

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Application Of NextEra Energy : Docket No. A-2026-_____
Transmission MidAtlantic, Inc., for All of :
the Necessary Authority, Approvals, and :
Certificates of Public Convenience :
(1) to Begin to Furnish and Supply Electric :
Transmission Service in Greene County and :
Fayette County, Pennsylvania; (2) for :
Certain Affiliated Interest Agreements; and :
(3) for any Other Approvals Necessary to :
Complete the Contemplated Transactions :

and

Application of NextEra Energy : Docket No. A-2026-_____
Transmission MidAtlantic, Inc., Filed :
Pursuant to 52 Pa. Code Chapter 57 :
Subchapter G, for Approval to Site and :
Construct a 500 kV Transmission Line :
Associated with the MidAtlantic Resiliency :
Link Project Located in Portions Of Greene :
County and Fayette County, Pennsylvania :

**NextEra Energy Transmission MidAtlantic, Inc.
Statement No. 5**

**DIRECT TESTIMONY OF
Heather Heater
Partner,
Environmental Resources Management, Inc.**

**Topics Addressed: Overview of Route Selection Process
Study Area and Route Development
Evaluation of Alternative Routes and Selection of
Proposed Route
Route Adjustments Following Public Involvement
Environmental and Socioeconomic Resources in
proximity to the Project and the Potential Impacts on
those resources from the construction of the Project**

Dated: March 3, 2026

1 **I. INTRODUCTION**

2 **Q. Please state your name, business position, and business address.**

3 A. My name is Heather Heater. I am a Partner at Environmental Resources Management, Inc.
4 (“ERM”). My business address is 1701 Golf Road, Suite 1-700, Rolling Meadows, IL
5 60008.

6

7 **Q. Please describe your educational and business background.**

8 A. I have a Bachelor of Science degree in Marine Biology from Florida Institute of
9 Technology in 1997 and completed a Master of Science degree in Environmental Resource
10 Management from Florida Institute of Technology in 1999. I am also a certified Project
11 Management Professional.

12 I have been employed at ERM since 2008 and have been managing and overseeing
13 as well as a siting lead for routing and siting projects of numerous projects. I have been the
14 partner in charge of the MidAtlantic Resiliency Link Project (“MARL” or the “MARL
15 Project”). My primary responsibilities at ERM include serving as the lead routing and siting
16 expert, final senior reviewer of deliverables, and strategic advisor responsible for the
17 implementation of the environmental studies and/or permits that are necessary for projects,
18 management of project budgets, schedules, and staffing of projects, as well as serve as
19 technical advisor to power projects.

20

21 **Q. On whose behalf are you testifying?**

22 A. I am testifying on behalf of the applicant in this proceeding, NextEra Energy Transmission
23 MidAtlantic, Inc. (“NEET MA”), the Applicant in this proceeding. NEET MA is requesting

1 all necessary authority, approvals, and Certificates of Public Convenience (“CPC”) from
2 the Pennsylvania Public Utility Commission (“PAPUC” or “Commission”): (1) to begin
3 to furnish and supply electric transmission service in Greene County and Fayette County,
4 Pennsylvania; (2) for certain affiliated interest agreements; and (3) for any other approvals
5 necessary or required. In addition, NEET MA is requesting PAPUC approval to site and
6 construct a new 500 kV high-voltage (“HV”) transmission line associated with the MARL
7 Project located in portions of Greene County and Fayette County, Pennsylvania. PJM
8 Interconnection, LLC (“PJM”) has directed NEET MA to build the MARL Project to
9 address significant electric reliability issues across the MidAtlantic region, including
10 within Pennsylvania.

11
12 **Q. What is the purpose of your testimony?**

13 A. The purpose of my testimony is to support NEET MA’s *“Application of NextEra Energy*
14 *Transmission MidAtlantic, Inc., Filed Pursuant to 52 Pa. Code Chapter 57 Subchapter G,*
15 *for Approval to Site and Construct a 500 kV Transmission Line Associated with the*
16 *MidAtlantic Resiliency Link Project Located in Portions Of Greene County and Fayette*
17 *County, Pennsylvania”* (hereinafter, “Siting Application”). I also support NEET MA’s
18 *“Application Of NextEra Energy Transmission MidAtlantic, Inc., for All of the Necessary*
19 *Authority, Approvals, and Certificates of Public Convenience (1) to Begin to Furnish and*
20 *Supply Electric Transmission Service in Greene County and Fayette County, Pennsylvania;*
21 *(2) for Certain Affiliated Interest Agreements; and (3) for any Other Approvals Necessary*
22 *to Complete the Contemplated Transactions”* (hereinafter, the “CPC Application”). The
23 MARL Project is a proposed new 107.5-mile, 500 kV transmission line that will traverse

1 portions of Pennsylvania, West Virginia, Maryland, and Virginia. The portions of the
2 Proposed Route that will traverse Pennsylvania (the “Pennsylvania Portions”) consist of
3 10.7 miles (out of 107.5 miles) in length in Greene and Fayette counties in Pennsylvania.
4 My testimony introduces the Routing Study and ERD, attached hereto, which describes the
5 MARL Project’s siting and right of way (“ROW”) corridors located within the project’s
6 study area (“Study Area” or “MARL Project Study Area”), describes the Proposed Route
7 and Alternative Routes, and provides a summary of the environmental and socioeconomic
8 effects of the MARL Project’s Proposed Route, including a description of the current
9 conditions, certain unavoidable impacts and recommended mitigation.

10
11 **Q. Please describe ERM and its role in the MARL Project.**

12 A. As testified by NEET MA Witness Kaitlin McCormick, following PJM’s direction to NEET
13 MA to construct the MARL Project, NEET MA assembled a team of experienced internal
14 transmission development subject-matter experts and retained ERM as its outside routing
15 and siting expert consultant (collectively, the “Routing Team”) to develop and ultimately
16 select the proposed route (“Proposed Route”) for the MARL Project. NEET MA retained
17 ERM to perform the detailed routing and siting analysis (“Routing Study”) and prepare
18 associated testimony for the respective state siting applications for approval of the MARL
19 Project as well as the environmental studies and permitting. NEET MA also retained ERM
20 to lead the environmental scope of work associated with the transmission line routing
21 analysis supporting the state siting applications and eventual federal, state, and local
22 environmental permitting for the MARL Project. The ERM team is comprised of
23 environmental scientists, planners, and cultural resources specialists, and engineers. ERM

1 is responsible for routing, permitting and development of the Environmental Review
2 Document (“ERD”) (attached to the Routing Study, Attachment 3 of the Siting Application)
3 as well as supporting agency consultation.
4

5
6 **Q. Have you previously provided testimony before the Pennsylvania Public Utility
7 Commission or another state regulatory commission?**

8 A. I have not provided testimony before the Pennsylvania Public Utility Commission
9 (“PAPUC”); however, I have provided testimony before the Illinois Commerce
10 Commission, for the Mapleridge to Fargo 345 kV Transmission Line Project (ICC Docket
11 13-0115) and supported numerous other filings.
12

13 **Q. Are you sponsoring any schedules or exhibits as part of your direct testimony?**

14 A. No, I am not.
15

16 **II. OVERVIEW OF THE ROUTE SELECTION PROCESS**

17 **Q. What was your role on the Routing Study and the route selection process for the
18 MARL Project?**

19 A. As described above, NEET MA retained ERM to perform the routing and siting of the
20 MARL Project, which included the identification and evaluation of route alternatives to
21 resolve the reliability needs identified by PJM, in accordance with Pennsylvania law and
22 NEET MA’s operating needs. In coordination with NEET MA, ERM was responsible for

1 the development of the study area, routing guidelines, and route alternatives and
2 identification of a Proposed Route, which are described in the Routing Study and the ERD.

3 My role within the Routing Team was to lead the ERM team in conducting the
4 routing and siting for the MARL Project. I was integral in preparing the Routing Study
5 and the various supporting attachments to the Routing Study and Siting Application. In this
6 capacity, I was one of the team members responsible for identifying route segments,
7 alternatives considered but not carried forward, preliminary draft alternative routes,
8 identification of final alternative routes, and the selection of the Proposed Route.
9 Additionally, stakeholder and public engagement played a critical role in shaping the
10 routing process for the MARL Project, and I was responsible for ERM's role in stakeholder
11 and public engagement activities including a multi-faceted public outreach effort
12 combining digital tools with in-person engagement across the four-state MARL Project
13 Study Area. Lastly, I was responsible for general oversight and review of the technical
14 studies, coordination and management of the ERM team, the creation and review of routing
15 deliverables, and the preparation of the appropriate testimony and Siting Application
16 components.

17
18 **Q. What was the objective of the Routing Study?**

19 A. The objective of the Routing Study was to identify a Proposed Route and Alternative
20 Routes that reasonably minimizes the potential impacts of the MARL Project on the natural
21 and built environment, utilizes existing routing opportunities where available, reduces
22 special engineering design requirements where feasible, and can be constructed and
23 operated in a safe and reliable manner. Throughout this process, NEET MA sought to

1 identify feasible, constructible, and permissible alternative routes that adhere to the route
2 development criteria and guidelines established by the Routing Team for the MARL
3 Project.

4
5 **Q. Please summarize the route selection process that the Routing Team undertook for**
6 **the Project.**

7 A. The goal of the routing process was to identify Alternative Routes that meet the technical
8 and economic needs of the MARL Project while avoiding potential constraints (e.g.,
9 sensitive environmental resources, residential dwellings) and taking advantage of
10 opportunity areas (e.g., existing linear infrastructure) to the greatest extent possible.
11 Furthermore, the goal was to identify and evaluate opportunities and environmental
12 constraints in the MARL Project Study Area to: (1) facilitate the development of feasible
13 Alternative Routes; (2) evaluate potential impacts associated with the Alternative Routes;
14 and (3) ultimately, identify a Proposed Route that meets the MARL Project need and that
15 is constructible. The five main steps in this process include: (1) defining the study area;
16 (2) identification of constraints and opportunities; (3) identification and assessment of
17 preliminary routes; (4) execution of field reconnaissance and stakeholder engagement
18 including open houses; and (5) implementation of quantitative and qualitative analysis to
19 identify the feasible route alternatives, including identifying the Proposed Route. Each
20 phase is described in detail in Section 2.0 of the Routing Study and in more detail later in
21 my Direct Testimony.

