminarily, I note that public utility facilities, such as transmission lines and substations, are generally exempt from local municipal authority. However, as required by the Commission's interim siting guidelines found at 52 Pa. Code §§ 69.1101(2)-(3) and 69.3104(1), local comprehensive land use plans and zoning ordinances were reviewed by MAIT to evaluate the impact of the Proposed Route on these local plans and ordinances.

MAIT evaluated the Proposed Route's consistency with the comprehensive plans and zoning ordinances of the government entities through which the Proposed Route would pass. MAIT has also reviewed the Project with representatives of Adams County and the commissioners of the townships through which the Proposed Route would pass. A discussion of MAIT's review of the land use comprehensive plans and local zoning ordinances is provided, respectively, in Sections 4.2.3 and 6.2.1 of MAIT Exhibit 15 (Route Selection Study) to the Siting Application.

Q. Please briefly describe the alternative routes.

A. The four Alternative Routes are as follows:

<u>Alternative Route A (Existing Unused ROW Route)</u>

Alternative Route A is approximately 3.40 miles in length. From the Germantown Substation, located in Mount Joy Township, Alternative Route A extends to the east for 0.06 mile (350 feet) to the first proposed structure, which would be located south of State Route 97 (SR 97). The existing unused ROW does not extend onto this parcel, which is privately owned. Turning to the northeast, the route spans to the north side of SR 97 and extends 0.73 mile (3,860 feet) to Roberts Road. The existing unused ROW starts on the north side of SR 97 and is 120 feet wide in this section. Continuing to the northeast past Roberts Road, Alternative Route A crosses into Germany Township and extends 0.87 mile (4,600 feet) to its intersection with the Conastone-Hunterstown 500 kV Transmission Line, which is located in Union Township. The route spans Locust Lane along this section. At the Conastone-Hunterstown 500 kV Transmission Line, the route turns sharply to the south and bends to the southeast for 0.36 mile (1,900 feet) to Feeser Road. The existing unused

ROW narrows to 75 feet wide from this point on to the East Germantown Substation. From Feeser Road, Alternative Route A extends southeast for 0.48 mile (2,550 feet) to residence-lined Littlestown Road. Continuing to the southeast past Littlestown Road, the route extends 0.90 mile (4,750 feet) to the East Germantown Substation, which is located in an agricultural field on the south side of Basehoar Road.

Alternative Route B (Alternative Existing Unused ROW Route)

Alternative Route B is approximately 3.35 miles in length. From the Germantown Substation, located in Mount Joy Township, Alternative Route B extends to the northeast for 0.17 mile (865 feet) to a point in an agricultural field located north of SR 97. This section crosses over SR 97 and under the Germantown-Lincoln 115 kV Transmission Line. From this point, the route turns toward the east and then back to the northeast for 0.70 mile (3,700 feet) to Roberts Road. Turning to the east past Roberts Road, Alternative Route B extends across agricultural fields for 0.48 mile (2,560 feet) to Locust Lane, crossing into Germany Township along this section. The alignment also crosses the existing unused ROW in the area. At Locust Lane, the route turns slightly to the northeast across agricultural lands for 0.63 mile (3,350 feet) to its intersection with the existing unused ROW, which is extending north to south parallel to the Conastone-Hunterstown 500 kV Transmission Line. This section parallels the north side of Feeser Road and then crosses the south side as it nears a farmstead located on the north side of the road. The route crosses into Union Township in this section. Once on the existing unused ROW, Alternative Route B turns south and extends for 1.37 miles (7,200 feet) to the East Germantown Substation. This section mirrors Alternative Route A.

Alternative Route C (Small Loop Route)

Alternative Route C is approximately 6.12 miles in length. From the Germantown Substation, located in Mount Joy Township, Alternative Route C spans Alloway Creek into Germany Township and extends to the south for 1.15 miles (6,075 feet) to the north side of Fish and Game Road. Most of this section would be as a second circuit on the existing single-circuit Caroll-Germantown 138 kV Transmission Line. The route separates from the Carroll-Germantown 138 kV Transmission Line approximately 0.23 mile north of Fish and Game Road, with this remaining section spanning agricultural lands. Turning to the southeast, the route extends for 0.99 miles (5,120 feet) to SR 194. After crossing SR 194, Alternative Route C extends to the southeast for 0.95 miles (5,040 feet) to Mengus Mill Road. At this point, the route turns to the northeast and extends predominantly across agricultural lands for 0.71 miles (3,730 feet) to SR 97. Turning more to the northeast and crossing into Littlestown Borough, Alternative Route C extends for 1.16 miles (6,100 feet) to a point in an agricultural field located on the southeastern corner of Littlestown. This section crosses back into Germany Township for a short distance before crossing into Union Township. From the point in the field, the route turns to the north and northwest for 1.16 miles (6,100 feet) to the East Germantown Substation. This section crosses agricultural lands and SR 194. The 0.74-mile section from SR 194 to the East Germantown Substation is within the existing unused ROW that parallels the Conastone-Hunterstown 500 kV Transmission Line.

