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July 26, 2024

BY ELECTRONIC FILING

Mr. Bernard Logan, Clerk
c/o Document Control Center
State Corporation Commission
1300 East Main Street
Tyler Building – 1st Floor
Richmond, Virginia 23219

Application of Virginia Electric and Power Company For approval and certification of electric transmission facilities: 230 kV Lines #210 and #243 Extension and 230-34.5 kV Edsall Substation
Case No. PUR-2024-00135

Dear Mr. Logan:

Please find enclosed for electronic filing in the above-captioned proceeding the application for approval of electric transmission facilities on behalf of Virginia Electric and Power Company (the "Company"). This filing contains the Application, Appendix, Direct Testimony, DEQ Supplement, and Environmental Routing Study, including attachments.

As indicated in Section II.A.12.b of the Appendix, electronic copies of the Virginia Department of Transportation "General Highway Map" for Fairfax County, as well as the digital geographic information system ("GIS") map required by § 56-46.1 of the Code of Virginia, which is Attachment II.A.2 to the Appendix, were provided via an e-room to the Commission's Division of Public Utility Regulation on July 25, 2024.

Please do not hesitate to call if you have any questions regarding the enclosed.

Highest regards,

Vishwa B. Link

Enclosures

cc: William H. Chambliss, Esq.
Mr. David Essah (without enclosures)

Mr. Neil Joshipura (without enclosures)
Mr. Michael A. Cizenski (without enclosures)
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Application, Appendix, DEQ Supplement, Routing Study, Direct Testimony and Exhibits of Virginia Electric and Power Company

Before the State Corporation Commission of Virginia

230 kV Lines #210 and #243 Extension and 230-34.5 kV Edsall Substation

Application No. 338

Case No. PUR-2024-00135

Filed: July 26, 2024

Volume 1 of 3

COMMONWEALTH OF VIRGINIA
BEFORE THE
STATE CORPORATION COMMISSION

APPLICATION OF

VIRGINIA ELECTRIC AND POWER COMPANY

FOR APPROVAL AND CERTIFICATION
OF ELECTRIC TRANSMISSION FACILITIES

230 kV Lines #210 and #243 Extension and 230-34.5 kV Edsall Substation

Application No. 338

Case No. PUR-2024-00135

Filed: July 26, 2024

COMMONWEALTH OF VIRGINIA

STATE CORPORATION COMMISSION

APPLICATION OF	)	
	)	
VIRGINIA ELECTRIC AND POWER COMPANY	)	Case No. PUR-2024-00135
	)	
For approval and certification of electric transmission facilities: 230 kV Lines #210 and #243 Extension and 230-34.5 kV Edsall Substation	)	

APPLICATION OF VIRGINIA ELECTRIC AND POWER COMPANY FOR APPROVAL AND CERTIFICATION OF ELECTRIC TRANSMISSION FACILITIES: 230 kV LINES #210 AND #243 EXTENSION AND 230-34.5 kV EDSALL SUBSTATION

Pursuant to § 56-46.1 of the Code of Virginia ("Va. Code") and the Utility Facilities Act, Va. Code § 56-265.1 *et seq.*, Virginia Electric and Power Company ("Dominion Energy Virginia" or the "Company"), by counsel, files with the State Corporation Commission of Virginia (the "Commission") this application for approval and certification of electric transmission facilities (the "Application"). In support of its Application, Dominion Energy Virginia respectfully states as follows:

1. Dominion Energy Virginia is a public service corporation organized under the laws of the Commonwealth of Virginia furnishing electric service to the public within its Virginia service territory. The Company also furnishes electric service to the public in portions of North Carolina. Dominion Energy Virginia's electric system—consisting of facilities for the generation, transmission, and distribution of electric energy—is interconnected with the electric systems of neighboring utilities and is a part of the interconnected network of electric systems serving the continental United States. By reason of its operation in two states and its interconnections with other utilities, the Company is engaged in interstate commerce.

2. In order to perform its legal duty to furnish adequate and reliable electric service, Dominion Energy Virginia must, from time to time, replace existing transmission facilities or construct new transmission facilities in its system. The electric facilities proposed in this Application are necessary so that Dominion Energy Virginia can continue to provide reliable electric service to its customers, consistent with applicable reliability standards.

3. In this Application, in order to provide service requested by a data center customer (the "Customer"); to maintain reliable service for the overall load growth in the area; and to comply with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, Dominion Energy Virginia proposes in Fairfax County, Virginia, to:

(1) Extend the Company's existing overhead single circuit Hayfield-Van Dorn Line #210 and Ox-Van Dorn Line #243 from Van Dorn Substation to the proposed 230-34.5 kilovolt ("kV") Edsall Substation, resulting in (i) 230 kV Edsall-Hayfield Line #210 and (ii) 230 kV Edsall-Ox Line #243 (collectively, the "Edsall Lines"). Specifically, extend existing Lines #210 and #243 approximately 0.9 mile starting from the eastern side of the Van Dorn Substation and terminating at the proposed Edsall Substation. The proposed Edsall Lines will be constructed on entirely new 100-foot-wide right-of way supported by galvanized steel double circuit monopoles utilizing three-phase twin-bundled 768.2 Aluminum Conductor Steel Supported/Trapezoidal Wire/High Strength ("ACSS/TW/HS") conductor with a summer transfer capability of 1,573 MVA.[1]

(2) Construct a new 230-34.5 kV substation in Fairfax County, Virginia, on property to be obtained by the Company (the "Edsall Substation") and perform substation-related work at the Company's existing Van Dorn Substation, in Fairfax County, Virginia.

The Edsall Lines, Edsall Substation, and substation-related work at the Van Dorn Substation are collectively referred to as the "230 kV Edsall Lines and Substation Project" or the "Project."

[1] Apparent power, measured in megavolt amperes ("MVA"), is made up of real power (megawatt or "MW") and reactive power (megavolt ampere reactive or "MVAR"). The power factor ("pf") is the ratio of real power to apparent power. For loads with a high pf (approaching unity), real power will approach apparent power and the two can be used interchangeably. Load loss criteria specify real power (MW) units because that represents the real power that will be dropped; however, MVA is used to describe retail customer projected load, reflecting representative pf, and the equipment ratings to handle the apparent power, which includes the real and reactive load components.

4. The Project is necessary to ensure that Dominion Energy Virginia can provide electric service requested by the Customer in Fairfax County, Virginia; to maintain reliable service for the overall growth in the load area surrounding the Company's existing Van Dorn Substation (the "Van Dorn Load Area");[2] and to comply with mandatory NERC Reliability Standards. Specifically, the Customer has requested a total of 176 MW of projected load from Dominion Energy Virginia to serve its planned data center campus in Fairfax County, Virginia.

5. The Company's existing Van Dorn Substation is the source substation for the local load area and also the closest substation to the Customer's data center development; however, the Van Dorn Substation does not have adequate capacity to serve the Customer's total block of load without resulting in transformer overloads by 2029, nor can the Van Dorn Substation provide bridging power to support the Customer's initial load as currently designed. Accordingly, to serve this new data center block load beginning in 2027 and maintain reliable service for the overall load growth in the area, consistent with NERC Reliability Standards, the Company is proposing to construct the Edsall Lines and the Edsall Substation. With the proposed Project, the Customer receives requested electric service beginning in 2027, the system transformers at the Van Dorn Substation are not overloaded, and reliability criteria are met.

6. The Company identified an approximately 0.9-mile proposed route for the Edsall Lines (the "Proposed Route"). The Company is proposing this route for Commission consideration and notice. Discussion of the Proposed Route and other overhead routes that the Company studied but ultimately rejected, is provided in Section II of the Appendix and in the Environmental Routing Study included with the Application.

[2] For purposes of this Application, the Van Dorn Load Area is defined generally as the area bounded by the I-495/I-395 interchange and corridors to the west, the I-395 corridor to the north, South Van Dorn Street to the east, and the I-95/I-495 corridor to the south.

7. The Proposed Route is the preferred, and only viable, route for the Project. The Proposed Route eliminates impacts to parklands and minimizes impacts on adjacent residential developments, with 29 dwellings within 250 feet and no dwellings within 100 feet. Additionally, the Proposed Route minimizes clearing of forested and treed areas (3.9 acres) and passes 750 feet from the St. Aphraim Syriac Orthodox Church. While the Proposed Route has the estimated potential to impact 0.1 acre of wetlands, the route has been designed to avoid wetlands to the maximum extent practicable. Finally, the Proposed Route does not cross either of the Fairfax County Park Authority ("FCPA") parklands in the Project area.[3] For all these reasons, the Company supports the Proposed Route for the Edsall Lines as it avoids or reasonably minimizes adverse impact to the greatest extent reasonably practicable on the scenic assets, historic and cultural resources, and environment of the area concerned, as well as on planned developments in the Project area.

8. The proposed Edsall Substation initially will be constructed with four 84 MVA 230-34.5 kV transformers and a 230 kV ring bus with a four circuit breaker configuration, built to 4000 ampere standards. In total, it will be designed to accommodate future growth in the area with one additional 230-34.5 kV transformer and up to sixteen 34.5 kV distribution circuits. The total area of the Edsall Substation is approximately 5.0 acres.

9. The substation-related work at the existing Van Dorn Substation is necessary in order to extend existing Lines #210 and #243 approximately 0.9 mile starting from the eastern side of the Van Dorn Substation and terminating at the proposed Edsall Substation. As part of this

[3] Two of the three route alternatives considered but rejected in the Environmental Routing Study cross FCPA lands. Fairfax County was not willing to grant the Company right-of-way through its parkland, and the Company is unable to condemn County lands, making those routes unfeasible. That said, even if the FCPA were to authorize a route within the park, the Proposed Route would still be the preferred route based on the evaluation of impacts discussed in the Environmental Routing Study.

work, the Company will remove an existing tie breaker (210T243) and two single circuit lattice structures, install two 230 kV single circuit backbone structures, and perform protection upgrades all within the Company's existing Van Dorn Substation.

10. The desired in-service target date for the proposed Project is October 1, 2027. The Company estimates it will take approximately 31 months for detailed engineering, materials procurement, permitting, real estate, and construction after a final order from the Commission. Accordingly, to support this estimated construction timeline and construction plan, the Company respectfully requests a final order by February 28, 2025. Should the Commission issue a final order by February 28, 2025, to accommodate long-lead materials procurement, the Company estimates that construction should begin around April 2026, and be completed by October 1, 2027. This schedule is contingent upon obtaining the necessary permits and outages, the latter of which may be particularly challenging due to the amount of new load growth, rebuilds, and new builds scheduled to occur in this load area. Dates may need to be adjusted based on permitting delays or design modifications to comply with additional agency requirements identified during the permitting application process, as well as the ability to schedule outages, and unpredictable delays due to labor shortages or materials/supply issues. This schedule also is contingent upon the Company's ability to negotiate for easements with property owners along the approved route without the need for additional litigation.

11. In addition, the Company is monitoring actively regulatory changes and requirements associated with the Northern long-eared bat ("NLEB") and how they could potentially impact construction timing associated with time of year restrictions ("TOYRs"). The U.S. Fish and Wildlife Service ("USFWS") previously indicated that it planned to issue final NLEB guidance to replace the interim guidance by April 1, 2024; however, the interim guidance

has been extended by USFWS until late summer 2024. The Company is tracking actively updates from the USFWS with respect to the final guidance. Once issued, the Company plans to review and follow the final guidance to the extent it applies to the Company's projects. Until the final guidance is issued, the Company will continue following the interim guidance. For projects that may require additional coordination, the Company will coordinate with the USFWS.

12. The Company is also monitoring potential regulatory changes associated with the potential up-listing of the Tricolored bat ("TCB"). On September 14, 2022, the USFWS published the proposed rule to the Federal Register to list the TCB as endangered under the Endangered Species Act. USFWS extended its Final Rule issuance target from September 2023 to September 2024. The Company is tracking actively this ruling and evaluating the effects of potential outcomes on Company projects' permitting, construction, and in-service dates, including electric transmission projects.

13. Any adjustments to this Project schedule resulting from these or similar challenges could necessitate a minimum of a six- to twelve-month delay in the targeted in-service date. Accordingly, for purposes of judicial economy, the Company requests that the Commission issue a final order approving both a desired in-service target date (*i.e.*, October 1, 2027) and an authorization sunset date (*i.e.*, October 1, 2028) for energization of the Project.

14. The estimated conceptual cost of the Project utilizing the Proposed Route is approximately $23.1 million, which includes approximately $13.7 million for transmission-related work and approximately $9.4 million for substation-related work (2024 dollars).[4]

[4] These total Project costs include projected real estate costs anticipated to acquire property rights for the Proposed Route and Edsall Substation, as well as costs related to the work at the Van Dorn Substation to extend Line #210 and Line #243. Additionally, the total Project costs include excess facilities charges that will be collected from the Customer (*see* Section I.C of the Appendix). The total Project costs exclude minor substation-related work at the Company's existing Hayfield and Ox Substations, as described in Section II.C of the Appendix.

15. Based on consultations with the Virginia Department of Environmental Quality ("DEQ"), the Company has developed a supplement ("DEQ Supplement") containing information designed to facilitate review and analysis of the proposed facilities by the DEQ and other relevant agencies. The DEQ Supplement is attached to this Application.

16. Based on the Company's experience, the advice of consultants, and a review of published studies by experts in the field, the Company believes that there is no causal link to harmful health or safety effects from electric and magnetic fields generated by the Company's existing or proposed facilities. Section IV of the Appendix provides further details on Dominion Energy Virginia's consideration of the health aspects of electric and magnetic fields.

17. Section V of the Appendix provides a proposed route description for public notice purposes and a list of federal, state, and local agencies and officials that the Company has or will notify about the Application.

18. In addition to the information provided in the Appendix, the DEQ Supplement, and the Environmental Routing Study, this Application is supported by the pre-filed direct testimony of Company Witnesses Bradley S. Lowe, Grace L. Gaudin, Chloe A. Genova, Mohammad M. Othman, Christiaanna C. McDonald, and Andrew E. Dietrich filed with this Application.

19. Finally, Dominion Energy Virginia requests that, to the extent the Commission modifies the deadline for responses to interrogatories and requests for production of documents in 5 VAC 5-20-260, the Commission grant the parties seven calendar days in order to afford the Company adequate time to provide comprehensive responses to discovery.

WHEREFORE, Dominion Energy Virginia respectfully requests that the Commission:

(a) direct that notice of this Application be given as required by § 56-46.1 of the Code of Virginia;

(b) approve pursuant to § 56-46.1 of the Code of Virginia the construction of the Project; and,

(c) grant a certificate of public convenience and necessity for the Project under the Utility Facilities Act, § 56-265.1 *et seq.* of the Code of Virginia.

VIRGINIA ELECTRIC AND POWER COMPANY

By: *[s] Vishwa B. Link*
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Counsel for Applicant Virginia Electric and Power Company

July 26, 2024

COMMONWEALTH OF VIRGINIA
BEFORE THE
STATE CORPORATION COMMISSION

APPLICATION OF

VIRGINIA ELECTRIC AND POWER COMPANY

FOR APPROVAL AND CERTIFICATION
OF ELECTRIC TRANSMISSION FACILITIES

230 kV Lines #210 and #243 Extension and 230-34.5 kV Edsall Substation

Application No. 338

Appendix

Containing Information in Response to
"Guidelines for Transmission Line Applications Filed Under Title 56 of the Code of Virginia"

Case No. PUR-2024-00135

Filed: July 26, 2024

TABLE OF CONTENTS

EXECUTIVE SUMMARY

In order to provide service requested by a data center customer (the "Customer"); to maintain reliable service for the overall load growth in the area; and to comply with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, Virginia Electric and Power Company ("Dominion Energy Virginia" or the "Company") proposes in Fairfax County, Virginia, to:

(i) Extend the Company's existing overhead single circuit Hayfield-Van Dorn Line #210 and Ox-Van Dorn Line #243 from Van Dorn Substation to the proposed 230-34.5 kilovolt ("kV") Edsall Substation, resulting in (i) 230 kV Edsall-Hayfield Line #210 and (ii) 230 kV Edsall-Ox Line #243 (collectively, the "Edsall Lines"). Specifically, extend existing Lines #210 and #243 approximately 0.9 mile starting from the eastern side of the Van Dorn Substation and terminating at the proposed Edsall Substation. The proposed Edsall Lines will be constructed on entirely new 100-foot-wide right-of way supported by galvanized steel double circuit monopoles utilizing three-phase twin-bundled 768.2 Aluminum Conductor Steel Supported/Trapezoidal Wire/High Strength ("ACSS/TW/HS") conductor with a summer transfer capability of 1,573 MVA.[1]

(ii) Construct a new 230-34.5 kV substation in Fairfax County, Virginia, on property to be obtained by the Company (the "Edsall Substation") and perform substation-related work at the Company's existing Van Dorn Substation, in Fairfax County, Virginia.

The Edsall Lines, Edsall Substation, and substation-related work at the Van Dorn Substation are collectively referred to as the "230 kV Edsall Lines and Substation Project" or the "Project."

The Project is necessary to ensure that Dominion Energy Virginia can provide electric service requested by the Customer in Fairfax County, Virginia; to maintain reliable service for the overall growth in the load area surrounding the Company's existing Van Dorn Substation (the "Van Dorn Load Area");[2] and to comply with mandatory NERC Reliability Standards. Specifically, the Customer has requested a total of 176 MW of projected load from Dominion Energy Virginia to serve its planned data center development in Fairfax County, Virginia.

The Company's existing Van Dorn Substation is the source substation for the local load area and also the closest substation to the Customer's data center development; however, the Van Dorn Substation does not have adequate capacity to serve the Customer's total block of load without resulting in transformer overloads by 2029, nor can the Van Dorn Substation provide bridging power to support the Customer's initial load as currently designed. Accordingly, to serve this

[1] Apparent power, measured in megavolt amperes ("MVA"), is made up of real power (megawatt or "MW") and reactive power (megavolt ampere reactive or "MVAR"). The power factor ("pf") is the ratio of real power to apparent power. For loads with a high pf (approaching unity), real power will approach apparent power and the two can be used interchangeably. Load loss criteria specify real power (MW) units because that represents the real power that will be dropped; however, MVA is used to describe retail customer projected load, reflecting representative pf, and the equipment ratings to handle the apparent power, which includes the real and reactive load components.

[2] For purposes of this Application, the Van Dorn Load Area is defined generally as the area bounded by the I-495/I-395 interchange and corridors to the west, the I-395 corridor to the north, South Van Dorn Street to the east, and the I-95/I-495 corridor to the south.

planned data center block load beginning in 2027 and maintain reliable service for the overall load growth in the area, consistent with NERC Reliability Standards, the Company is proposing to construct the Edsall Lines and the Edsall Substation. With the proposed Project, the Customer receives requested electric service beginning in 2027, the system transformers at the Van Dorn Substation are not overloaded, and reliability criteria are met.

The Company identified an approximately 0.9-mile proposed route for the Edsall Lines (the "Proposed Route"). The Company is proposing this route for State Corporation Commission ("Commission") consideration and notice. Discussion of the Proposed Route and other overhead routes that the Company studied but ultimately rejected is provided in Section II of this Appendix and in the Environmental Routing Study (or "Routing Study") included with the Application.

The proposed Edsall Substation initially will be constructed with four 84 MVA 230-34.5 kV transformers and a 230 kV ring bus with a four circuit breaker configuration, built to 4000 ampere ("A") standards. In total, it will be designed to accommodate future growth in the area with one additional 230-34.5 kV transformer and up to sixteen 34.5 kV distribution circuits. The total area of the Edsall Substation is approximately 5.0 acres.

The substation-related work at the existing Van Dorn Substation is necessary in order to extend existing Lines #210 and #243 approximately 0.9 mile starting from the eastern side of the Van Dorn Substation and terminating at the proposed Edsall Substation. As part of this work, the Company will remove an existing tie breaker (210T243) and two single circuit lattice structures, install two 230 kV single circuit backbone structures, and perform protection upgrades all within the Company's existing Van Dorn Substation.

The estimated conceptual cost of the Project utilizing the Proposed Route is approximately $23.1 million, which includes approximately $13.7 million for transmission-related work and approximately $9.4 million for substation-related work (2024 dollars).[3]

The desired in-service target date for the proposed Project is October 1, 2027. The Company estimates it will take approximately 31 months for detailed engineering, materials procurement, permitting, real estate, and construction after a final order from the Commission. Accordingly, to support this estimated construction timeline and construction plan, the Company respectfully requests a final order by February 28, 2025. Should the Commission issue a final order by February 28, 2025, to accommodate long-lead materials procurement, the Company estimates that construction should begin around April 2026, and be completed by October 1, 2027. This schedule is contingent upon obtaining the necessary permits and outages, the latter of which may be particularly challenging due to the amount of new load growth, rebuilds, and new builds scheduled to occur in this load area. Dates may need to be adjusted based on permitting delays or design modifications to comply with additional agency requirements identified during the permitting application process, as well as the ability to schedule outages, and unpredictable delays due to labor shortages or materials/supply issues. This schedule also is contingent upon the Company's

[3] These total Project costs include projected real estate costs anticipated to acquire property rights for the Proposed Route and Edsall Substation, as well as costs related to the work at the Van Dorn Substation to extend Line #210 and Line #243. Additionally, the total Project costs include excess facilities charges that will be collected from the Customer (*see* Section I.C). The total Project costs exclude minor substation-related work at the Company's existing Hayfield and Ox Substations, as described in Section II.C.

ability to negotiate for easements with property owners along the approved route without the need for additional litigation.

In addition, the Company is monitoring actively regulatory changes and requirements associated with the Northern long-eared bat ("NLEB") and how they could potentially impact construction timing associated with time of year restrictions ("TOYRs"). The U.S. Fish and Wildlife Service ("USFWS") previously indicated that it planned to issue final NLEB guidance to replace the interim guidance by April 1, 2024; however, the interim guidance has been extended by USFWS until late summer 2024. The Company is tracking actively updates from the USFWS with respect to the final guidance. Once issued, the Company plans to review and follow the final guidance to the extent it applies to the Company's projects. Until the final guidance is issued, the Company will continue following the interim guidance. For projects that may require additional coordination, the Company will coordinate with the USFWS.

The Company is also monitoring potential regulatory changes associated with the potential up-listing of the Tricolored bat ("TCB"). On September 14, 2022, the USFWS published the proposed rule to the Federal Register to list the TCB as endangered under the Endangered Species Act ("ESA"). USFWS extended its Final Rule issuance target from September 2023 to September 2024. The Company is tracking actively this ruling and evaluating the effects of potential outcomes on Company projects' permitting, construction, and in-service dates, including electric transmission projects.

Any adjustments to this Project schedule resulting from these or similar challenges could necessitate a minimum of a six- to twelve-month delay in the targeted in-service date. Accordingly, for purposes of judicial economy, the Company requests that the Commission issue a final order approving both a desired in-service target date (*i.e.*, October 1, 2027) and an authorization sunset date (*i.e.*, October 1, 2028) for energization of the Project.

I. NECESSITY FOR THE PROPOSED PROJECT

A. State the primary justification for the proposed project (for example, the most critical contingency violation including the first year and season in which the violation occurs). In addition, identify each transmission planning standard(s) (of the Applicant, regional transmission organization ("RTO"), or North American Electric Reliability Corporation) projected to be violated absent construction of the facility.

Response: The Project is necessary in order to provide electric service requested by the Customer in Fairfax County, Virginia; to maintain reliable service for the overall growth in the Project area; and to comply with mandatory NERC Reliability Standards. See Attachment I.A.1 for an overview map of the Project area and Proposed Route, including the location of the Customer's planned data center development and general boundary of the Van Dorn Load Area.

Dominion Energy Virginia's transmission system is responsible for providing transmission service (i) for redelivery to the Company's retail customers; (ii) to Appalachian Power Company, Old Dominion Electric Cooperative, Northern Virginia Electric Cooperative, Central Virginia Electric Cooperative, and Virginia Municipal Electric Association for redelivery to their retail customers in Virginia; and (iii) to North Carolina Electric Membership Corporation and North Carolina Eastern Municipal Power Agency for redelivery to their customers in North Carolina (collectively, the "DOM Zone"). The Company needs to be able to maintain the overall, long-term reliability of its transmission system to meet its customers' evolving power needs in the future.

Dominion Energy Virginia is part of the PJM Interconnection, L.L.C. ("PJM") regional transmission organization ("RTO"), which provides service to a large portion of the eastern United States. PJM is currently responsible for ensuring the reliability and coordinating the movement of electricity through all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia, and the District of Columbia. This service area has a population of approximately 65 million and, on August 2, 2006, set a record high of 165,563 MW for summer peak demand, of which Dominion Energy Virginia's load portion was approximately 19,256 MW. On July 28, 2023, the Company set a record high of 21,993 MW for summer peak demand. On December 24, 2022, the Company set a winter and all-time record demand of 22,189 MW. Based on the 2024 PJM Load Forecast, the DOM Zone is expected to grow with average growth rates of 5.6% summer and 5.1% winter over the next 10 years compared to the PJM average of 1.7% and 2.0% over the same period for the summer and winter, respectively.[4]

[4] A copy of the 2024 PJM Load Report is available at the following: https://www.pjm.com/-/media/library/reports-notices/load-forecast/2024-load-report.ashx. *See, in particular,* page 3 (PJM) and 28, 35, 39 (DOM Zone).

Dominion Energy Virginia is also part of the Eastern Interconnection transmission grid, meaning its transmission system is interconnected, directly or indirectly, with all of the other transmission systems in the United States and Canada between the Rocky Mountains and the Atlantic coast, except for Quebec and most of Texas. All of the transmission systems in the Eastern Interconnection are dependent on each other for moving bulk power through the transmission system and for reliability support. Dominion Energy Virginia's service to its customers is extremely reliant on a robust and reliable regional transmission system.

NERC has been designated by the Federal Energy Regulatory Commission ("FERC") as the electric reliability organization for the United States. Accordingly, NERC requires that the planning authority and transmission planner develop planning criteria to ensure compliance with NERC Reliability Standards. Mandatory NERC Reliability Standards require that a transmission owner ("TO") develop facility interconnection requirements that identify load and generation interconnection minimum requirements for a TO's transmission system, as well as the TO's reliability criteria.[5]

Federally mandated NERC Reliability Standards constitute minimum criteria with which all public utilities must comply as components of the interstate electric transmission system. Moreover, the Energy Policy Act of 2005 mandates that electric utilities must follow these NERC Reliability Standards, and imposes fines on utilities found to be in noncompliance up to $1.3 million a day per violation.

PJM's Regional Transmission Expansion Plan ("RTEP") is the culmination of a FERC-approved annual transmission planning process that includes extensive analysis of the electric transmission system to determine any needed improvements.[6] PJM's annual RTEP is based on the effective criteria in place at the time of the analyses, including applicable standards and criteria of NERC, PJM, and local reliability planning criteria, among others.[7] Projects identified through the RTEP process are developed by the TO in coordination with PJM, and are presented at the Transmission Expansion Advisory Committee ("TEAC") meetings prior to inclusion in the RTEP, which is then presented for approval to the PJM Board of Managers (the "PJM Board").

Outcomes of the RTEP process include three types of transmission system upgrades or projects: (i) baseline upgrades are those that resolve a system reliability criteria violation, which can include planning criteria from NERC, ReliabilityFirst, SERC Reliability Corporation, PJM, and TOs; (ii) network upgrades are new or upgraded facilities required primarily to eliminate reliability criteria violations caused by

[5] *See* Facility Connection ("FAC") Standard FAC-001-4 (effective June 14, 2022), which can be found at https://www.nerc.com/pa/Stand/Reliability%20Standards/FAC-001-4.pdf.

[6] PJM Manual 14B (effective December 20, 2023) focuses on the RTEP process and can be found at https://www.pjm.com/-/media/documents/manuals/m14b.ashx.

[7] *See* PJM Manual 14B, Attachment D: PJM Reliability Planning Criteria. *See supra*, n. 6 for a link to PJM Manual 14B.

proposed generation, merchant transmission, or long-term firm transmission service requests; and (iii) supplemental projects are projects initiated by the TO in order to interconnect new customer load, address degraded equipment performance, improve operational flexibility and efficiency, and increase infrastructure resilience. The Project is classified as a supplemental project initiated by the TO in order to interconnect new customer load . See Section I.J for a discussion of the PJM process as it relates to this Project.

Need for the Project

The Northern Virginia data center market is spread across Loudoun, Fairfax, and Prince William Counties, with the largest concentration of data centers in Loudoun County's Data Center Alley ("DCA") in the area of Ashburn and Sterling. The combination of competitive colocation/cloud environment, fiber connectivity, strategic geographic location, low risk of business disruptions, affordable and reliable power, and the business climate in Virginia has created the largest market for data center capacity in the United States.

While the Project is not located in the DCA, the Van Dorn Load Area is located in Northern Virginia in the densely populated eastern Fairfax County. The proposed Edsall Lines and Edsall Substation are necessary to provide electric service to the Customer, as well as other future customers in the Van Dorn Load Area, in compliance with mandatory NERC Reliability Standards.

In April 2024, the Company's Distribution Planning group submitted an updated delivery point ("DP") request to the Transmission Planning group for construction of a new substation (*i.e.*, the Edsall Substation) to serve the Customer's planned data center development in Fairfax County, Virginia. Specifically, the Customer is constructing two new data center buildings, which will require approximately 2 MW to begin the Customer's projected load ramp in 2027, with a total of 176 MW of projected load at full build out by 2037, and a requested in-service date of October 2027.

The Company's existing Van Dorn Substation is the source substation for the local load area and also the closest substation to the Customer's data center development; however, the Van Dorn Substation does not have adequate capacity to serve the Customer's total block of load at full build out without resulting in transformer overloads by 2029, nor can the Van Dorn Substation provide bridging power to support the Customer's initial load as currently designed. See Section I.C. Accordingly, to serve this planned data center block load beginning in 2027 and maintain reliable service for the overall load growth in the area, consistent with NERC Reliability Standards, the Company is proposing to construct the Edsall Lines and the Edsall Substation. With the proposed Project, the Customer receives requested electric service beginning in 2027, the system transformers at the Van Dorn Substation are not overloaded, and reliability criteria are met.

Attachment I.A.2 provides the existing one-line diagram of the area transmission

system. Attachment I.A.3 provides a one-line diagram of the area transmission system after completion of the proposed Project in 2027. See Attachment II.A.2 for a map depicting the proposed Project area.

Project Description

Edsall Lines

As part of the Project, the Company proposes to extend the existing overhead single circuit Hayfield-Van Dorn Line #210 and Ox-Van Dorn Line #243 from within the Company's existing Van Dorn Substation to the proposed 230-34.5 kV Edsall Substation, resulting in (i) 230 kV Edsall-Hayfield Line #210 and (ii) 230 kV Edsall-Ox Line #243 (*i.e.*, the Edsall Lines). Specifically, the Company proposes to extend existing Lines #210 and #243 approximately 0.9 mile starting from the eastern side of the Company's existing Van Dorn Substation and terminating at the proposed Edsall Substation. The proposed Edsall Lines will be constructed on entirely new 100-foot-wide right-of way supported by galvanized steel double circuit monopoles utilizing three-phase twin-bundled 768.2 ACSS/TW/HS conductor with a summer transfer capability of 1,573 MVA.