22 The **first step** in the routing process was to define a geographic study area in
23 alignment with PJM's identified electric reliability requirements, which included two fixed

1 endpoints, including the western terminus at the 502 Junction Substation in Greene County,
2 Pennsylvania, and the eastern terminus at the PJM-designated handoff point in Frederick
3 County, Virginia. The **second step** involved identifying and mapping constraints that
4 consisted of natural environment, built environment, cultural resources, and social
5 resources, engineering considerations, and existing opportunities (primarily including
6 existing linear infrastructure corridors) within the study area. The **third step** included the
7 identification of broad conceptual route corridors—swaths of the study area feasible for
8 routing new transmission infrastructure—and the exclusion of areas where transmission
9 line routing is impracticable due to land use or other constraints. The **fourth step** included
10 conducting field reconnaissance and stakeholder/public engagement activities to gather
11 local knowledge, identify sensitive resources, and help further inform routing and route
12 selection. The **fifth step** then used the data collected during field reconnaissance and
13 stakeholder outreach activities to refine the preliminary draft route options, develop end-
14 to-end route alternatives, and conduct both quantitative and qualitative analyses of these
15 alternatives.

16 During all steps in the process, subject matter experts within the Routing Team were
17 involved, making informed and necessary route adjustments, performing a route analysis,
18 and selecting potential route options to move forward. The public and agency involvement
19 included public outreach and obtaining feedback from members of the public and relevant
20 federal, state, and local agencies who could have jurisdiction over required permits or
21 authorizations necessary for project development and construction. Extensive feedback
22 was solicited from members of the public and the Routing Team engaged with a wide range
23 of local, state, and federal agencies across the four states area, including within Greene and

1 Fayette counties in Pennsylvania. As described in Section 4.4 of the Routing Study,
2 stakeholder feedback was used by the Routing Team to modify, combine or dismiss route
3 segments. The public involvement phase is further described in the Direct Testimony of
4 NEET MA Witness McCormick. (NEET MA St. No. 1, pp. 30-35.)

5 The MARL Project will be constructed in a new ROW Corridor measuring, on
6 average, 200 feet wide. The MARL Project will require a wider ROW Corridor in some
7 areas where additional aerial easement rights are necessary to comply with electrical
8 standards and requirements. The full area of required MARL Project-specific ROW
9 Corridor at any given point along the route is hereafter referred to as the “ROW Corridor.”
10 The ROW Corridor ranges from 200 feet to 426 feet.

11
12 **Q. What are opportunities and constraints?**

13 A. Opportunities are existing linear infrastructure or corridors (*e.g.*, existing transmission line
14 corridors) or other features along which transmission line development is potentially
15 compatible. The Routing Team aimed to parallel existing transmission line corridors to the
16 extent practicable as this allows for potentially minimizing the impacts of the new line on
17 the natural environment and built environment, *e.g.*, by minimizing visual, environmental,
18 and access effects. Benefits to paralleling existing transmission line corridors include:
19 limiting impacts on local communities; providing easier construction access to the ROW
20 Corridor for the MARL Project; reducing the need for new access roads; reducing impacts
21 on sensitive natural and visual resources; and decreasing new areas of habitat
22 fragmentation and impacts on wildlife. In addition to seeking to parallel and abut existing

1 transmission lines, the Routing Team sought to follow property lines to the extent
2 practicable to minimize bifurcation of properties.

3 Constraints are areas or sensitivities that generally can be identified through data
4 collection and that might adversely affect the location of the new facility. Constraints
5 represent obstacles or impediments to the routing of a transmission line. Examples of
6 constraints for route selection included residential areas, forested wetlands areas, large
7 tracts of public land, community facilities, conservation easements, steep slopes, and
8 crossings of other existing infrastructure, that could result in difficulty during project
9 construction or adversely impact the natural or built environment, or other resources
10 identified as high priority by the public or federal, state, or local agencies.

11 ERM assessed constraints and opportunities for routing the MARL Project. In fact,
12 features in the Study Area are often both constraints and opportunities. For example,
13 running parallel to existing transmission lines in a state forest could offer space for new
14 ROWs, but it may not be compatible with the adjacent land uses (*e.g.*, homes, dwellings,
15 or businesses). When routing the MARL Project, the Routing Team assessed both the
16 constraints and opportunities located within the MARL Study Area. Thereafter, the
17 Routing Team developed route alternatives through a comparative evaluation process that
18 considered: existing opportunities; the presence and extent of constraints along potential
19 routes; and when route alternatives were otherwise comparable in terms of constructability,
20 length, and other technical factors, the Routing Team considered the types of constraints
21 present along each route and their relative significance.

22 As part of the routing process for the MARL Project, the Routing Team adhered to
23 three principles when developing route alternatives: parallel existing transmission lines

1 where feasible; avoid residential dwellings within the ROW Corridor where feasible; and
2 minimize crossing conservation easements.

3
4 **Q. What constraints and opportunities are present within the Study Area for the MARL**
5 **Project?**

6 A. The MARL Project Study Area encompassed several existing high-voltage transmission
7 line corridors as well as smaller-scale transmission and distribution networks. These
8 features allowed the Routing Team to maximize opportunities to site the MARL Project
9 parallel to and abutting existing transmission line corridors owned by other utility
10 companies, where possible.

11 Examples of constraints within the Pennsylvania portion of the study area included:
12 protected areas such as State Game Land No. 38, Friendship Hill National Historic Site,
13 Forbes State Forest, and Quebec Run Wild Area; agricultural and conservation easements;
14 scenic byways, including the Laurel Highlands Scenic byway; and recreational resources,
15 such as hiking, backpacking, camping, and fishing areas.

16 The Study Area also contains sensitive environmental areas, such as naturally
17 reproducing, wilderness and stocked trout streams, wetlands, and various sensitive species
18 resources such as bat hibernacula and natural heritage areas. There are also cultural
19 resources within the Study Area, including historic districts and resources listed in the
20 National Register of Historic Places. Regarding the built environment within the Study
21 Area, there is also significant residential, commercial, and agricultural development,
22 oftentimes adjacent to the existing transmission line corridors. Topographically, there are

1 significant ridge and valleys with steep slopes presenting engineering constraints to
2 development.

3 For more details on the opportunities and constraints within the MARL Project
4 Study Area, refer to section 3.2 of the Routing Study.

5
6 **Q. What are Conceptual Route Corridors, Route Segments, and Alternative Routes?**

7 A. “Conceptual Route Corridors” are broad, general areas within which the transmission line
8 could feasibly be located and generally follow the existing transmission lines within the
9 Study Area. The Routing Team developed these conceptual route corridors at a high level
10 to avoid mapped large area constraints and/or incorporate notable opportunity features—
11 existing transmission lines—that could be paralleled. “Route Segments” are more refined
12 linear paths that represent feasible alignments for siting the transmission line. Multiple
13 segments are typically identified, each outlining a potential path of the transmission line,
14 thereby resulting in alternative route options. An “Alternative Route” is an assemblage of
15 route segments that form a unique route connecting the project endpoints for analysis and
16 comparison.

17
18 **Q. How were routes identified?**

19 A. The routing process for the MARL Project was structured as a multi-phased, iterative
20 approach that integrated both quantitative and qualitative assessments at each stage. The
21 Routing Team began by identifying broad conceptual route corridors within the MARL
22 Project Study Area that generally followed existing transmission lines that maintained a
23 similar directional alignment between the two MARL Project endpoints. From these

1 conceptual route corridors, the Routing Team developed preliminary route segments that
2 were evaluated using measurable criteria such as line length, potential for paralleling, and
3 parcel crossings, as well as qualitative factors including land use compatibility, community
4 context, and field observations. These route segments were presented as preliminary draft
5 route options for public input through open houses and an online survey.

6 Following the public input period, the Routing Team assessed the input and further
7 refined route segments. These refined route segments were consolidated into longer
8 “trunks” or route groupings that were further evaluated quantitatively and qualitatively.
9 Through continued refinement and comparative evaluation of the route groupings, the
10 Routing Team ultimately identified six full end-to-end route alternatives that reflect
11 technical and regulatory requirements and address stakeholder preferences including the
12 desire that the MARL Project parallel existing infrastructure, such as transmission lines
13 and roads, and minimize impacts on residential areas and recreational activities.

14 To address public feedback that NEET MA received, the MARL Project
15 incorporated into the development of routes the following: (1) paralleling existing
16 transmission lines where feasible; (2) avoiding residential dwellings within the ROW
17 Corridor where feasible; and (3) minimizing the crossing of conservation easements as well
18 as other protected lands.

19
20 **Q. Please summarize the guidelines used to identify potential Alternative Routes.**

21 A. At the start of the routing process, the Routing Team established a set of criteria, guidelines,
22 and considerations based on best practices and extensive experience in transmission line
23 routing and siting projects. While there are no published studies or formal industry

1 standards, the criteria reflect methodologies that have been applied to other greenfield
2 projects and, in some cases, accepted by state commissions. These criteria were considered
3 and applied to the MARL Project, incorporating natural environment and built environment
4 resources as well as land and engineering considerations.

5 An extensive list of routing development criteria and guidelines that the Routing
6 Team applied to identify alternative routes are set forth and included in Section 2.7 of the
7 Routing Study. Among other things, these guidelines focus on minimizing impacts to
8 residences, commercial buildings, schools, and other socially sensitive facilities, while
9 reducing interference with agricultural operations and avoiding removal of nonresidential
10 structures. Using these guidelines, alternative routes were evaluated to align closely with
11 existing transmission corridors, limit circuitous paths, and reduce the number of affected
12 parcels by following property boundaries. Environmental considerations included
13 minimizing crossings of major water bodies and wetlands, avoiding critical habitats and
14 biodiversity areas, and reducing visibility from scenic or populated locations. Engineering
15 and constructability factors were also addressed by favoring high ground for tower
16 placement, avoiding steep slopes and flood-prone areas, and utilizing existing access routes
17 where possible.

18 In reviewing the socioeconomic and landowner impacts of the potential routes, the
19 Routing Team's goal was to reduce greenfield¹ routing impacts for landowners by
20 paralleling existing transmission lines, roads, and property line edges when feasible,
21 maximizing distances from residences and public facilities to the extent possible, and

¹ As used in the Routing Study and throughout my testimony, for the MARL Project, *paralleling* is defined as siting the proposed transmission line so the MARL Project ROW Corridor abuts the existing transmission line corridor. *Greenfield* is defined as a section of the MARL Project ROW Corridor for any portion of the route that does not abut an existing transmission line corridor.