Alternative Route D (Large Loop Route)

Alternative Route D is approximately 9.07 miles in length. From the Germantown Substation, located on Mount Joy Township, Alternative Route D crosses Alloway Creek into Germany Township and extends to the southeast for 3.07 miles (16,235 feet) to

Mengus Mill Road, mirroring the alignment of Alternative Route C. From Mengus Mill Road, the route continues to the southeast for 1.54 miles (8,110 feet) to SR 97. Turning to the northeast, the route spans SR 97 and extends for 2.16 miles (11,400 feet) to the intersection with the existing unused ROW located adjacent to the Conastone-Hunterstown 500 kV Transmission Line. This section crosses into Union Township near Mathias Road. At the intersection with the Conastone-Hunterstown 500 kV Transmission Line, Alternative Route D turns to the northwest and parallels the line for 2.30 miles (12,140 feet) to the East Germantown Substation within the existing unused ROW.

Q. Was outreach part of the routing process?

A. Yes. MAIT conducted extensive public outreach throughout the siting process, including initial regulatory agency consultation, public notification and virtual open house meetings, and meetings with property owners.

Considering the social concerns of holding in-person public meetings, MAIT provided Project-related information to the general public through a virtual open house forum that was accessible via the internet. Close consideration was given to which routes would be presented at the open house. Due to the longer length and potential magnitude of impacts of Alternative Route D and the fact that the route does not provide any additional benefit relative to Alternative Route C, Alternative Route D was removed from the open house materials, which focused on Alternative Routes A, B, and C. MAIT collected contact information for landowners within 500 feet of the alternative routes and sent letters to these landowners to introduce the Project and provide guidance on accessing the virtual open house presentation.

On May 1, 2022, MAIT placed the virtual public open house presentation on the Internet for public review at https://firstenergy.consultation.ai/eastgermantown-germantown. The presentation included a series of stations that provided information on the Project needs and benefits, alternative routes, engineering and design, vegetation management, real estate negotiations, environmental permitting, a Project schedule, and contact information. Also included was a link to an interactive map that illustrated the alternative routes and parcel boundary information so that landowners could identify their location relative to the proposed alternative routes. Other links provided the public with options to download maps and project information as well as to leave a comment. Comments submitted through the website were combined with other comments received via a Project hotline phone number and reviewed by MAIT. The virtual public open house forum was closed to public comment on May 31, 2022.

Project feedback was submitted by thirteen landowners with most of the comments provided by landowners along Alternative Route C. All of these comments stated opposition to Alternative Route C with specific focus on topics such as electromagnetic fields, cancer, proximity to homes, property values, and crop damages. Several of the landowners also noted the much longer length relative to Alternative Routes A and B. Due to the close proximity of Alternative Routes A and B to each other, they cross many of the same landowners. Comments provided by some of these landowners voiced opposition to Alternative Route B due to its alignment outside the existing unused ROW. Opposition to Alternative Route A was voiced by one landowner who purchased a recently subdivided parcel that contains the existing unused ROW. All of these comments were followed up by MAIT representatives who discussed the Project further with the various landowners.

IV. ENVIRONMENTAL ASSESSMENT

Q. Did the routing team evaluate the impacts of the alternative routes on the built environment?

A. Yes. The Routing Team evaluated the potential impact of the four Alternative Routes on existing residential and commercial development, land uses, archaeological and historical areas, recreational and scenic resources, conserved lands, and terrain and landscape. With the exception of a portion of Alternative Route C (Small Loop Route) which extends through developed areas along SR 97 and a local recreational park on the perimeter of Littlestown, nearly the entire length of the Alternative Routes crosses agricultural land coverages. The Project is not anticipated to impact any existing residential or commercial development.

The closest airport is the Kingsdale Air Park Airport, which is located approximately 1.7 miles southwest of Littlestown and 0.5 miles south of Alternative Route D (Large Loop Route). MAIT will need to file the appropriate documentation with both the Federal Aviation Administration and the PennDOT Bureau of Aviation to ensure the Proposed Line will not be a hazard to the airport's flight operations. No other smaller airports or heliports were identified within 2 miles of the Project Study Area.

Some of the agricultural parcels located within the Project Study Area are protected through state-based agricultural conservation easements or land conservation easements that are managed by local conservancies that focus on protecting agricultural and natural lands to preserve the character of the area. Some of the land conservancy parcels also involved forested lands that provide ecological value to the region. Assessment of these

conserved lands identified that Alternative Route A (Existing Unused ROW Route) and Alternative Route B (Alternative Existing Unused ROW Route) would cross the least area relative to the other options. Lands crossed by the alignment are currently used for agriculture, and the existing unused ROW was in place prior to the land being conserved. The other options would involve new ROW impacts across these protected agricultural and forested lands.

The Project is not anticipated to impact any scenic, geologic, or wilderness areas.

Q. Did the routing team consider impacts of constructing the transmission line on each alternative route on the natural environment?

A. Yes. Natural environment impacts include potential impacts to vegetation, critical species habitat areas, surface waters, and wetlands. Potential impacts are evaluated based on publicly available maps and data as well as consultation with federal and state agencies.

The Project would require the clearing of trees to safely operate the new transmission line. Alternative Routes C and D would involve the need to clear more forest relative to Alternative Routes A and B.

The Project Study Area does not contain any natural areas as identified by *The Natural Areas Inventory of Adams County, Pennsylvania*, which highlights potential critical habitat areas for plant or animal species of concern. After the Proposed Route was identified, coordination with state and federal agencies with jurisdiction over plant and animal species of concern was completed through the PNDI review process. The PNDI review concluded that no state or federal identified plant or animal species of concern are located along or near the Proposed Route.