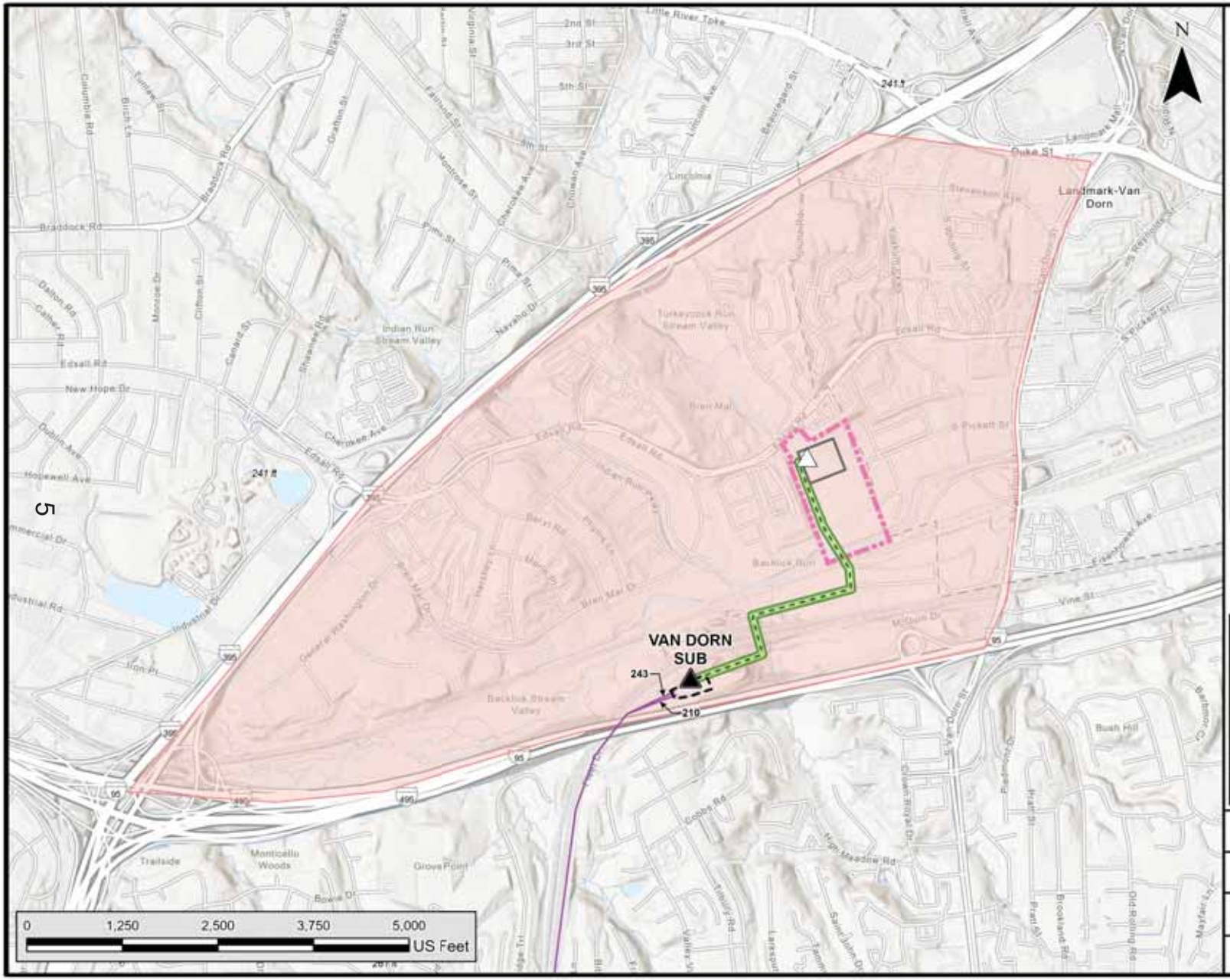
The Company identified an approximately 0.9-mile Proposed Route for the Edsall Lines, which the Company is proposing for Commission consideration and notice. Discussion of the Proposed Route and other overhead routes that the Company studied but ultimately rejected, is provided in Section II of this Appendix and in the Routing Study included with the Application.

Substation Work

The Company proposes to construct the new 230-34.5 kV Edsall Substation in Fairfax County, Virginia, on property to be obtained by the Company. In addition, the Company will perform substation-related work at the Company's existing Van Dorn Substation, in Fairfax County, Virginia. See Section II.C.

***

In summary, the proposed Project will provide service requested by the Customer in Fairfax County, Virginia; maintain reliable service for the overall growth in the Project area; and comply with mandatory NERC Reliability Standards.



ATTACHMENT
I.A.1

TITLE:

PROJECT OVERVIEW MAP

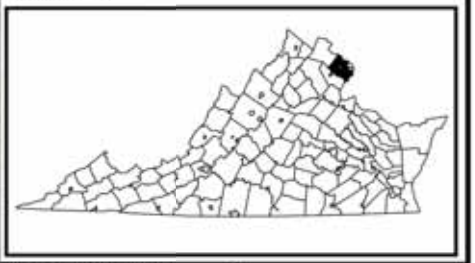
PROJECT:

230 KV LINES #210 AND #243 EXTENSION AND EDSALL SUBSTATION

LEGEND

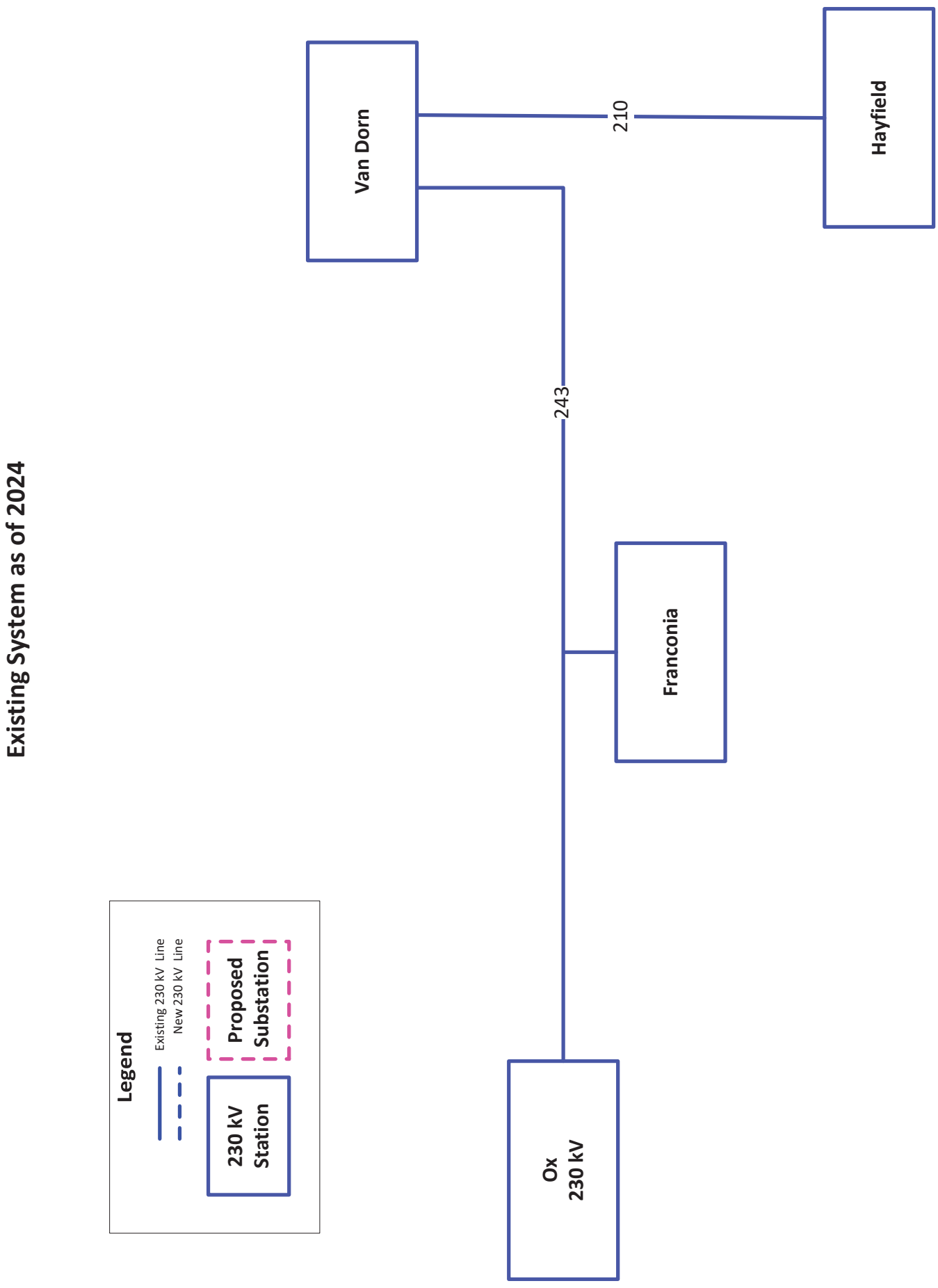
- PROPOSED EDSALL SUBSTATION
- EXISTING SUBSTATIONS
- CUSTOMER DATA CENTER CAMPUS
- EXISTING DOMINION TRANSMISSION LINES
- PROPOSED ROUTE CENTERLINE AND RIGHT-OF-WAY
- PROPOSED SUBSTATION BOUNDARY
- EXISTING SUBSTATION BOUNDARY
- VAN DORN LOAD AREA

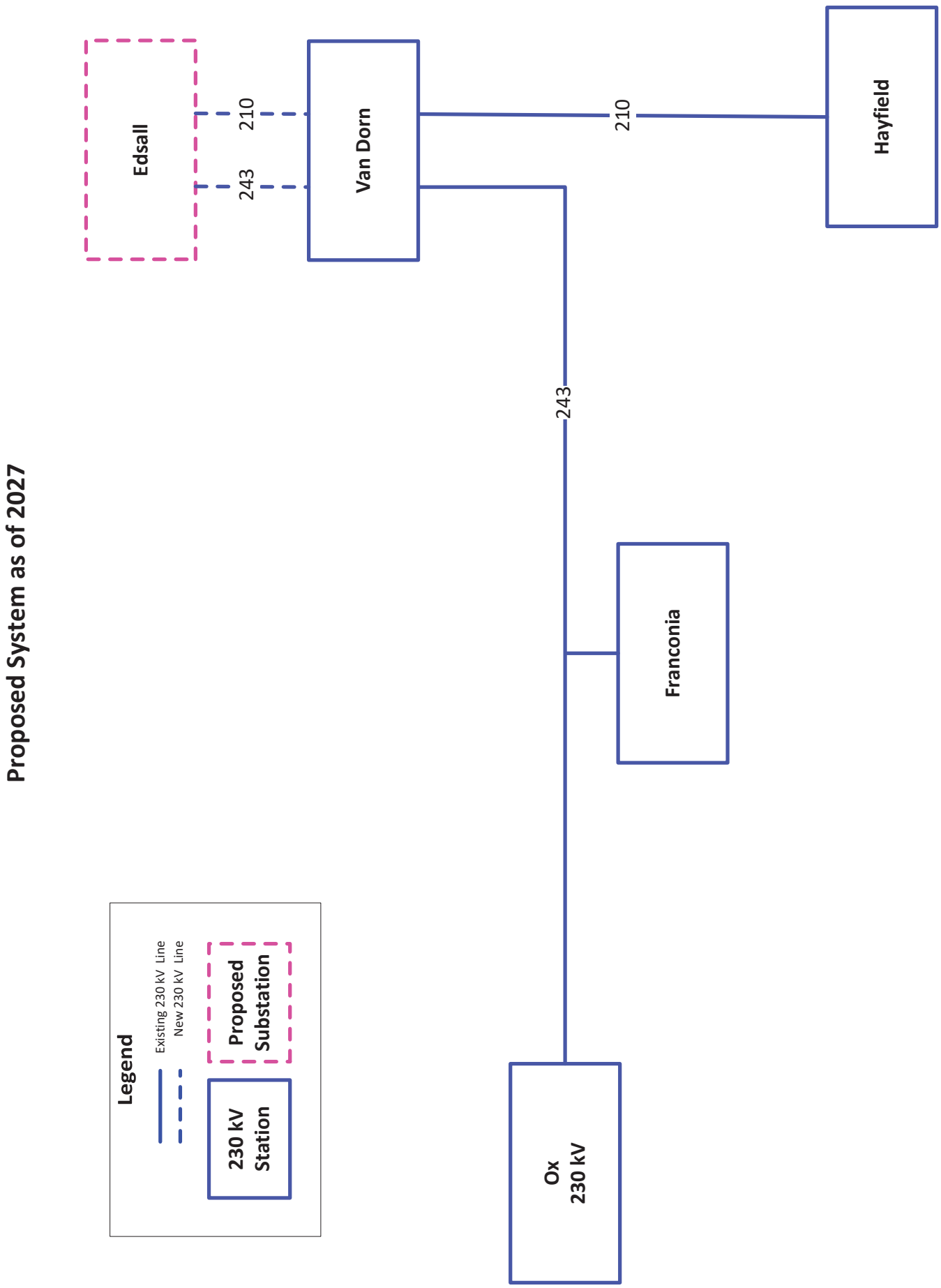
KEY PLAN



PROJECT NUMBER: 50163606	
SCALE: 1" = 1250 FEET	DATE: 5/1/2024
PROJECT MANAGER: TL	Dewberry
DRAWN BY: MGH	

Attachment I.A.1


Existing System as of 2024
Van Dorn
210
Hayfield
243
Franconia
Ox
230 kV
Legend
Existing 230 kV Line
New 230 kV Line
Proposed Substation
230 kV Station


Proposed System as of 2027
Edsall
210
243
Van Dorn
210
Hayfield
243
Franconia
Ox
230 kV
Legend
Existing 230 kV Line
New 230 kV Line
Proposed Substation
230 kV Station

I. NECESSITY FOR THE PROPOSED PROJECT

B. Detail the engineering justifications for the proposed project (for example, provide narrative to support whether the proposed project is necessary to upgrade or replace an existing facility, to significantly increase system reliability, to connect a new generating station to the Applicant's system, etc.). Describe any known future project(s), including but not limited to generation, transmission, delivery point or retail customer projects, that require the proposed project to be constructed. Verify that the planning studies used to justify the need for the proposed project considered all other generation and transmission facilities impacting the affected load area, including generation and transmission facilities that have not yet been placed into service. Provide a list of those facilities that are not yet in service.

Response:

(1) <u>Engineering Justification for Project</u>

Detail the engineering justifications for the proposed project (for example, provide narrative to support whether the proposed project is necessary to upgrade or replace an existing facility, to significantly increase system reliability, to connect a new generating station to the Applicant's system, etc.).

See Section I.A of the Appendix.

(2) <u>Known Future Projects</u>

Describe any known future project(s), including but not limited to generation, transmission, delivery point or retail customer projects, that require the proposed project to be constructed.

The proposed Project is needed to serve the Customer's planned data center development and maintain reliable service for the overall load growth in the area, consistent with NERC Reliability Standards, as described in Section I.A. There are no other known future projects at this time that require the Project to be constructed.

(3) <u>Planning Studies</u>

Verify that the planning studies used to justify the need for the proposed project considered all other generation and transmission facilities impacting the affected load area, including generation and transmission facilities that have not yet been placed into service.

<u>Distribution</u>

For this Project, the Company's Distribution Planning group first used the Customer's load projection information for the data center development. After analyzing this information, the Distribution Planning group determined for this Project that it was not feasible to serve the total projected load at full build out from the Company's existing Van Dorn Substation, nor can the Van Dorn Substation

provide bridging power to support the Customer's initial load as currently designed. See Sections I.A and I.C.

Transmission

In order to maintain reliable service to the Company's customers and to comply with mandatory NERC Reliability Standards, specifically FAC-001,[8] the Company's Facility Interconnection Requirements ("FIR")[9] document addresses the interconnection requirements of generation, transmission, and electricity end-user facilities. The purpose of the NERC FAC Standards is to avoid adverse impacts on reliability by requiring that each TO establish facility connection and performance requirements in accordance with FAC-001, and the TOs and end-users meet and adhere to the established facility connection and performance requirements in accordance with FAC-002.[10]

NERC Reliability Standards TPL-001 requirements R2, R5, and R6 require PJM, the Planning Coordinator, and the TO have criteria. PJM's planning criteria outlined in Attachment D of Manual 14B requires the Company, as a TO, to follow NERC and Regional Planning Standards and criteria as well as the TO Standards filed in Dominion Energy Virginia's FERC 715 filings. The Company's FERC 715 filing contains the Dominion Energy Virginia Transmission Planning Criteria in Exhibit A of the FIR document.

The two major criteria considered as part of this Project were:

1) Ring bus arrangement is required for load interconnections in excess of 100 MW (Company's FIR, Section 4.3.2); and

2) The minimum load levels within a 10-year planning horizon for the direct interconnection to existing transmission lines is 30 MW for a 230 kV delivery (Company's FAC-001 Section 4.3, Load Criteria – End User).

The Project is being constructed as two 230 kV single circuits to comply with Section 4.3.2 of the Company's FIR, which requires a ring bus arrangement for load interconnections in excess of 100 MW.

[8] *See supra* n. 5.

[9] The Company's mandatory electric transmission planning criteria ("Planning Criteria") can be found in Attachment 1 of the Company's FIR document (effective January 1, 2024), pursuant to FAC-001 (R1, R3), which is available online at https://cdn-dominionenergy-prd-001.azureedge.net/-/media/pdfs/virginia/parallel-generation/facility-connection-requirements.pdf?la=en&rev=f280781e90cf47f69ea526c944c9c347&hash=82DD2567D0B033C47536134B8C4D5C5E.

[10] *See* https://www.nerc.com/pa/Stand/Reliability%20Standards/FAC-002-2.pdf.

(4) <u>Facilities List</u>

Provide a list of those facilities that are not yet in service.

Not applicable.

I. NECESSITY FOR THE PROPOSED PROJECT

C. Describe the present system and detail how the proposed project will effectively satisfy present and projected future electrical load demand requirements. Provide pertinent load growth data (at least five years of historical summer and winter peak demands and ten years of projected summer and winter peak loads where applicable). Provide all assumptions inherent within the projected data and describe why the existing system cannot adequately serve the needs of the Applicant (if that is the case). Indicate the date by which the existing system is projected to be inadequate.

Response: The existing Van Dorn Load Area is located in Fairfax County, Virginia, and is generally bounded by the I-495/I-395 interchange and corridors to the west, the I-395 corridor to the north, South Van Dorn Street to the east, and the I-95/I-495 corridor to the south. See Attachment I.A.1 for a map of the general boundary of the Van Dorn Load Area and the location of the Customer's data center development that drives the need for the Project. See Attachment I.G.1 for the portion of the Company's existing transmission facilities in the area of the Project.

The Van Dorn Substation is the source substation for the local area and is also the closest substation to the Customer's data center development. The load at the Customer's data center development is projected to be approximately 185 MVA[11] in 10 years. Adding the total load from the Customer's future data center development at full build out to the existing Van Dorn Substation beginning in 2027 would result in overload conditions by 2029 and NERC reliability criteria violations, as discussed in Section I.A. Further, the Van Dorn Substation is unable to provide bridging power to support the Customer's initial load as currently designed.

Attachment I.C.1 shows loading (MVA) as follows:

- Attachment I.C.1.a shows historical and projected peak loading at Van Dorn Substation from 2019 through 2033, with existing load only and without the Customer's projected load.

- Attachment I.C.1.b shows historical and projected peak loading at Van Dorn Substation from 2019 through 2033, with the Customer's full projected load beginning in 2027.

- Attachment I.C.1.c shows historic and projected peak loading (existing load

[11] Distribution load forecasts for data centers typically involve use of customer-requested load ramps to project load growth based on historical knowledge of the customer requesting service for the new data center. The data center customer typically requests the full maximum capacity that their data center building can support to ensure they are able to fully utilize or lease their building investment. The Company has applied a diversification factor to the Customers' block load request to project load at full build out.

only) at Van Dorn Substation from 2019 to 2033, and the projected loading at Edsall Substation with the Customer's full projected load from 2027 through 2033.

Note that all of the Section I.C attachments include only the normal feed circuits to the Company's customers; they do not include any alternate feed loads. To be clear, that means there are no circuits normally open that serve as alternate feeds for the Customer or for other customers with existing alternate feed arrangements shown in the Section I.C attachments. Also note that the load tables in the Section I.C attachments show actual and projected peak loading in MVA based on the Customer's load projections.

For this Project, the Customer has requested that the data center buildings include totally independent, redundant distribution feeds. This is referred to as an alternate feed. At any customer's request, the Company will endeavor to design a distribution or transmission system that provides a backup source of power should the normal feed have an outage. The estimated cost of this alternate feed arrangement is then compared to the normal arrangement of service, and the difference in cost is collected through an excess facilities charge. This Customer's business plans rely on the requested alternate feed plan to meet the non-outage demands of the data center build out. Therefore, the Company plans to serve the data center development with both normal feed circuits and alternate feed circuits. This essentially doubles the required substation transformer capacity that the Customer will contract for and doubles the number of distribution circuits required for providing normal feed service only.

Each substation transformer has a normal overload ("NOL") rating that cannot be exceeded. These distribution circuits each have a thermal overload rating that is based on the type of equipment and the configuration of the equipment in the field. To prevent overloads that could damage equipment or result in failure, the maximum capacity limits of the distribution circuits and the substation transformers cannot be exceeded.

The proposed Edsall Substation initially will be constructed with four 84 MVA transformers. Each 84 MVA 230-34.5 kV transformer will have an NOL rating of 90 MVA. The transformers will be responsible for sourcing four normal feeders and four alternate feeders for the Customer's data center capacity.

To ensure reliability to its customers, the Company maintains a substation transformer contingency plan. Because of the negative impact to customers due to the outage duration if a substation transformer were to fail, the Company creates a switching plan that allows customer load to be picked up on other equipment for the loss of any substation transformer. There are various switching methods that can be used for these substation transformer contingency plans. If the contingency plan creates overloads in other equipment because of the switching, new substation capacity, such as constructing the Edsall Substation, is necessary.

In order to maintain reliable service to the Company's customers and to comply with mandatory NERC Reliability Standards, the Company's FIR document addresses the interconnection requirements of generation, transmission, and electricity end-user facilities, as discussed in Section I.B. The Company's FIR document requires a ring bus arrangement for load interconnections in excess of 100 MW (Section 4.3.2) to ensure system reliability and to remain in compliance with NERC mandated reliability criteria. Interconnecting the Customer's full projected load beginning in 2027 would result in substation transformer overloads at the Company's existing Van Dorn Substation by 2029. See Attachment I.C.1.b. Specifically, as shown in Attachment I.C.1.b, without the proposed Edsall Substation, the Van Dorn Substation is projected to have TX#1 and TX#2 thermal overloads starting in summer 2029.

While the projected overloads are not anticipated until 2029, the Van Dorn Substation is unable to provide bridging power to support the Customer's initial load from 2027 to 2029 as currently designed.

First, serving the Customer's initial load with bridging power from 2027 to 2029 would jeopardize substation transformer contingency planning for the Van Dorn Substation. Based on 2023 actual peak loading, Van Dorn Substation TX #1 and TX #2 are at 29.9 MVA and 53.5 MVA, respectively, for a combined total of 83.4 MVA, excluding any of the Customer's projected load. See Attachment I.C.1.a. TX #1 has a nameplate rating of 75 MVA and an NOL of 82.5 MVA; TX #2 has a nameplate rating of 75 MVA and an NOL of 91.5 MVA. Pursuant to the Company's substation transformer contingency plan described above, in the event of an outage of TX #1 or TX #2, the Company would transfer the total load to the remaining transformer, even though it would exceed the nameplate rating. Accordingly, to serve *any* of the Customer's initial load with bridging power from 2027 to 2029 would require an additional transformer to be installed at the Van Dorn Substation, or upgrades to the existing transformers, either of which the Company estimates would require a similar construction timeframe as the proposed Edsall Substation (*i.e.*, estimated to be completed in 2027).

Second, the installation of an additional transformer, or upgrades of the existing transformers, at the Van Dorn Substation would only provide a temporary solution in the way of bridging power to serve the Customer's initial load, as the proposed Edsall Substation would still be required to serve the Customer's full load, which the Company projects to be approximately 185 MVA.

Based on the stated projected transformer overloads above, and the lack of bridging power available from the Van Dorn Substation as currently designed, the Company needs to construct the Project by October 2027.

Table I.C.1.a																	
VAN DORN Load Area			(Load and Ratings in MVA)														
Van Dorn Substation (Contains existing load only)																	
			2019 Actual Peak Loading (MVA)	2020 Actual Peak Loading (MVA)	2021 Actual Peak Loading (MVA)	2022 Actual Peak Loading (MVA)	2023 Actual Peak Loading (MVA)	2024 Projected Peak Loading (MVA)	2025 Projected Peak Loading (MVA)	2026 Projected Peak Loading (MVA)	2027 Projected Peak Loading (MVA)	2028 Projected Peak Loading (MVA)	2029 Projected Peak Loading (MVA)	2030 Projected Peak Loading (MVA)	2031 Projected Peak Loading (MVA)	2032 Projected Peak Loading (MVA)	2033 Projected Peak Loading (MVA)
Substation Total (MVA)			103.9	71.3	87.2	86.8	83.4	88.8	89.7	90.6	91.5	92.4	93.3	94.3	95.2	96.1	97.1
Substation Total Calculation for 300MW NERC Limit (MW)			98.705	67.735	82.84	82.46	79.23	84.36	85.215	86.07	86.925	87.78	88.635	89.585	90.44	91.295	92.245
Transformer	Nameplate	NOL															
TX #1	75	82.5	52.6	23.2	38.6	40	29.9	39.4	39.8	40.2	40.6	41	41.4	41.9	42.3	42.7	43.1
TX #2	75	91.5	51.3	48.1	48.6	46.8	53.5	49.4	49.9	50.4	50.9	51.4	51.9	52.4	52.9	53.4	54

Table I.C.1.b																	
Van Dorn Load Area			(Load and Ratings in MVA)														
Van Dorn Substation (Contains existing load and customer load, no Edsall)																	
			2019 Actual Summer Peak Loading (MVA)	2020 Actual Summer Peak Loading (MVA)	2021 Actual Summer Peak Loading (MVA)	2022 Actual Summer Peak Loading (MVA)	2023 Actual Summer Peak Loading (MVA)	2024 Projected Summer Peak Loading (MVA)	2025 Projected Summer Peak Loading (MVA)	2026 Projected Summer Peak Loading (MVA)	2027 Projected Summer Peak Loading (MVA)	2028 Projected Summer Peak Loading (MVA)	2029 Projected Summer Peak Loading (MVA)	2030 Projected Summer Peak Loading (MVA)	2031 Projected Summer Peak Loading (MVA)	2032 Projected Summer Peak Loading (MVA)	2033 Projected Summer Peak Loading (MVA)
Substation Total (MVA)			103.9	71.3	87.2	138.8	83.4	88.8	89.7	90.6	93.5	124.4	177.3	225.3	269.7	282.38	282.38
Substation Total Calculation for 300MW NERC Limit (MW)			98.71	67.74	82.84	131.86	79.23	84.36	85.22	86.07	88.83	118.18	168.44	214.04	256.22	268.26	268.26
Transformer	Nameplate	NOL															
TX #1	75	82.5	52.6	23.2	38.6	66	29.9	39.4	39.8	40.2	41.6	57	83.4	107.4	128.3	135.74	135.74
TX #2	75	91.5	51.3	48.1	48.6	72.8	53.5	49.4	49.9	50.4	51.9	67.4	93.9	117.9	141.4	146.64	146.64

Table I.C.1.c																	
Van Dorn Load Area			(Load and Ratings in MVA)														
Van Dorn Substation (Contains existing load only)																	
			2019 Actual Summer Peak Loading (MVA)	2020 Actual Summer Peak Loading (MVA)	2021 Actual Summer Peak Loading (MVA)	2022 Actual Summer Peak Loading (MVA)	2023 Actual Summer Peak Loading (MVA)	2024 Projected Summer Peak Loading (MVA)	2025 Projected Summer Peak Loading (MVA)	2026 Projected Summer Peak Loading (MVA)	2027 Projected Summer Peak Loading (MVA)	2028 Projected Summer Peak Loading (MVA)	2029 Projected Summer Peak Loading (MVA)	2030 Projected Summer Peak Loading (MVA)	2031 Projected Summer Peak Loading (MVA)	2032 Projected Summer Peak Loading (MVA)	2033 Projected Summer Peak Loading (MVA)
Substation Total (MVA)			103.9	71.3	87.2	86.8	83.4	88.8	89.7	90.6	91.5	92.4	93.3	94.3	95.2	96.1	97.1
Substation Total Calculation for 300MW NERC Limit (MW)			98.705	67.735	82.84	82.46	79.23	84.36	85.215	86.07	86.925	87.78	88.635	89.585	90.44	91.295	92.245
Transformer	Nameplate	NOL															
TX #1	75	82.5	52.6	23.2	38.6	40	29.9	39.4	39.8	40.2	40.6	41	41.4	41.9	42.3	42.7	43.1
TX #2	75	91.5	51.3	48.1	48.6	46.8	53.5	49.4	49.9	50.4	50.9	51.4	51.9	52.4	52.9	53.4	54
Edsall Load Area			(Load and Ratings in MVA)														
Edsall Substation (Contains Customer load)																	
			2019 Actual Summer Peak Loading (MVA)	2020 Actual Summer Peak Loading (MVA)	2021 Actual Summer Peak Loading (MVA)	2022 Actual Summer Peak Loading (MVA)	2023 Actual Summer Peak Loading (MVA)	2024 Projected Summer Peak Loading (MVA)	2025 Projected Summer Peak Loading (MVA)	2026 Projected Summer Peak Loading (MVA)	2027 Projected Summer Peak Loading (MVA)	2028 Projected Summer Peak Loading (MVA)	2029 Projected Summer Peak Loading (MVA)	2030 Projected Summer Peak Loading (MVA)	2031 Projected Summer Peak Loading (MVA)	2032 Projected Summer Peak Loading (MVA)	2033 Projected Summer Peak Loading (MVA)
Substation Total			0	0	0	0	0	0	0	0	2.08	33.68	79.8	127.8	175.8	185.28	185.28
Substation Total Calculation for 300MW NERC Limit (MW)			0	0	0	0	0	0	0	0	1.976	31.996	75.81	121.41	167.01	176	176
Transformer	Nameplate	NOL															
TX #1	84	90	0	0	0	0	0	0	0	0	0.52	8.42	19.95	31.95	43.95	46.32	46.32
TX #2	84	90	0	0	0	0	0	0	0	0	0.52	8.42	19.95	31.95	43.95	46.32	46.32
TX #3	84	90	0	0	0	0	0	0	0	0	0.52	8.42	19.95	31.95	43.95	46.32	46.32
TX #4	84	90	0	0	0	0	0	0	0	0	0.52	8.42	19.95	31.95	43.95	46.32	46.32

I. NECESSITY FOR THE PROPOSED PROJECT

D. If power flow modeling indicates that the existing system is, or will at some future time be, inadequate under certain contingency situations, provide a list of all these contingencies and the associated violations. Describe the critical contingencies including the affected elements and the year and season when the violation(s) is first noted in the planning studies. Provide the applicable computer screenshots of single-line diagrams from power flow simulations depicting the circuits and substations experiencing thermal overloads and voltage violations during the critical contingencies described above.

Response: Not applicable.

I. NECESSITY FOR THE PROPOSED PROJECT

E. Describe the feasible project alternatives, if any, considered for meeting the identified need including any associated studies conducted by the Applicant or analysis provided to the RTO. Explain why each alternative was rejected.

Response: The Company identified the following transmission and distribution electrical alternatives to the Project.

Transmission Alternatives

Transmission Alternatives #1 and #2: *Cut 230 kV Hayfield-Van Dorn Line #210 (Alternative #1) or Cut 230 kV Ox-Van Dorn Line #243 (Alternative #2)*

Under Transmission Alternative #1, the Company would cut *only* Line #210 just west of the Van Dorn Substation and loop it into and out of the Edsall Substation. Under Transmission Alternative #2, the Company would cut *only* Line #243 just west of the Van Dorn Substation and loop it into and out of the proposed Edsall Substation. From an electrical standpoint, both of these solutions are similar to the Company's preferred option. However, both Alternative #1 and Alternative #2 would require cutting the lines prior to entering Van Dorn Substation, which would require additional right-of-way adjacent to the substation in order to route the lines around the substation, impacting Virginia Department of Transportation ("VDOT") and Virginia Passenger Rail Authority ("VPRA") properties. Additionally, upon exiting the Van Dorn Substation, the lines would have to run parallel within either Washington Metropolitan Area Transit Authority's ("WMATA") or VPRA's right-of-way.[12] The Company discussed the Project with WMATA, VPRA, and CSX, all of which expressed a preference that the Company not construct the proposed Project within their respective rights-of-way. The Company cannot condemn these properties. Because routing through these entities' rights-of-way posed permitting, construction, and operations and maintenance risk, the Company rejected these alternatives.