1 minimizing impacts to public airports. In reviewing the environmental impacts of the
2 alternative routes, NEET MA's Routing Team also sought to minimize or avoid impacts to
3 forested wetlands, protected or sensitive species and habitats, known cultural and
4 archeological resources, and federal and state-owned lands and conservation easements to
5 the maximum extent practicable. Other guidelines the Routing Team considered included
6 minimizing impacts on the natural and built environment to the extent practicable; avoiding
7 dwellings; minimizing interference with economic activities; minimizing the crossings of
8 environmentally and culturally sensitive lands; and maximizing the paralleling of existing
9 ROW to the extent practicable. Collectively, these criteria were applied to balance
10 environmental, social, and technical concerns in developing feasible and responsible
11 routing alternatives.

12
13 **III. STUDY AREA AND CONSTRAINT AND OPPORTUNITIES DEVELOPMENT**

14 **Q. How was the Study Area developed for the MARL Project?**

15 A. The first step in the routing process involved defining a geographic study area in alignment
16 with PJM's identified electric reliability requirements, which included two fixed endpoints,
17 *i.e.*, the 502 Junction Substation in Greene County, Pennsylvania and the PJM-designated
18 handoff point with FirstEnergy in Frederick County, Virginia. In addition to these
19 endpoints, the Study Area included a sufficiently broad area to capture geographically
20 diverse opportunities for paralleling existing linear infrastructure—such as transmission
21 lines, pipelines, and transportation corridors—thereby supporting the identification and
22 evaluation of a reasonable range of routing alternatives. Additionally, and to the extent
23 practicable, the limits of the Study Area were defined by reference to easily distinguished

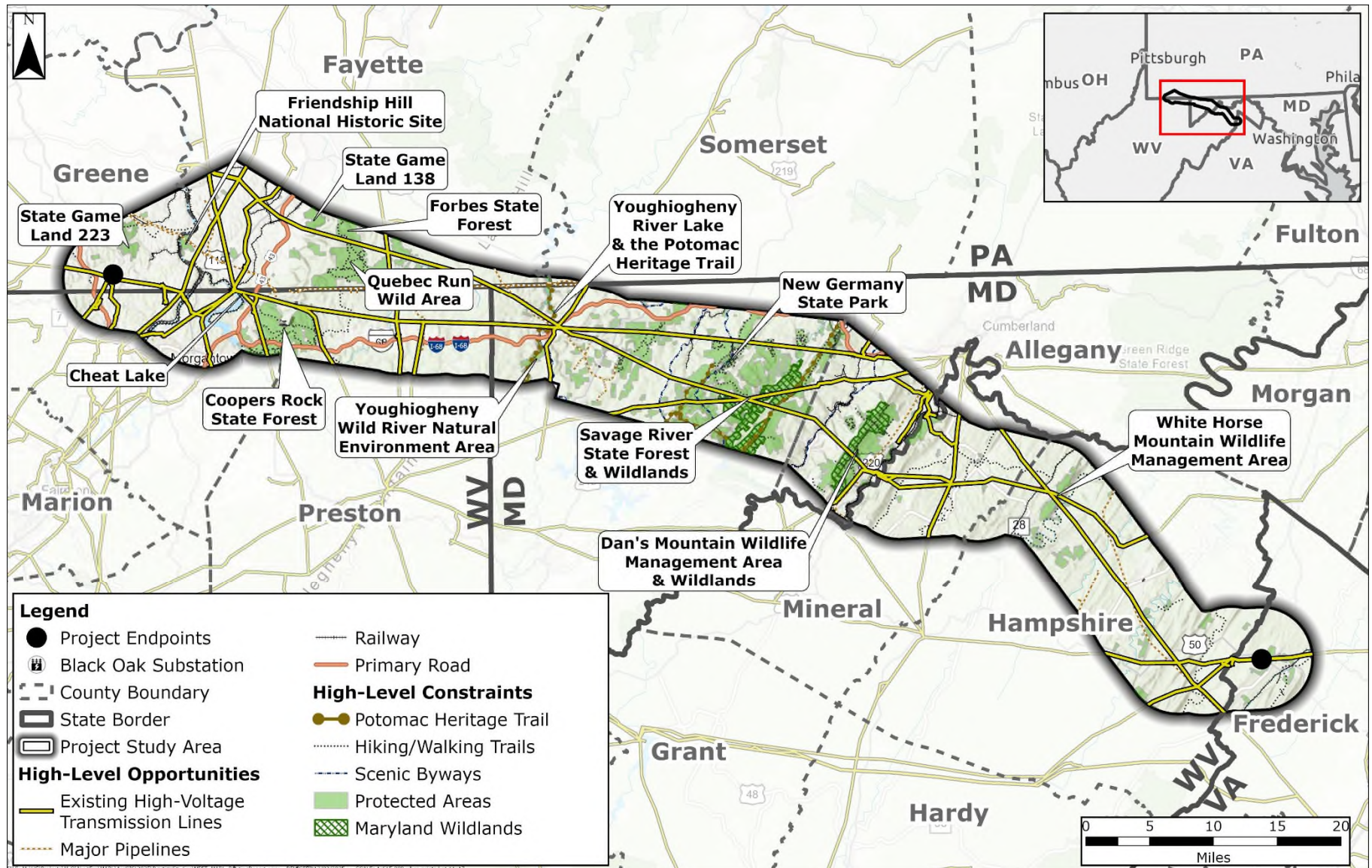
1 landmarks, such as roads or other features. This approach helped the Routing Team clearly
2 communicate the Study Area boundaries to stakeholders, such as potentially affected
3 landowners, county officials, and permitting agency staff. Section 3.1 of the Routing Study
4 describes the characteristics of the Study Area in detail.

5
6 **Q. Please describe the Study Area for the MARL Project.**

7 A. In general, the Study Area for the MARL Project encompassed 1,053 square miles, was 95
8 miles west to east (straight-line distance) and varied from 8 to 16 miles wide across the
9 following states and counties: Pennsylvania: Greene and Fayette counties; West Virginia:
10 Hampshire, Mineral, Monongalia, and Preston counties; Maryland: Garrett and Allegany
11 counties; and Virginia: Frederick County.

12 The area included in the Study Area had to be sufficiently broad to capture
13 geographically diverse opportunities for paralleling existing linear infrastructure and to
14 accommodate potential routing options between the MARL Project's endpoints, traversing
15 areas with challenging topography and pockets of high population density while generally
16 followed existing transmission lines in similar directional alignment between the two
17 MARL Project endpoints. See **Figure 1** below that highlights the Study Area and major
18 constraints and opportunities.

1 **Figure 1: The Study Area and Major Constraints and Opportunities**



2

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23

Q. What was the next step in the routing process, following the development of the Study Area?

A. The next step in the routing process involved the identification and mapping of constraints that consisted of natural environment, built environment, cultural resources, and social resources, and existing opportunities within the Study Area. The Routing Team developed a constraint geospatial database that integrated publicly available spatial data across the four states with analytical tools to support informed decision-making. This process involved collecting, organizing, and managing a wide range of geospatial data such as parcel data, roads, municipal boundaries, topography, land use, environmental constraints, infrastructure, and socioeconomic factors. In addition to publicly available geospatial data, NEET MA contracted SAM, Inc. to capture high-resolution aerial imagery and LiDAR data for the MARL Project Study Area. Data acquisition was conducted during leaf-off conditions between December 2023 and February 2024, providing 3-inch-resolution imagery and LiDAR data. This high-resolution imagery and elevation data was critical in the development of a Study Area wide building footprint dataset. The existing aerial and satellite imagery of the Study Area had low spatial or temporal resolution, making identification of buildings difficult. However, by using the acquired high-resolution aerial imagery provided by SAM, Inc., the Routing Team was better able to identify and categorize building footprints

Using Geographic Information Systems (“GIS”), the Routing Team analyzed these datasets to identify optimal paths that minimize environmental impacts, confirm constructability, and avoid populated or sensitive areas to the maximum extent practicable.

1 The collection of this data was necessary to identify constraints and opportunities within
2 the Study Area for the development of potential route options. Section 3.2 of the Routing
3 Study describes and summarizes in more detail the major constraints and opportunities with
4 the Study Area for the MARL Project.

5
6 **Q. Once the Study Area data is collected and the opportunities and constraints are**
7 **identified, what was the routing process?**

8 A. After developing the constraint and opportunity geospatial database, the Routing Team
9 identified the routing criteria and guidelines, which consisted of routing best practices and
10 evaluation criteria for data associated with the natural environment, built environment,
11 cultural resources, social resources, and engineering factors to be considered for the
12 evaluation of the routes. As mentioned above, the guidelines and evaluation criteria are set
13 forth more fully in Section 2.7 of the Routing Study. Then, using the constraint and
14 opportunity geospatial database, the Routing Team identified broad conceptual route
15 corridors—swaths of the Study Area feasible for routing new transmission infrastructure—
16 and excluded areas where transmission line routing would be impracticable due to land use
17 or other constraints.

18
19 **IV. PRELIMINARY DRAFT ROUTE OPTIONS**

20 **Q. What were the routing principles used to identify the preliminary draft route options?**

21 A. As part of the MARL Project, the Routing Team adhered to three principles when
22 developing route alternatives: parallel existing transmission lines where feasible; avoid

1 residential dwellings within the ROW Corridor where feasible; and minimize crossing
2 conservation easements.

3
4 **Q. Please explain how the preliminary draft route options were developed.**

5 A. Prior to developing preliminary draft route options to release during public open houses,
6 and employing the routing guidelines and criteria described above, the Routing Team
7 developed conceptual route corridors as broad, general areas within which the MARL
8 Project could feasibly be located and that generally followed the existing transmission lines
9 within the Study Area. The conceptual route corridors were developed at a high level to
10 avoid mapped large area constraints and/or incorporate notable opportunity features—*e.g.*,
11 existing transmission lines—that could be paralleled. The conceptual route corridors were
12 designed to provide options that allowed for: paralleling existing transmission lines, where
13 feasible; maximizing the separation distance from or minimizing impacts on residential
14 dwellings; and minimizing conservation easement crossings. Additional considerations
15 during conceptual route corridor development included: natural environment constraints
16 (*e.g.*, wetlands, wildlife habitats, protected lands); built environment patterns (*e.g.*, land
17 use, residential neighborhoods, residential structures, commercial buildings); engineering
18 constructability (*e.g.*, topography, access); and regulatory and permitting constraints.