All four Alternative Routes would extend across several forested floodplain areas that border the streams that bisect the Project Study Area. None of the streams are classified as High Quality or Exceptional Value, nor are these streams afforded state protection as Wild Trout Streams, which would classify adjacent wetlands as Exceptional Value features.

Several USFWS-mapped wetland areas are located along the alignments of the four Alternative Routes. Most of these wetlands consist of emergent and shrub-based vegetation that can be spanned by the new transmission line. A few small areas of forested wetlands would also be crossed that would result in the need to clear the trees, which could be considered a conversion impact by the state and federal regulatory agencies.

V. ROUTE SELECTION STUDY CONCLUSION

Q. Did the routing team decide which alternative is the proposed route?

A. Yes. The Routing Team concluded that most of the alignment of Alternative Route A would be the Proposed Route for the Project. The only concern noted by the Routing Team with the alignment of Alternative Route A was the potential environmental impact that could occur on the initial 0.50-mile section exiting to the northeast from the Germantown Substation. This section would span across a large emergent and forested wetland complex that borders Alloway Creek, as well as span longitudinally over an extensive length of the creek. To minimize impacts to the wetlands and avoid the riparian impacts to Alloway Creek, the Routing Team assessed the option to bypass this area by merging a portion of Alternative Route B into this section of the Proposed Route. To address this change in alignment, portions of the existing unused ROW were adjusted to the north to avoid

spanning Alloway Creek and minimize the impacts to the adjacent riparian areas and the surrounding forested wetland and floodplain areas. The ensuing alignment resulted in only one structure in this large wetland complex and reduced the overall clearing of forested wetlands in the area. The remaining length of the Proposed Route would span other wetland and stream areas but may have the room for engineering to place poles outside of wetlands and cross streams in a perpendicular fashion.

In terms of the potential impact of the Proposed Route on the built environment, this alignment would skirt around the perimeter of the town of Littlestown and avoid the more densely residential and commercially developed areas around the town. A short section of the Proposed Route would extend in close proximity to several homes located near Littlestown Road, but this is in an area where the new 115 kV transmission line would be located parallel to the existing 500 kV transmission line, as well as be located within an existing unused ROW that crosses these properties. The Proposed Route would also span across a few parcels that are protected by agricultural conservation easements; however, the existing unused ROW was in place prior to these lands being incorporated in the agricultural easement and is therefore not considered a concern.

New ROW agreements were acquired for the 0.50-mile section near the existing Germantown Substation. The remaining length of the Proposed Route would be located entirely within the existing unused ROW that extends to the new East Germantown Substation.

Q. Does this conclude your testimony at this time?

A. Yes, it does. I reserve the right to supplement my testimony as additional issues arise during the course of this proceeding.

STATEMENT NO. 5

BEFORE THE
PENNSYLVANIA PUBLIC UTIILTY COMMISSION

APPLICATION OF MID-ATLANTIC INTERSTATE TRANSMISSION, LLC FILED PURSUANT TO 52 PA. CODE CHAPTER 57, SUBCHAPTER G, FOR APPROVAL OF THE SITING AND CONSTRUCTION OF THE EAST GERMANTOWN-GERMANTOWN 115 KILOVOLT TRANSMISSION LINE PROJECT LOCATED IN MOUNT JOY, GERMANY AND UNION TOWNSHIPS, ADAMS COUNTY, PENNSYLVANIA	:	**Docket No. A-2024_____**

Direct Testimony
of
Lisa Marinelli

MAIT Statement No. 5

List of Topics Addressed

Real Estate and Property Rights

Dated: July 3, 2024

I. RESPONSIBILITIES, EXPERIENCE AND EDUCATION

Q. Please state your name and business address.

A. My name is Lisa Marinelli, and my business address is 800 Cabin Hill Drive, Greensburg, Pennsylvania 15601.

Q. By whom are you employed and in what capacity?

A. I am employed by FirstEnergy Service Company ("FESC") as a Senior Real Estate Representative. My primary responsibility is the acquisition of land rights (by easement or fee) necessary for the construction and maintenance of transmission facilities and providing project management oversight for contracted right-of-way ("ROW") acquisition projects. In this proceeding I am testifying on behalf of the Mid-Atlantic Interstate Transmission, LLC ("MAIT").

Q. Please provide a summary of your education and professional work experience.

A. I graduated from the University of Pittsburgh in Johnstown, Pennsylvania, in 1990 with a Bachelor of Arts in Finance and Accounting. I graduated from Duquesne University, Pennsylvania with a Master's degree in Taxation in 2004. I have been employed with FESC since 2011, when the merger of FESC and Allegheny Energy was completed. Prior to the merger and since 2001, I was employed with Allegheny Energy Service Corporation. I worked within its Audit Department from 2001 to 2006, where I was responsible for conducting operational, environmental and financial audits. From 2006, I worked within its Real Estate Department, where I was responsible for acquisition and divestiture of

company-owned assets, and acquisition of ROW for the construction and maintenance of distribution and transmission facilities.

Q. Have you previously testified in Pennsylvania Public Utility Commission ("Commission") or other regulatory agencies?

A. Yes, I have provided siting testimony before the Commission for the Bedford North-Central City West 115 kV and Hunterstown-Orrtanna 115 kV projects.

II. PURPOSE OF TESTIMONY

Q. Please describe the purpose of your testimony.

A. The purpose of my testimony is to:

- Describe the process used by MAIT in acquiring the necessary ROW to permit the construction of the proposed East Germantown-Germantown 115 kV Transmission Line Project ("Project");
- Identify the potentially affected landowners and properties; and
- Describe the Code of Conduct applicable to MAIT's employees, agents, contractors and subcontractors in their respective interactions with impacted property owners.