Transmission Alternative #3: *Install a gas insulated substation ("GIS") 230 kV ring bus at existing Van Dorn Substation and extend two single circuit overhead lines to the Edsall Substation*

Under Transmission Alternative #3, the Company would install a GIS 230 kV ring bus with a four circuit breaker configuration within the existing Van Dorn Substation fence line. This alternative would require terminating Line #210 and Line #243 into the GIS ring and extending two new 230 kV circuits to Edsall Substation. Notably, this alternative still would require construction of two new single circuit lines to Edsall Substation, similar to the proposed Project. It also would require replacing the existing Van Dorn Substation transformers feed with

[12] This segment of VPRA's right-of-way is utilized by CSX and the Company also would have to meet CSX's requirements for construction and receive approval from CSX to use the right-of-way for the proposed Project.

new underground gas-insulated bus ("GIB") feeds due to substation design. This alternative also would require upgrading the substation fence security to a level 4. The estimated cost associated with installing a GIS ring bus at Van Dorn Substation would exceed the cost of installing the ring bus at Edsall Substation as proposed in the Project and, therefore, Transmission Alternative #3 was rejected.

Transmission Alternative #4: *Install a standard air insulated substation ("AIS") 230 kV ring bus at existing Van Dorn Substation and extend two single circuit overhead lines to the Edsall Substation*

Under Transmission Alternative #4, the Company would install an AIS 230 kV ring bus with a four circuit breaker configuration at Van Dorn Substation. This alternative would require expanding Van Dorn Substation. This alternative design would require terminating Line #210 and Line #243 into the AIS ring bus, extending two new 230 kV circuits to Edsall Substation, and replacing the existing Van Dorn Substation transformers feed with new underground GIB feeds due to substation design. Notably, this alternative still would require construction of two new single circuit lines to Edsall Substation, similar to the proposed Project. This alternative also would require upgrading the substation fence security to a level 4 and new ground grid overlay. The estimated cost associated with installing an AIS ring bus and expanding Van Dorn Substation would exceed the cost of installing the ring bus at Edsall Substation as proposed in the Project and, therefore, Transmission Alternative #4 was rejected.

Distribution Alternatives

Distribution Alternative #1: *Serve the Customer's load from the existing Van Dorn Substation*

Under Distribution Alternative #1, the Van Dorn Substation, as the source substation for the local load area and also the closest substation, would serve the full load of the Customer's data center development. However, as discussed in Sections I.A and I.C, if the Customer's total block of load at full build out were connected to the Van Dorn Substation, the existing transformers would overload by 2029. Nor can the Van Dorn Substation provide bridging power to support the Customer's initial load as currently designed. In order to serve *any* of the Customer's initial load with bridging power from 2027 to 2029 would require an additional transformer to be installed at the Van Dorn Substation, or upgrades to the existing transformers, either of which the Company estimates would require a similar construction timeframe as the proposed Edsall Substation (*i.e.*, completed in 2027). Accordingly, Distribution Alternative #1 was rejected.

Distribution Alternative #2: *Expand the Van Dorn Substation to serve the Customer's full load*

Under Distribution Alternative #2, the Company would expand the Van Dorn Substation within the Company-owned parcel and extend ten overhead distribution circuits within a new 110-foot-wide right-of-way to serve the Customer's full projected load. The Company rejected this alternative for the following reasons:

- Topography: Given there is up to a 65-foot drop from the edge of the substation pad to the edge of the parcel, it would require a significant amount of fill and use of retaining walls in order to grade the parcel to be suitable to expand the substation.

- Stormwater Solution: Expansion of the substation pad would not leave adequate space for the traditional surface stormwater management. The Company would be required to pursue an underground detention or an atypical stormwater solution.

- Permits: There is an existing Resource Protection Area ("RPA") partially located on the east side of the substation parcel. Avoiding the RPA would require construction of additional retaining walls. If the RPA were impacted by the expansion, the Company would need additional approval from Fairfax County.

- Zoning: The existing Van Dorn Substation is grandfathered but the parcel is zoned residential. Expansion would require a special exception from the Fairfax County Board of Supervisors, which could introduce risk to the timing of the Project.

- Cost: The above challenges would significantly increase the cost of this distribution alternative, possibly double the cost of the proposed Project.

For all these reasons, the Company rejected Distribution Alternative #2.

Analysis of Demand-Side Resources:

Pursuant to the Commission's November 26, 2013, Order entered in Case No. PUE-2012-00029,[13] and its November 1, 2018, Final Order entered in Case No. PUR-2018-00075,[14] the Company is required to provide analysis of demand-side

[13] *Application of Virginia Electric and Power Company d/b/a Dominion Virginia Power for approval and certification of electric facilities: Surry-Skiffes Creek 500 kV Transmission Line, Skiffes Creek-Whealton 230 kV Transmission Line, and Skiffes Creek 500 kV-230 kV-115 kV Switching Station*, Case No. PUR-2012-00029, Final Order (Nov. 26, 2023).

[14] *Application of Virginia Electric and Power Company for approval and certification of electric transmission facilities under Va. Code § 56-46.1 and the Utility Facilities Act, Va. Code § 56-265.1 et seq.*, Case No. PUR-2018-00075, Final Order (Nov. 1, 2018).

resources ("DSM") incorporated into the Company's planning studies. DSM is the broad term that includes both energy efficiency ("EE") and demand response ("DR"). In this case, the Company has identified a need for the proposed Project based on the obligation to provide service and to comply with mandatory NERC Reliability Standards, while maintaining the overall long-term reliability of the transmission system.[15] Notwithstanding, when performing an analysis based on PJM's 50/50 load forecast, there is no adjustment in load for DR programs because PJM only dispatches DR when the system is under stress (*i.e.*, a system emergency). Accordingly, while existing DSM is considered to the extent the load forecast accounts for it, DR that has been bid previously into PJM's capacity market is not a factor in this particular application because of the identified need for the Project. Based on these considerations, the evaluation of the Project demonstrated that despite accounting for DSM consistent with PJM's methods, the Project is necessary.

Incremental DSM also will not eliminate the need for the Project. As discussed in Sections I.A and I.C, the need for the Project is not load driven; rather it is based on the Company's obligation to interconnect the Customer's data center development consistent with the FIR document and mandatory NERC Reliability Standards. As reflected in Section I.A, the Customer's projected load fully built out is approximately 176 MW. By way of comparison, the Company achieved demand savings of 276.5 MW (net) / 350.0 MW (gross) from its DSM Programs in 2023.

[15] While the PJM load forecast does not directly incorporate DR, its load forecast incorporates variables derived from Itron that reflect EE by modeling the stock of end-use equipment and its usages. Further, because PJM's load forecast considers the historical non-coincident peak ("NCP") for each load serving entity ("LSE") within PJM, it reflects the actual load reductions achieved by DSM programs to the extent an LSE has used DSM to reduce its NCPs.

I. NECESSITY FOR THE PROPOSED PROJECT

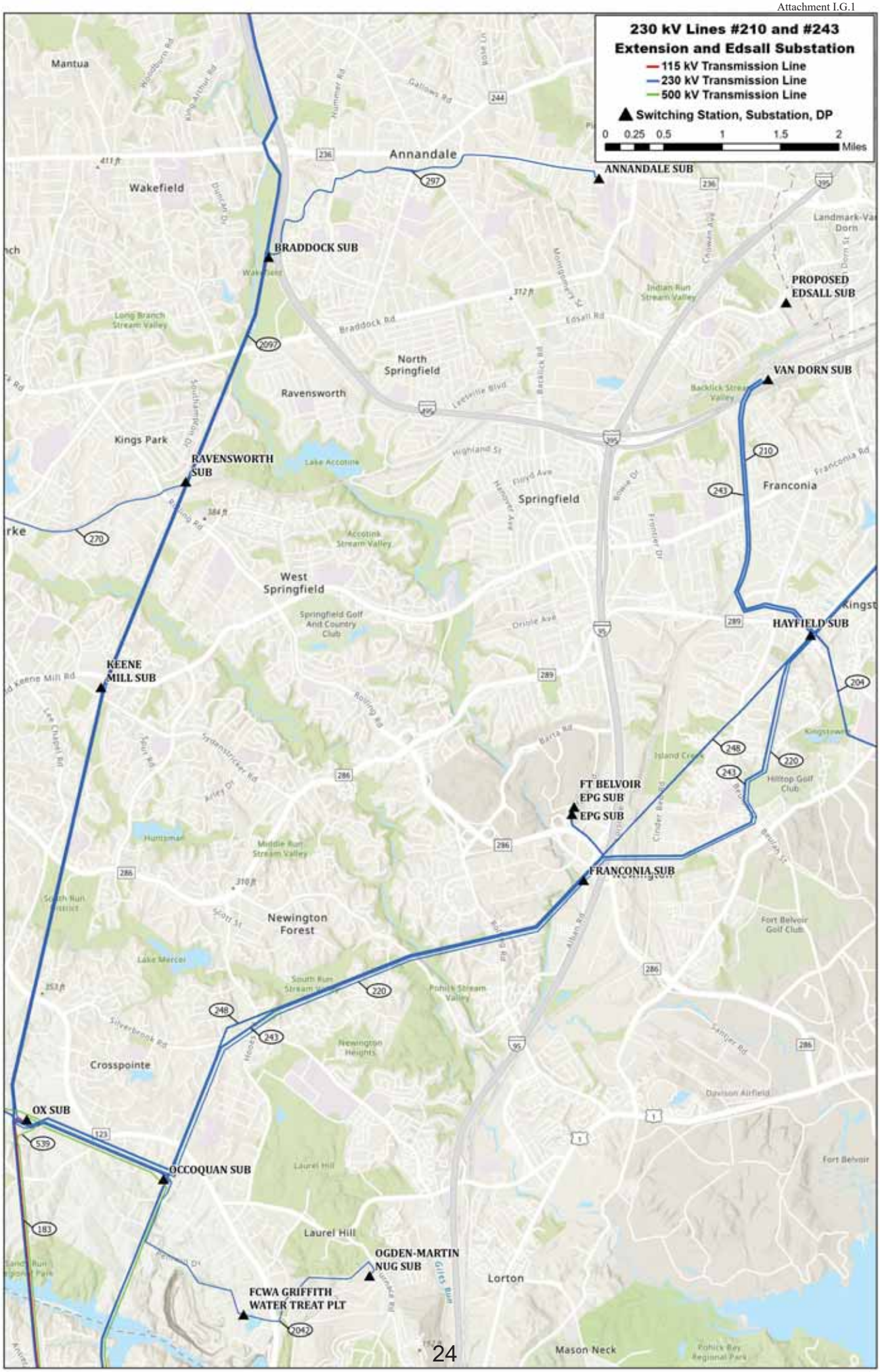
F. Describe any lines or facilities that will be removed, replaced, or taken out of service upon completion of the proposed project, including the number of circuits and normal and emergency ratings of the facilities.

Response: Not applicable. See Section II.C.

I. NECESSITY FOR THE PROPOSED PROJECT

G. Provide a system map, in color and of suitable scale, showing the location and voltage of the Applicant's transmission lines, substations, generating facilities, etc., that would affect or be affected by the new transmission line and are relevant to the necessity for the proposed line. Clearly label on this map all points referenced in the necessity statement.

Response: See Attachment I.G.1.


230 kV Lines #210 and #243
Extension and Edsall Substation
115 kV Transmission Line
230 kV Transmission Line
500 kV Transmission Line
Switching Station, Substation, DP
0 0.25 0.5 1 1.5 2 Miles
ANNANDALE SUB
BRADDOCK SUB
PROPOSED EDSALL SUB
VAN DORN SUB
RAVENSWORTH SUB
HAYFIELD SUB
KEENE MILL SUB
FT BELVOIR EPG SUB
EPG SUB
FRANCONIA SUB
OX SUB
OCCOQUAN SUB
OGDEN-MARTIN NUG SUB
FCWA GRIFFITH WATER TREAT PLT
Mantua
Wakefield
Annandale
North Springfield
Ravensworth
Kings Park
Springfield
Franconia
West Springfield
Newington Forest
Crosspointe
Laurel Hill
Lorton
Mason Neck

I. NECESSITY FOR THE PROPOSED PROJECT

H. Provide the desired in-service date of the proposed project and the estimated construction time.

Response: The desired in-service target date for the proposed Project is October 1, 2027.

The Company estimates it will take approximately 31 months for detailed engineering, materials procurement, permitting, real estate, and construction after a final order from the Commission. Accordingly, to support this estimated construction timeline and construction plan, the Company respectfully requests a final order by February 28, 2025. Should the Commission issue a final order by February 28, 2025, to accommodate long-lead materials procurement, the Company estimates that construction should begin around April 2026, and be completed by October 1, 2027. This schedule is contingent upon obtaining the necessary permits and outages, the latter of which may be particularly challenging due to the amount of new load growth, rebuilds, and new builds scheduled to occur in this load area. Dates may need to be adjusted based on permitting delays or design modifications to comply with additional agency requirements identified during the permitting application process, as well as the ability to schedule outages, and unpredictable delays due to labor shortages or materials/supply issues. This schedule also is contingent upon the Company's ability to negotiate for easements with property owners along the approved route without the need for additional litigation.

In addition, the Company is monitoring actively regulatory changes and requirements associated with the NLEB and how they could potentially impact construction timing associated with TOYRs. The USFWS previously indicated that it planned to issue final NLEB guidance to replace the interim guidance by April 1, 2024; however, the interim guidance has been extended by USFWS until late summer 2024. The Company is tracking actively updates from the USFWS with respect to the final guidance. Once issued, the Company plans to review and follow the final guidance to the extent it applies to the Company's projects. Until the final guidance is issued, the Company will continue following the interim guidance. For projects that may require additional coordination, the Company will coordinate with the USFWS.

The Company is also monitoring potential regulatory changes associated with the potential up-listing of the TCB. On September 14, 2022, the USFWS published the proposed rule to the Federal Register to list the TCB as endangered under the ESA. USFWS extended its Final Rule issuance target from September 2023 to September 2024. The Company is tracking actively this ruling and evaluating the effects of potential outcomes on Company projects' permitting, construction, and in-service dates, including electric transmission projects.

Any adjustments to this Project schedule resulting from these or similar challenges could necessitate a minimum of a six- to twelve-month delay in the targeted in-service date. Accordingly, for purposes of judicial economy, the Company requests

that the Commission issue a final order approving both a desired in-service target date (*i.e.*, October 1, 2027) and an authorization sunset date (*i.e.*, October 1, 2028) for energization of the Project.

I. NECESSITY FOR THE PROPOSED PROJECT

I. Provide the estimated total cost of the project as well as total transmission-related costs and total substation-related costs. Provide the total estimated cost for each feasible alternative considered. Identify and describe the cost classification (e.g. "conceptual cost," "detailed cost," etc.) for each cost provided.

Response: The estimated conceptual cost of the Project utilizing the Proposed Route is approximately $23.1 million, which includes approximately $13.7 million for transmission-related work and approximately $9.4 million for substation-related work (2024 dollars).[16]

[16] *See supra*, n. 3.

I. NECESSITY FOR THE PROPOSED PROJECT

J. If the proposed project has been approved by the RTO, provide the line number, regional transmission expansion plan number, cost responsibility assignments, and cost allocation methodology. State whether the proposed project is considered to be a baseline or supplemental project.

Response: The Project is classified as a supplemental project (Need Number DOM-2022-0059) initiated by the TO in order to interconnect new customer load. The Project was submitted to PJM at the December 6, 2022 TEAC Meeting (Need) and the April 2, 2024 TEAC Meeting (Solution). See Attachment I.J.1 and Attachment I.J.2, respectively.

As this is a supplemental project, the Company anticipates the Project will be included in the RTEP. While the Company has not received a Supplemental ID# for this Project, the Project as originally submitted to PJM in 2022 will be included in the 2029 RTEP model.

The Project is presently 100% cost allocated to the DOM Zone.

Dominion Supplemental Projects

29

Transmission Expansion Advisory Committee
December 6, 2022

Attachment I.J.1

Needs

Stakeholders must submit any comments within 10 days of this meeting in order to provide time necessary to consider these comments prior to the next phase of the M-3 process

30

Dominion Transmission Zone: Supplemental Customer Load Request

Need Number: DOM-2022-0059

Process Stage: Need Meeting 12/06/2022

Project Driver: Customer Service

Specific Assumption References:

Customer load request will be evaluated per Dominion's Facility Interconnection Requirements Document and Dominion's Transmission Planning Criteria.

31

Problem Statement:

DEV has submitted a DP Request for a new substation (Edsall) in Fairfax County with a total load in excess of 100MW.

Requested in-service date is 9/1/2025.

Initial In-Service Load	Projected 2027 Load
Summer: 52.0 MW	Summer: 96.0 MW

Dominion Supplemental Projects

Transmission Expansion Advisory Committee
April 2, 2024

Solutions

Stakeholders must submit any comments within 10 days of this meeting in order to provide time necessary to consider these comments prior to the next phase of the M-3 process

33

Dominion Transmission Zone: Supplemental Customer Load Request

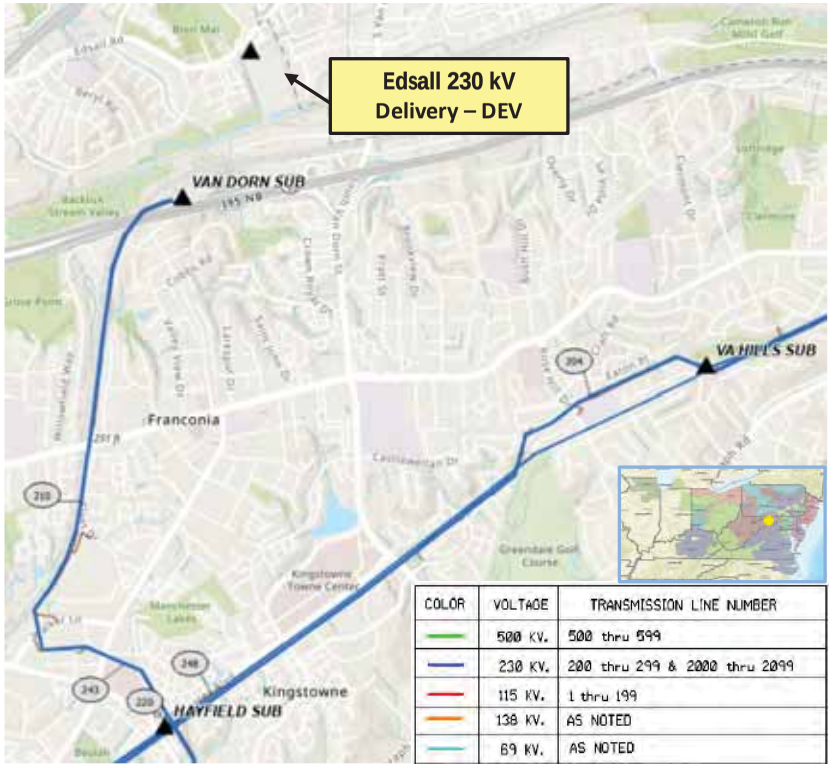
Need Number: DOM-2022-0059
Process Stage: Solution Meeting 04/02/2024
Previously Presented: Need Meeting 12/06/2022
Project Driver: Customer Service

Specific Assumption References:

Customer load request will be evaluated per Dominion's Facility Interconnection Requirements Document and Dominion's Transmission Planning Criteria.

Problem Statement:

34 DEV Distribution has submitted a DP request for a new substation (Edsall) to serve a data center complex in Fairfax County with a total load in excess of 100 MW. Requested in-service date is 10/01/2027.



Initial In-Service Load	Projected 2029 Load
Summer: 32 MW Winter: 12 MW	Summer: 84 MW Winter: 54 MW

Dominion Transmission Zone: Supplemental Edsall 230kV Delivery - DEV

Need Number: DOM-2022-0059
Process Stage: Solution Meeting 04/02/2024

Proposed Solution:

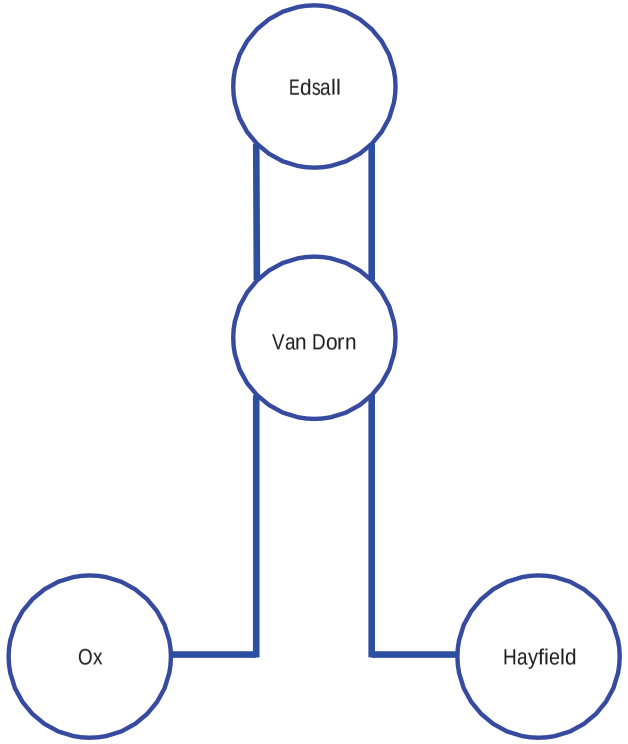
At Van Dorn substation, remove breaker 210T243. Extend both the 243 Line (Ox –Van Dorn) and the 210 Line (Hayfield – Van Dorn) to the proposed Edsall substation. Lines to terminate in a 230kV four-breaker ring arrangement with an ultimate arrangement of a six-breaker ring.

Estimated Project Cost: $23M

Alternatives Considered:

1) Cut either the 243 Line (Ox – Van Dorn) OR the 210 Line (Hayfield – Van Dorn) and extend to Edsall. Both alternatives were eliminated from consideration because we could not find a viable route originating from the existing line corridors.
2) Expand Van Dorn substation and extend two 230kV circuits to Edsall. At Edsall terminate the two 230kV circuits and feed the 230-34.5kV distribution transformers directly (no transmission ring bus). This alternative was eliminated from consideration because the expansion of Van Dorn substation was significantly more complex and costly.

Projected In-service Date: 10/01/2027
Project Status: Engineering
Model: 2028 RTEP



I. NECESSITY FOR THE PROPOSED PROJECT

K. If the need for the proposed project is due in part to reliability issues and the proposed project is a rebuild of an existing transmission line(s), provide five years of outage history for the line(s), including for each outage the cause, duration and number of customers affected. Include a summary of the average annual number and duration of outages. Provide the average annual number and duration of outages on all Applicant circuits of the same voltage, as well as the total number of such circuits. In addition to outage history, provide five years of maintenance history on the line(s) to be rebuilt including a description of the work performed as well as the cost to complete the maintenance. Describe any system work already undertaken to address this outage history.

Response: Not applicable. See Section I.A.

I. NECESSITY FOR THE PROPOSED PROJECT

L. If the need for the proposed project is due in part to deterioration of structures and associated equipment, provide representative photographs and inspection records detailing their condition.

Response: Not applicable. See Section I.A.

I. NECESSITY FOR THE PROPOSED PROJECT

M. In addition to the other information required by these guidelines, applications for approval to construct facilities and transmission lines interconnecting a Non-Utility Generator ("NUG") and a utility shall include the following information:

1. The full name of the NUG as it appears in its contract with the utility and the dates of initial contract and any amendments;

2. A description of the arrangements for financing the facilities, including information on the allocation of costs between the utility and the NUG;

3. a. For Qualifying Facilities ("QFs") certificated by Federal Energy Regulatory Commission ("FERC") order, provide the QF or docket number, the dates of all certification or recertification orders, and the citation to FERC Reports, if available;

b. For self-certificated QFs, provide a copy of the notice filed with FERC;

4. Provide the project number and project name used by FERC in licensing hydroelectric projects; also provide the dates of all orders and citations to FERC Reports, if available; and

5. If the name provided in 1 above differs from the name provided in 3 above, give a full explanation.

Response: Not applicable.

I. NECESSITY FOR THE PROPOSED PROJECT

N. Describe the proposed and existing generating sources, distribution circuits or load centers planned to be served by all new substations, switching stations and other ground facilities associated with the proposed project.

Response: The Edsall Substation will serve the Van Dorn Load Area as described in Section I.C and generally depicted in Attachment I.A.1. The Project also will be used to support future load in the area.

II. DESCRIPTION OF THE PROPOSED PROJECT

A. Right-of-way ("ROW")

1. Provide the length of the proposed corridor and viable alternatives.

Response: The length of the Edsall Lines along the Proposed Route is approximately 0.9 mile.

See Section II.A.9 of this Appendix, as well as the Routing Study referenced therein, for an explanation of the Company's route selection process and alternative routes considered but rejected by the Company.

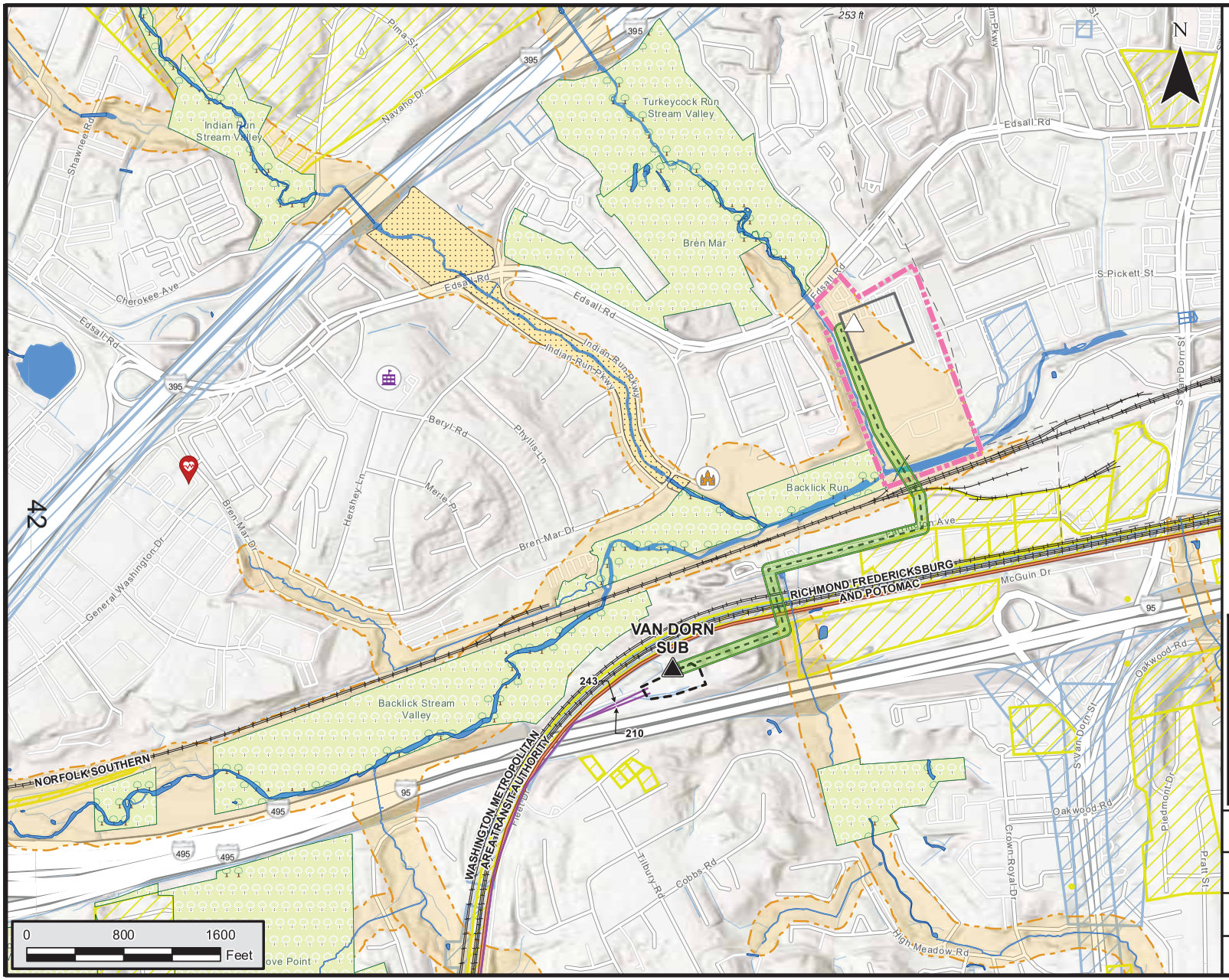
II. DESCRIPTION OF THE PROPOSED PROJECT

A. Right-of-way ("ROW")

2. Provide color maps of suitable scale (including both general location mapping and more detailed GIS-based constraints mapping) showing the route of the proposed line and its relation to: the facilities of other public utilities that could influence the route selection, highways, streets, parks and recreational areas, scenic and historic areas, open space and conservation easements, schools, convalescent centers, churches, hospitals, burial grounds/cemeteries, airports and other notable structures close to the proposed project. Indicate the existing linear utility facilities that the line is proposed to parallel, such as electric transmission lines, natural gas transmission lines, pipelines, highways, and railroads. Indicate any existing transmission ROW sections that are to be quitclaimed or otherwise relinquished. Additionally, identify the manner in which the Applicant will make available to interested persons, including state and local governmental entities, the digital GIS shape file for the route of the proposed line.

Response: See Attachment II.A.2. No portion of the right-of-way is proposed to be quitclaimed or relinquished.

Dominion Energy Virginia will make the digital Geographic Information System shapefile available to interested persons upon request to the Company's legal counsel as listed in the Project Application.



ATTACHMENT
II.A.2

TITLE:

ENVIRONMENTAL CONSTRAINTS MAP

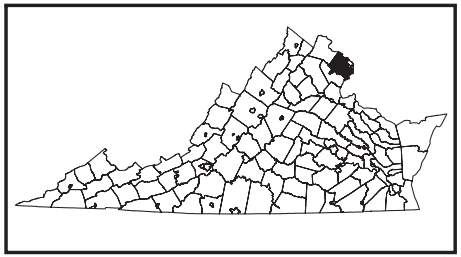
PROJECT:

230 KV LINES #210 AND #243 EXTENSION AND EDSALL SUBSTATION

LEGEND

- EXISTING SUBSTATIONS
- PROPOSED EDSALL SUBSTATION
- EXISTING SUBSTATION BOUNDARY
- CUSTOMER DATA CENTER CAMPUS
- PROPOSED ROUTE CENTERLINE AND RIGHT-OF-WAY
- PROPOSED SUBSTATION BOUNDARY
- PLACES OF WORSHIP
- SCHOOL FACILITIES
- HOSPITALS AND URGENT CARE FACILITIES
- RESOURCE PROTECTION AREAS
- STATE CONSERVATION EASEMENTS
- COUNTY WATERS AND PERENNIAL STREAMS
- COUNTY PARKS
- ARCHAEOLOGY PHASE 1 SURVEY
- ARCHITECTURE RESOURCES
- RAILROADS
- EXISTING DOMINION TRANSMISSION LINES
- GAS PIPELINES

KEY PLAN



PROJECT NUMBER: 50163606	
SCALE: 1"= 800 FEET	DATE: 4/24/2024
PROJECT MANAGER: TL	
DRAWN BY: MGH	Dewberry

Attachment II.A.2

II. DESCRIPTION OF THE PROPOSED PROJECT

A. Right-of-way ("ROW")

3. Provide a separate color map of a suitable scale showing all the Applicant's transmission line ROWs, either existing or proposed, in the vicinity of the proposed project.

Response: See Attachment I.G.1 for the existing transmission line right-of-way and Attachment II.B.3.b for proposed and future transmission line rights-of-way in the Project area.

II. DESCRIPTION OF THE PROPOSED PROJECT

A. Right-of-way ("ROW")

4. To the extent the proposed route is not entirely within existing ROW, explain why existing ROW cannot adequately service the needs of the Applicant.

Response: There is no existing transmission right-of-way located between the Van Dorn Substation and the Customer's data center development where the proposed Edsall Substation will be located.