19 The conceptual route corridors were developed to parallel existing transmission
20 lines to the greatest extent possible, focusing on those that traveled in the same general
21 direction between the MARL Project's endpoints. This reduced the overall line length and
22 associated potential impacts.

1 To help facilitate development of conceptual route corridors, the Study Area was
2 subdivided into four quadrants—Northwest, Southwest, Central, and Eastern—to allow for
3 a more organized and efficient review of routing alternatives across the large Study Area.
4 Quantitatively, this enabled the evaluation of the criteria identified in the Routing Study
5 (*e.g.*, length, paralleling, parcel crossings). Qualitatively, this allowed for an assessment
6 of constraints that could not be quantitatively compared (*e.g.*, land use patterns, community
7 development, terrain characteristics). The combination of quantitative analysis and
8 qualitative insight supported a transparent, data-driven decision-making process and made
9 sure that development of route segments and alternatives were evaluated consistently
10 throughout the process. This framework enabled the Routing Team to identify, evaluate,
11 and refine potential route segments within each quadrant, ultimately supporting the
12 development of end-to-end Alternative Routes.

13 Within each quadrant, routing efforts prioritized opportunities to parallel existing
14 transmission lines and other compatible linear features, where feasible, while also avoiding
15 large concentrations of developed areas. This approach was intended to: minimize impacts
16 on the natural environment; reduce potential conflicts with the existing built environment;
17 streamline permitting and stakeholder engagement; and enhance constructability and long-
18 term operational efficiency. Section 4.1 of the Routing Study describes more fully the
19 process the Routing Team undertook to develop conceptual route corridors.

20 After identification of the conceptual route corridors, the Routing Team identified
21 and mapped preliminary route segments within the Study Area quadrants for initial
22 evaluation against the routing criteria and guidelines identified in Section 2.7. The
23 preliminary route segments were quantitatively and qualitatively assessed on a continual

1 basis by the Routing Team and adjusted as needed to support the development of
2 preliminary route options for the MARL Project open houses and online survey, which
3 were designed to gather stakeholder and public feedback. The objective of this process was
4 to reduce the number of route segments such that those remaining were more suitable for
5 routing a new transmission line and could be combined into reasonable full-length
6 preliminary draft route options. These assessments were conducted by the Routing Team
7 using a combination of data sources, including digital datasets, stakeholder and agency
8 input, and windshield field reconnaissance.

9 Through the windshield field reconnaissance, additional qualitative observations
10 were made that informed further refinement of the preliminary route segments. As a result,
11 certain preliminary route segments were adjusted or removed based on field-verified
12 conditions not observable in the high-resolution imagery, such as newly constructed
13 dwellings, residences obscured from aerial view, unmarked cemeteries, engineering
14 constraints, and other site-specific factors. These field-based insights complemented the
15 quantitative data and verified that route development was grounded in both spatial analysis
16 and real-world conditions.

17 The Routing Team compiled data analytics for each preliminary route segment
18 using common starting and ending points and compared them against each other in the four
19 quadrants of the MARL Project Study Area, removed those preliminary route segments
20 that were less favorable, and then carried forward those remaining route segments. These
21 remaining route segments comprised the MARL Project “preliminary draft route
22 options” that were presented to the public at the open houses and through the online survey.
23

1 **Q. What were the routing criteria that were utilized to evaluate preliminary draft route**
2 **options?**

3 A. Section 2 of the Routing Study identified the goal of the Routing Study for the MARL
4 Project, as well as the criteria and guidelines used for the development of route selection.
5 The Routing Team recognized that no single route can simultaneously minimize all
6 potential impacts or eliminate the need for non-standard design elements. Routing
7 decisions inherently involve trade-offs. For example, in forested regions, a route that avoids
8 residential development may require extensive tree clearing, while a route that minimizes
9 ecological disturbance may affect more homes.

10 Accordingly, the routing process aimed not to only reduce impacts across all
11 resource categories, but also to achieve a balanced outcome which allows flexible
12 consideration of multiple criteria in consideration of stakeholder input to account for and
13 prevent prioritization of one impact over another, when competing constraints cannot be
14 avoided.

15 The multi-criteria evaluation (Table 2.7-1 of the Routing Study) for analysis of the
16 Alternative Routes was a comprehensive process that integrated the natural environment,
17 built environment, cultural resources, social resources, and engineering constructability to
18 identify the superior and least impactful route. Each route was assessed using a robust
19 framework outlined in Section 2.7 of the Routing Study. The Routing Team systematically
20 compared the identified Alternative Routes across quantitative and qualitative measures,
21 including route length and footprint; land use considerations such as paralleling existing
22 infrastructure, impacts on communities, protected lands, cultural resources and land cover;
23 natural environment considerations such as water resources, and ecological and sensitive

1 species; and engineering criteria. This process aimed to achieve an optimal balance among
2 all evaluation criteria and identified a Proposed Route that is superior to the five other
3 Alternative Routes.

4 The criteria used in the Routing Study included Route Length, Construction
5 Footprint, Paralleling Existing Infrastructure, Community and Recreational Resources,
6 Protected Areas, Cultural Resources, Agricultural and Land Cover, Water Resources,
7 Sensitive Species and Habitats, Engineering and Infrastructure, and Estimated Costs.

8
9 **Q. Did the Routing Team conduct a field review of the identified preliminary draft route**
10 **options?**

11 A. The Routing Team conducted field reconnaissance reviews of various locations within the
12 MARL Project Study Area and along identified route segments from public roads during
13 2025. These site visits were used to visually assess terrain, land use, vegetation, residential
14 development, and existing infrastructure conditions. Photographs and field observations
15 collected during these visits supplemented the desktop data to aid in the analysis and
16 evaluation of route segments. Field reconnaissance also provided valuable on-the-ground
17 context, helped the Routing Team verify data accuracy and identify potential constraints
18 not visible in the high-resolution aerial imagery flown for the MARL Project, and helped
19 refine the Routing Team's understanding of local conditions.

1 **V. ROUTE ADJUSTMENTS FOLLOWING PUBLIC INVOLVEMENT**

2 **Q. Have stakeholders or members of the public provided feedback to NEET MA during**
3 **the route selection process?**

4 A. Yes. Ms. McCormick describes the extensive public outreach that NEET MA undertook
5 during the routing and siting process in her direct testimony. (NEET MA St. No. 1, pp.
6 30-35.) Section 4.3 of the Routing Study also describes the steps the Routing Team
7 undertook to integrate stakeholder and public feedback for the MARL Project.

8
9 **Q. Were any state, federal, or local agencies or tribes contacted as part of the routing**
10 **process?**

11 A. Yes. Agency outreach was initiated in May 2024, to provide high-level project
12 introductions to federal, state, and local agencies who may require authorizations for the
13 MARL Project. This initial round of outreach was conducted with the goal of gathering
14 feedback on the larger project study area, to help understand agencies' concerns and
15 priorities. Follow up coordination continued and was re-initiated in May 2025, in parallel
16 with the public open house period, to provide agencies the opportunity to review the draft
17 route options and again provide feedback. A detailed discussion of the Applicant's outreach
18 efforts is set forth in Ms. McCormick's Direct Testimony. (NEET MA St. No. 1, pp. 30-
19 32.)

20
21 **Q. Was any feedback received from the agencies or tribes?**

22 A. Yes. As Ms. McCormick discusses in her Direct Testimony, feedback was received from
23 agencies and/or tribes. (NEET MA St. No. 1, p. 32.)

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22

Q. Were any modifications to the preliminary route options made as a result of this public feedback?

A. Yes. As mentioned above, the Routing Team incorporated public feedback received through online mapping surveys, in-person and virtual open house meetings, and direct stakeholder communications in order to refine the preliminary route options. Following these public engagement efforts including the May 2025 open houses and online survey where the preliminary draft route options were presented, the Routing Team conducted additional evaluations to refine the preliminary draft route options/route segments using the evaluation criterion. The Routing Team’s process is described in detail in Section 4.4 of the Routing Study.

Q. Were any route segments rejected?

A. Yes, after further evaluation discussed below, several route segments were rejected. As described in more detail in the Routing Study, the preliminary draft route options that were shared publicly included route segments spanning approximately 310 total miles within the Study Area. Following public engagement efforts, the Routing Team conducted additional evaluations to refine the preliminary draft route options/route segments. As part of the route refinement process, route segments were combined, modified, or dismissed based on stakeholder concerns, engineering constructability, and natural environment, built environment, cultural, and social criteria. In total, 84 route segments were evaluated, each representing a potential part of the alternative routes.

1 As a result, and for the overall MARL Project, 35 of these 84 route segments were
2 dismissed due to constraints identified through public and agency input. Forty-nine
3 segments were carried forward, and of these, 41 were refined—adjusted, shortened, or
4 rerouted—to address community concerns and improve constructability. In Pennsylvania
5 specifically, 17 route segments were part of the refinement process with 6 route segments
6 dismissed and 11 carried forward (see Table 4.4-1 of the Routing Study). These
7 refinements for the MARL Project informed the development of six full end-to-end route
8 alternatives for regulatory review, representing both technical feasibility and
9 responsiveness to public and stakeholder input. Table 4.4-1 of the Routing Study set forth
10 in detail the reason(s) each routing segment was refined (*i.e.*, shortened, rerouted, or
11 adjusted), dismissed or added following these public engagement efforts.

12
13 **VI. EVALUATION OF THE FINAL ALTERNATIVE ROUTES**

14 **Q. Please describe NEET MA's final Alternative Routes.**

15 A. Following public engagement efforts and the route refinement process described in Section
16 4 of the Routing Study, the Routing Team analyzed and combined the 49 route segments
17 into six end-to-end Alternative Routes (A through F) for a detailed comparative analysis.
18 From the more than 350 possible end-to-end routing combinations generated through the
19 route segment analysis, a focused set of six representative alternatives was identified for
20 detailed comparison. These six feasible Alternative Routes for the MARL Project were
21 selected to capture the full range of routing opportunities while minimizing overlap,
22 making sure that each option meaningfully differed in terms of geographic alignment, land
23 use context, and environmental setting.