Q. What are your responsibilities in connection with the Project?

A. It is my department's responsibility to identify all property owners along the Proposed Route for the East Germantown-Germantown 115 kV Transmission Line Project. We review and determine adequacy of easement rights in areas where we plan to use existing ROW and identify any areas where we will require new or enhanced rights for the

Proposed Route. For the areas where we may need new or enhanced ROW, we attempt to negotiate with these property owners for the appropriate land rights needed. We also deliver literature concerning the Project to all property owners affected by the Proposed Route, including a project fact sheet, a property owner notice required by the Commission, a Code of Conduct for Real Estate Representatives and subcontractor employees, a permission form and a brochure entitled "Maintaining Safe and Reliable Service" which explains FirstEnergy's ROW maintenance practices, and other information to help them fully understand the Project. The Real Estate Representative provides the property owner with information on how he/she can be contacted at any time to answer questions or to address issues or concerns. The Real Estate Representative is a direct link for the property owner to communicate with MAIT.

Q. What exhibits do you reference?

A. I will refer to certain exhibits accompanying MAIT's Application that were prepared under my direction. As part of my testimony, I am sponsoring the following exhibits:

MAIT Exhibit 17 of the Application shows a list of names and addresses of all known persons, corporations, and other entities of record owning property along the proposed transmission line ROW; and

MAIT Exhibit 18 of the Application includes the aforementioned "Code of Conduct".

III. REAL ESTATE AND PROPERTY RIGHTS

Q. How has MAIT addressed right-of-way procurement and related matters since the proposed Project route was selected?

A. After the siting process was completed and a proposed route was selected that would utilize existing ROW on existing transmission line corridors, the process of identifying affected property owners commenced. The siting contractor, AECOM, identified the property owners along the Proposed Route using publicly available information, such as tax maps and courthouse records. MAIT confirmed the property owners identified, reviewed the easement documents to confirm the easement widths, and consulted engineering to identify any properties where additional ROW might be required for best construction of this Project. Of the 22 tracts reviewed, it was determined that the Proposed Route occupies existing ROW on all 22 tracts, including land upon which the existing Germantown Substation is situated and the East Germantown Mod Substation ("East Germantown Substation") is proposed to be constructed. A property owner list was developed, which is reflected in MAIT Exhibit 17, and the property owners were contacted with information pertaining to the Project and MAIT's proposed activities relating to their properties. In an effort to reduce environmental impacts, which is further discussed in MAIT Statement No. 4, it was later determined that of the 22 parcels, additional ROW would be required for one parcel, and existing, unused ROW would need to be relocated on three parcels. New ROW agreements for those four aforementioned parcels were procured through a negotiation process with the affected property owners.

Q. Please describe how MAIT intends to interact with property owners.

A. Throughout the Project, MAIT's Real Estate Representatives have worked with the property owners to assure and acquire the necessary rights to construct the Project. These rights include the transmission line easement, vegetation management rights, access roads, and storage yards, as applicable. The Real Estate Representative described the work to be conducted on the property and negotiated in good faith using fair market offers for the necessary ROW. These offers are based on the current market values, amount and type of ROW needed, and the use of the property.

Q. What is the current status of negotiations?

A. MAIT has reached agreements with all affected landowners.

Q. Is there any pending or prior litigation involving MAIT relating to property or right-of-way matters with respect to the Project?

A. There is no litigation involving MAIT or its affiliates with respect to the Project.

Q. Does MAIT have a form of notice it intends to provide to impacted property owners advising them of the company's vegetation maintenance plan?

A. Yes. The Real Estate Representative verbally described the Transmission Vegetation Maintenance plan that would be conducted on the property during and post construction.

Q. Please describe MAIT's code of conduct related to property rights.

A. The Code of Conduct outlines MAIT's expectations for its employees, contractors and subcontractors that are interacting with property owners and the general public on this Project. This Code of Conduct applies to all MAIT employees, agents, contractors and subcontractors who have any contact with impacted property owners. This list of "do's and don'ts" clearly communicates to all those involved in interacting with property owners in any aspect of the Project MAIT's expectations of how the process should proceed and, more importantly, how property owners and others should be treated.

Q. Was that Code of Conduct followed relative to this Project?

A. Yes, the Real Estate Representative described the work to be conducted on the property and negotiated in good faith using fair market offers for the necessary ROW.

Q. Does this conclude your direct testimony?

A. Yes, it does. However, I reserve the right to file such additional testimony as may be necessary or appropriate.

STATEMENT NO. 6

BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION

APPLICATION OF MID-ATLANTIC INTERSTATE TRANSMISSION, LLC FILED PURSUANT TO 52 PA. CODE CHAPTER 57, SUBCHAPTER G, FOR APPROVAL OF THE SITING AND CONSTRUCTION OF THE EAST GERMANTOWN-GERMANTOWN 115 KILOVOLT TRANSMISSION LINE PROJECT LOCATED IN MOUNT JOY, GERMANY AND UNION TOWNSHIPS, ADAMS COUNTY, PENNSYLVANIA	:	**Docket No. _____**

Direct Testimony
of
Morgan W. Meehan

MAIT Statement No. 6

List of Topics Addressed

The Design, Engineering, Construction, Operation and Maintenance of the Proposed East Germantown- Germantown 115 Kilovolt ("kV") Transmission Line Project

Dated: July 3, 2024

I. RESPONSIBILITIES, EXPERIENCE AND EDUCATION

Q. Please state your name and business address.

A. My name is Morgan W. Meehan, and my business address is 800 Cabin Hill Drive, Greensburg, Pennsylvania 15601.

Q. By whom are you employed and in what capacity?

A. I am employed by FirstEnergy Service Company ("FESC") as an Engineering Supervisor in the Transmission Line Design Group. FESC is a subsidiary of FirstEnergy Corp. ("FirstEnergy") that provides legal, financial, and other corporate support services to FirstEnergy and its regulated operating subsidiaries, one of which is Mid-Atlantic Interstate Transmission, LLC ("MAIT").