II. DESCRIPTION OF THE PROPOSED PROJECT

A. Right-of-way ("ROW")

5. Provide drawings of the ROW cross section showing typical transmission line structure placements referenced to the edge of the ROW. These drawings should include:

a. ROW width for each cross section drawing;

b. Lateral distance between the conductors and edge of ROW;

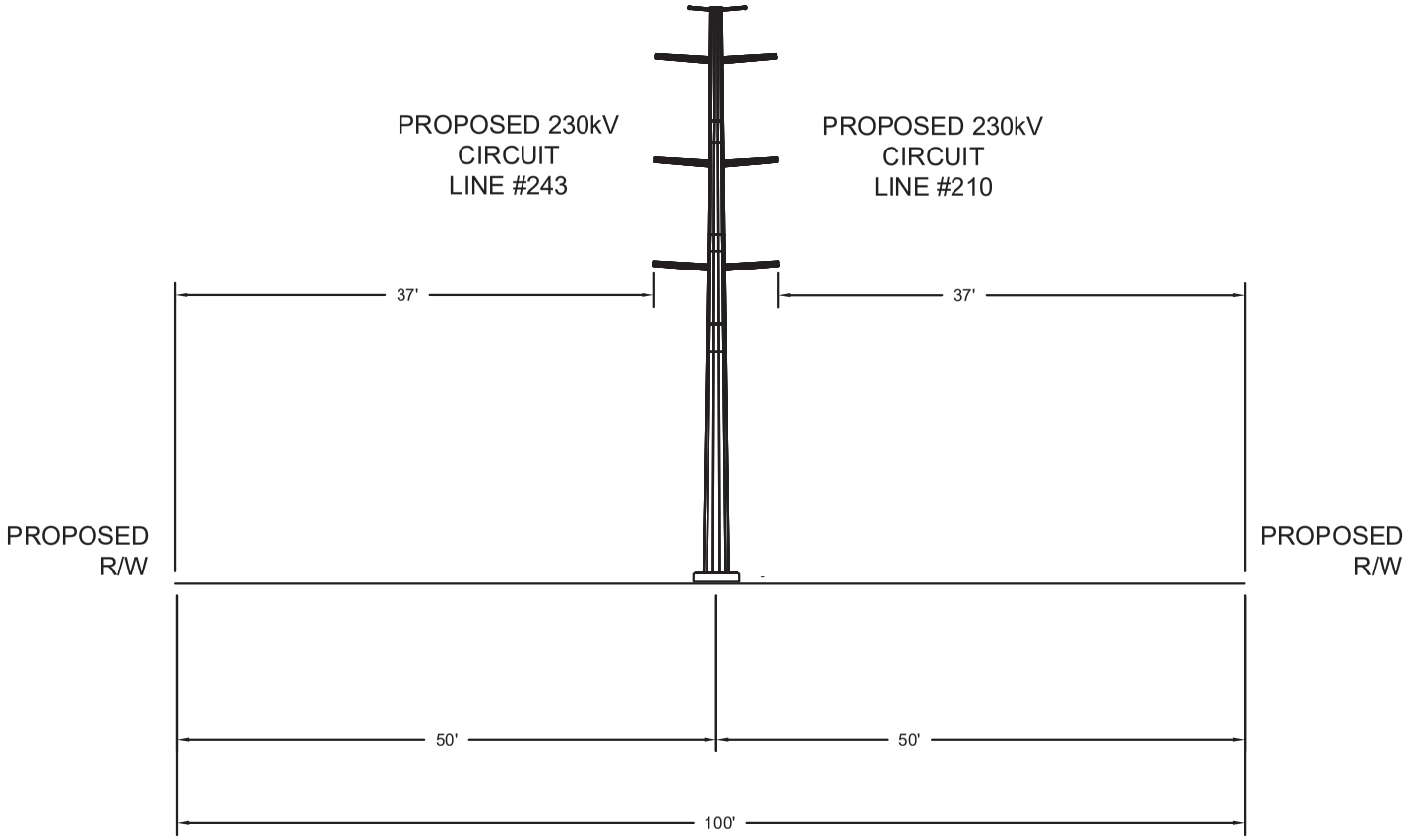
c. Existing utility facilities on the ROW; and

d. For lines being rebuilt in existing ROW, provide all of the above (i) as it currently exists, and (ii) as it will exist at the conclusion of the proposed project.

Response: See Attachment II.A.5.a.

For additional information on the structures, see Section II.B.3.

EDSALL - HAYFIELD LINE #210
EDSALL - OX LINE #243
PROPOSED CONFIGURATION



TYPICAL RIGHT OF WAY LOOKING TOWARD EDSALL

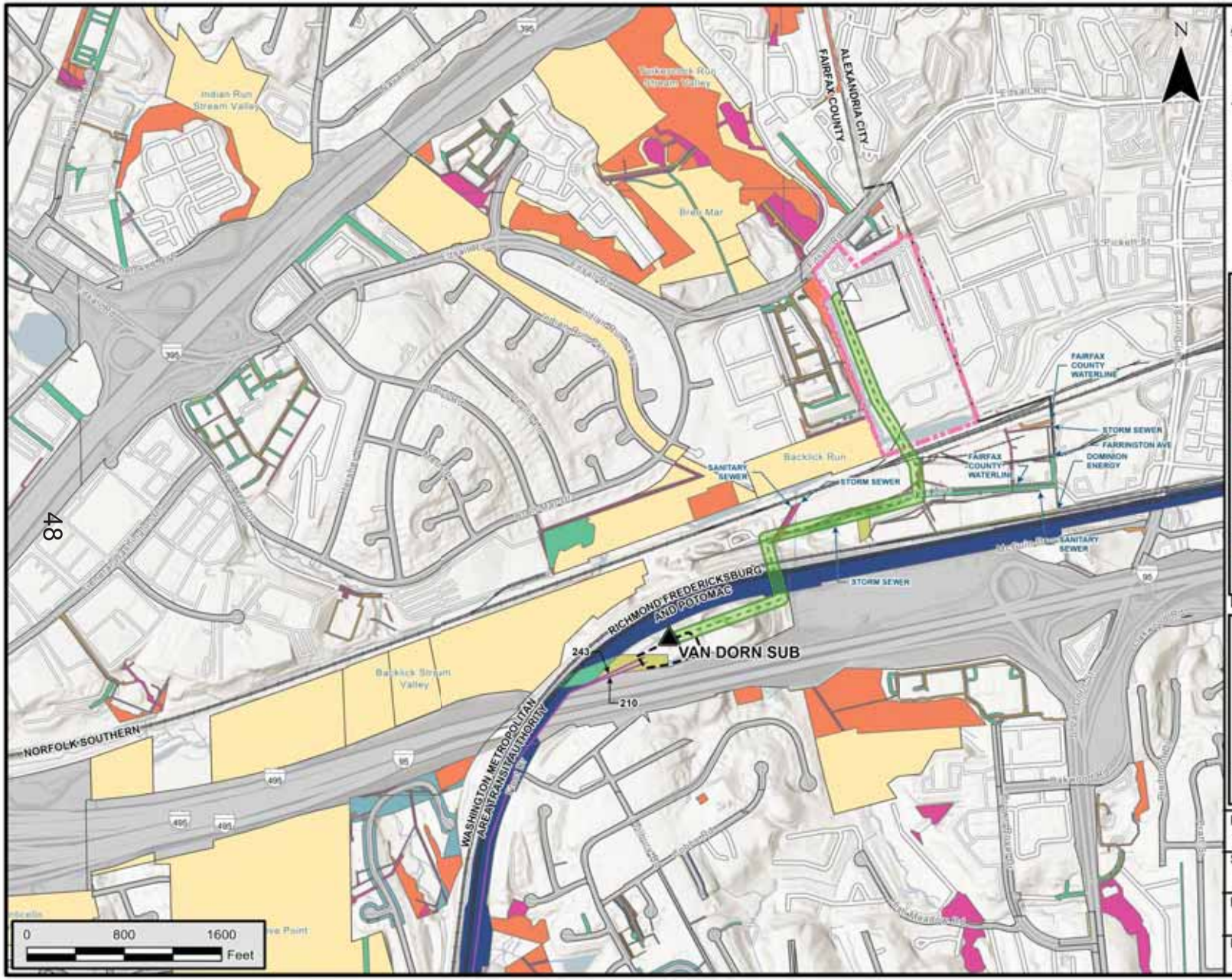
NOTE: INFORMATION CONTAINED ON DRAWING IS CONSIDERED PRELIMINARY IN NATURE AND SUBJECT TO CHANGE BASED ON FINAL DESIGN

II. DESCRIPTION OF THE PROPOSED PROJECT

A. Right-of-way ("ROW")

6. Detail what portions of the ROW are subject to existing easements and over what portions new easements will be needed.

Response: As discussed in Section II.A.4, there is no existing transmission right-of-way located between the Van Dorn Substation and the Customer's data center development where the proposed Edsall Substation will be located. Therefore, the entire right-of-way for the Project will require new property rights for a new build transmission line. See Attachment II.A.6.



ATTACHMENT
II.A.6

TITLE:

EASEMENTS AND RIGHTS-OF-WAY MAP

PROJECT:

230 KV LINES #210 AND #243 EXTENSION AND EDSALL SUBSTATION

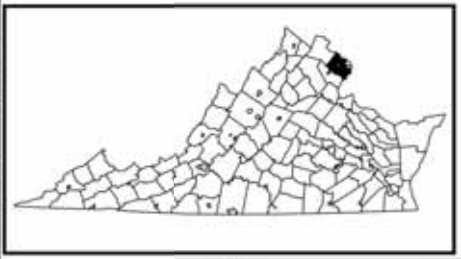
LEGEND

- EXISTING SUBSTATIONS
- PROPOSED EDSALL SUBSTATION
- PROPOSED SUBSTATION BOUNDARY
- EXISTING SUBSTATION BOUNDARY
- PROPOSED ROUTE CENTERLINE AND RIGHT-OF-WAY
- CUSTOMER DATA CENTER CAMPUS
- RAILROADS
- EXISTING DOMINION TRANSMISSION LINES
- FAIRFAX COUNTY RIGHT OF WAY (ROW)
- STATE CONSERVATION EASEMENTS

COUNTY EASEMENT TYPE

- BUILDING RESTRICTION
- BUS STOP FACILITIES
- COMMUNICATION
- CONSERVATION
- DRAINAGE
- ELECTRIC
- GAS
- INGRESS EGRESS
- LANDSCAPE
- PLANTING
- REFORESTATION
- SANITARY SEWER
- SIDEWALK
- SIGHT DISTANCE
- TRAIL
- WATER

KEY PLAN



PROJECT NUMBER: 50163606	
SCALE: 1"= 800 FEET	DATE: 4/29/2024
PROJECT MANAGER: TL	Dewberry
DRAWN BY: MGH	

II. DESCRIPTION OF THE PROPOSED PROJECT

A. Right-of-way ("ROW")

7. Detail the proposed ROW clearing methods to be used and the ROW restoration and maintenance practices planned for the proposed project.

Response: The right-of-way for the Proposed Route will be 100 feet in width. Based on existing conditions, approximately one third of the right-of-way will require clearing.

Trimming of tree limbs along the edge of the right-of-way also may be conducted to support construction activities for the Project. For any such minimal clearing within the right-of-way, trees will be cut to no more than three inches above ground level. Trees located outside of the right-of-way that are tall enough to potentially impact the transmission facilities, commonly referred to as "danger trees," may also need to be cut. Danger trees will be cut to be no more than three inches above ground level, limbed, and will remain where felled. Debris that is adjacent to homes will be disposed of by chipping or removal. In other areas, debris may be mulched or chipped as practicable. Danger tree removal will be accomplished by hand in wetland areas and within 100 feet of streams, if applicable. Care will be taken not to leave debris in streams or wetland areas. Matting will be used for heavy equipment in these areas. Erosion control devices will be used where applicable on an ongoing basis during all clearing and construction activities accompanied by weekly Virginia Stormwater Management Program inspections.

Erosion control will be maintained and temporary stabilization for all soil disturbing activities will be used until the right-of-way has been restored. Upon completion of the Project, the Company will restore the right-of-way utilizing site rehabilitation procedures outlined in the Company's *Standards & Specifications for Erosion & Sediment Control and Stormwater Management for Construction and Maintenance of Linear Electric Transmission Facilities* that was approved by the Virginia Department of Environmental Quality ("DEQ"). Time of year and weather conditions may affect when permanent stabilization takes place.

This right-of-way will continue to be maintained on a regular cycle to prevent interruptions to electric service and provide ready access to the right-of-way to patrol and make emergency repairs. Periodic maintenance to control woody growth will consist of hand cutting, machine mowing and/or herbicide application.

II. DESCRIPTION OF THE PROPOSED PROJECT

A. Right-of-way ("ROW")

8. Indicate the permitted uses of the proposed ROW by the easement landowner and the Applicant.

Response: Any non-transmission use will be permitted that:

- Is in accordance with the terms of the easement agreement for the right-of-way;
- Is consistent with the safe maintenance and operation of the transmission lines;
- Will not restrict future line design flexibility; and
- Will not permanently interfere with future construction.

Subject to the terms of the easement, examples of typical permitted uses include but are not limited to:

- Agriculture
- Hiking Trails
- Fences
- Perpendicular Road Crossings
- Perpendicular Utility Crossings
- Residential Driveways
- Wildlife / Pollinator Habitat

II. DESCRIPTION OF THE PROPOSED PROJECT

A. Right-of-way ("ROW")

9. Describe the Applicant's route selection procedures. Detail the feasible alternative routes considered. For each such route, provide the estimated cost and identify and describe the cost classification (e.g. "conceptual cost," "detailed cost," etc.). Describe the Applicant's efforts in considering these feasible alternatives. Detail why the proposed route was selected and other feasible alternatives were rejected. In the event that the proposed route crosses, or one of the feasible routes was rejected in part due to the need to cross, land managed by federal, state, or local agencies or conservation easements or open space easements qualifying under §§ 10.1-1009 – 1016 or §§ 10.1-1700 – 1705 of the Code (or a comparable prior or subsequent provision of the Code), describe the Applicant's efforts to secure the necessary ROW.

Response: The Company's route selection for a new transmission line typically begins with identification of the project "origin" and "termination" points provided by the Company's Transmission Planning group. This is followed by the development of a study area for the project. The study area represents a circumscribed geographic area from which potential routes that may be suitable for a transmission line can be identified.

For this Project, the Company retained the services of Dewberry Engineers, Inc. ("Dewberry") to help collect information within the study area, identify potential routes, perform a routing analysis comparing the route alternatives, and document the routing efforts in an Environmental Routing Study. After review of the new build options, Dominion Energy Virginia determined there was only one viable electrical solution, which is located entirely within Fairfax County, Virginia.

The study area encompasses an area containing the Project origin and termination points and is bounded by the following features:

- The I-495/I-395 interchange and corridors to the west;
- The I-395 corridor to the north;
- South Van Dorn Street to the east; and
- The I-95/I-495 corridor to the south.

The Company considered the facilities required to construct and operate the new infrastructure, the length of new right-of-way that would be required for the Project, the amount of existing development in the area, the potential for environmental impacts and impacts on communities, and cost.

Additionally, as part of its routing analysis, Dewberry incorporated restrictions imposed by the planned data center development, which specified the requirement to site the transmission line along the west side of the development in its approach to the proposed Edsall Substation. Through coordination with the Customer, it was determined that site development requirements—including zoning within the parcel to be developed, property-line set-backs and development restrictions within RPAs—necessitated the proposed Customer buildings be sited on the eastern side of the parcel. This restricted accommodations for the proposed transmission lines to the western side of the parcel. For this reason, all routes considered in the Routing Study approach the proposed Edsall Substation from the west side of the Customer's parcel.

As discussed in more detail in the Routing Study, Dewberry originally identified seven potential overhead route alternatives. Of these seven routes, four were rejected due to constraints associated with navigating between existing buildings and other structures that would require a narrowing of the right-of-way for the proposed transmission lines. See Sections 2.1 to 2.5 of the Routing Study for an overview of the seven routes and the rationale for why Routes 4 through 7 were rejected.

Of the remaining three route alternatives, two subsequently were rejected.[17] As discussed in Section 6 of the Routing Study, these two rejected route alternatives impact more parklands and residential developments than the Proposed Route and require additional clearing of forested and treed areas. Finally, it was determined that these rejected route alternatives were not viable because the Fairfax County Park Authority ("FCPA") opposed any routes that would be located within Backlick Run Park, which the Company cannot condemn. See Attachment II.A.9.a.[18] That said, even if the FCPA were to authorize a route within the park, the Proposed Route would still be the preferred route based on the evaluation of impacts discussed in the Environmental Routing Study.

No viable underground alternatives were identified, as discussed in Section 2.5.5 of the Routing Study.

The route development process for the Project is described in more detail in the Environmental Routing Study.

[17] Note that in the Routing Study, the route that is ultimately selected as the Proposed Route is referred to as Route 1. The two route alternatives that were rejected at the conclusion of the Routing Study are referred to as Route 2 and Route 3.

[18] Note that the map included in Attachment II.A.9.a was provided to FCPA via email in February 2024 and accordingly reflects the alternative routes under consideration at that time as contemplated. Subsequently, all routes were rejected except for the Proposed Route and slight tweaks were made to the Proposed Route as it was further refined as discussed in the Routing Study. However, the tweaks to the Proposed Route made after the February 2024 email would not impact FCPA's decision regarding the routes as no changes were made that would impact FCPA property. Further, note that the redevelopment of Plaza 500 commercial center indicated on the maps was based on an initial illustration provided by the Customer.

Proposed Route

The Proposed Route would construct two new overhead single circuit 230 kV transmission lines on shared double circuit monopoles that would extend from the east side of the Company's existing Van Dorn Substation to the proposed Edsall Substation, where they will terminate. See Section I.I for the estimated conceptual cost for the Proposed Route for the Edsall Lines.

The Proposed Route originates within the eastern side of the Company's existing Van Dorn Substation. After exiting the substation property, the route continues east for approximately 925 feet and then turns north for approximately 500 feet, crossing the WMATA Blue Line and the VPRA Richmond, Fredericksburg, and Potomac rail corridors. The route then turns east and continues through the Farrington Avenue industrial complex for approximately 1,350 feet before turning north between two industrial buildings. The Proposed Route then continues north for approximately 700 feet, crossing over the Norfolk Southern rail line and Backlick Run. At this point, the route enters into the Customer's planned data center development, to be located within the existing Plaza 500 commercial center, and continues north just east of Turkeycock Run for a distance of 1,100 feet where it turns eastward and terminates at the proposed Edsall Substation. The total length of the Proposed Route of the Edsall Lines between the Company's existing Van Dorn Substation and the proposed Edsall Substation is approximately 0.9 mile.

The Proposed Route crosses ten parcels. All of the parcels crossed by the Proposed Route are either industrial/commercial parcels or are parcels zoned as residential but currently contain no residences and are associated with rail corridors.

Construction of the Proposed Route will cross a total of approximately 0.9 mile of land affecting 10.8 acres of right-of-way.

Land use along the right-of-way consists of 0 acres of Fairfax County-identified forested land, 2.6 acres of open space, 8.3 acres of developed land, and 0 acres of open water.

Based on Dewberry's desktop wetland and waterbody analysis, the right-of-way of the Proposed Route will encompass approximately 2.7% (0.3 acre) of land with a medium-to-high probability of containing wetlands and waterbodies. Of this 0.3 acre, 0.1 acre was identified as having a medium probability of containing forested wetlands. The Proposed Route has one waterbody crossing of a perennial stream. Lastly, the Proposed Route will require the clearing of about 3.9 acres of existing tree cover.

Based on the analysis presented in the Routing Study, the Company selected the Proposed Route as the preferred, and only viable, route for the Edsall Lines. The Proposed Route eliminates impacts to parklands and minimizes impacts on adjacent residential developments, with 29 dwellings within 250 feet and no dwellings within 100 feet. Additionally, the Proposed Route minimizes clearing of forested

and treed areas (3.9 acres) and passes 750 feet from the St. Aphraim Syriac Orthodox Church. While the Proposed Route has the estimated potential to impact 0.1 acre of wetlands, the route has been designed to avoid wetlands to the maximum extent practicable. Finally, the Proposed Route does not cross either of the Fairfax County Park Authority parklands in the Project area.[19] For all these reasons, Dewberry and the Company support the Proposed Route for the Edsall Lines as it avoids or reasonably minimizes adverse impact to the greatest extent reasonably practicable on the scenic assets, historic and cultural resources, and environment of the area concerned, as well as on planned developments in the Project area.

[19] As noted earlier in Section II.A.9, two of the three route alternatives considered but rejected in the Environmental Routing Study cross FCPA lands. Fairfax County was not willing to grant the Company right-of-way through its parkland, and the Company is unable to condemn County lands, making those routes unfeasible. That said, even if the FCPA were to authorize a route within the park, the Proposed Route would still be the preferred route based on the evaluation of impacts discussed in the Routing Study.

Christiaanna C Mcdonald (Services - 6)

From: Hudson, Samantha <Samantha.Hudson@fairfaxcounty.gov>
Sent: Monday, February 12, 2024 8:39 AM
To: Christiaanna C Mcdonald (Services - 6)
Cc: Hanafin, Brendon
Subject: [EXTERNAL] RE: Route Maps for Edsall
Attachments: Routes2-2.pdf

Hi Christa,
Thank you again for the opportuntiy to review and provide input on this as early in the process as possible. After reviewing your proposal with Park Authority staff, we do not recommend proceeding with the options on FCPA property. The proposed alignment of route 2 & route 3 would impact Backlick Run Park to varying degrees, although both options would result in removal of vegetation/denuding of a large area of park land all contained within the Resource Protection Area. While it appears a small portion of the proposed alignments run on a previously disturbed area of Backlick Run Park, due to the potential for additional tree loss within this already narrow and constrained stream valley corridor park, FCPA does not support the proposed routes located within Backlick Run Park.
Could you please respond to confirm receipt of these comments? Also, what are the next steps on your end and when will FCPA be re-engaged in this process as it moves forward?
Thank you,
Sam

Samantha (Sam) Hudson, AICP, LEED AP *(she/her/hers)*
Assistant Division Director for Planning & Real Estate
Fairfax County Park Authority
12055 Government Center Parkway, Suite 421
Fairfax, VA 22035
O: 703-324-3075 C: 571-460-8712 | www.fairfaxcounty.gov/parks/ [fairfaxcounty.gov]

From: C.McDonald@dominionenergy.com <C.McDonald@dominionenergy.com>
Sent: Thursday, February 1, 2024 11:38 AM
To: Hudson, Samantha <Samantha.Hudson@fairfaxcounty.gov>
Subject: Route Maps for Edsall

Sam,

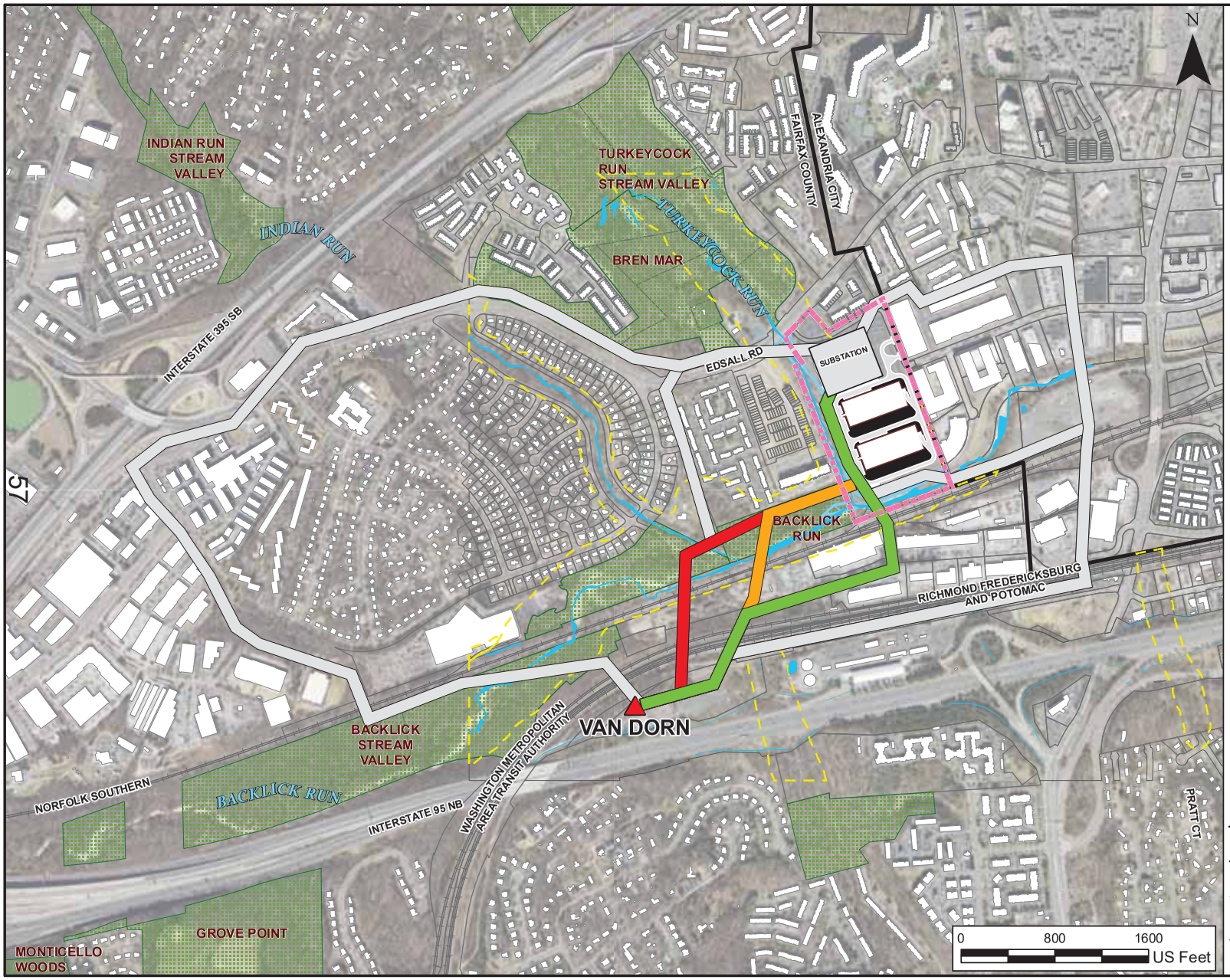
Here is the map we were discussing.

Christa McDonald
Siting and Permitting Specialist

Electric Transmission

Dominion Energy Virginia
5000 Dominion Blvd, 3.SW3051
Glen Allen, VA 23060

C: 571-319-2582
Email: C.McDonald@dominionenergy.com
Website: https://www.dominionenergy.com



TITLE:

PROPOSED PRELIMINARY ROUTES - OVERALL ROUTES

PROJECT:

EDSALL ROUTING STUDY
FAIRFAX COUNTY AND ALEXANDRIA CITY, VA

ROUTE OPTIONS

- ROUTES REMOVED FROM CONSIDERATION
- ROUTE 1
- ROUTE 2
- ROUTE 3

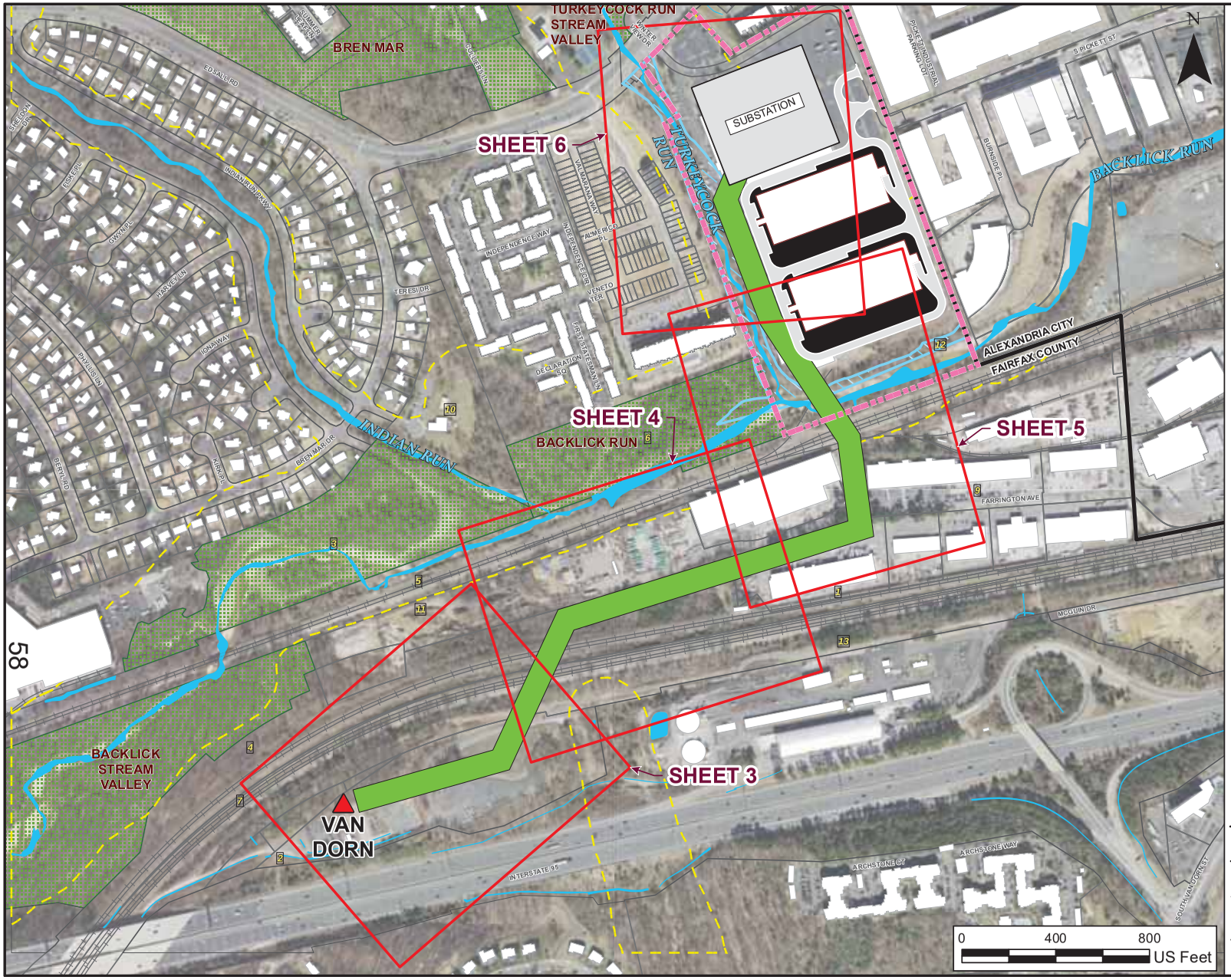
PROPOSED END-POINT DEVELOPMENT PLAZA 500 COMPLEX

- PLAZA 500 COMPLEX BOUNDARY
- SITE SIDEWALKS
- SITE BUILDING OUTLINE
- SITE PAVING ASPALT
- PROPOSED SUBSTATION LOCATION

LEGEND

- SUBSTATION
- COUNTY-MAPPED FLOOD ZONE
- COUNTY RESOURCE PROTECTION AREA (RPA)
- COUNTY STREAM
- COUNTY PARKS
- PARCEL BOUNDARY
- RAILROADS

PROJECT NUMBER: 50158513	SHEET NUMBER: 1
SCALE: 1"=800'	DATE: 1/30/2024
PROJECT MANAGER: TL	Dewberry
DRAWN BY: MGH	



TITLE:

BASEMAP - INDEX
PRELIMINARY ROUTES
ROUTE 1

PROJECT:

EDSALL ROUTING STUDY
FAIRFAX COUNTY AND ALEXANDRIA CITY, VA

ROUTE OPTIONS

ROUTE 1

PROPOSED END-POINT DEVELOPMENT
PLAZA 500 COMPLEX

- PLAZA 500 COMPLEX BOUNDARY
- SITE SIDEWALKS
- SITE BUILDING OUTLINE
- SITE PAVING ASPALT
- PROPOSED SUBSTATION LOCATION

LEGEND

- SUBSTATION
- COUNTY-MAPPED FLOOD ZONE
- COUNTY RESOURCE PROTECTION AREA (RPA)
- COUNTY STREAM
- COUNTY PARKS
- PARCEL BOUNDARY
- RAILROADS