1 **Alternative Route A** is 107.5 miles long that includes 10.7 miles in Pennsylvania,
2 58.9 miles in West Virginia, 35.4 miles in Maryland, and 2.4 miles in Virginia, and requires
3 2,669.0 acres of ROW Corridor. Alternative Route A parallels existing transmission lines
4 for 56.4 miles (52.5 percent of the total alignment) and proposes 51.0 miles of a greenfield
5 section (47.5 percent of the total alignment). Alternative Route A crosses Coopers Rock
6 State Forest, Youghiogheny River Lake and the Potomac Heritage Trail, Bear Creek
7 Hatchery FMA, Savage River State Forest, including the associated Bear Pen and Big
8 Savage Mountain Wildlands, Dans Mountain WMA, and the associated Dans Mountain
9 Wildlands, and the White Horse Mountain WMA—all of which have existing transmission
10 lines that Alternative A parallels.

11 Within Pennsylvania, Alternative Route A parallels existing transmission lines for
12 2.3 miles (21.1 percent of the Pennsylvania total alignment) with 8.5 miles of a greenfield
13 section (78.9 percent of the Pennsylvania total alignment). Alternative Route A in
14 Pennsylvania does not cross any protected areas.

15 **Alternative Route B** is 107.3 miles long that includes 8.5 miles in Pennsylvania,
16 60.9 miles in West Virginia, 35.5 miles in Maryland, and 2.4 miles in Virginia, and requires
17 2,671.4 acres of ROW Corridor. Alternative Route B parallels existing transmission lines
18 for 59.7 miles (55.6 percent of the total alignment) and proposes 47.6 miles of a greenfield
19 section (44.4 percent of the total alignment). Alternative Route B crosses Coopers Rock
20 State Forest, Youghiogheny River Lake and the Potomac Heritage Trail, Bear Creek
21 Hatchery FMA, Savage River State Forest, including the associated Bear Pen and Big
22 Savage Mountain Wildlands, Dans Mountain WMA, and the associated Dans Mountain
23 Wildlands, and the White Horse Mountain WMA.

1 Within Pennsylvania, Alternative Route B parallels and abuts existing transmission
2 lines for 2.3 miles (26.6 percent of the Pennsylvania total alignment) and proposes
3 6.2 miles of a greenfield section (73.4 percent of the Pennsylvania total alignment).
4 Alternative Route B in Pennsylvania does not cross any protected areas.

5 **Alternative Route C** is 113.6 miles long that includes 34.2 miles through
6 Pennsylvania, 40.5 miles through West Virginia, 36.4 miles through Maryland, and
7 2.4 miles through Virginia, and requires 2,835.5 acres of ROW Corridor. Alternative Route
8 C parallels existing transmission lines for 64.5 miles (56.8 percent of the total alignment)
9 and proposes 49.1 miles of a greenfield section (43.2 percent of the total alignment).
10 Alternative Route C crosses SGL 138, Forbes State Forest, Quebec Run Wild Area,
11 Youghiogheny River Lake and the Potomac Heritage Trail, Bear Creek Hatchery FMA,
12 Savage River State Forest, including the associated Bear Pen and Big Savage Mountain
13 Wildlands, Dans Mountain WMA, and the associated Dans Mountain Wildlands, and the
14 White Horse Mountain WMA.

15 Within Pennsylvania, Alternative Route C parallels and abuts existing transmission
16 lines for 16.9 miles (49.4 percent of the Pennsylvania total alignment) and proposes
17 17.3 miles of a greenfield section (50.5 percent of the Pennsylvania total alignment).
18 Alternative Route C in Pennsylvania crosses State Game Lands 138, Forbes State Forest,
19 including a small section of Quebec Run Wild Area (part of Forbes State Forest).

20 **Alternative Route D** is 115.2 miles long that includes 10.7 miles in Pennsylvania,
21 58.9 miles in West Virginia, 43.2 miles in Maryland, and 2.4 miles in Virginia, and requires
22 2,839.0 acres of ROW Corridor. Alternative Route D parallels existing transmission lines
23 for 43.1 miles (37.4 percent of the total alignment) and proposes 72.1 miles of a greenfield

1 section (62.6 percent of the total alignment). Alternative Route D crosses Coopers Rock
2 State Forest, Youghiogheny River Lake and the Potomac Heritage Trail, Savage River State
3 Forest, Dans Mountain WMA, and the White Horse Mountain WMA. Alternative Route
4 D was developed to provide an alternative that minimizes impacts on the Savage River
5 State Forest and associated Wildlands and Dans Mountain WMA and associated Wildlands.

6 Within Pennsylvania, Alternative Route D follows the same alignment as
7 Alternative Route A and parallels existing transmission lines for 2.3 miles (21.1 percent of
8 the Pennsylvania total alignment) with 8.5 miles of a greenfield section (78.9 percent of
9 the Pennsylvania total alignment). Alternative Route D in Pennsylvania does not cross any
10 protected areas.

11 **Alternative Route E** is 106.3 miles long that includes 10.7 miles in Pennsylvania,
12 57.8 miles in West Virginia, 35.4 miles in Maryland, and 2.4 miles in Virginia, and requires
13 2,651.5 acres of ROW Corridor. Alternative Route E parallels existing transmission lines
14 for 50.8 miles (47.7 percent of the total alignment) and proposes 55.6 miles of a greenfield
15 section (52.3 percent of the total alignment). Alternative Route E crosses Coopers Rock
16 State Forest, Youghiogheny River Lake and the Potomac Heritage Trail, Bear Creek
17 Hatchery FMA, Savage River State Forest, including the associated Bear Pen and Big
18 Savage Mountain Wildlands, and Dans Mountain WMA, and the associated Dans
19 Mountain Wildlands.

20 Within Pennsylvania, Alternative Route E follows the same alignment as
21 Alternative Route A and parallels existing transmission lines for 2.3 miles (21.1 percent of
22 the Pennsylvania total alignment) with 8.5 miles of a greenfield section (78.9 percent of

1 the Pennsylvania total alignment). Alternative Route E in Pennsylvania does not cross any
2 protected areas.

3 **Alternative Route F** is 119.1 miles long that includes 34.2 miles in Pennsylvania,
4 38.3 miles in West Virginia, 44.1 miles in Maryland, and 2.4 miles in Virginia, and requires
5 2,964.3 acres of ROW Corridor. Alternative Route F parallels existing transmission lines
6 for 43.2 miles (36.3 percent of the total alignment) and proposes 75.9 miles of a greenfield
7 section (63.7 percent of the total alignment). Alternative Route F crosses SGL 138, Forbes
8 State Forest, Quebec Run Wild Area, Youghiogheny River Lake and the Potomac Heritage
9 Trail, Savage River State Forest, and Dans Mountain WMA.

10 Within Pennsylvania, Alternative Route F follows the same alignment as
11 Alternative Route C and parallels and abuts existing transmission lines for 16.9 miles
12 (49.4 percent of the Pennsylvania total alignment) and proposes 17.3 miles of a greenfield
13 section (50.5 percent of the Pennsylvania total alignment). Alternative Route F in
14 Pennsylvania crosses State Game Lands 138, Forbes State Forest, including a small section
15 of Quebec Run Wild Area (part of Forbes State Forest).

16
17 **Q. How were the routing criteria assessed/applied to the final Alternative Routes?**

18 A. The Routing Team used a multi-criteria evaluation (Table 2.7-1 of the Routing Study) for
19 analysis of the Alternative Routes which was a comprehensive process that integrated the
20 natural environment, built environment, cultural resources, social resources, and
21 engineering constructability to identify the superior and least impactful route. Each route
22 was assessed using the robust framework outlined in Section 2.7 of the Routing Study. The
23 Routing Team systematically compared the identified six Alternative Routes across

1 quantitative and qualitative measures. The Routing Team grouped the data associated with
2 each Alternative Route into the following criteria categories for evaluation:

- 3 • Route Length and Construction Footprint
- 4 • Land Use and Social Resources, including subsections of:
 - 5 ○ Paralleling Existing Infrastructure
 - 6 ○ Community and Recreational Resources
 - 7 ○ Protected Areas
 - 8 ○ Cultural Resources
 - 9 ○ Agricultural and Land Cover
- 10 • The Natural Environment, including subsections of:
 - 11 ○ Water Resources
 - 12 ○ Sensitive Species and Habitats
- 13 • Engineering and Infrastructure

14 The Routing Team utilized GIS to run analytics on the six Alternative Routes for
15 the numerous individual datasets. After the analytics were conducted for each Alternative
16 Route, the Routing Team assessed each Alternative Route in detail and assigned one of the
17 following categories of performance:

- 18 • Superior—High performance for the listed criteria with low impacts on category
19 resources relative to the other Alternative Routes.
- 20 • Moderate—Average performance for the listed criteria with moderate impacts on
21 category resources relative to the other Alternative Routes.
- 22 • Inferior—Poor performance for the listed criteria with high impacts on category
23 resources relative to the other Alternative Routes.

1 Section 5 of the Routing Study includes the detailed evaluation for the six end-to-
2 end Alternative Routes.

3
4 **VII. SELECTION OF THE PROPOSED ROUTE**

5 **Q. Which of the final Alternate Routes for the MARL Project was selected as the**
6 **Proposed Route?**

7 A. The Routing Team conducted a comprehensive multi-criteria evaluation of the Alternative
8 Routes, assessing criteria described in Sections 5.1 through 5.5 of the Routing Study. As
9 discussed more fully above, these criteria included route length, construction footprint,
10 paralleling existing infrastructure, community and recreational resources, protected areas,
11 cultural resources, agricultural and land cover, natural environmental features—including
12 water and ecological resources—engineering and infrastructure considerations, and
13 estimated costs. Based on this evaluation, the Routing Team selected end-to-end
14 Alternative Route A as the Proposed Route for the MARL Project, as described in detail in
15 Section 5.6 of the Routing Study.

16
17 **Q. Please describe the Proposed Route.**

18 A. The Proposed Route will generally encompass the geographic area between the endpoints
19 of the existing 502 Junction Substation in Greene County, Pennsylvania, and the handoff
20 point (a new 500 kV transmission line to be constructed by FirstEnergy) in Frederick
21 County, Virginia. NEET MA's proposed Woodside Substation also is located in Frederick
22 County, Virginia, approximately 11 miles to the east of the eastern terminus of the Proposed
23 Route handoff point. The total Proposed Route will be 107.5 miles in length, with a ROW

1 Corridor of 2,669.0 acres. The Proposed Route for the MARL Project, where it parallels
2 existing transmission line corridors, is proposed to abut existing transmission line corridors
3 and does not propose to overlap or utilize portions of other utilities' ROWs.