Q. Please provide a summary of your education and professional work experience.

A. I am a graduate of the University of Pittsburgh, having earned a Bachelor of Science degree in Civil Engineering. I began my employment with the former Allegheny Energy Service Corporation as a Civil Engineer in the Transmission Projects Group in June 2009. My primary responsibilities consisted of designing new and upgrading existing electric transmission lines. As a result of Allegheny Energy's merger with FirstEnergy in 2011, I was placed into FirstEnergy's Transmission Design Group with a title of Engineer with similar job responsibilities. In October 2017, I became Acting Supervisor of Transmission Design. After 8 months, I was promoted to Supervisor of the same group, and I hold that position today. I am a registered Professional Engineer in the Commonwealth of Pennsylvania.

Q. Have you previously testified in Pennsylvania Public Utility Commission ("Commission") or other regulatory agencies?

A. Yes, I have provided testimony before the Commission for the Lackawanna – North Meshoppen 230 kV Transmission Line Rebuild Project (Docket No. A-2017-2625214).

II. PURPOSE OF TESTIMONY

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to describe the design and construction methodology of the Germantown-East Germantown 115 kV Transmission Line Project ("Project"). I will also provide information on the maintenance of this line.

Q: Briefly outline your testimony.

A: My testimony will cover:

- Proposed transmission line configuration;
- Right-of-way ("ROW") details;
- Design criteria;
- Construction activities; and
- Maintenance activities.

Q. Does your testimony address the filing requirements of 52 Pa. Code §§ 57.71-57.77 concerning the siting and construction of high voltage ("HV") transmission lines?

A. Yes. My direct testimony, together with the Application for authorization to locate and construct a high-voltage transmission line ("Application") filed by MAIT, provides information to respond to the requirements of 52 Pa. Code §§ 57.72(c)(6) (safety considerations to be incorporated into the design, construction, and maintenance of the proposed HV line), (c)(13)(ii) (an engineering and design-based description of the proposed line), and (c)(13)(iii) (a simple drawing of a cross section of the ROW of the HV line showing the placement of supporting structures at typical locations, with structure sizes, ROW widths, and the lateral distances between the conductors and the edge of the ROW indicated).

Q. Please identify and describe the exhibits you will refer to in your testimony.

A: I will refer to certain exhibits accompanying MAIT's Application that were prepared under my direction. As part of my testimony, I am sponsoring the following exhibits:

- **MAIT Exhibit 19** is a general layout of the Project;
- **MAIT Exhibit 20** is a typical ROW cross section for the single circuit 115 kV transmission line;
- **MAIT Exhibit 21** is a typical ROW cross section for the single circuit 115 kV transmission line where it parallels the existing 500 kV transmission line;
- **MAIT Exhibit 22** is a depiction of a typical 115 kV single circuit wood pole suspension horizontal 2-pole H-frame structure;

- **MAIT Exhibit 23** is a depiction of a typical 115 kV single circuit wood pole suspension horizontal 3-pole structure;
- **MAIT Exhibit 24** is a depiction of a typical 115 kV single circuit wood pole strain dead-end horizontal 3-pole structure;
- **MAIT Exhibit 25** is a depiction of a typical 115 kV single circuit steel delta suspension structure;
- **MAIT Exhibit 26** is a depiction of a typical 115 kV single circuit steel strain dead-end structure;
- **MAIT Exhibit 27** is a depiction of a typical 115 kV single circuit steel dead-end structure;
- **MAIT Exhibit 28** is a depiction of a typical 115 kV single circuit steel dead-end H-Frame structure;
- **MAIT Exhibit 29** is a depiction of a typical 115 kV single circuit direct embed steel 3-pole switch structure;
- **MAIT Exhibit 30** is a depiction of a typical 115kV single circuit steel H-Frame switch structure;
- **MAIT Exhibit 31** is a copy of "Maintaining a Safe and Reliable Transmission System Vegetation Management for New Transmission Construction Projects";
- **MAIT Exhibit 32** is a copy of "Maintaining a Safe and Reliable Transmission System Tree Trimming and Comprehensive Vegetation Management"; and
- **MAIT Exhibit 33** is a copy of "Vegetation Management Program Document."

III. DESIGN AND CONFIGURATION FOR THE PROPOSED LINE

Q. Has a general description of the Project been provided?

A. Yes, a description of the proposed Project has been provided in the Application. Additionally, other MAIT witnesses provide a general description of the need for the Project, the proposed route and similar basic information about the Project. My discussion of the engineering and construction of the Project, which follows, is consistent with those descriptions.