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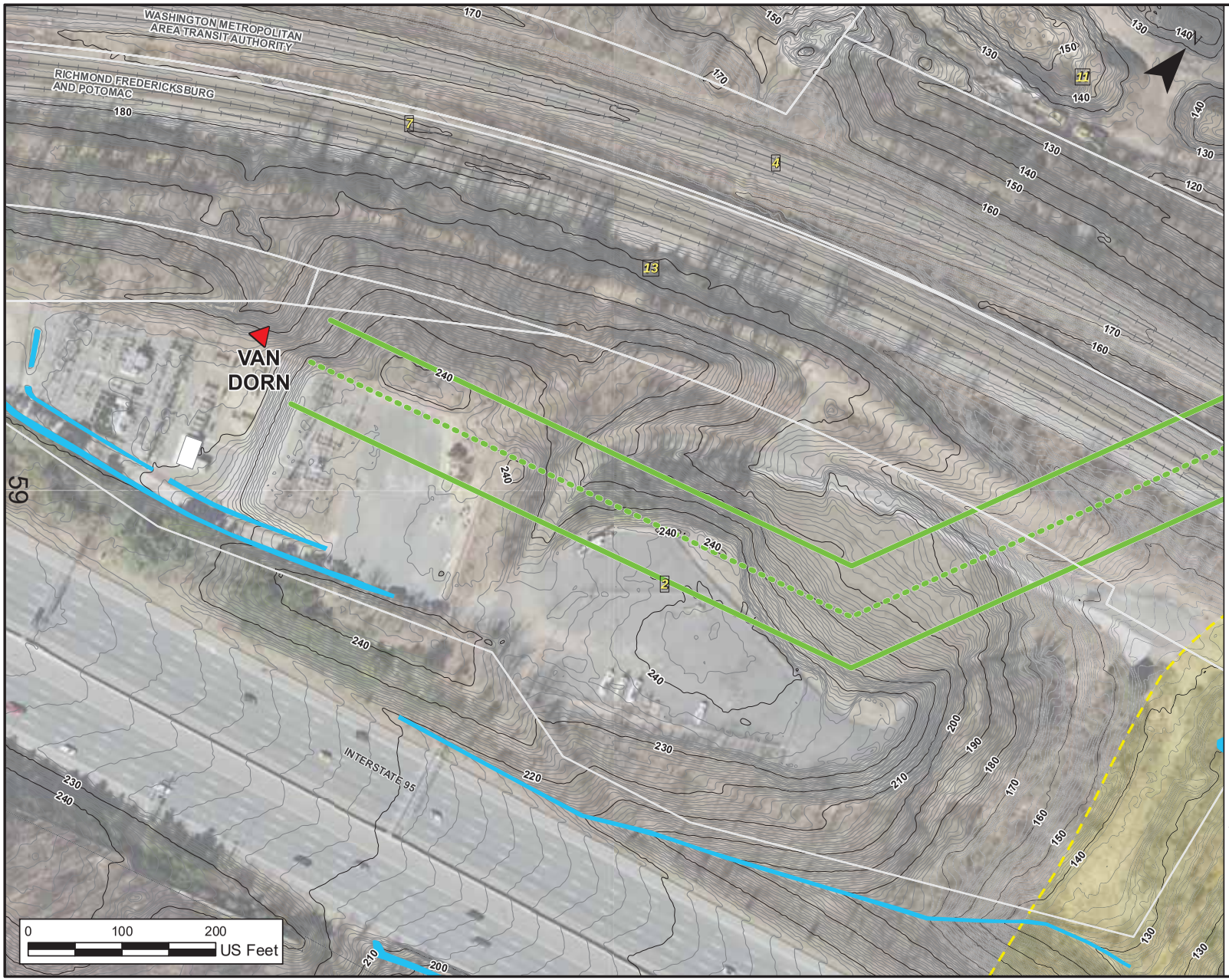

TITLE:

PROPOSED PRELIMINARY ROUTES - ROUTE 1

PROJECT:

EDSALL ROUTING STUDY
FAIRFAX COUNTY AND ALEXANDRIA CITY, VA

ROUTE OPTIONS

- ROUTE 1 - 100' EASEMENT
- ROUTE 1 - PROPOSED TRANSMISSION LINE/CENTERLINE

PROPOSED END-POINT DEVELOPMENT PLAZA 500 COMPLEX

- PLAZA 500 COMPLEX BOUNDARY
- SITE SIDEWALKS
- SITE BUILDING OUTLINE
- SITE PAVING ASPALT
- PROPOSED SUBSTATION LOCATION

LEGEND

- SUBSTATION
- PARCEL BOUNDARY
- COUNTY-MAPPED FLOOD ZONE
- COUNTY RESOURCE PROTECTION AREA (RPA)
- COUNTY STREAM
- COUNTY PARKS
- EXISTING BUILDING FOOTPRINT
- RAILROADS
- MAJOR CONTOURS
- MINOR CONTOURS

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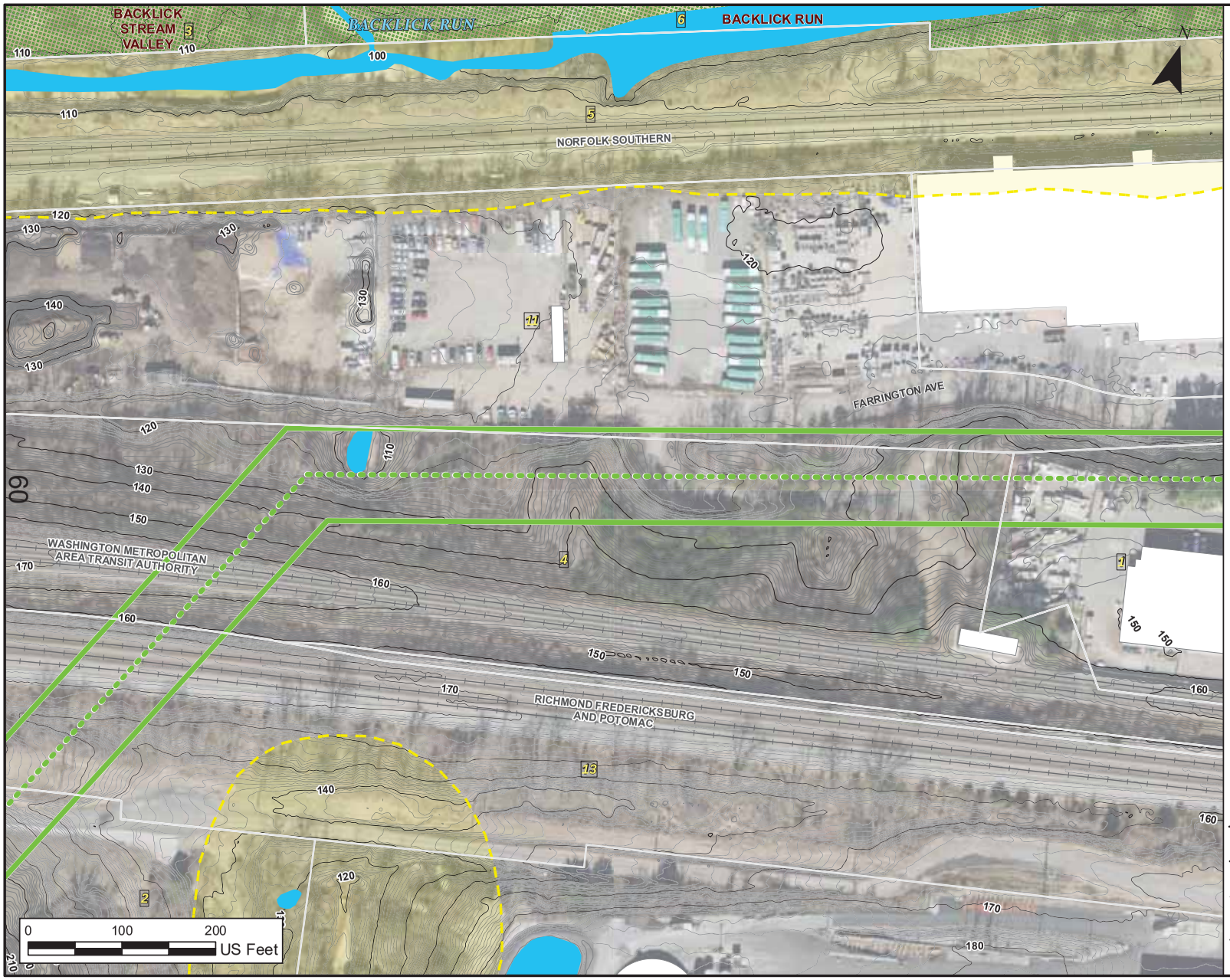
PROJECT MANAGER: TL	Dewberry
DRAWN BY: MGH	



TITLE:

PROPOSED PRELIMINARY ROUTES - ROUTE 1

PROJECT:

EDSALL ROUTING STUDY
FAIRFAX COUNTY AND ALEXANDRIA CITY, VA

ROUTE OPTIONS

- ROUTE 1 - 100' EASEMENT
- ROUTE 1 - PROPOSED TRANSMISSION LINE/CENTERLINE

PROPOSED END-POINT DEVELOPMENT PLAZA 500 COMPLEX

- PLAZA 500 COMPLEX BOUNDARY
- SITE SIDEWALKS
- SITE BUILDING OUTLINE
- SITE PAVING ASPALT
- PROPOSED SUBSTATION LOCATION

LEGEND

- SUBSTATION
- PARCEL BOUNDARY
- COUNTY-MAPPED FLOOD ZONE
- COUNTY RESOURCE PROTECTION AREA (RPA)
- COUNTY STREAM
- COUNTY PARKS
- EXISTING BUILDING FOOTPRINT
- RAILROADS
- MAJOR CONTOURS
- MINOR CONTOURS

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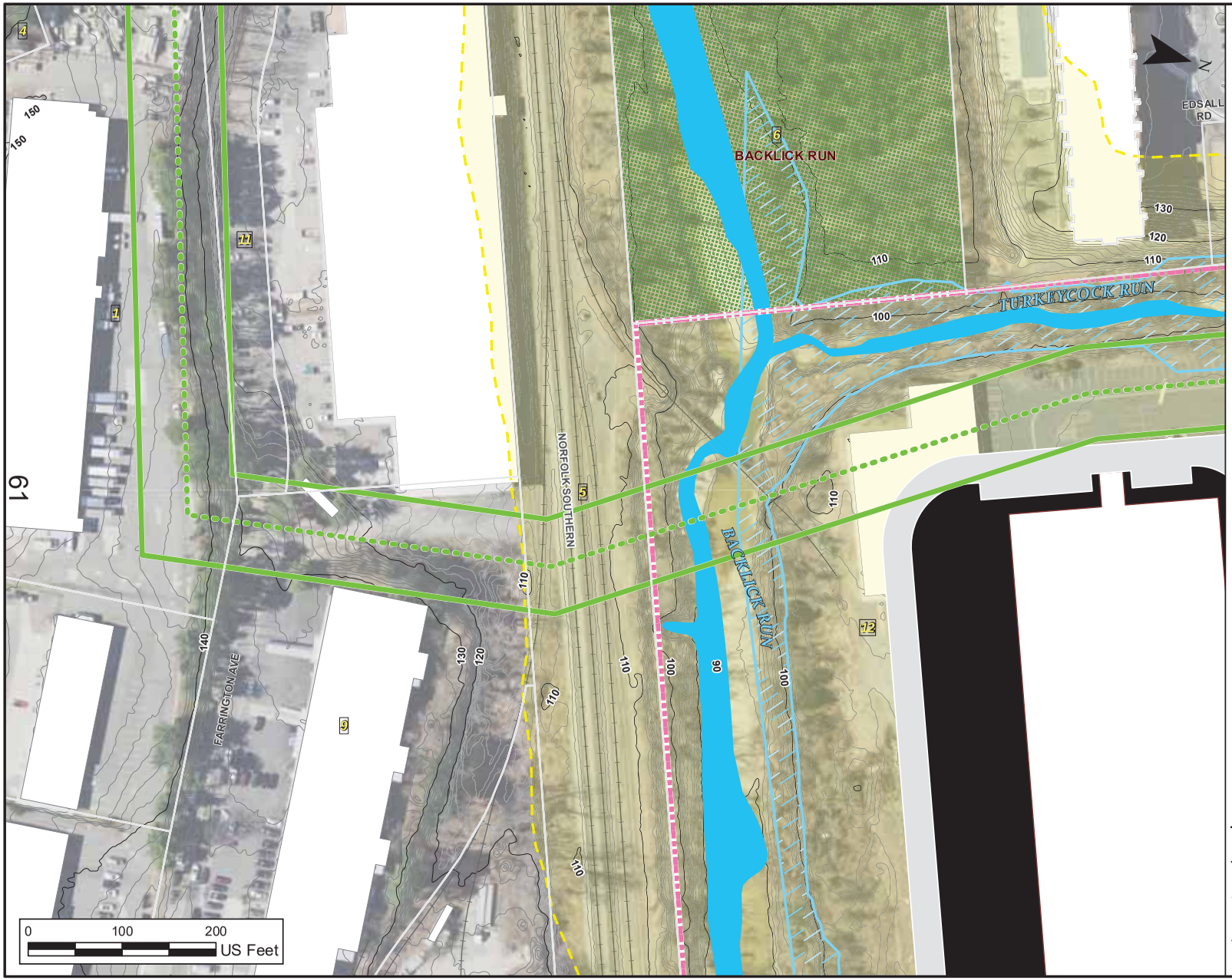

TITLE:

PROPOSED PRELIMINARY ROUTES - ROUTE 1

PROJECT:

EDSALL ROUTING STUDY
FAIRFAX COUNTY AND ALEXANDRIA CITY, VA

ROUTE OPTIONS

- ROUTE 1 - 100' EASEMENT
- ROUTE 1 - PROPOSED TRANSMISSION LINE/CENTERLINE

PROPOSED END-POINT DEVELOPMENT PLAZA 500 COMPLEX

- PLAZA 500 COMPLEX BOUNDARY
- SITE SIDEWALKS
- SITE BUILDING OUTLINE
- SITE PAVING ASPALT
- PROPOSED SUBSTATION LOCATION

LEGEND

- SUBSTATION
- PARCEL BOUNDARY
- COUNTY-MAPPED FLOOD ZONE
- COUNTY RESOURCE PROTECTION AREA (RPA)
- COUNTY STREAM
- COUNTY PARKS
- EXISTING BUILDING FOOTPRINT
- RAILROADS
- MAJOR CONTOURS
- MINOR CONTOURS

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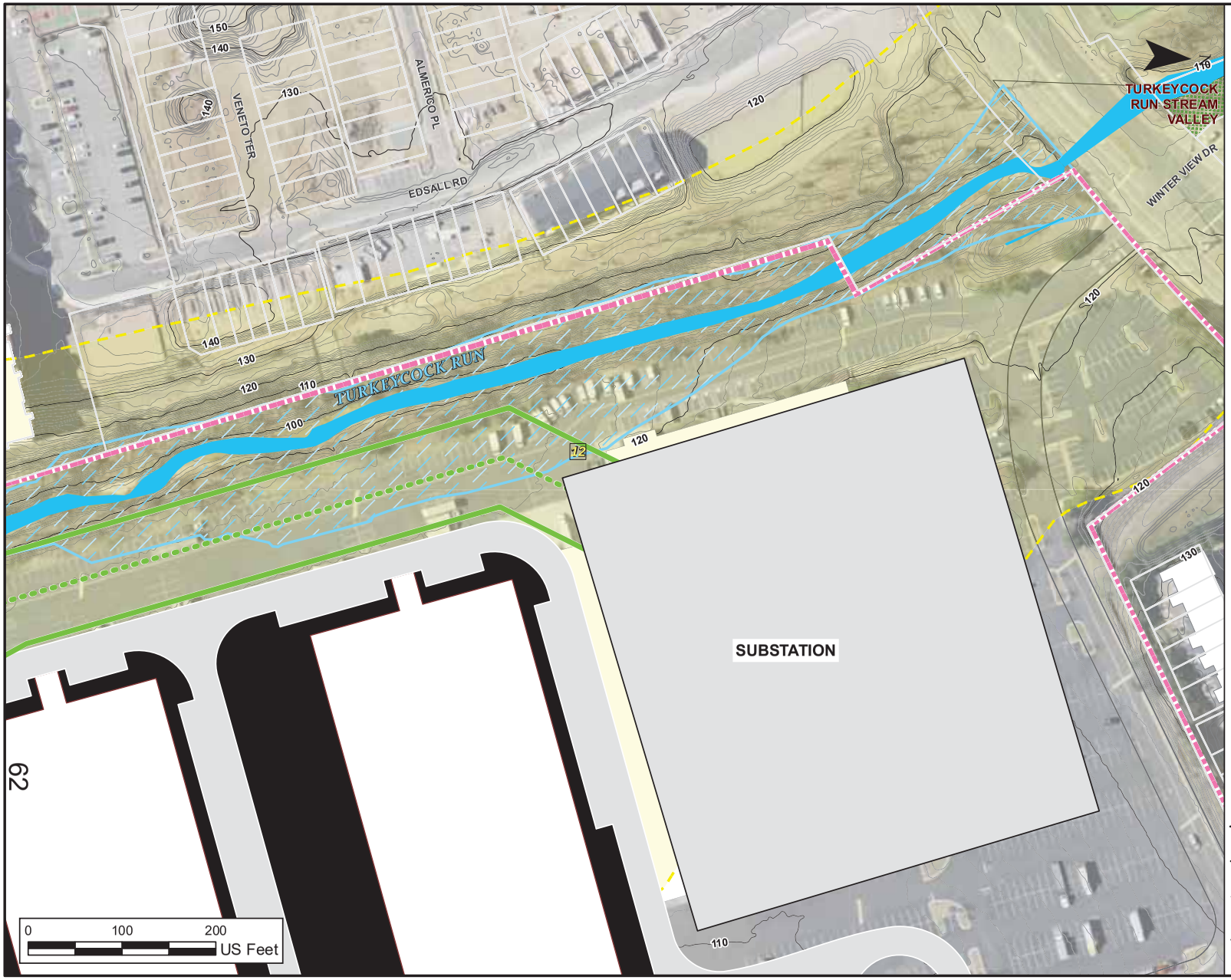

TITLE:

PROPOSED PRELIMINARY ROUTES - ROUTE 1

PROJECT:

EDSALL ROUTING STUDY
FAIRFAX COUNTY AND ALEXANDRIA CITY, VA

ROUTE OPTIONS

- ROUTE 1 - 100' EASEMENT
- ROUTE 1 - PROPOSED TRANSMISSION LINE/CENTERLINE

PROPOSED END-POINT DEVELOPMENT PLAZA 500 COMPLEX

- PLAZA 500 COMPLEX BOUNDARY
- SITE SIDEWALKS
- SITE BUILDING OUTLINE
- SITE PAVING ASPALT
- PROPOSED SUBSTATION LOCATION

LEGEND

- SUBSTATION
- PARCEL BOUNDARY
- COUNTY-MAPPED FLOOD ZONE
- COUNTY RESOURCE PROTECTION AREA (RPA)
- COUNTY STREAM
- COUNTY PARKS
- EXISTING BUILDING FOOTPRINT
- RAILROADS
- MAJOR CONTOURS
- MINOR CONTOURS

PROJECT NUMBER: 50158513	SHEET NUMBER: 6
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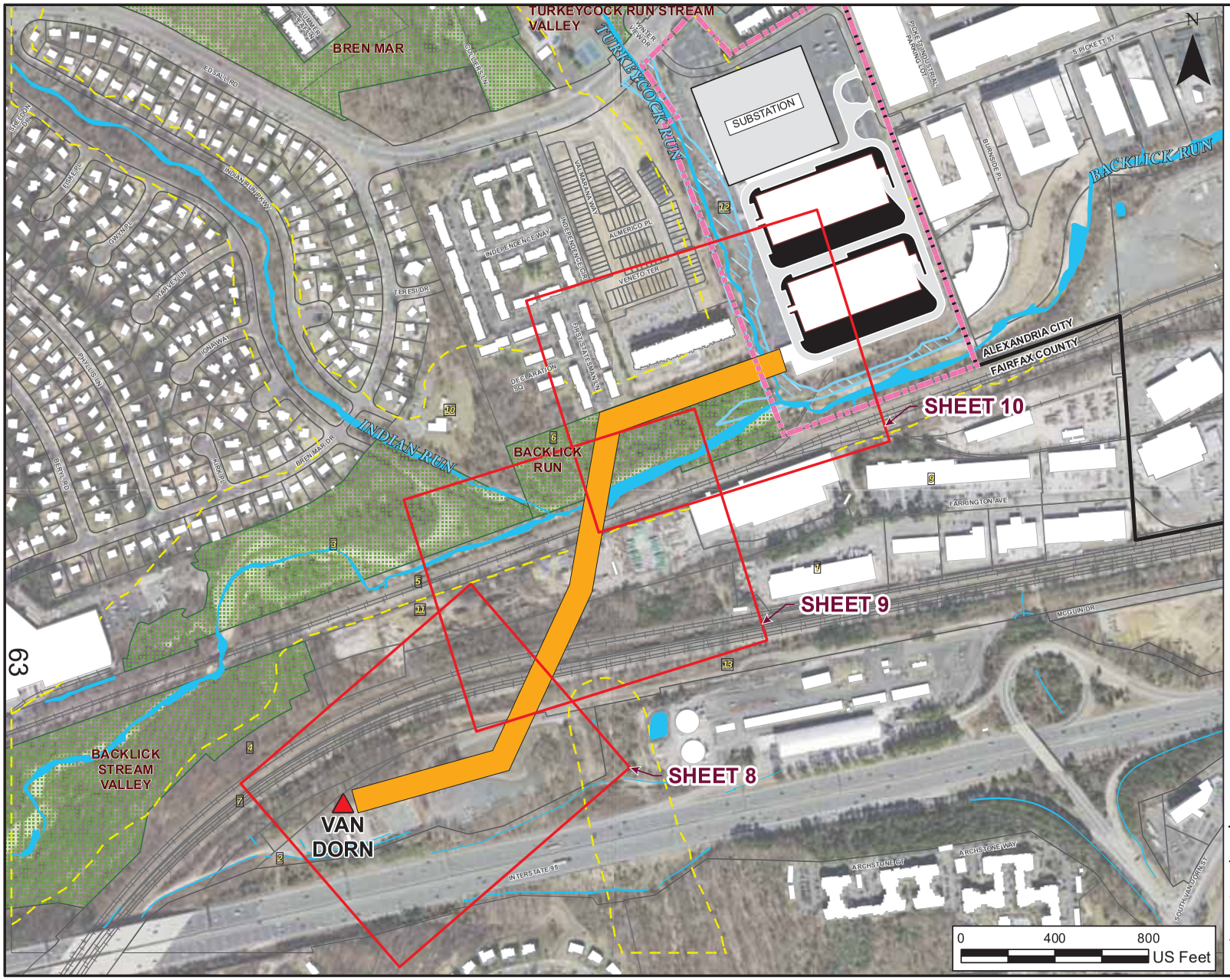

TITLE:

BASEMAP - INDEX
PRELIMINARY ROUTES
ROUTE 2

PROJECT:

EDSALL ROUTING STUDY
FAIRFAX COUNTY AND ALEXANDRIA CITY, VA

ROUTE OPTIONS

- ROUTE 2

PROPOSED END-POINT DEVELOPMENT
PLAZA 500 COMPLEX

- PLAZA 500 COMPLEX BOUNDARY
- SITE SIDEWALKS
- SITE BUILDING OUTLINE
- SITE PAVING ASPALT
- PROPOSED SUBSTATION LOCATION

LEGEND

- SUBSTATION
- COUNTY-MAPPED FLOOD ZONE
- COUNTY RESOURCE PROTECTION AREA (RPA)
- COUNTY STREAM
- COUNTY PARKS
- PARCEL BOUNDARY
- RAILROADS

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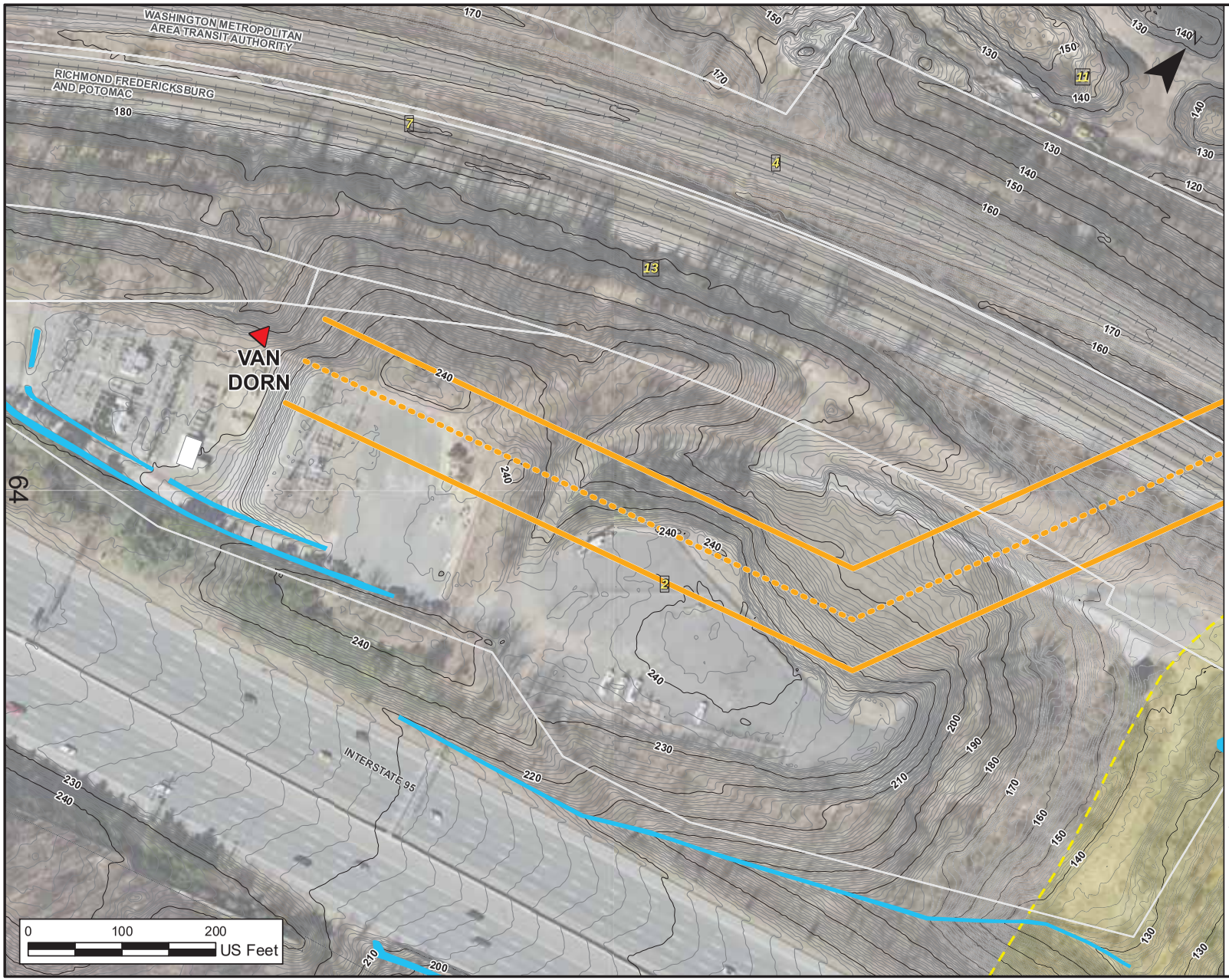

TITLE:

PROPOSED PRELIMINARY ROUTES - ROUTE 2

PROJECT:

EDSALL ROUTING STUDY
FAIRFAX COUNTY AND ALEXANDRIA CITY, VA

ROUTE OPTIONS

- ROUTE 2 - 100' EASEMENT
- ROUTE 2 - PROPOSED TRANSMISSION LINE/CENTERLINE

PROPOSED END-POINT DEVELOPMENT
PLAZA 500 COMPLEX

- PLAZA 500 COMPLEX BOUNDARY
- SITE SIDEWALKS
- SITE BUILDING OUTLINE
- SITE PAVING ASPALT
- PROPOSED SUBSTATION LOCATION

LEGEND

- SUBSTATION
- PARCEL BOUNDARY
- COUNTY-MAPPED FLOOD ZONE
- COUNTY RESOURCE PROTECTION AREA (RPA)
- COUNTY STREAM
- COUNTY PARKS
- EXISTING BUILDING FOOTPRINT
- RAILROADS
- MAJOR CONTOURS
- MINOR CONTOURS

PROJECT NUMBER: 50158513	SHEET NUMBER: 8
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PROJECT MANAGER: TL	
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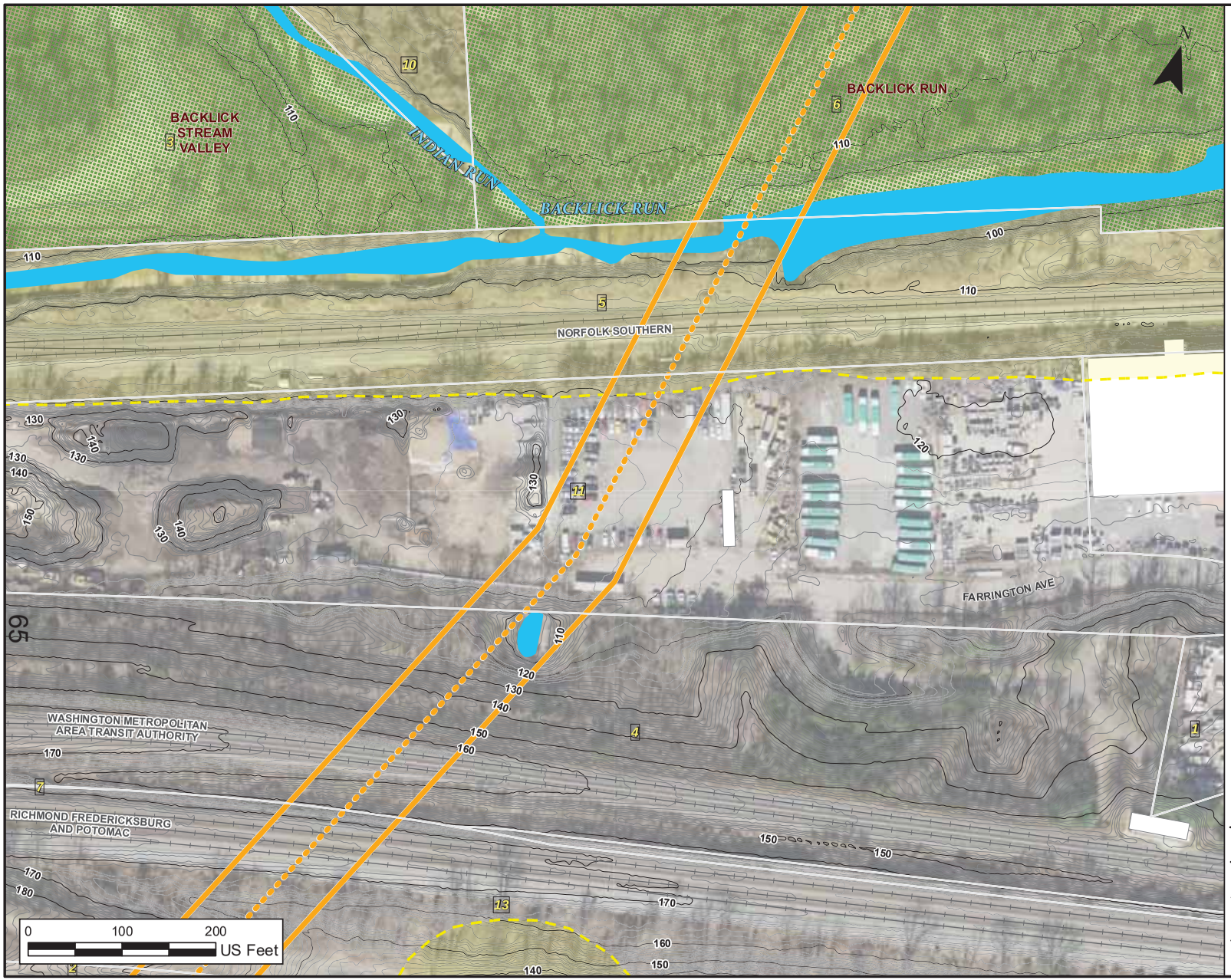

TITLE:

PROPOSED PRELIMINARY ROUTES - ROUTE 2

PROJECT:

EDSALL ROUTING STUDY
FAIRFAX COUNTY AND ALEXANDRIA CITY, VA

ROUTE OPTIONS

- ROUTE 2 - 100' EASEMENT
- ROUTE 2 - PROPOSED TRANSMISSION LINE/CENTERLINE

PROPOSED END-POINT DEVELOPMENT PLAZA 500 COMPLEX

- PLAZA 500 COMPLEX BOUNDARY
- SITE SIDEWALKS
- SITE BUILDING OUTLINE
- SITE PAVING ASPALT
- PROPOSED SUBSTATION LOCATION