4 Beginning at 502 Junction in Greene County, Pennsylvania, the Proposed Route
5 mostly parallels two existing transmission lines traveling southeast for 2.7 miles before
6 entering Monongalia County, West Virginia, near milepost ("MP") 2.7. It then travels east
7 for 3.1 miles before reentering Greene County, Pennsylvania, near Fort Martin Power
8 Station at MP 5.8. The Proposed Route travels east for 1.4 miles in Greene County,
9 Pennsylvania, before crossing the Monongahela River and entering Fayette County,
10 Pennsylvania, at MP 13.8. In Fayette County, Pennsylvania, the Proposed Route travels
11 east as a greenfield section through undeveloped private property for 6.6 miles before
12 reentering Monongalia County, West Virginia, near MP 13.8.

13 The Proposed Route travels east to southeast for 2.8 miles in northeastern corner of
14 Monongalia County, West Virginia, while paralleling the existing Hazelton to Lake Lynn
15 138 kV Transmission Line near Coopers Rock State Forest. It crosses into Preston County,
16 West Virginia, near Patterson Run at MP 16.6, where it primarily parallels the existing
17 Hazelton to Lake Lynn 138 kV Transmission Line, traveling east for 15.8 miles before
18 entering Garrett County, Maryland, near MP 32.5.

19 In Garrett County, the Proposed Route parallels the existing Jennings to Hazelton 138
20 kV Transmission Line and Hatfield's Ferry Power Station to Black Oak 500 kV Transmission
21 Line traveling east to southeast for 27.8 miles before entering Allegany County, Maryland,
22 near MP 60.3. In Allegany County, Maryland, the Proposed Route parallels the existing
23 Hatfield's Ferry Power Station to Black Oak 500 kV Transmission Line, traveling southeast

1 for 7.6 miles before entering Mineral County, West Virginia, near Black Oak Substation at
2 MP 67.9. In Mineral County, West Virginia, the Proposed Route travels east while mostly
3 paralleling the existing Black Oak to Bedington 500 kV Transmission Line for 10.9 miles
4 before entering Hampshire County, West Virginia, at MP 78.8.

5 The Proposed Route then travels southeast for 26.2 miles in Hampshire County
6 while mostly paralleling the existing Hampshire to Ridgeley 138 kV Transmission Line.
7 The Proposed Route enters Frederick County, Virginia, near MP 105.0 and travels east for
8 2.4 miles following the Mount Storm to Doubs 500 kV and Stonewall to Hampshire 138
9 kV transmission lines, where feasible, except in areas with residential development
10 adjacent to the existing transmission lines before handing off to a new 500 kV transmission
11 line to be constructed by FirstEnergy at MP 107.5.

12 The Proposed Route will require 452 structures, with an average span length of 1,258
13 feet. It will parallel existing transmission lines for 56.4 miles (52.5 percent of the Proposed
14 Route) in order to limit impacts on sensitive areas and communities to the extent possible.
15

16 **Q. Why was the Proposed Route selected?**

17 A. As described in detail in Section 5.6 of the Routing Study, and shown in Table 5.6-1, a
18 summary matrix highlighting the performance of each Alternative Route for each set of
19 criteria, Alternative Route A had superior performance for all routing criteria except for
20 one, where it had a moderate performance. Alternative Route A had superior performance
21 for route length and footprint, paralleling existing infrastructure, community and
22 recreational resources, cultural resources, agricultural and land cover, water resources,
23 sensitive species and habitats, and engineering criteria. Alternative Route A had only one

1 moderate performance criteria, protected areas. It did not have inferior performance for
2 any criteria when compared to other Alternative Routes. Notably, Alternative Route A is
3 the only Alternative Route with superior performance for three primary categories of
4 criteria the Routing Team strived to achieve at the start of the MARL Project: **route length**
5 **and construction footprint, paralleling existing infrastructure, and community and**
6 **recreational resource**—which were important decision criteria for the selection of the
7 Proposed Route.

8 Therefore, based on this analysis, the Routing Team selected Alternative Route A
9 as the Proposed Route for the MARL Project. Alternative Route A offers the most balanced
10 solution that maximizes opportunities to parallel existing transmission lines, minimizes
11 potential impacts on both natural environment and built environment, and minimizes the
12 engineering and construction related challenges.

13
14 **Q. Why were the other alternatives not selected?**

15 A. As identified in the Routing Study, Alternatives B through F were not selected as the
16 Proposed Route. Table 5.6-2 of the Routing Study presents a comparison between the
17 Proposed Route and the other five Alternative Routes based on their relative performance
18 on the routing evaluation criteria. Table 5.6-3 highlights the difference in criteria
19 performance evaluation for the Alternative Routes compared to the Proposed Route. The
20 performance of each Alternative Route is shown in Table 5.6-1 of the Routing Study and
21 shown below in **Table 1**. Ultimately, Alternatives B through F were rejected because they
22 were not superior to the Proposed Route.

23

1

Table 1: Alternative Route Evaluation Result Matrix

Alternative Routes	Route Length and Construction Footprint	Paralleling Existing Infrastructure	Community and Recreational Resources	Protected Areas	Cultural Resources	Agricultural and Land Cover	Water Resources	Sensitive Species and Habitats	Engineering and Infrastructure	Estimated Cost
Alternative Route A	Superior	Superior	Superior	Moderate	Superior	Superior	Superior	Superior	Superior	Superior
Alternative Route B	Superior	Superior	Inferior	Moderate	Moderate	Superior	Superior	Superior	Moderate	Superior
Alternative Route C	Moderate	Superior	Moderate	Inferior	Inferior	Inferior	Inferior	Moderate	Inferior	Moderate
Alternative Route D	Moderate	Inferior	Moderate	Superior	Superior	Moderate	Moderate	Inferior	Moderate	Inferior
Alternative Route E	Superior	Moderate	Superior	Moderate	Superior	Superior	Moderate	Superior	Superior	Superior
Alternative Route F	Inferior	Inferior	Inferior	Moderate	Inferior	Inferior	Inferior	Inferior	Inferior	Inferior

2 Superior—High performance for the listed criteria with low impacts on category resources relative to the other Alternative Routes.
 3 Moderate—Average performance for the listed criteria with moderate impacts on category resources relative to the other
 4 Alternative Routes.
 5 Inferior—Poor performance for the listed criteria with high impacts on category resources relative to the other Alternative Routes.

6

7 **Q. Were there any other considerations that contributed to the selection of the Proposed**
 8 **Route for the MARL Project?**

9 A. As part of the Routing Study, ERM developed Appendix A to consider state-specific
 10 requirements and data, recognizing that the state-specific environmental data are different
 11 in each of the four states. The objective of Appendix A was to detail the existing
 12 environmental, cultural, and social conditions and potential impacts associated with the
 13 MARL Project Proposed Route for the specific state of Pennsylvania requirements.

14

15 **VIII. GENERAL DESCRIPTION OF THE MARL PROJECT’S SITE AND ADJACENT**
 16 **AREAS**

17 **Q. Please describe the MARL Project’s site and adjacent areas.**

1 A. To address the requirements of the *Interim Guidelines for the Filing of Electric*
2 *Transmission Line Siting Applications* established by the PAPUC under Title 52, Chapter
3 69 of the Pennsylvania Code, the Pennsylvania ERD describes the existing environmental,
4 cultural, and social conditions, as well as the potential impacts associated with the
5 Pennsylvania Portions of the Proposed Route for the MARL Project within Greene and
6 Fayette Counties, Pennsylvania.

7 As described in more detail in Appendix A of the Routing Study, the MARL Project
8 passes within the Kanawha and Allegheny Mountain sections of the Appalachian Plateau
9 physiographic province. The Proposed Route and Alternative Route Siting Corridors west
10 of the Monongahela River, within Greene County, are primarily within the relatively
11 younger rock formations exposed in the Monongahela River valley.

12 In general, the aesthetic character of both Greene and Fayette counties is visually
13 diverse with a mix of natural landforms, varied vegetation cover, water features, and
14 patterns of largely rural development. The Siting Corridors are slightly different, but
15 several share the same alignment. Specifically, the Proposed Route shares the same
16 alignment as Alternative Routes D and E, and Alternative Routes C and F share the same
17 alignment. Alternative Route B follows a unique alignment in Pennsylvania. While these
18 three alignments are different, they are generally routed through similar landscape types.

19 The MARL Project in Pennsylvania is within the Upper Monongahela (USGS HUC
20 8 digit 05020003), Lower Monongahela (USGS HUC 8-digit 05020005), and Cheat
21 (USGS HUC 8 digit 05020004) watersheds.

22

1 **Q. How did ERM and NEET MA evaluate these potential natural environment and**
2 **human environment impacts?**

3 A. This information was developed using publicly available data sources and included data
4 obtained from relevant agencies. The information presented within this report was
5 developed by ERM based on best practices and extensive experience in transmission line
6 routing and siting projects. While there are no published studies or formal industry
7 standards, the approach reflects methodologies that have been applied to other greenfield
8 projects and, in some cases, accepted by state commissions. The approach was considered
9 and applied to the MARL Project, incorporating natural environment and built environment
10 resources as well as land and engineering considerations. Where appropriate for a resource
11 area, ERM provided in that resource discussion the regulatory driver that may be applicable
12 to the MARL Project once permits are determined upon completion of the CPC
13 Application. In addition to the publicly available data sources that are used for the ERD, a
14 number of enhanced desktop assessments have been completed in combination with
15 extensive agency outreach and coordination to provide a robust analysis of resource
16 impacts in support of this CPC Application. Additional enhanced desktop assessments, in
17 combination with select field surveys, will be conducted and submitted to the PSC as a
18 supplemental amendment to this ERD. Full field surveys will be conducted following
19 approval of a final route to facilitate state and federal permitting.

20 Each resource area included a discussion of existing conditions, an assessment of
21 potential impacts, and the identification of potential mitigation measures. Where feasible,
22 GIS analysis was used to quantify both existing conditions and projected impacts. In cases

1 where quantitative data was unavailable or insufficient, qualitative information was
2 provided to characterize certain resource areas.