Q. Please describe the general design configuration planned for the Project.

A. The proposed Project involves the construction of a new single circuit 115 kV transmission line from the existing Germantown Substation to a new proposed East Germantown Mod Substation ("East Germantown Substation"). The East Germantown- Germantown 115 kV Transmission line is proposed as a single circuit line consisting of three electrical phases (a "three-phase" system) elevated above the ground by self-supporting steel structures, direct embed steel structures or direct embed wood pole structures. Proposed construction will extend from the existing Germantown Substation to the new East Germantown Substation as depicted in MAIT Exhibit 19. This new transmission line will be constructed primarily within existing ROW. The proposed 115 kV transmission line will partially utilize existing ROW located between Germantown Substation and the existing Conastone-Hunterstown 500 kV Transmission Line ROW (MAIT Exhibit 20) as well as utilize available ROW as the new 115 kV transmission line parallels the existing Conastone-Hunterstown 500 kV Transmission Line ROW (MAIT Exhibit 21) until reaching the proposed East Germantown Substation site. One section, approximately 0.5 miles, will be

constructed on newly acquired 120–foot-wide ROW to avoid and reduce environmental impacts, which is further addressed in MAIT Statement No. 4 by MAIT witness Barry Baker.

The designs will primarily consist of wood H-frame structures. The horizontal configuration allows for longer spans compared to a single pole design, minimizing the number of structures required and reducing the impact to landowners and farms. All necessary ground guying will be contained to the ROW. Two switch structures will be designed to accommodate isolation of the transmission line and/or East Germantown Substation. Steel H-frame or monopoles will be used in areas where there is an inability to install supporting ground guy wires, or where the anticipated structure height exceeds the limitation of wood structures. One area identified for steel structures is approximately 0.06 miles outside of Germantown Substation, where the proposed East Germantown - Germantown 115 kV Transmission line will cross over the existing Germantown - Lincoln 115 kV Transmission line.

This Project requires the installation of approximately 40 structures ranging from 55 feet to 125 feet above ground level, with an average structure height of 68.5 feet above ground level. The proposed average span length is approximately 465 feet. MAIT Exhibits 22 through 30 to the Application depict the various structure types to be used on the Project. I describe each of these exhibits and the typical structure depicted therein below.

Q. Please describe MAIT Exhibit 22.

A. MAIT Exhibit 22 shows a typical single circuit tangent wood H-Frame structure. A tangent wood H-Frame structure is used to support the transmission lines where they run in a

straight line or where they turn angles less than 5 degrees. This structure is directly embedded into the soil. This is the most utilized structure in the preliminary engineering design and will utilize a horizontal conductor arrangement. Approximately 29 structures will utilize this structure type.

Q. Please describe MAIT Exhibit 23.

A. MAIT Exhibit 23 shows a typical single circuit suspension wood three pole angle structure. This structure is used to support a horizontally configured transmission line where line termination is not required. This structure is generally a guyed structure for structural support and is used where the transmission line turns at an angle from 3 degrees to 70 degrees. This structure is directly embedded into the soil. Approximately five structures will utilize this structure type.

Q. Please describe MAIT Exhibit 24.

A. MAIT Exhibit 24 shows a typical single circuit three pole angle strain/dead-end wood structure. A three-pole angle strain/dead-end wood structure is used to support the transmission line at locations where it is desirable to terminate a section of transmission line wire at locations where it turns an angle between 3 and 95 degrees. This structure type is typically guyed for structural support and will utilize a horizontal arrangement. This structure is directly embedded into the soil. Approximately two structures will utilize this structure type.

Q. Please describe MAIT Exhibit 25.

A. MAIT Exhibit 25 shows a typical single circuit tangent steel pole structure. A tangent steel pole structure is used to support the transmission lines where they run in a straight line or where they turn angles less than 5 degrees. In certain locations, this structure may need to be installed atop drilled shaft foundations or can be directly embedded into the soil. This is a vertically oriented structure with a delta configuration. No structures are proposed to utilize this structure type, but this is an alternative if detailed engineering warrants a change at a tangent structure location.

Q. Please describe MAIT Exhibit 26.

A. MAIT Exhibit 26 shows a typical single circuit angle strain/dead-end single pole steel structure. An angle strain/dead-end single pole steel structure is used to support the transmission line at locations where it is desirable to terminate a section of the transmission line wire where it turns an angle of 0 degrees to 60 degrees. In certain locations, this structure may need to be installed atop drilled shaft foundations or can be directly embedded into the soil. This is a vertically oriented structure configuration. No structures are proposed to utilize this structure type, but this is an alternative if detailed engineering warrants a change at an angle strain/dead-end structure location.

Q. Please describe MAIT Exhibit 27.

A. MAIT Exhibit 27 shows a typical single circuit dead-end single steel pole structure. This structure is vertically oriented in a delta configuration. A dead-end delta single pole steel structure is used to support the transmission line at locations where it is desirable to

terminate a section of transmission line wire where it turns an angle of 0 degrees to 90 degrees. This structure is installed atop a drilled shaft foundation. No structures are proposed to utilize this structure type, but this is an alternative if detailed engineering warrants a change at a dead-end structure location.

Q. Please describe MAIT Exhibit 28.

A. MAIT Exhibit 28 shows a typical single circuit dead-end H-Frame steel structure. This structure is horizontally oriented. A dead-end steel H-Frame structure is used to support the transmission line at locations where it is desirable to terminate a section of transmission line wire where it turns an angle of 0 degrees to 90 degrees. This structure is installed atop drilled shaft foundations. Approximately two structures will utilize this structure type.