LEGEND

- SUBSTATION
- PARCEL BOUNDARY
- COUNTY-MAPPED FLOOD ZONE
- COUNTY RESOURCE PROTECTION AREA (RPA)
- COUNTY STREAM
- COUNTY PARKS
- EXISTING BUILDING FOOTPRINT
- RAILROADS
- MAJOR CONTOURS
- MINOR CONTOURS

PROJECT NUMBER: 50158513	SHEET NUMBER: 9
SCALE: 1"=100'	DATE: 1/30/2024
PROJECT MANAGER: TL	Dewberry
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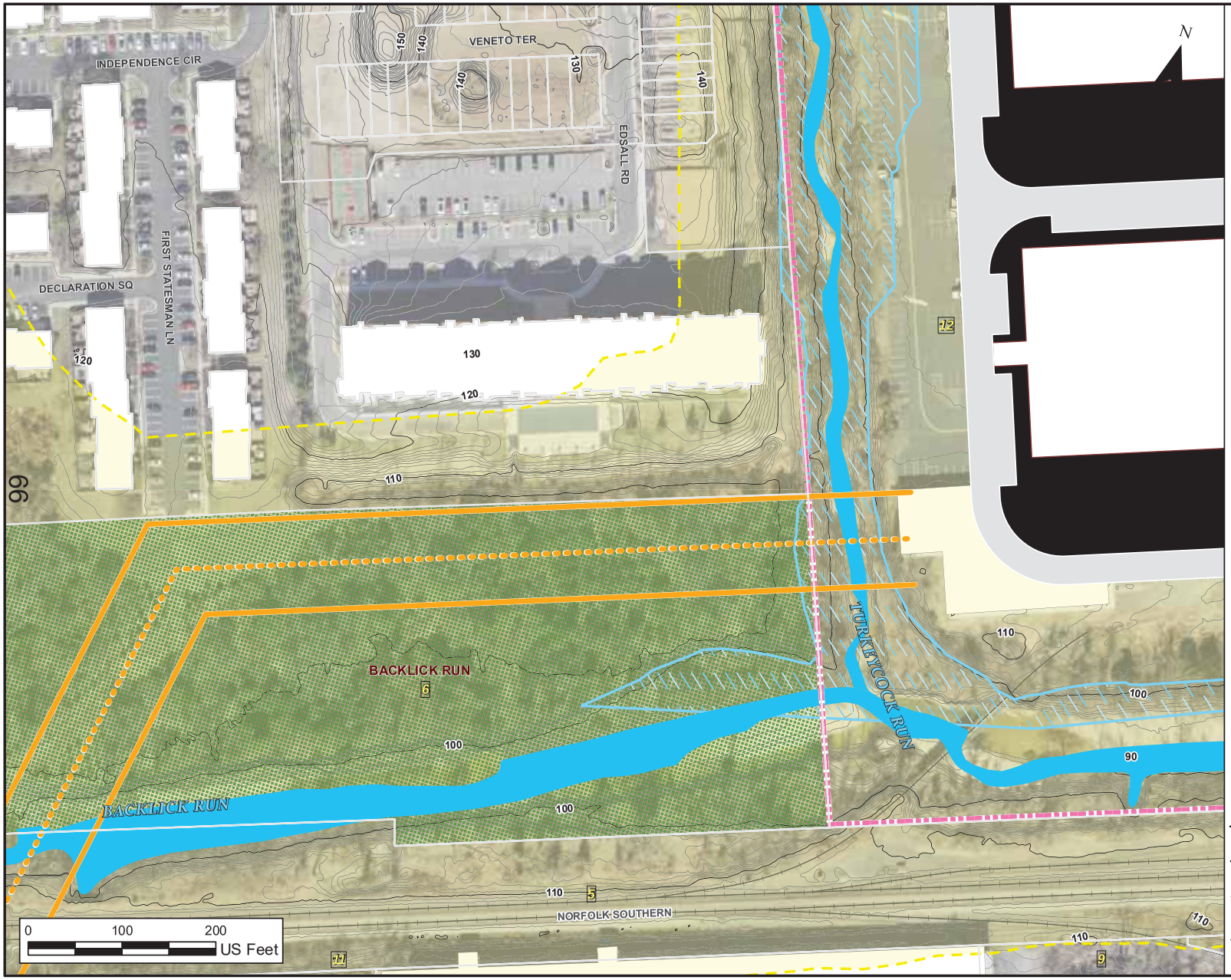

TITLE:

PROPOSED PRELIMINARY ROUTES - ROUTE 2

PROJECT:

EDSALL ROUTING STUDY
FAIRFAX COUNTY AND ALEXANDRIA CITY, VA

ROUTE OPTIONS

- ROUTE 2 - 100' EASEMENT
- ROUTE 2 - PROPOSED TRANSMISSION LINE/CENTERLINE

PROPOSED END-POINT DEVELOPMENT PLAZA 500 COMPLEX

- PLAZA 500 COMPLEX BOUNDARY
- SITE SIDEWALKS
- SITE BUILDING OUTLINE
- SITE PAVING ASPALT
- PROPOSED SUBSTATION LOCATION

LEGEND

- SUBSTATION
- PARCEL BOUNDARY
- COUNTY-MAPPED FLOOD ZONE
- COUNTY RESOURCE PROTECTION AREA (RPA)
- COUNTY STREAM
- COUNTY PARKS
- EXISTING BUILDING FOOTPRINT
- RAILROADS
- MAJOR CONTOURS
- MINOR CONTOURS

PROJECT NUMBER: 50158513	SHEET NUMBER: 10
SCALE: 1"=100'	DATE: 1/30/2024
PROJECT MANAGER: TL	Dewberry
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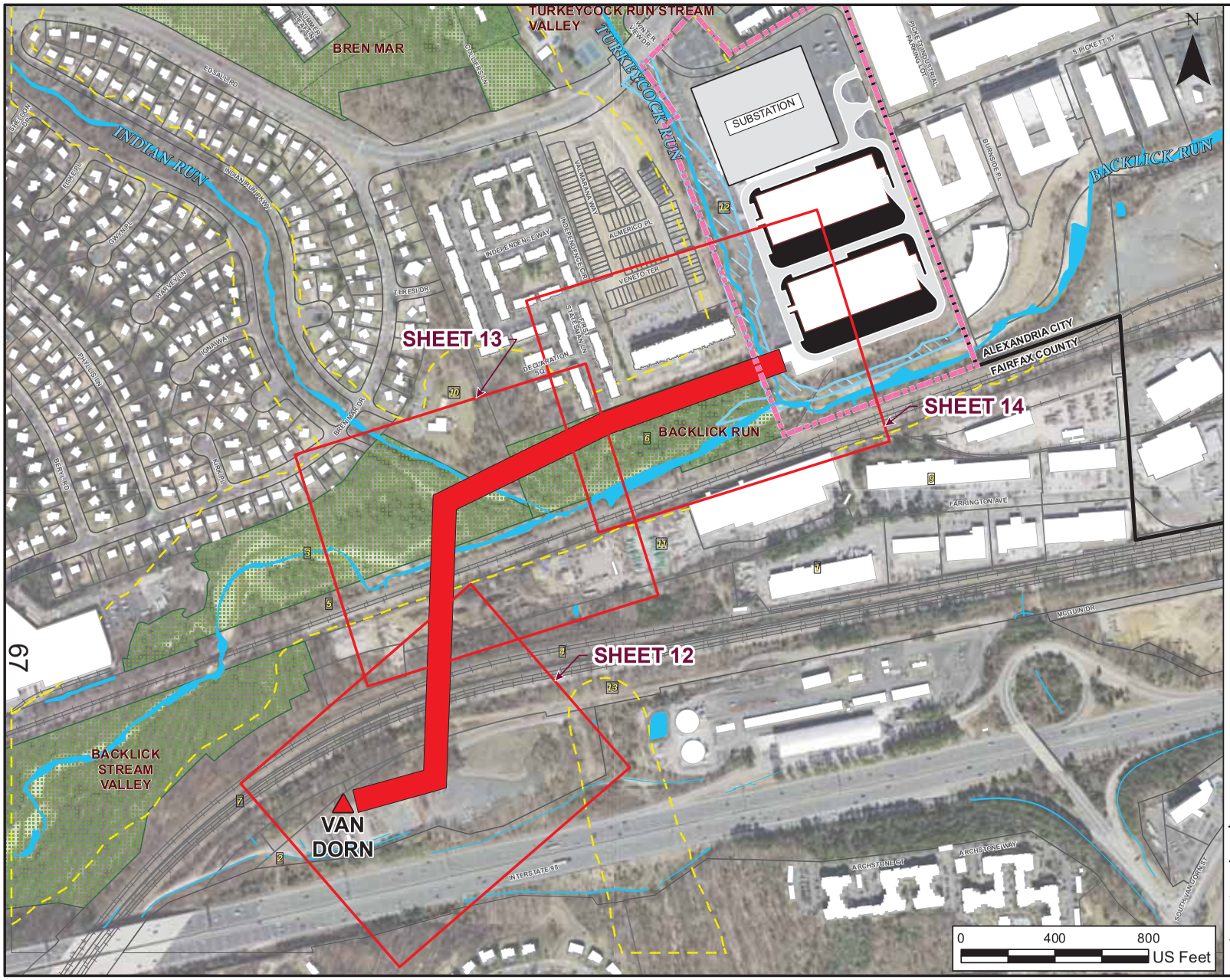

TITLE:

BASEMAP - INDEX
PRELIMINARY ROUTES
ROUTE 3

PROJECT:

EDSALL ROUTING STUDY
FAIRFAX COUNTY AND ALEXANDRIA CITY, VA

ROUTE OPTIONS

- ROUTE 3

PROPOSED END-POINT DEVELOPMENT
PLAZA 500 COMPLEX

- PLAZA 500 COMPLEX BOUNDARY
- SITE SIDEWALKS
- SITE BUILDING OUTLINE
- SITE PAVING ASPALT
- PROPOSED SUBSTATION LOCATION

LEGEND

- SUBSTATION
- COUNTY-MAPPED FLOOD ZONE
- COUNTY RESOURCE PROTECTION AREA (RPA)
- COUNTY STREAM
- COUNTY PARKS
- PARCEL BOUNDARY
- RAILROADS

PROJECT NUMBER: 50158513	SHEET NUMBER: 13
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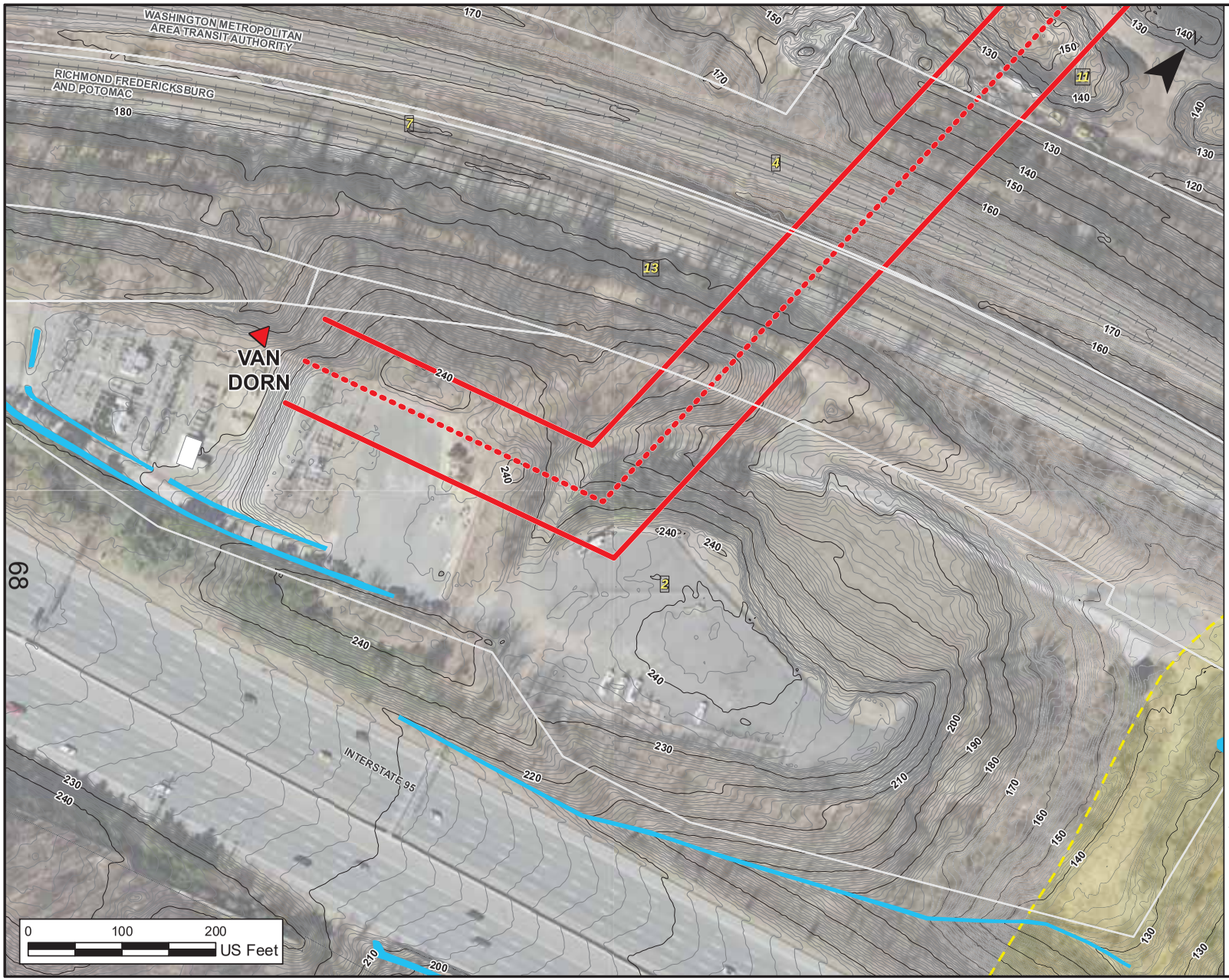

TITLE:

PROPOSED PRELIMINARY ROUTES - ROUTE 3

PROJECT:

EDSALL ROUTING STUDY
FAIRFAX COUNTY AND ALEXANDRIA CITY, VA

ROUTE OPTIONS

- ROUTE 3 - 100' EASEMENT
- ROUTE 3 - PROPOSED TRANSMISSION LINE/CENTERLINE

PROPOSED END-POINT DEVELOPMENT
PLAZA 500 COMPLEX

- PLAZA 500 COMPLEX BOUNDARY
- SITE SIDEWALKS
- SITE BUILDING OUTLINE
- SITE PAVING ASPALT
- PROPOSED SUBSTATION LOCATION

LEGEND

- SUBSTATION
- PARCEL BOUNDARY
- COUNTY-MAPPED FLOOD ZONE
- COUNTY RESOURCE PROTECTION AREA (RPA)
- COUNTY STREAM
- COUNTY PARKS
- EXISTING BUILDING FOOTPRINT
- RAILROADS
- MAJOR CONTOURS
- MINOR CONTOURS

PROJECT NUMBER: 50158513	SHEET NUMBER: 12
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PROJECT MANAGER: TL	Dewberry
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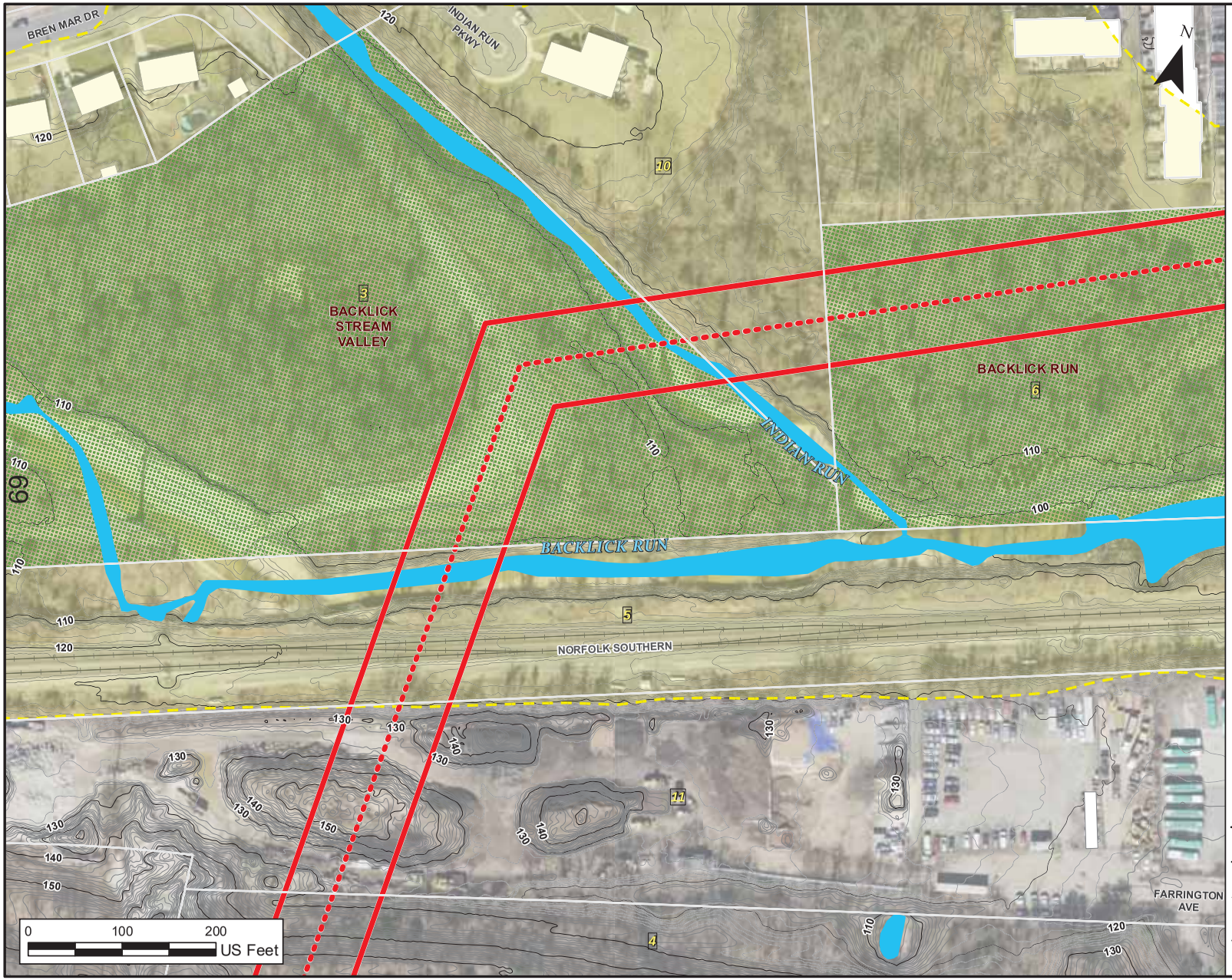


TITLE:

PROPOSED PRELIMINARY ROUTES - ROUTE 3

PROJECT:

EDSALL ROUTING STUDY
FAIRFAX COUNTY AND ALEXANDRIA CITY, VA

ROUTE OPTIONS

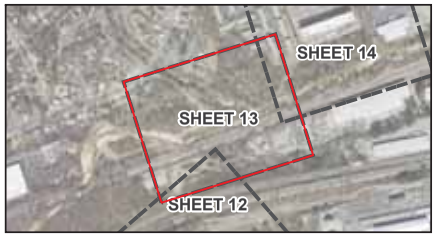
- ROUTE 3 - 100' EASEMENT
- ROUTE 3 - PROPOSED TRANSMISSION LINE/CENTERLINE

PROPOSED END-POINT DEVELOPMENT PLAZA 500 COMPLEX

- PLAZA 500 COMPLEX BOUNDARY
- SITE SIDEWALKS
- SITE BUILDING OUTLINE
- SITE PAVING ASPALT
- PROPOSED SUBSTATION LOCATION

LEGEND

- SUBSTATION
- PARCEL BOUNDARY
- COUNTY-MAPPED FLOOD ZONE
- COUNTY RESOURCE PROTECTION AREA (RPA)
- COUNTY STREAM
- COUNTY PARKS
- EXISTING BUILDING FOOTPRINT
- RAILROADS
- MAJOR CONTOURS
- MINOR CONTOURS



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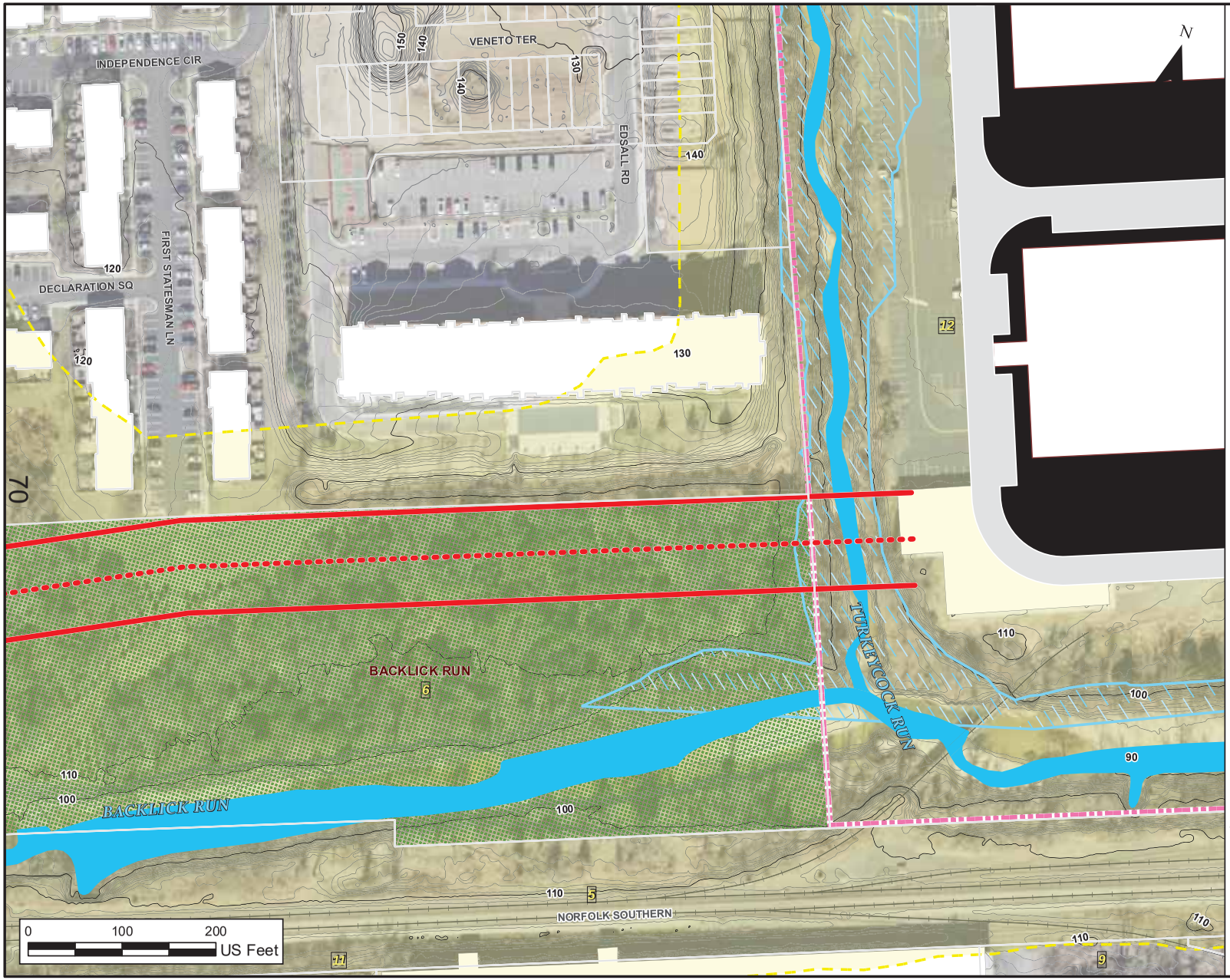
PROJECT MANAGER: TL	
DRAWN BY: MGH	Dewberry



TITLE:

PROPOSED PRELIMINARY
ROUTES - ROUTE 3

PROJECT:

EDSALL ROUTING STUDY
FAIRFAX COUNTY AND ALEXANDRIA CITY, VA

ROUTE OPTIONS

- ROUTE 3 - 100' EASEMENT
- ROUTE 3 - PROPOSED TRANSMISSION LINE/CENTERLINE

PROPOSED END-POINT DEVELOPMENT PLAZA 500 COMPLEX

- PLAZA 500 COMPLEX BOUNDARY
- SITE SIDEWALKS
- SITE BUILDING OUTLINE
- SITE PAVING ASPALT
- PROPOSED SUBSTATION LOCATION

LEGEND

- SUBSTATION
- PARCEL BOUNDARY
- COUNTY-MAPPED FLOOD ZONE
- COUNTY RESOURCE PROTECTION AREA (RPA)
- COUNTY STREAM
- COUNTY PARKS
- EXISTING BUILDING FOOTPRINT
- RAILROADS
- MAJOR CONTOURS
- MINOR CONTOURS

PROJECT NUMBER: 50158513	SHEET NUMBER: 14
SCALE: 1"=100'	DATE: 1/30/2024
PROJECT MANAGER: TL	Dewberry
DRAWN BY: MGH	

	Map ID	FAIRFAX COUNTY	LANDOWNER
Route 1	1	0812 01 0010D	FORD FARRINGTON 6021 LLC,
	2	0811 01 0011A	ELECTRIC AND POWER CO VIRGINIA
	4	0811 01 0025	WASHINGTON METROPOLITAN, AREA TRANSIT
	5	0812 01 0009A	SOUTHERN RAILWAY
	9	0812 01 0013A	B-DEL CORPORATION
	11	0812 01 0009D	J-DEL LLC
	12	0812 01 0007	PLAZA 500 PROPERTY OWNER LP
	13	0904 01 0024	VA PASSENGER RAIL AUTHORITY

	Map ID	FAIRFAX COUNTY	LANDOWNER
Route 2	2	0811 01 0011A	ELECTRIC AND POWER CO VIRGINIA
	4	0811 01 0025	WASHINGTON METROPOLITAN, AREA TRANSIT
	5	0812 01 0009A	SOUTHERN RAILWAY
	6	0811 01 0021	PARK AUTHORITY FAIRFAX COUNTY
	11	0812 01 0009D	J-DEL LLC
	12	0812 01 0007	PLAZA 500 PROPERTY OWNER LP
	13	0904 01 0024	VA PASSENGER RAIL AUTHORITY

	Map ID	FAIRFAX COUNTY	LANDOWNER
Route 3	2	0811 01 0011A	ELECTRIC AND POWER CO VIRGINIA
	3	0811 01 0009C	PARK AUTHORITY FAIRFAX COUNTY
	4	0811 01 0025	WASHINGTON METROPOLITAN, AREA TRANSIT
	5	0812 01 0009A	SOUTHERN RAILWAY
	6	0811 01 0021	PARK AUTHORITY FAIRFAX COUNTY
	7	0811 01 0025A	VA PASSENGER RAIL AUTHORITY
	10	0811 01 0009B	CHURCH ORTHODOX, ARCHDIOCESE OF THE SYRIAN
	11	0812 01 0009D	J-DEL LLC
	12	0812 01 0007	PLAZA 500 PROPERTY OWNER LP
	13	0904 01 0024	VA PASSENGER RAIL AUTHORITY

TITLE:

LANDOWNER TABLE

PROJECT:

EDSALL ROUTING STUDY
FAIRFAX COUNTY AND ALEXANDRIA CITY, VA

PROJECT NUMBER: 50158513	SHEET NUMBER: 15
SCALE: 1"=400'	DATE: 1/30/2024
PROJECT MANAGER: TL	Dewberry
DRAWN BY: MGH	

II. DESCRIPTION OF THE PROPOSED PROJECT

A. Right-of-way ("ROW")

10. Describe the Applicant's construction plans for the project, including how the Applicant will minimize service disruption to the affected load area. Include requested and approved line outage schedules for affected lines as appropriate.

Response: The Company plans to construct the Project in a manner that minimizes outage time on Lines #210 and #243. Assuming the Commission issues a final order by February 28, 2025, and Project construction commences in April 2026, the extension of Lines #210 and #243 will be constructed sequentially, which will require an outage on each line in fall 2026 and spring 2027, respectively. As noted in Section I.H, the Company estimates that construction of the Project will be completed by October 2027.

The Company intends to complete this work during requested outage windows, as described above. However, as with all outage scheduling, these outages may change depending on whether PJM approves the outages and other relevant considerations allow for it. It is customary for PJM to hold requests for outages and approve only shortly before the outages are expected to occur and, therefore, the requested outages are subject to change. Therefore, the Company will not have clarity on whether this work will be done as requested until very close in time to the requested outages. If PJM approves different outage dates, the Company will continue to diligently pursue timely completion of this work.

II. DESCRIPTION OF THE PROPOSED PROJECT

A. Right-of-way ("ROW")

11. Indicate how the construction of this transmission line follows the provisions discussed in Attachment 1 of these Guidelines.

Response: The Company routinely uses Attachment 1 to these Guidelines in routing its transmission line projects.

The Company utilized Guideline #1 by minimizing conflict between the rights-of-way and present and prospective uses of the land on which the proposed Project is to be located (To the extent permitted by the property interest involved, rights-of-way should be selected with the purpose of minimizing conflict between the rights-of-way and present and prospective uses of the land on which they are to be located. To this end, existing rights-of-way should be given priority as the locations for additions to existing transmission facilities, and the joint use of existing rights-of-way by different kinds of utility services should be considered.).

Existing right-of-way corridors between the proposed start and end points of the Edsall Lines were limited, restricting the potential for collocation. To minimize land-use conflicts, the Proposed Route was sited along the edge of developed industrial parcels to avoid impacts to existing structures and other facilities. Where possible, the Proposed Route also parallels existing Farrington Avenue.[20] The Proposed Route avoids Fairfax County parklands entirely and crosses the Backlick Run corridor at a roughly perpendicular angle to minimize potential impacts to the stream corridor and potential adjacent wetland areas. The Company also identified areas with compatible land uses (*i.e.*, data center developments and other industrial zoned parcels) and worked with property managers along the route in order to identify existing facilities within and adjacent to the proposed right-of-way and ensure existing operations would not be impacted by the proposed transmission line. See Routing Study Sections 4.1 and 4.2 and Appendices A and B.

The Company utilized Guideline #2 to ensure potential impacts to national historic places listed on the National Register of Historic Places ("NRHP") or natural landmarks were assessed and minimized. One historic property eligible for listing in the NRHP—the Richmond, Fredericksburg, and Potomac Railroad Historic District ("RF&PHD"), Virginia Department of Historic Resources ("VDHR") ID 500-0001—is located within the proposed right-of-way. It is anticipated that the impact to the RF&PHD due to Project activities will be consistent and in character with its current viewshed. The Proposed Route crosses the RF&PHD at a perpendicular angle to minimize overlap between the proposed right-of-way corridor and the historic resource. As proposed, it is anticipated the Project will have minimal impact on the viewshed of the RF&PHD. See Section III.G for a description of the cultural resources identified in the Stage I Pre-Application

[20] Note that Farrington Avenue is privately owned and maintained. The Company will obtain the necessary rights for the Proposed Route to parallel Farrington Avenue from the property owners.

Analysis, which is included in Appendix E of the Routing Study and was submitted to the VDHR on July 25, 2024.

The Proposed Route is not located in an area of high scenic value in conformance with Guideline #3. As discussed in Section III.E, the area in the vicinity of the Proposed Route is expected to continue to be a key location for industrial uses and data center development.

The Company communicated with local, state, and federal agencies prior to filing this Application consistent with Guideline #4 (where government land is involved the applicant should contact the agencies early in the planning process). In particular, the Company consulted with the FCPA, WMATA, and VPRA. See Sections III.B, III.J, and V.A of this Appendix.