3
4 **Q. Please summarize the environmental effects of the MARL Project on the project site
5 and adjacent areas.**

6 A. The anticipated impacts of the MARL Project construction and operation are summarized
7 below.

8 **Geology:** Impacts on geology include temporary impacts from construction
9 activities and permanent impacts from installation of transmission structures. The
10 Proposed Route within Pennsylvania has 44 structures out of the total 452 for the MARL
11 Project. Structure foundations and footers will be embedded into the ground surface. The
12 average span length between towers is 1,258 feet. Structure foundation types are subject
13 to final engineering design, geophysical surveys, and geotechnical investigations. Typical
14 installation will be drilled piers with reinforced concrete; however, micropiles may be used
15 in certain circumstances. Other foundation types will be considered, on an as-needed basis.
16 The need for blasting is not anticipated for the MARL Project. If blasting is needed pending
17 future engineering design and construction planning, NEET MA will prepare a Blasting
18 Plan. Drilling, if used, may have a localized impact at structure foundation locations,
19 particularly if karst is present. Best management practices (“BMP”) will be implemented
20 if karst features are identified during construction.

21 **Water Resources:** Impacts on wetlands would include temporary impacts on
22 Palustrine Emergent Wetland (“PEM”) and Palustrine Scrub-Shrub (“PSS”) wetlands from
23 construction activities, including vegetative clearing, matting, and equipment access, as

1 well as permanent wetland impacts associated with operation of the MARL Project.
2 Wetland areas will be aerially spanned by transmission line conductors; however, there
3 would be permanent conversion of some Palustrine Forested (“PFO”) wetlands to PEM
4 and/or PSS wetlands within the ROW Corridor as a result of operational vegetative
5 maintenance activities.

6 Waterbodies will be aerially spanned by the transmission line conductors, and
7 transmission structures will not be placed within waterbodies to avoid direct impacts on
8 waterbodies during operation of the MARL Project to the maximum extent practicable.

9 In some areas, forested riparian buffers adjacent to waterbodies will be cut and
10 permanently converted to maintained scrub/shrub or herbaceous cover within the ROW
11 Corridor during operation. Removal of forested riparian vegetation would result in indirect
12 impacts on waterbodies, including localized increases in water temperature and decreased
13 dissolved oxygen levels. In addition, vegetation clearing, grading or other earth-disturbing
14 activities associated with construction in proximity to waterbodies would temporarily
15 result in increased potential for erosion and stormwater runoff impacts, including increased
16 nutrient loading, turbidity, and sedimentation in waterbodies. Impacts on waterbodies as a
17 result of access road construction and/or culvert placement in waterbodies, if required,
18 could include increased sedimentation, flow disruption, and habitat displacement.

19 **Vegetation and Wildlife:** Construction and operation would result in both
20 temporary and permanent impacts on terrestrial wildlife species and/or their habitats.
21 Impacts on potentially suitable wildlife habitat would be temporary for some open habitats,
22 as these habitats will be restored or allowed to regenerate with select vegetation
23 management as required by site conditions. Impacts on forested habitats and associated

1 wildlife would result from construction, mainly from the conversion of forested habitats to
2 maintained ROW Corridor. In addition, cutting of forested vegetation could also
3 potentially increase forest fragmentation in some areas.

4 Impacts from construction activities (*e.g.*, sound, vibration) could cause temporary
5 displacement of more mobile species such as mammals, birds, and some insects to areas
6 outside of construction zones. Most displaced wildlife is expected to return to the area
7 following construction and would be expected to use the newly established and revegetated
8 herbaceous and shrub/scrub habitat during operation. Loss of less mobile species, such as
9 reptiles, amphibians and plants, could occur because of ground disturbances associated
10 with construction and routine maintenance activities.

11
12 **Q. Please summarize the human environment effects of the MARL Project.**

13 A. As described in more detail in the ERD, to address human environment effects, ERM
14 studied land use and land cover, local comprehensive plans and zoning, conservation and
15 protected lands and recreation resources, aesthetics and scenic areas, and linear
16 infrastructure and transportation in the portion of Greene and Fayette counties crossed by
17 the Proposed Route and Alternative Routes. The anticipated impacts of MARL Project
18 construction and operation are summarized below.

19 **Land Use and Land Cover:** Due to the absence of recent, statewide land use
20 mapping, ERM's evaluation of land use and land cover was primarily based on 2024 land
21 cover data from the U.S. Geological Survey. As detailed in Section 2.3.1 of the ERD, the
22 ROW Corridors for the Proposed Route and Alternative Routes would primarily affect
23 forest (deciduous forest, evergreen forest, and mixed forest) and agricultural (pasture/hay

1 and cultivated crops) land cover types. These land cover types account for approximately
2 88.1 to 91.8 percent of all ROW Corridors in Pennsylvania (0.2 to 0.7 percent of all forested
3 land cover within the MARL Project Study Area in Pennsylvania). Forest also comprises
4 more than half of the ancillary facility workspaces outside of the ROW Corridor for the
5 Proposed Route.

6 Open lands (barren land, wetland, open water, grassland/herbaceous, and
7 scrub/shrub land cover types) comprise 3.2 to 4.5 percent of the ROW Corridors.
8 Developed lands—the large majority of which is “developed, open space” land such as
9 parks, golf courses, and maintained landscaping—would comprise 4.6 to 6.8 percent of the
10 ROW Corridors.

11 Construction and operation of the MARL Project would permanently convert forest
12 uses within the ROW Corridor and ancillary facilities workspaces to herbaceous and
13 scrub/shrub land cover types. Except for the land within the footprint of transmission
14 structures and permanent access roads outside of the ROW Corridor, other land cover types
15 (e.g., agriculture, developed lands) would be reopened to pre-construction uses after
16 construction is complete.

17 The MARL Project would not affect any cemeteries, schools, or places of worship.
18 The MARL Project also would not affect any proposed development, other than supporting
19 increased power reliability for the MARL Project Study Area in Pennsylvania, including
20 areas targeted for future development. Similarly, the ancillary facility workspaces would
21 not affect proposed development.

22 **Local Comprehensive Plans and Zoning:** Comprehensive plans in Pennsylvania
23 identify existing conditions, determine a jurisdiction’s overall vision for future growth and

1 development, and set a framework to achieve this vision through goals, objectives, and
2 policies. Zoning and other development regulations are laws that govern the allowed types
3 of uses and physical characteristics and relationships of those uses.

4 The MARL Project (including the Proposed Route and Alternative Routes) will be
5 generally consistent with comprehensive plan land use goals for Greene County and
6 Fayette County and will not change the overall intended land use patterns in either county.
7 The MARL Project will provide long-term benefits by improving regional electric system
8 reliability, which will support future development and growth in areas identified in the
9 comprehensive plans.

10 Greene County and Dunkard Township (the only municipality within Greene
11 County crossed by the Proposed Route or Alternative Routes) do not have zoning
12 ordinances. The Fayette County Zoning Ordinance does not include provisions specific to
13 transmission lines. Wharton Township’s Zoning Ordinance defines electrical distribution
14 and transmission infrastructure as “non-local” and “essential services” (Wharton Township
15 Zoning Ordinance, Article II, Section 202), which are considered to be a conditional use in
16 most zoning districts. Similarly, Henry Clay Township defines transmission lines as a
17 “public utility” (Henry Clay Township Zoning Ordinance, Article II), which is permitted
18 by conditional use in applicable zoning districts. While I am not an attorney, it is my
19 understanding that, under Pennsylvania law, public utility facilities are exempt from local
20 ordinances as a general rule.²

21 **Conservation and Protected Lands and Recreation Resources:** There are no
22 federal conservation, protected, or recreational lands within the Siting Corridors in

² *Twp. Of Marple v. Pa. P.U.C.*, 294 A.3d 965, 972 (Pa. Cmwlth. 2023).

1 Pennsylvania. The Proposed Route and Alternative Routes B, D, and E also do not cross
2 any state or local conservation or recreation lands in Pennsylvania. The ROW Corridor for
3 the Alternative Routes C and F would cross approximately 88.1 acres of these lands. The
4 Proposed Route and Alternative Routes would cross approximately 0.2 to 0.3 mile of
5 recreational trails. Affected areas of designated recreational and natural resource lands
6 would remain available for use. As described in the ERD (Section 2.3.3), impacts on
7 designated conservation and protected lands and recreational resources would include:

- 8 • temporary access and/or use restrictions during construction, including disruption
9 of wildlife habitat areas that support hunting within State Game Lands 138;
- 10 • fragmentation of areas that may be suitable for new or expanded protections;
- 11 • permanent aesthetic changes (see Visual Resources, below);
- 12 • changes in the behavior and habitat of wildlife (see the response to the previous
13 question);
- 14 • alterations or modifications to existing trail routes; and
- 15 • opportunities for new trail routes and/or improved access to existing trails.

16 These impacts would incrementally change the experience of using the affected
17 portions of designated conservation and protected lands and recreational resources, but
18 would not fundamentally or significantly change access to or use of these resources.

19 **Aesthetics and Scenic Areas:** Appendix J of the Routing Study (Visual Impact
20 Assessment) provides a detailed description of the aesthetic impacts of the entire MARL
21 Project Proposed Route, including the portion that crosses Pennsylvania. The degree to
22 which overhead transmission lines influence and are visible on a landscape depends on a
23 number of factors, including, but not limited to, structure height and color, existing

1 landscape features (*e.g.*, topography, vegetation, built environment), duration of the view,
2 and distances from the viewer. The specific combination of these factors changes by
3 location, contributing to a range of potential influences and impacts for the Proposed Route
4 and each Alternative Route.

5 Construction of the MARL Project would result in increased visibility of
6 construction equipment and construction activity, including clearing of trees and other
7 vegetation from the ROW Corridor. These changes would be short-term, temporary
8 impacts that would last only for the duration of construction in a given location.

9 During operation, the new transmission line will add tall, geometric structures and
10 long, gently curving lines to the landscape that will be most apparent in views 0.5 mile or
11 less from MARL Project facilities. The transmission structures will create a series of
12 repetitive, dominant, vertical features that extend above existing tree canopies and add new
13 focal points that shift the vertical structure of the landscape. The conductors will appear as
14 multiple undulating, overhead horizontal lines spanning the areas between transmission
15 poles. These changes will be most perceptible in areas with fewer screening features (such
16 as topography, vegetation, and other structures) and least perceptible in areas with more
17 screening features (such as forested and mountainous areas).