Q. Please describe MAIT Exhibit 29.

A. MAIT Exhibit 29 shows a typical single circuit three pole direct embed steel unitized switch structure. This structure is horizontally oriented as a strain/dead-end type structure to be used in tangent locations where the line angle does not exceed 3 degrees. This structure is used to support the transmission line at locations where it is desirable to isolate sections of transmission line or Substation facilities from the energized line. This structure may be guyed, if required, and is directly embedded into the soil. Approximately two structures may utilize this structure type. MAIT Exhibit 30 shows another switch alternative that may be considered.

Q. Please describe MAIT Exhibit 30.

A. MAIT Exhibit 30 shows a typical single circuit self-supporting H-Frame unitized switch structure. This structure is installed atop drilled shaft foundations. This structure is horizontally oriented as a strain/dead-end type structure to be used in tangent locations where the line angle does not exceed 3 degrees. This structure is used to support the transmission line at locations where it is desirable to isolate sections of transmission line or Substation facilities from the energized line.

Q. Do you anticipate the need for any other types of structures for the Project?

A. No. We do not anticipate the need for any types of structures other than those shown in MAIT Exhibits 22 through 30 to the Application. It is possible that detailed design engineering for this Project may reveal the need for other structure types; however, we do not anticipate that any such structures will be substantially different from those depicted in the Application.

Q. What is the width of ROW planned for the Project?

A. This Project will use a section of acquired/existing ROW at a width of 120 feet and will use a section of existing ROW at a width of 75 feet where the proposed transmission line parallels the existing 500 kV transmission line ROW. MAIT Exhibit 21 depicts the approximately 1.7-mile 120-foot ROW section, and Exhibit 22 depicts the approximately 1.8-mile 75-foot ROW section.

Q. Where will the proposed electric transmission centerline fall in the existing MAIT ROW?

A. The centerline of the proposed 115 kV transmission line will be centered in the 120-foot-wide ROW section as shown in MAIT Exhibit 20. The electric transmission centerline location varies along the 75-foot ROW corridor. This variability is due to maintaining conductor clearances to the southern ROW extent, as well as maintaining guy wires within the existing ROW corridor. Exhibit 21 highlights this range of the proposed centerline location within the 75-foot ROW corridor. The 200-foot 500 kV line ROW allows electrical clearances along the north ROW edge to be met.

Q. Will the supporting structures carry any wires other than transmission conductors?

A. Yes. The proposed transmission line will have one standard shield wire and one optical ground wire ("OPGW") that will be located above the transmission conductors. The purpose of the shield wire is to protect the conductor from lightning strikes. The OPGW also protects the conductor from lightning strikes as well as provides a means of communication between substations.

Q. Does the project meet MAIT's existing engineering and design specifications?

A. Yes. The structures depicted in MAIT Exhibits 22 through 30 are designed to meet MAIT's applicable, existing engineering and design criteria for 115 kV transmission lines.

V. DETAILED ENGINEERING SPECIFICATIONS FOR THE PROPOSED LINE

Q. Please describe the voltage, temperature, and other electrical parameters for which the conductors are designed and how these parameters will conform to the Ational Electrical Safety Code ("NESC").

A. The three (3) conductors to be installed on the new transmission line structures are 795 thousand circular mills ("kcmil") 26/7 aluminum conductor, steel reinforced ("ACSR"). The 26/7 designation indicates the stranding of the conductor, with the "26" representing the outer 26 aluminum wires and the "7" representing the inner seven (7) steel wires. The Project proposes electric shielding via a single 7#8 Alumoweld shield wire as well as an OPGW fiber cable.

The proposed Project will be designed and operated at 115 kV. The transmission maximum design operating temperature is 212 degrees Fahrenheit. The transmission line will meet or exceed all requirements of the current NESC under all operating conditions.

Q. Please describe the relationship of the existing ROW widths to the design and NESC requirements for the Project.

A. When evaluating transmission design criteria and the location of structures with respect to the edge of the ROW, an array of parameters must be considered. These include structure type, conductor size, stringing tension, conductor motion, line voltage, and NESC-defined weather conditions. The proposed transmission line will be designed to ensure that all applicable NESC conductor clearances to the edge of the ROW will be met.

IV. CONSTRUCTION ACTIVITIES

Q. Please generally describe the construction process.

A. The Project will be constructed following MAIT's standard construction practices to perform all work safely and in compliance with the Occupational Safety and Health Administration Rules and Regulations, while keeping environmental impact to a minimum. Project activities will include the installation and maintenance of soil erosion and sedimentation control measures, construction of temporary access roads, ROW clearing, installation of foundations, structures and wire, and rehabilitation of all disturbed areas due to the construction process.

Q. What is the estimated cost to site and construct the Project?

A. The cost of the Project is currently estimated at approximately $11,717,000.

Q. Over what time period will the Project be constructed?

A. Pending approval of the Project by the Commission, construction is scheduled to commence on or about May 12, 2025, with a target date for in-service of October 8, 2025.

Q. What steps are planned for minimizing the effects of construction on areas within and outside of the row, including things such as traffic and other local community issues?

A. No work will begin until the necessary permits for that work have been issued. All work will be conducted in accordance with all state and local permits, property releases, and approved special conditions. At all times, MAIT will minimize to the greatest extent practicable the impacts of construction activities on local communities.