The Company followed Guideline #6 by crossing the existing rail lines (including the line identified as the RF&PHD) and Backlick Run at perpendicular angles to these corridors and by having alignment changes on either side of these crossings (Long tunnel views of transmission line crossings, highways in wooded areas, down canyons and valleys or up ridges and hills should be avoided). The alignment north of Backlick Run is an exception, running relatively straight for a distance of approximately 1,800 feet; however, the route is constrained in this location by existing buildings, Turkeycock Run, and the proposed buildings within the Customer's site. Further, route changes in this area are not practicable and would result in additional tree clearing, impacts to streams and wetlands, and/or encroachments on residential developments.

The Company follows recommended construction methods in the Guidelines on a site-specific basis for typical construction projects (Guidelines #8, #10, #11, #15, #16, #18, and #22).

The Company also utilizes recommended guidelines in clearing right-of-way, constructing facilities, and maintaining rights-of-way after construction. Moreover, secondary uses of right-of-way that are consistent with the safe maintenance and operation of facilities are permitted.

II. DESCRIPTION OF THE PROPOSED PROJECT

A. Right-of-way ("ROW")

12. a. Detail counties and localities through which the line will pass. If any portion of the line will be located outside of the Applicant's certificated service area: (1) identify each electric utility affected; (2) state whether any affected electric utility objects to such construction; and (3) identify the length of line(s) proposed to be located in the service area of an electric utility other than the Applicant; and

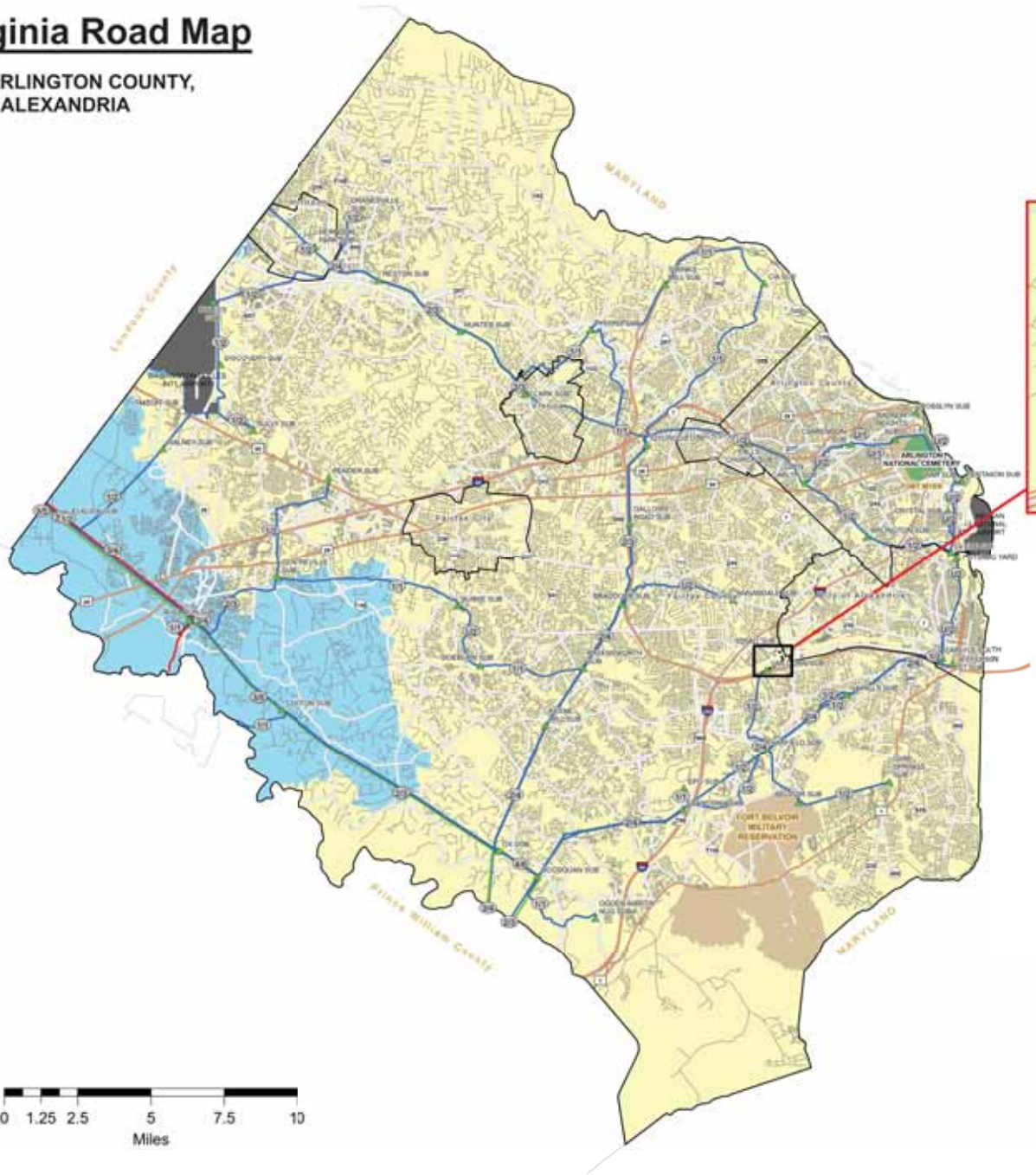
b. Provide three (3) color copies of the Virginia Department of Transportation "General Highway Map" for each county and city through which the line will pass. On the maps show the proposed line and all previously approved and certificated facilities of the Applicant. Also, where the line will be located outside of the Applicant's certificated service area, show the boundaries between the Applicant and each affected electric utility. On each map where the proposed line would be outside of the Applicant's certificated service area, the map must include a signature of an appropriate representative of the affected electric utility indicating that the affected utility is not opposed to the proposed construction within its service area.

Response: a. The proposed Project traverses Fairfax County, Virginia, for a total of approximately 0.9 mile and is entirely located within the Company's service territory.

b. An electronic copy of the VDOT "General Highway Map" for Fairfax County has been marked as required and submitted with the Application. A reduced copy of the map is provided as Attachment II.A.12.b.

Northern Virginia Road Map

FAIRFAX COUNTY, ARLINGTON COUNTY, AND CITY OF ALEXANDRIA



This digital map depicts the Virginia Electric and Power Company ("Company") transmission facilities in this county as approved by the Virginia State Corporation Commission ("SCC"), and any proposed transmission facilities in this county, as of April 4, 2024. Other Company facilities previously authorized by the SCC may be depicted on prior SCC approved county maps.

Legend

- Proposed 230 kV Transmission Line
- 230 kV Under Consideration by SCC
- Number of Lines of Structures/Number of Circuits
- Existing Substations
- Proposed Substations
- 115 kV
- 230 kV
- 500 kV

Service Provider Territory

- NOVEC
- VEPCO

Fairfax County, Arlington County, and City of Alexandria

II. DESCRIPTION OF THE PROPOSED PROJECT

B. Line Design and Operational Features

1. Detail the number of circuits and their design voltage, initial operational voltage, any anticipated voltage upgrade, and transfer capabilities.

Response: The proposed Edsall Lines will be designed and operated at 230 kV with no anticipated voltage upgrade and have a transfer capability of 1,573 MVA.[21]

[21] Note that the rating of proposed Lines #210 and #243 between the Edsall Substation and Van Dorn Substation will be limited by the ratings of the existing Lines #210 and #243 between the Hayfield/Ox Substations and Van Dorn Substation.

II. DESCRIPTION OF THE PROPOSED PROJECT

B. Line Design and Operational Features

2. Detail the number, size(s), type(s), coating and typical configurations of conductors. Provide the rationale for the type(s) of conductor(s) to be used.

Response: Each 230 kV single circuit will include three-phase twin-bundled 768.2 ACSS/TW/HS conductors arranged as shown in Attachment II.B.3.a. The twin-bundled 768.2 ACSS/TW/HS conductors are a Company standard for new 230 kV construction.

II. DESCRIPTION OF THE PROPOSED PROJECT

B. Line Design and Operational Features

3. With regard to the proposed supporting structures over each portion of the ROW for the preferred route, provide diagrams (including foundation reveal) and descriptions of all the structure types, to include:

a. mapping that identifies each portion of the preferred route;

b. the rationale for the selection of the structure type;

c. the number of each type of structure and the length of each portion of the ROW;

d. the structure material and rationale for the selection of such material;

e. the foundation material;

f. the average width at cross arms;

g. the average width at the base;

h. the maximum, minimum and average structure heights;

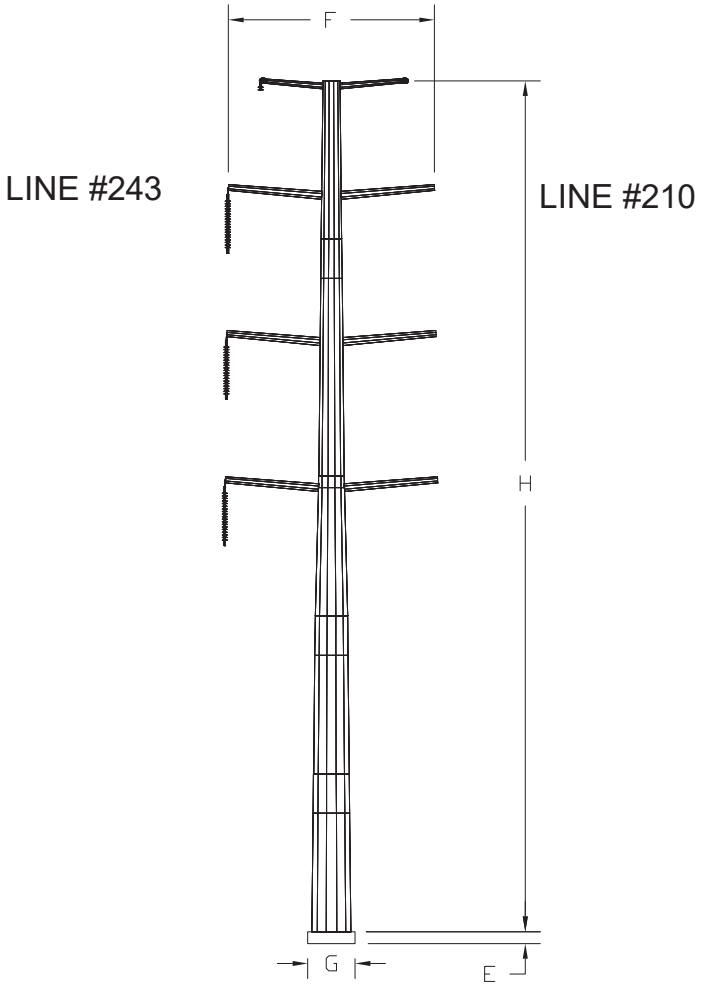
i. the average span length; and

j. the minimum conductor-to-ground clearances under maximum operating conditions.

Response: See Attachment II.B.3.a for subparts (b) through (j).

For subpart (a), see Attachment II.B.3.b for approximate mapping of the proposed structures along the Proposed Route, which is subject to change during final engineering.

EDSALL - HAYFIELD LINE #210
EDSALL - OX LINE #243



230 kV DC ENGINEERED MONOPOLE DDE STRUCTURE

A. MAPPING OF THE ROUTE: SEE ATTACHMENT II.B.3.b

B. RATIONALE FOR STRUCTURE TYPE: STANDARD STRUCTURE TYPE FOR DC 230 kV LINES

C. LENGTH OF R/W (STRUCTURE QTY): 0.90 MILE (8 STRUCTURES)

D. STRUCTURE MATERIAL: GALVANIZED STEEL

RATIONALE FOR MATERIAL: TO MATCH OTHER LINES IN THE AREA

E. FOUNDATION MATERIAL: CONCRETE

AVERAGE FOUNDATION REVEAL: SEE NOTE 2

F. AVERAGE WIDTH AT CROSS ARM: 26'

G. AVERAGE WIDTH AT BASE: SEE NOTE 2

H. MINIMUM STRUCTURE HEIGHT: 100'

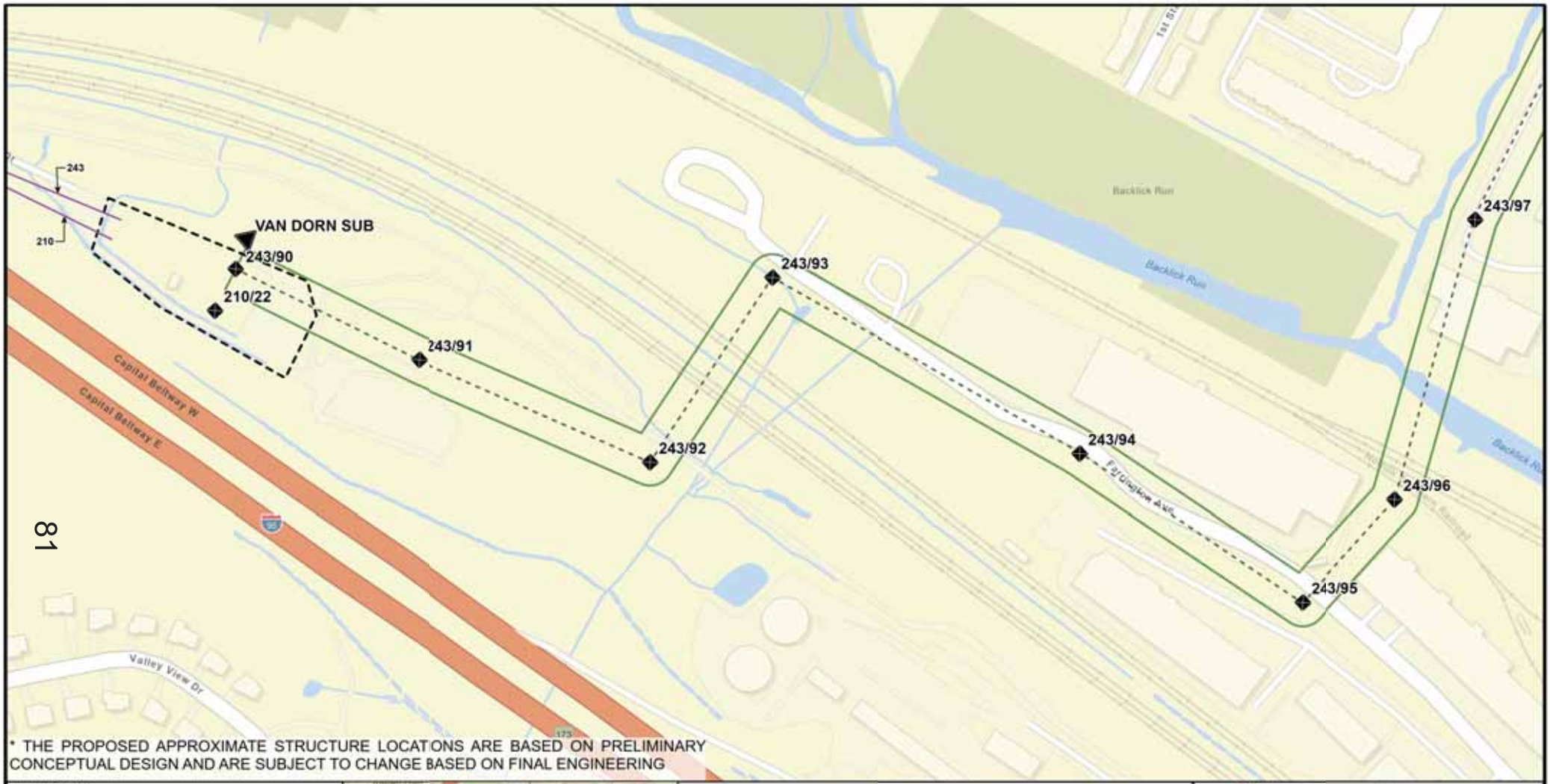
MAXIMUM STRUCTURE HEIGHT: 150'

AVERAGE STRUCTURE HEIGHT: 125'

I. AVERAGE SPAN LENGTH (RANGE): 575' (299'-943') (SEE NOTE 4)

J. MINIMUM CONDUCTOR-TO-GROUND: 22.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTES:
1. INFORMATION CONTAINED ON DRAWING IS PRELIMINARY IN NATURE AND SUBJECT TO CHANGE DURING FINAL DESIGN.
2. A MINIMUM FOUNDATION REVEAL SHALL BE 1.5 FEET. FOUNDATION DIAMETER SHALL BE BASED ON FINAL ENGINEERING.
3. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE AND DO NOT INCLUDE FOUNDATION REVEAL.
4. THE SPAN ASSOCIATED WITH EACH STRUCTURE IS THE AHEAD SPAN.



KEY PLAN

LEGEND

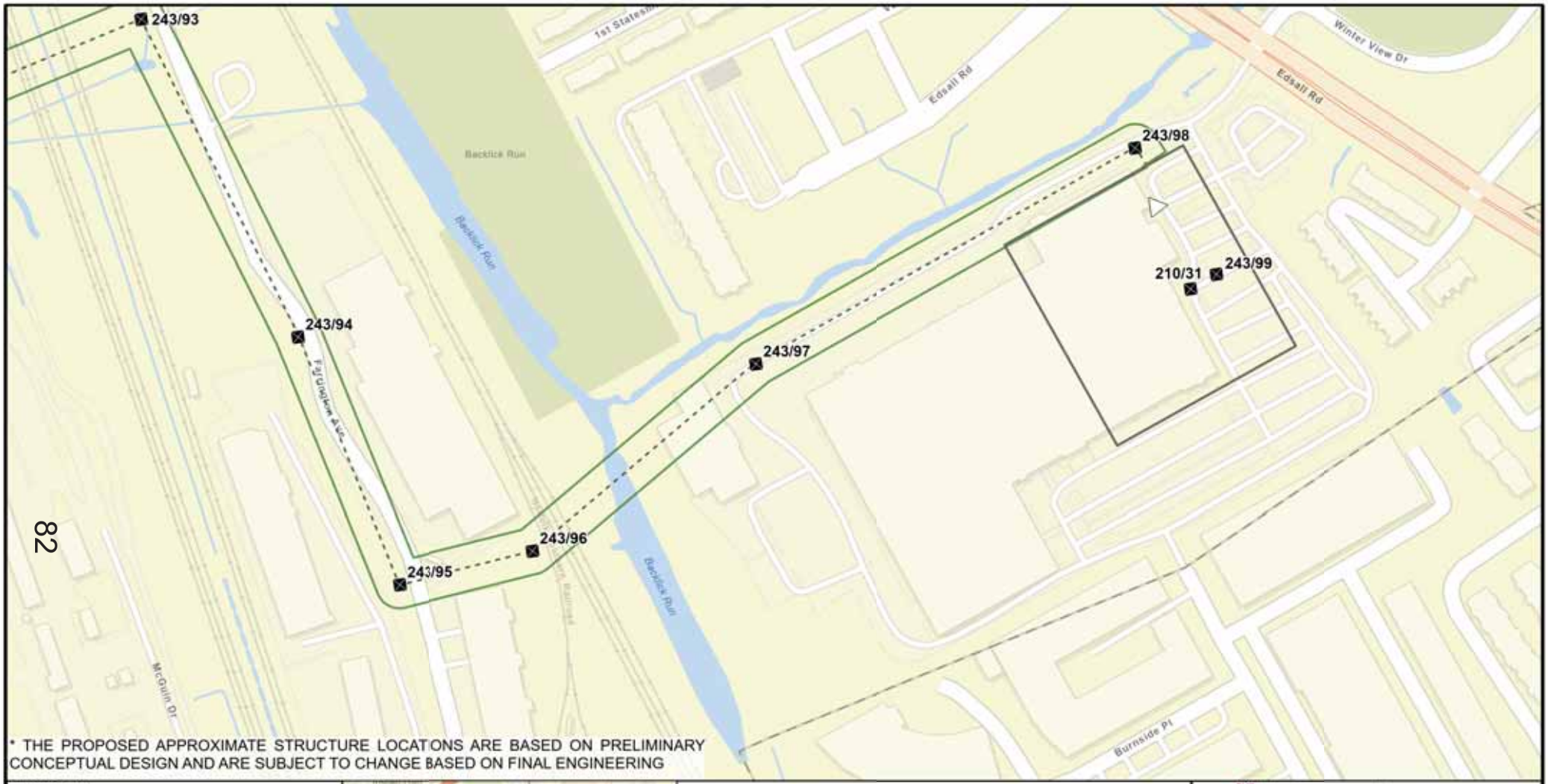
- EXISTING SUBSTATIONS
- PROPOSED STRUCTURES
- EXISTING SUBSTATION BOUNDARY
- PROPOSED ROUTE CENTERLINE AND RIGHT-OF-WAY
- EXISTING DOMINION TRANSMISSION LINES

N

0 200 400 Feet

Dewberry

ATTACHMENT: II.B.3.b	DATE: 4/30/2024
TITLE: STRUCTURE LOCATION MAP	SHEET NUMBER: 1 OF 2
PROJECT: 230 KV LINES #210 AND #243 EXTENSION AND ECSALL SUBSTATION	PROJECT MANAGER: TL
	PROJECT NUMBER: 50163606



* THE PROPOSED APPROXIMATE STRUCTURE LOCATIONS ARE BASED ON PRELIMINARY CONCEPTUAL DESIGN AND ARE SUBJECT TO CHANGE BASED ON FINAL ENGINEERING

KEY PLAN

LEGEND

- PROPOSED EDSALL SUBSTATION
- PROPOSED STRUCTURES
- PROPOSED SUBSTATION BOUNDARY
- PROPOSED ROUTE CENTERLINE AND RIGHT-OF-WAY
- EXISTING DOMINION TRANSMISSION LINES

N

0 200 400 Feet

Dewberry

ATTACHMENT: II.B.3.b	DATE: 4/30/2024
TITLE: STRUCTURE LOCATION MAP	SHEET NUMBER: 2 OF 2
PROJECT: 230 KV LINES #210 AND #243 EXTENSION AND ECSALL SUBSTATION	PROJECT MANAGER: TL
	PROJECT NUMBER: 50163606

II. DESCRIPTION OF THE PROPOSED PROJECT

B. Line Design and Operational Features

4. With regard to the proposed supporting structures for all feasible alternate routes, provide the maximum, minimum and average structure heights with respect to the whole route.

Response: Not applicable. See Section II.A.9.

II. DESCRIPTION OF THE PROPOSED PROJECT

B. Line Design and Operational Features

5. For lines being rebuilt, provide mapping showing existing and proposed structure heights for each individual structure within the ROW, as proposed in the application.

Response: Not applicable.

II. DESCRIPTION OF THE PROPOSED PROJECT

B. Line Design and Operational Features

6. Provide photographs for [a] typical existing facilities to be removed, [b] comparable photographs or representations for proposed structures, and [c] visual simulations showing the appearance of all planned transmission structures at identified historic locations within one mile of the proposed centerline and in key locations identified by the Applicant.

Response: [a] Not applicable.

[b] See Attachment II.B.6.b for a representative photograph of the proposed structure type.

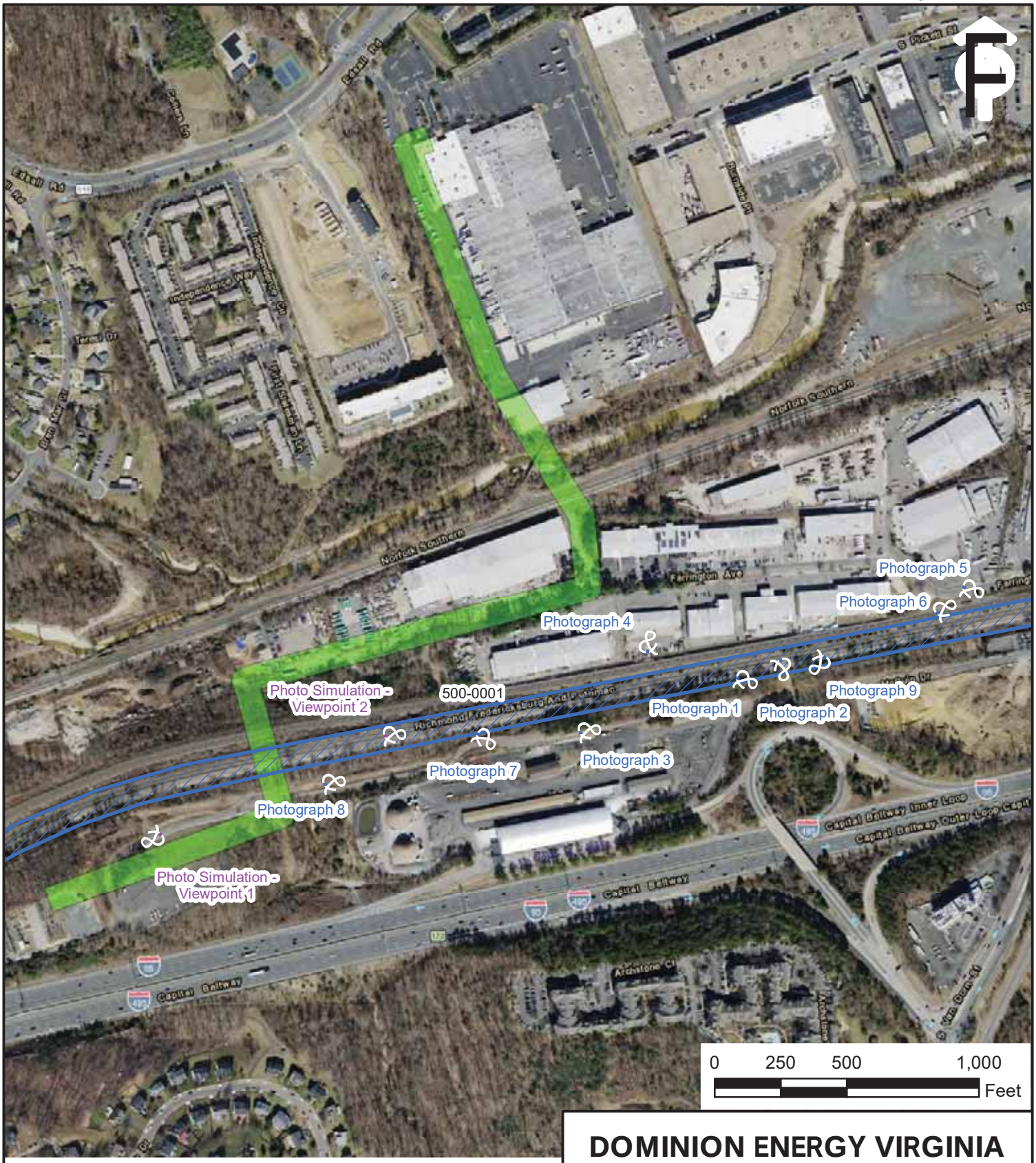
[c] Visual simulations showing the appearance of the proposed transmission structures at identified historic locations within 1.0 mile of the centerline of the Edsall Lines are provided. See Attachment II.B.6.c for a map of the simulation locations, photographs of the existing views at the identified historic property,[22] and simulated proposed views from two key observation points. These simulations were created using Geographic Information System modeling to depict whether the proposed structures will be visible from the identified historic property. The historic properties evaluated are described below. See also the Stage I Pre-Application Analysis Report contained in Appendix E of the Environmental Routing Study.

Historic Property	Viewpoint	Comments
Richmond, Fredericksburg, and Potomac Railroad Historic District (*i.e.*, RF&PHD) (VDHR #500-0001)	Photo-Simulation Viewpoint #2	The Proposed Route is anticipated to have minimal impact on 500-0001, as it will be consistent and in character with its current viewshed.

See Attachment III.B.2 for visual simulations of key locations evaluated.

[22] The photographs presented were taken to depict the general character of the area around the RF&PHD historic resource in order to assess if the proposed transmission lines would be congruous with the existing landscape. The photographs demonstrate the industrial, developed nature of the existing landscape.

Proposed Structure Type:
230 kV DC Monopole Double Deadend



LEGEND

DHR ID

- 500-0001
- Route 1
- Photo Location
- Photo Simulation Location

Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors
Virginia Geographic Information Network (VGIN)

DOMINION ENERGY VIRGINIA

LOCATIONS OF PHOTOGRAPHS AND PHOTO-SIMULATIONS

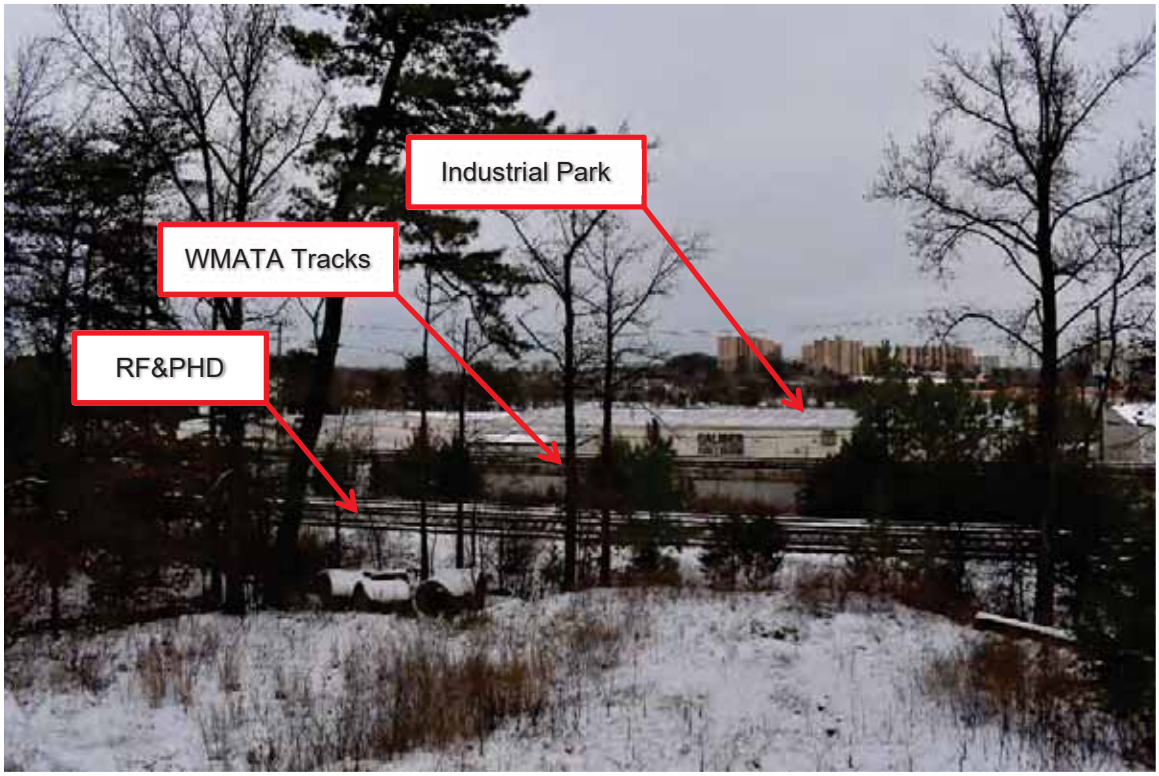
SCC Pre-Application Analysis of Cultural Resources
Edsall 230 kV Transmission Line
Fairfax County and the City of Alexandria, Virginia

SCALE: 1" = 500' DATE: July 2024

Dewberry

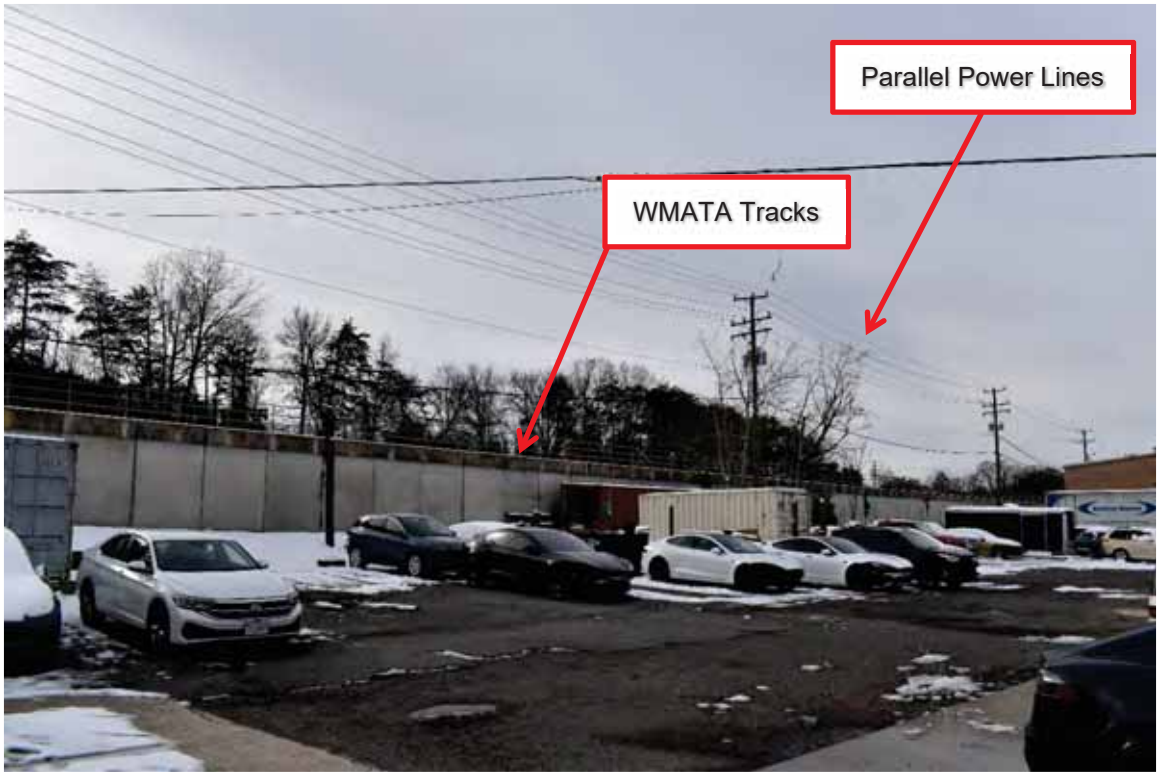
FIGURE 6

Path: Q:\50163603\GIS\Mxd\Final_Page_Turn_MXDs\6_PhotoandSimulationLocations_EdsallSCCPreAppAnalysis_FairfaxCountyVA.mxd



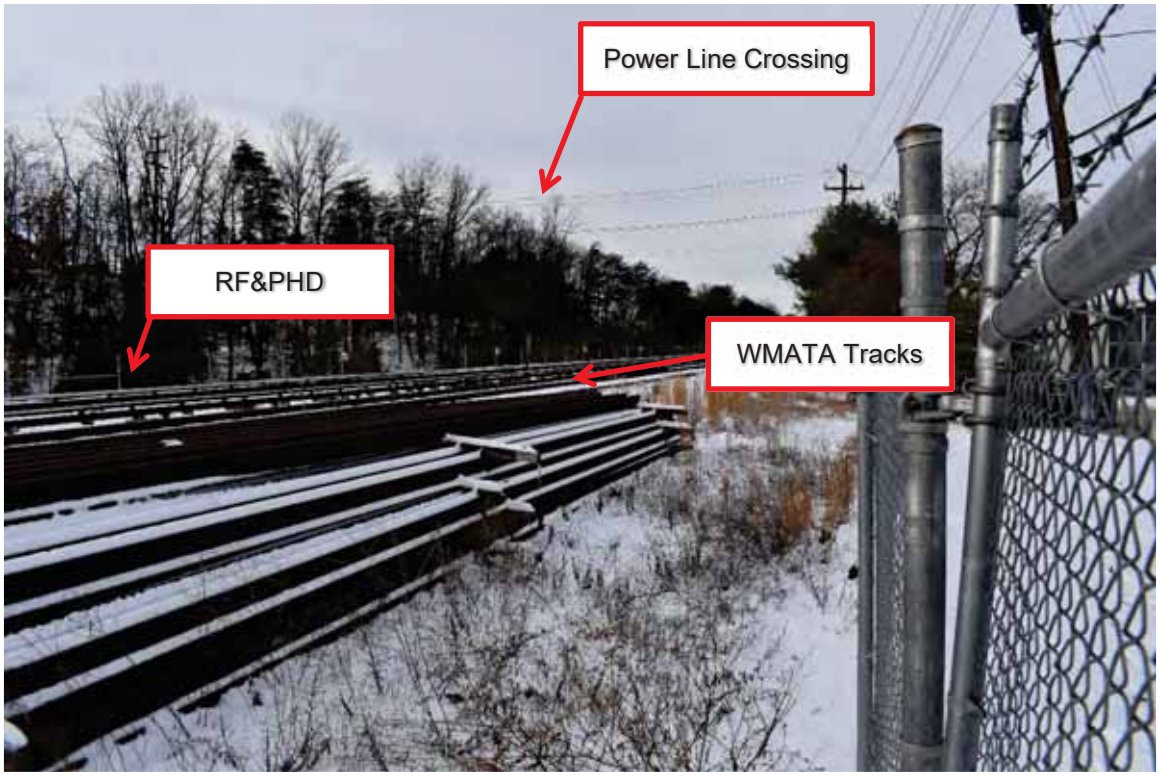
Photograph 2: RF&PHD Overall Setting Near the Project Alignment. View North. (MN 1/18/2024).