18 Changes to visual resources are not completely avoidable from large-scale
19 transmission line projects. The Proposed Route alignment, the greatest visual resource
20 impacts would be expected where there are unobstructed (or nearly unobstructed) views of
21 MARL Project infrastructure, at road crossings, near residences and other locations where
22 viewer sensitivity to landscape change may be high, and in areas with no transmission line
23 infrastructure or other large-scale development. In these areas, changes to existing visual

1 characteristics would be most pronounced, and viewer exposure and sensitivity to these
2 changes would be greatest. This combination would result in impacts on aesthetic
3 resources. Areas that meet these criteria generally represent a small percentage of the
4 MARL Project Study Area in Pennsylvania.

5 **Linear Infrastructure and Transportation:** MARL Project construction will
6 result in temporary impacts on traffic, due to short-duration (i.e., a few minutes),
7 intermittent closures of some roads for safety while transmission lines are being installed.
8 In addition, the MARL Project will require the use and upgrade of some existing roads to
9 access the ROW Corridor, as well as the installation of temporary construction and long-
10 term maintenance access roads from existing public roads along the ROW Corridor. The
11 upgrade of existing roads and installation of new temporary or permanent access roads may
12 result in temporary traffic impacts, such as single lane or shoulder closures, especially
13 where new access roads meet existing roads. MARL Project operation (including routine
14 maintenance) will require minimal use of access roads. NEET MA will prepare a Traffic
15 Control Plan for all road crossings and will coordinate with state and local road authorities
16 to implement any upgrades of existing roads or temporary closures on public roads
17 necessary to install access roads.

18 NEET MA will work with operators of the Norfolk Southern Railway and
19 Southwest Pennsylvania Railroad lines to coordinate crossing of railroad tracks. The
20 MARL Project would not affect any public airports. MARL Project construction may
21 require the use of helicopters to facilitate construction on an as-needed basis. The frequency
22 and duration of such flights (if any) and the location of temporary helipads (if any) would
23 be determined as part of MARL Project design and permitting. Overall, MARL Project

1 construction and operation will have minimal impact on road, railroad, and air
2 transportation.

3 Other linear infrastructure includes utilities (other electrical transmission lines and
4 electrical distribution lines) and pipelines. NEET MA will work with owners and/or
5 operators of this infrastructure to coordinate crossings, including the timing of
6 deenergizing electrical lines being crossed. NEET MA will place transmission poles at least
7 50 feet (or the minimum required distance) from pipelines. As a result, the MARL Project
8 will have minimal if any impact on linear infrastructure.

9

10 **Q. Did ERM evaluate the viewshed impacts of the MARL Project?**

11 A. Yes. ERM conducted a GIS-based viewshed model to evaluate potential visibility and
12 visual impacts for the MARL Project. A viewshed model uses terrain data, the heights of
13 the proposed infrastructure, and various obstructions (*e.g.*, terrain, vegetation) to identify
14 areas where a project may be visible by calculating line-of-sight visibility. For the entirety
15 of the MARL Project viewshed, ERM used a digital elevation (topography) model derived
16 from high-resolution LiDAR data and a vegetation model using canopy data to account for
17 the screening effects of vegetation, along with preliminary design considerations (*e.g.*,
18 structure heights, ROW widths) to run the analysis. The outcome of this GIS-modeling
19 provides an understanding of the geographic extent of potential visibility of the MARL
20 Project from the surrounding landscape. The Visual Impact Assessment (Appendix J) of
21 the Routing Study provides additional details on the methods and assumptions that ERM
22 used for the viewshed analysis.

1 Per the results of the Visual Impact Assessment, the Proposed Route would be
2 potentially visible across slightly more than 18 percent of the foreground (up to 0.5 mile
3 from the Proposed Route centerline) and slightly less than 9 percent of the middle ground
4 (0.5 to 2 miles from the Proposed Route centerline). Most potential views in both the
5 foreground and middle ground areas are expected to reveal all or a portion of fewer than
6 12 structures (the model does not differentiate between varying degrees of structure
7 visibility, such as whether only the top of the structure or the entire structure is visible).

8
9 **Q. Did ERM evaluate the environmental impacts of access roads?**

10 A. Yes. The Routing Study presented ERM's overall approach to developing route
11 alternatives that have an endpoint in Pennsylvania and another endpoint in Virginia. In
12 developing the end-to-end route alternatives, ERM considered state-specific requirements
13 and data, while also recognizing that the state-specific environmental data are different in
14 each of the four states; therefore, ERM developed state-specific appendices to present the
15 different information that each of the state authorities expect to see. The objective of the
16 Pennsylvania ERD, Appendix A of the Routing Study, was to detail the environmental,
17 cultural, and social existing conditions and potential impacts associated with the Proposed
18 Route for the specific state of Pennsylvania requirements. In addition, the Pennsylvania
19 ERD presents the potential impacts of access roads and Attachment 1, Pennsylvania ERD
20 Resource Mapbooks, provides detailed resource information and shows the proposed
21 access roads.

22

1 **Q. Please describe any unavoidable impacts and recommended mitigation.**

2 A. ERM evaluated the potential impacts of the MARL Project on individual resources within
3 the ROW Corridor, as detailed throughout the Pennsylvania ERD. Section 2,
4 Environmental Setting and Impacts, of the Pennsylvania ERD outlines the potential
5 temporary and permanent impacts the MARL Project may have on the natural environment
6 and human environment.

7 This assessment included a description of existing resources within the Siting
8 Corridor; an evaluation of potential impacts from activities within the ROW Corridor; and
9 a summary of avoidance and mitigation measures.

10 For each resource, the impact assessment considered the MARL Project's ROW
11 Corridor and incorporated applicable construction BMPs, along with other feasible
12 avoidance and mitigation strategies.

13
14 **Q. Were any of the mitigation measures recommended incorporated in the Proposed
15 Route?**

16 A. Yes. The Pennsylvania ERD describes the existing environmental, cultural, and social
17 conditions, as well as the potential impacts associated with the Proposed Route for the
18 MARL Project within Greene and Fayette Counties, Pennsylvania. Furthermore, as
19 described throughout the ERD, NEET MA has committed to numerous measures to
20 minimize or avoid potential impacts to resource areas along the Proposed Route.

21

1 **Q. Will the MARL Project conform to applicable environmental standards?**

2 A. Yes. NEET MA will conform to the applicable environmental standards that have been
3 committed to within the Pennsylvania ERD as well as any additional terms and conditions
4 identified in the permits that are issued for the MARL Project.

5
6 **Q. What other approvals are required for the Project?**

7 A. NEET MA also will undertake coordination with, and as necessary, obtain approvals and
8 permits from the following agencies and governmental entities: the U.S. Army Corps of
9 Engineers; the U.S. Fish and Wildlife Service; Pennsylvania Department of Environmental
10 Protection, Pennsylvania Department of Conservation and Natural Resources,
11 Pennsylvania Historical and Museum Commission, and the Pennsylvania Department of
12 Transportation, as well as the various states and counties in which the MARL Project will
13 be located. Subject to final approval and engineering design, NEET MA anticipates the
14 MARL Project will require Federal review under the Section 404 of the Clean Water Act
15 and Section 10 of the Rivers and Harbors Act of 1899 for activities within Waters of the
16 United States; review under Section 408 of the Rivers and Harbors Act of 1899 for
17 alterations to existing U.S. Army Corps of Engineers Civil Works projects; consultation
18 under Section 7 of the Endangered Species Act, Migratory Bird Treaty Act, and Bald and
19 Golden Eagle Protection Act; notification under the Federal Aviation Administration Act
20 for structures that exceed 200 feet in height; and approval through Section 106 of the
21 National Historic Preservation Act. In addition to Federal agency approvals, NEET MA
22 anticipates the MARL Project will require Chapter 105 (Water Obstruction and
23 Encroachment Permit or Waiver) and Chapter 106 (Obstructions in Floodplains for

1 Commonwealth of PA or Political Subdivisions of the Commonwealth) permitting from PA
2 DEP; review under Section 401 of the Pennsylvania State Water Quality Certification;
3 approval under the National Pollutant Discharge Elimination System Permit for
4 Stormwater Associated with Construction Activities; review under the Nongame and
5 Endangered Species Conservation Act; approval under the Pennsylvania Historic Trust
6 Act; and approval from the Pennsylvania Department of Transportation State Highway
7 Administration for oversize/overweight infrastructure and entrances for industrial access
8 on regulated roadways. To address the requirements of the *Interim Guidelines for the*
9 *Filing of Electric Transmission Line Siting Applications* established by the PAPUC under
10 Title 52, Chapter 69 of the Pennsylvania Code, a list of each local, state, or federal
11 government agency having authority to approve or disapprove the construction or operation
12 of the project is attached to Ms. McCormick's Direct Testimony in NEET MA Statement
13 No. 1 as Exhibit KM-5.

14
15 **IX. CONCLUSION**

16 **Q. What do you conclude regarding the route selection for the MARL Project?**

17 A. As described in detail in Section 5.6 of the Routing Study, and shown in Table 5.6-1, a
18 summary matrix highlighting the performance of each Alternative Route for each set of
19 criteria, Alternative Route A had superior performance for all routing criteria except for
20 one, where it had a moderate performance. Alternative Route A had superior performance
21 for route length and footprint, paralleling existing infrastructure, community and
22 recreational resources, cultural resources, agricultural and land cover, water resources,
23 sensitive species and habitats, and engineering criteria. Alternative Route A had only one

1 moderate performance criteria, protected areas. It did not have inferior performance for
2 any criteria when compared to other Alternative Routes. Notably, Alternative Route A is
3 the only Alternative Route with superior performance for three primary categories of
4 criteria the Routing Team strived to achieve at the start of the MARL Project—route length
5 and construction footprint, paralleling existing infrastructure, and community and
6 recreational resource—which were important decision criteria for the selection of the
7 Proposed Route. Therefore, based on this analysis, the Routing Team selected Alternative
8 Route A as the Proposed Route for the MARL Project. Alternative Route A offers the most
9 balanced solution that maximizes opportunities to parallel existing transmission lines,
10 minimizes potential impacts on both natural environment and built environment, and
11 minimizes the engineering and construction related challenges.

12

13 **Q. Does this conclude your testimony?**

14 A. Yes, it does.