VI. ROW CLEARING AND PREPARATION

Q. What methods will be used to clear and prepare the ROW for construction?

A. The construction specifications adopted for the Project are designed to avoid or minimize impacts to the extent practicable. MAIT's efforts to minimize environmental impacts during the corridor preparation phase of construction will include the following:

1. The Project will obtain a National Pollutant Discharge Elimination System ("NPDES") permit, approved by the Adams County Conservation District as well as the Pennsylvania Department of Environmental Protection ("PADEP"), as necessary. The NPDES Permit will include an Erosion & Sediment Control Plan as well as other stormwater pollution controls.
2. Best Management Practices for erosion and sediment control will be put in place prior to commencement of earth disturbance and maintained throughout construction and restoration.
3. Construction access routes will be installed in accordance with the approved Erosion and Sediment Control Plan and, where possible, will utilize existing roads, private farm lanes, private forest roads and similar paths. It is not typical MAIT practice to install any permanent access roads. Where new access routes are needed for construction, the routes will be re-graded to pre-construction contours and re-vegetated with appropriate vegetation upon completion of construction. If requested by the property owner and permits allow, consideration will be given to allowing the access route improvements to remain in place.

4. Disturbed work areas will be re-vegetated in accordance with the approved Erosion and Sediment Control Plan.

5. MAIT will clear the corridor to the edge of the ROW in accordance with the FirstEnergy Initial Clearing of Transmission Lines Specification. Trees located adjacent to transmission corridors that are dead, dying, diseased, structurally defective, leaning or significantly encroaching where the transmission facilities are at risk of arcing or failing should the tree or portions of the tree (i) fall near or into the transmission facilities or (ii) grow towards or into the transmission facilities, will be deemed priority trees. These priority (or "danger") trees shall be identified and removed. Before removing priority trees, MAIT will first obtain the necessary rights from the applicable property owners (to the extent that such rights are not already provided).

When required to comply with all terms of the governing permits applicable to construct the Project, MAIT's specifications will be modified and/or amended for construction of the Project.

Q. What steps will be taken to upgrade, seed, or otherwise restore disturbed ROW once construction is complete?

A. After construction is complete, the transmission line ROW will be restored to conditions as good as or better than those that existed prior to construction. Such restoration work includes restoring drainage ditches, fencing, and field drainage tiles. Non-cultivated areas that are disturbed by construction activities will be fertilized, seeded, and mulched.

Temporary erosion and sediment control measures will be removed after vegetative cover has been established.

Q. Please describe the steps that will be taken to control erosion and the siltation of streams where the ground is disturbed during construction activities along the ROW.

A. MAIT will follow its approved NPDES Permit and Erosion and Sediment Control Plan, in accordance with the PADEP's Erosion and Sediment Pollution Control Program Manual to control erosion and siltation of streams during construction.

VII. ROW MAINTENANCE

Q. Please describe the procedures that will be employed to maintain the corridor free of incompatible vegetation following the completion of construction and the commencement of operations.

A. The approach MAIT employs is the control or removal of all incompatible vegetation that has the potential to interfere with the safe and efficient operation of the transmission system. The goal is to promote a low-growing plant community of grasses, herbs, and low-growing compatible species within the transmission corridor. MAIT's methods to manage and control vegetation include manual control methods using hand-operated tools and/or mechanical control methods using equipment-mounted saws, mowers, or other devices. Various herbicide application techniques are also used, such as selective basal, stem foliage and cut stubble where necessary to prevent re-sprouting. Where vegetation management rights do not exist, MAIT will negotiate to obtain those rights. Also, adjacent to the transmission corridor, priority trees are identified and removed.

Work activities are performed under established maintenance cycles which have been developed based on existing vegetation conditions and species, anticipated growth rates, conductor movement, as well as terrain, state regulatory requirements, easement restrictions, typical corridor widths, and environmental concerns.

Q. Under what general parameters will MAIT maintain this Project corridor?

A. MAIT will maintain the Project in accordance with FirstEnergy's Transmission Vegetation Management Program ("TVMP"). I am sponsoring "Maintaining a Safe and Reliable Transmission System Vegetation Management for New Transmission Construction Projects" and "Maintaining a Safe and Reliable Transmission System Tree Trimming and Comprehensive Vegetation Management," which are attached as MAIT Exhibits 31 and 32 of the Application, respectively. In addition, a copy of the Vegetation Management Program Document is attached to the Application as MAIT Exhibit 33.

As described in these documents, the objective of the Transmission Vegetation Management Program is to ensure the continued and safe operation of transmission circuits through the removal and control of all incompatible vegetation that has the potential to interfere with the safe and efficient operation of the transmission system. MAIT's vegetation management practices are designed to prevent vegetation related outages by creating and sustaining a stable and compatible vegetated community within and along the transmission corridor using various vegetation management techniques, as mentioned previously.

Q. Will MAIT's vegetation control procedures observe specific legal or regulatory standards?

A. Yes. The vegetation management procedures described above are designed to ensure that MAIT complies with all required federal, state, and local statutes, regulations, ordinances, and vegetation management standards.

Q. Please describe the expected ROW maintenance cycle for this Project.

A. The FirstEnergy Transmission Vegetation Management program is currently on a four-year maintenance schedule for all transmission voltages.

Q. Does this conclude your direct testimony?

A. Yes, it does. However, I would like to reserve the right to file additional testimony or exhibits as may be necessary or appropriate.