Photograph 3: Setting Bordering the RF&PHD to the South. View West. (MN 1/18/2024).



Photograph 4: Setting Bordering the RF&PHD to the North, including WMATA Tracks, Parallel Power Lines, and Autobody Shop. View Southwest. (MN 1/18/2024).

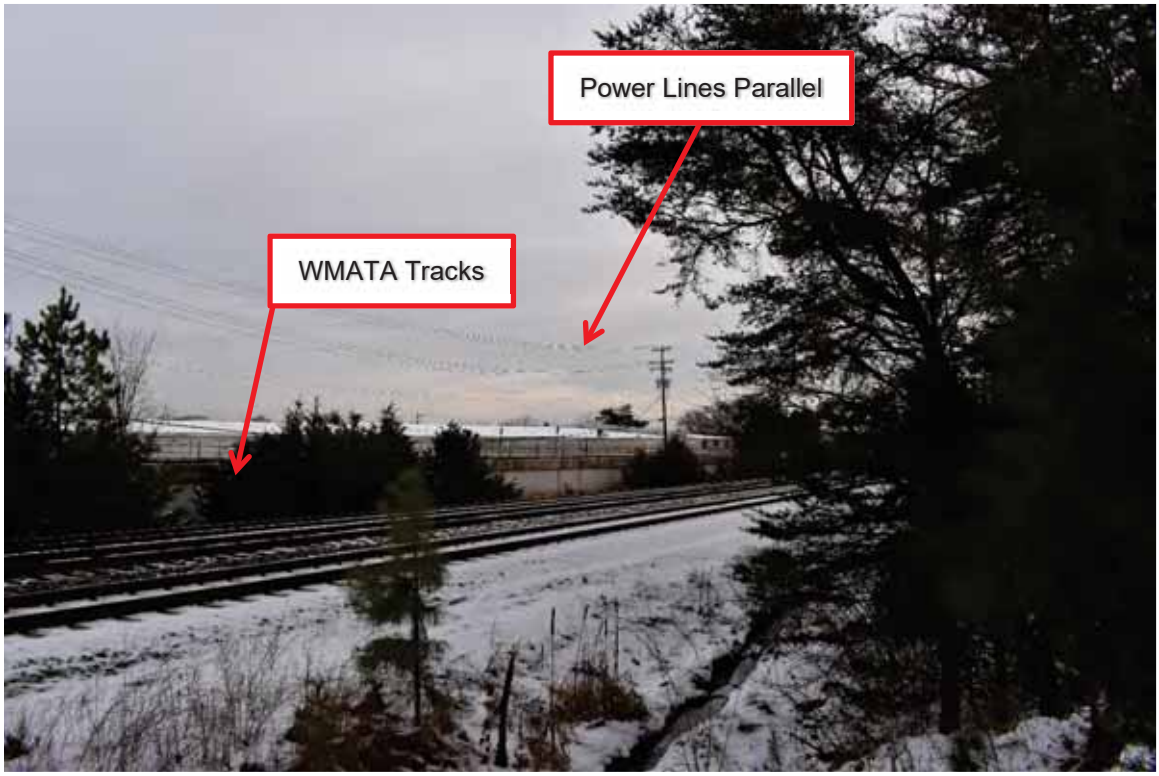
Photograph 5: Industrial Park along Farrington Ave North of the RF&PHD. View Northeast. (MN 1/18/2024).



Photograph 6: Extant Distribution Lines Across the RF&PHD. View West. (MN 1/18/2024).

Photograph 7: Additional Power Lines Crossing the RF&PHD Near the Project Alignment. View Northeast. (MN 1/18/2024).

Photograph 8: Power Lines Bordering the RF&PHD to the South, Van Dorn SubsThere are several existing power distribution lines that run across the RF&PHD. Moreover, there are additional power lines that are parallel to the RF&PHD. North, Between WMATA Tracks. View Northeast. (MN 1/18/2024).



Photograph 9: Power Lines Bordering the RF&PHD to the North, Between WMATA Tracks. View Northeast. (MN 1/18/2024).

EDSALL
Substation Project

Viewpoint 1

Date: 01/29/2024 **Time:** 9:24 am **Viewing Direction:** Northeast

1 Viewpoint Location — Transmission Line

Dominion Energy®

EXISTING CONDITIONS

PROPOSED CONDITIONS

Photo simulations are for discussion purposes only. Final design is subject to change pending public, engineering, and regulatory review.

EDSALL
Substation Project

Viewpoint 2

Date: 01/29/2024 **Time:** 10:04 am **Viewing Direction:** West

2 Viewpoint Location — Transmission Line

Dominion Energy®

94

EXISTING CONDITIONS

PROPOSED CONDITIONS

Photo simulations are for discussion purposes only. Final design is subject to change pending public, engineering, and regulatory review.

II. DESCRIPTION OF THE PROPOSED PROJECT

C. Describe and furnish plan drawings of all new substations, switching stations, and other ground facilities associated with the proposed project. Include size, acreage, and bus configurations. Describe substation expansion capability and plans. Provide one-line diagrams for each.

Response: The proposed Project requires construction of the new 230-34.5 kV Edsall Substation, as well as substation-related work at the Company's existing Van Dorn Substation, in Fairfax County, Virginia, as follows.

Edsall Substation

The proposed Edsall Substation will be located on property to be obtained by the Company. The proposed Edsall Substation initially will be constructed with four 84 MVA 230-34.5 kV transformers and a 230 kV ring bus with a four circuit breaker configuration, built to 4000A standards. In total, it will be designed to accommodate future growth in the area with one additional 230-34.5 kV transformer and up to sixteen 34.5 kV distribution circuits. The total area of the Edsall Substation is approximately 5.0 acres.

The one-line and general arrangement diagrams for the proposed Edsall Substation are provided as Attachment II.C.1 and Attachment II.C.2, respectively.

Van Dorn Substation

The substation-related work at the existing Van Dorn Substation is necessary in order to extend existing Lines #210 and #243 approximately 0.9 mile starting from the eastern side of the Van Dorn Substation and terminating at the proposed Edsall Substation. Specifically, at the existing Van Dorn Substation, the Project requires the removal of an existing tie breaker (210T243) and two single circuit lattice structures, which will be replaced with two 230 kV single circuit backbone structures. The Project also requires protection upgrades at the Company's existing Van Dorn Substation. All of the substation-related work required by the Project will be completed within the Company's existing Van Dorn Substation.

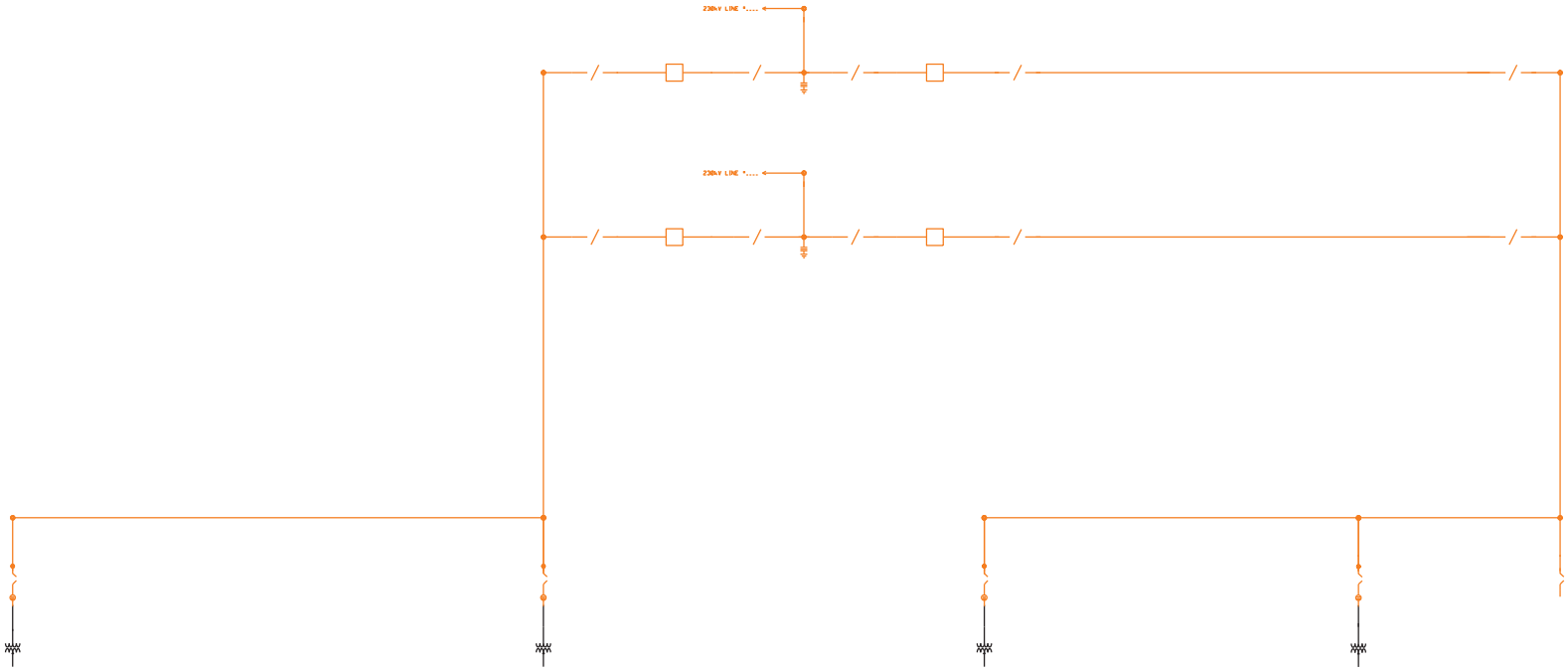
Other Minor Substation-Related Work

In addition to the substation-related work described above, the Company will perform relay resets at the existing Hayfield and Ox Substations.

While this work is required in association with the Project, it is not a component of the Project as defined in Section I.A, and the costs associated with this minor substation-related work are not included in the total Project costs. The costs associated with this minor substation-related work are provided below, for reference purposes only.

Other Minor Substation-Related Costs
(Millions (approximate))

Substation	Total
Hayfield	$0.02
Ox	$0.02



97

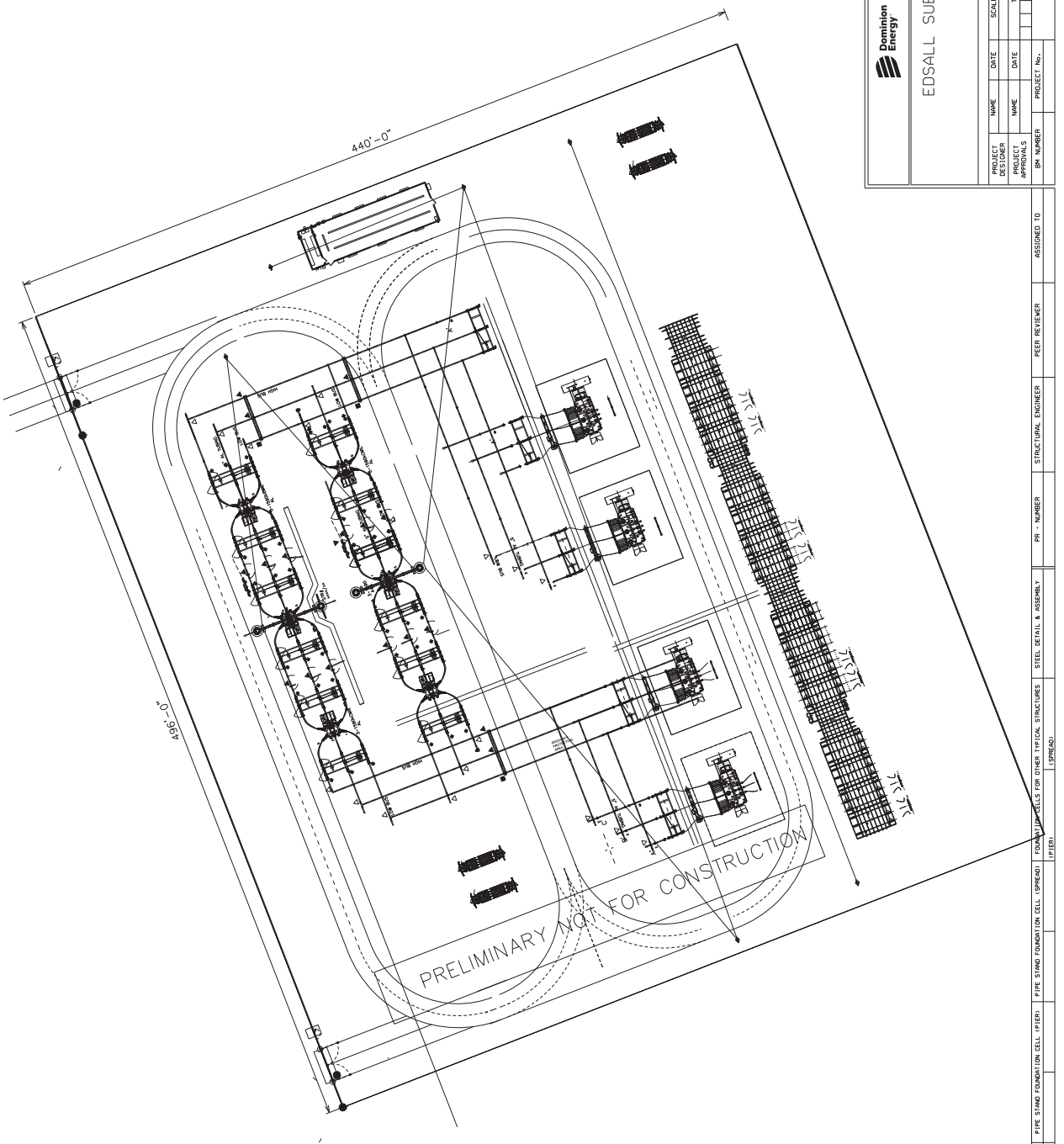
Attachment II.C.1

PRELIMINARY NOT FOR CONSTRUCTION

Dominion Energy

Drawn By	Date	Substation	EDSALL SUB
Approval	Date	Drawing No.	II.C.1

(98) DEMARCATION INDICATOR - SEE SUB.OL. (99) DEMARCATION INDICATOR - SEE TLIN.OL. (98) DEMARCATION INDICATOR - SEE DIST.OL. (97) DEMARCATION INDICATOR - SEE CUST.DOC.



EDSALL SUB

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

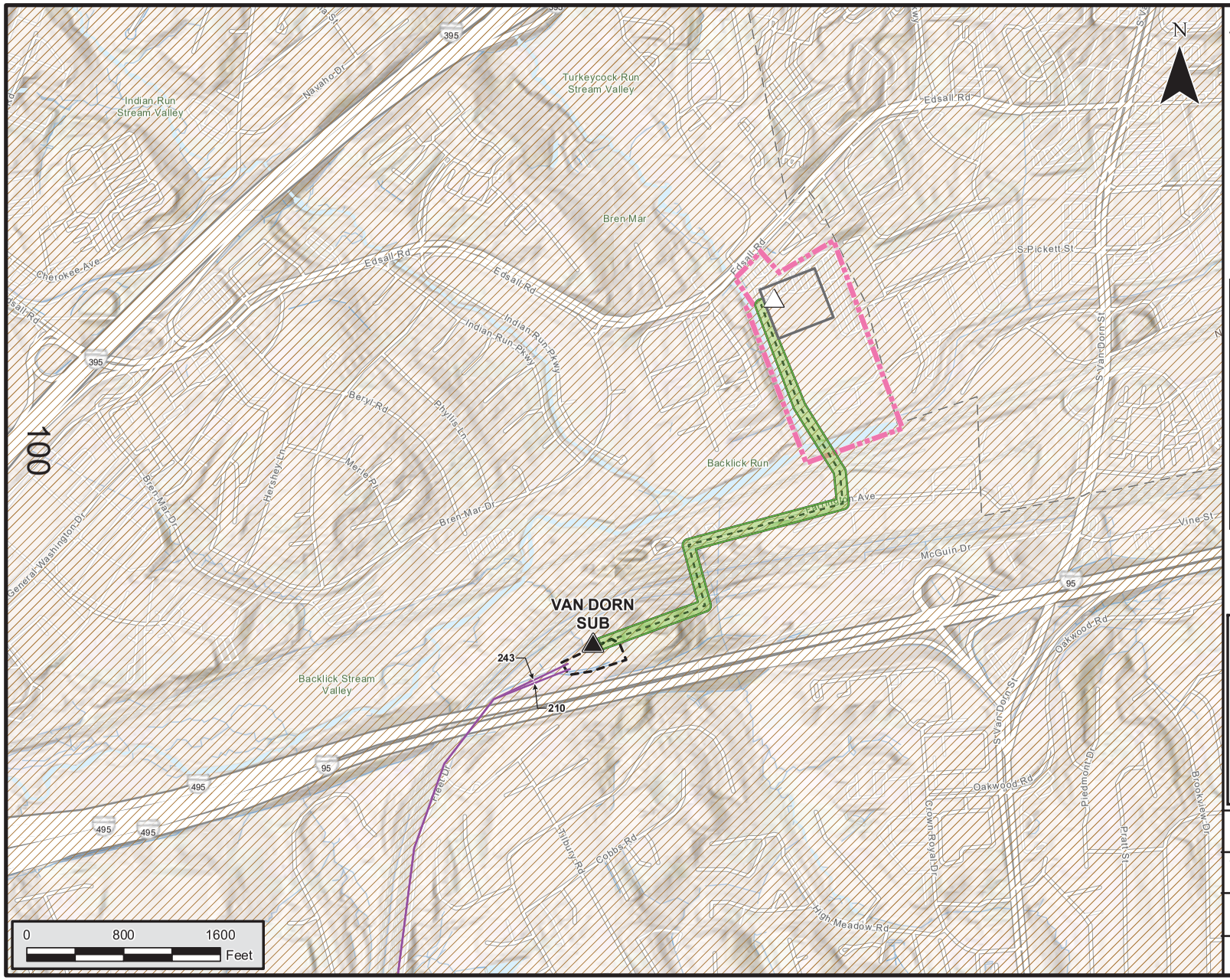
A. Describe the character of the area that will be traversed by this line, including land use, wetlands, etc. Provide the number of dwellings within 500 feet, 250 feet and 100 feet of the centerline, and within the ROW for each route considered. Provide the estimated amount of farmland and forestland within the ROW that the proposed project would impact.

Response: The Proposed Route of the Edsall Lines is approximately 0.9 mile in length and is located entirely within Fairfax County, extending east and northeast from the existing Van Dorn Substation to the proposed Edsall Substation. The Proposed Route crosses mostly developed land, including existing industrial and commercial developments and railroad corridors. All parcels crossed by the Proposed Route are zoned as Industrial (I-5 General Industrial Districts or I-6 Heavy Industrial Districts) or Residential (R-1/R-3 Residential Districts); however, the zoned residential parcels along the route are currently occupied by railroad facilities and the Van Dorn Substation and do not include any dwellings. In addition to industrial uses, land uses along the Proposed Route include utility areas, one transportation easement associated with Farrington Avenue, and open lands that are currently utilized for storage of industrial equipment and materials (*e.g.*, vehicles and landscaping materials). A riverine system is identified where the Proposed Route crosses Backlick Run, and the route passes through and adjacent to a number of forest fragments along the edges of the industrial parcels.

According to Fairfax County parcel data, zoning data, and aerial photo analysis, there are 113 dwellings (including one condominium building consisting of multiple residences) and 19 non-residential building (*e.g.*, industrial warehouses, trailers, and commercial/retail facilities) located within 500 feet of the proposed centerline, and 29 dwellings located within 250 feet of the proposed centerline of the Proposed Route. There are no dwellings within 100 feet of the centerline or within the right-of-way of the Proposed Route.

There is no prime farmland or farmland of statewide importance within the Project right-of-way, nor are there any forestal or agricultural districts within or adjacent to the Proposed Route. See Attachment III.A.1. Though there is existing tree cover within the Project right-of-way, Fairfax County does not identify any forestlands as being present within the proposed right-of-way. See Section 2.L of the DEQ Supplement for the estimated amount of existing tree cover within the right-of-way that the Proposed Route would impact.

For additional description of the character of the area that will be traversed by the Proposed Route and the related impacts, see the DEQ Supplement, specifically as to land use (Sections 2.I and 2.L), wetlands (Section 2.D), forests (Section 2.L), agricultural lands (Section 2.L), historic resources (Section 2.I), and wildlife (Sections 2.G and 2.K).



ATTACHMENT
III.A.1

TITLE:

PRIME FARMLAND AND FARMLAND OF STATEWIDE IMPORTANCE

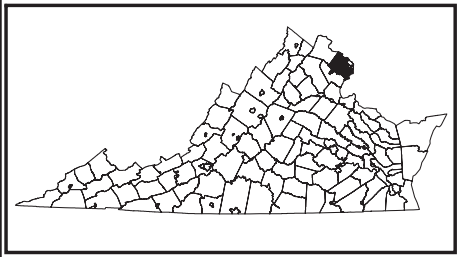
PROJECT:

230 KV LINES #210 AND #243 EXTENSION AND EDSALL SUBSTATION

LEGEND

- PROPOSED EDSALL SUBSTATION
- EXISTING SUBSTATIONS
- PROPOSED SUBSTATION BOUNDARY
- PROPOSED ROUTE CENTERLINE AND RIGHT-OF-WAY
- NOT PRIME FARLAND
- PRIME FARMLAND
- FARMLAND OF STATEWIDE IMPORTANCE
- EXISTING SUBSTATION BOUNDARY
- CUSTOMER DATA CENTER CAMPUS
- EXISTING DOMINION TRANSMISSION LINES

KEY PLAN



PROJECT NUMBER: 50163606	
SCALE: 1"= 800 FEET	DATE: 4/24/2024
PROJECT MANAGER: TL	
DRAWN BY: MGH	Dewberry

Attachment III.A.1

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

B. Describe any public meetings the Applicant has had with neighborhood associations and/or officials of local, state or federal governments that would have an interest or responsibility with respect to the affected area or areas.

Response: Stakeholder Engagement

At Dominion Energy Virginia, the Company believes stakeholder engagement is critical to the success of this Project. The data center industry has grown substantially in northern Virginia in recent years, and the Company has made significant investments in new infrastructure to meet the growing demand for electricity in a concentrated area. The proposed Project is designed to provide requested service to a Customer's planned data center development, as well as other future customers in the Van Dorn Load Area, in compliance with mandatory NERC Reliability Standards.

The proposed Project is located in an area of Fairfax County that is partially industrial, with warehouses for storage, large truck traffic, and a landscaping business. The Proposed Route (after it crosses Backlick Run) and Edsall Substation are close to a residential community and outreach to the community about this Project has been important to providing fact-based information and obtaining feedback. Feedback is critical as the Company considers all potential benefits and impacts of the Project, including connecting the new substation in a populated area in Fairfax County.

Dominion Energy Virginia has and will continue to engage with a broad range of stakeholders that have interests across the Project area. Stakeholder engagement includes both a statewide and regional approach in the following segments: cultural and historic resource stewardship organizations; the business community and workforce organizations; the environmental community; and organizations that represent the needs of underrepresented communities. The Company has also met with members of the Fairfax County Board of Supervisors, Fairfax Planning Commission, and the Alexandria City Council.

In February 2024, the Company launched a website dedicated to the Project: www.dominionenergy.com/Edsall.[23] The website includes a description of the proposed Project, an explanation of the need, routing options, GeoVoice (an interactive mapping tool), photo renderings and simulations, and information on the Commission review process. The Company made the virtual open house materials about the Project available to the public in English and Spanish.

[23] The open house materials for the Project are also available on the Company's website for transmission projects in Northern Virginia. *See* www.dominionenergy.com/NOVA.

Beginning in March 2024, the Company commenced coordinated community and stakeholder engagement with Fairfax County regarding the proposed Project, as follows.

- On March 20, 2024, a save-the-date Project announcement postcard was mailed to nearly 500 residences and businesses in the vicinity of the Project. The postcard included Project information and details regarding the April 9, 2024 in-person community meeting.

- On April 9, 2024, the Company's Project team hosted an open house at Bren Mar Park Elementary School in Springfield, Virginia, to inform stakeholders about the proposed Edsall Lines and Edsall Substation. Notably,

    - The open house was conducted in an exhibition format, and the layout included several Project specific stations, such as maps of the Proposed Route, rejected routes, study areas, photo simulations, and related informational boards. These informational boards are also available at www.dominionenergy.com/Edsall.

    - A check-in table was placed at the main entrance, where Project team members greeted attendees and tracked attendance using Jambo, a stakeholder relationship management software. A feedback table was set up to collect comments from open house attendees via paper comment forms and a QR code that directed users to the Fairfax County Transmission Projects GeoVoice webpage available at www.dominionenergy.com/Edsall.

    - An environmental justice screening (discussed further below) indicated that a significant population of Spanish speakers reside in the Project area. Accordingly, translation services and some printed materials, including comment forms, were translated to accommodate attendees whose primary language was Spanish.

    - Approximately 132 individuals attended the open house event.

- The Edsall campaign ran on Facebook and Google through May 1, 2024. These campaigns were targeted at English and Spanish speaking customers over the age of 25 who resided in and around the Project area in Fairfax County, Virginia.

- Two print advertisements ran in the following Fairfax County publications: the Fairfax County Times on April 5, 2024, and the Fairfax Gazette Leader on April 4, 2024. Both print advertisements were published in English.

See Attachment III.B.1, which includes the Project's newspaper advertisements, the digital advertisements, and the digital campaign results.

As noted above, the Company deployed an online tool called GeoVoice at www.dominionenergy.com/Edsall, which allows users to review the potential transmission routing options and to provide location-based comments to share insights. GeoVoice was first populated with the Proposed Route for the Project on April 3, 2024, and was subsequently updated with typical proposed structure drawings and photo simulations, which are included as Attachment III.B.2. Users do not need to register before viewing the routing details. GeoVoice allows stakeholders to provide their comments (after registering prior to routes being released) to help inform the routing process.

Environmental Justice

As set forth in Section 3.8 of the Routing Study, the Company researched the demographics of the surrounding communities using census data from the U.S. Census Bureau's American Community Survey 5-Year Estimates (2018-2022). This information revealed that 51 Census Block Groups ("CBGs") are located within one mile of the Proposed Route, inclusive of the proposed Edsall Substation. A review of census data for several demographic characteristics identified populations within the Project study area that meet the Virginia Environmental Justice Act ("VEJA") thresholds for Environmental Justice Communities ("EJ Communities") (Va. Code §§ 2.2-234, 2.2-235).

Of the 51 CBGs within the Project study area, three are crossed by the Proposed Route. One of the three meets VEJA definitions for a community of people of color and a low-income community. All three of the CBGs overlapping the Proposed Route have a greater percentage of linguistically isolated households than the state average.

As set forth above in this Section III.B, the Company has engaged extensively all communities within the Project study area, including people in the EJ Community CBGs discussed herein. This engagement has included accommodations for Spanish speakers at the community meeting, and translations of Project information into other languages. The Company believes that 1) its work has allowed for the fair treatment and meaningful involvement of all interested people, regardless of race, color, national origin, income, faith, or disability, and 2) the Project's Proposed Route minimizes potential impacts to EJ Communities and other populations, and will not result in a disproportionate impact on EJ Communities.

In addition to its evaluation of impacts, the Company has and will continue to engage the EJ Communities and others affected by the Project in a manner that allows them to meaningfully participate in the Project development and approval process so that the Company can take their views and input into consideration. See Attachment III.B.3 for a copy of the Company's Environmental Justice Policy.

DE Transmission

Edsall

Report Date: April 3, 2024 – May 1, 2024

charles ryan associates

Dominion Energy

DET | Edsall | 4/3/24 – 5/1/24 | Overall Report

The Edsall campaign ran on Facebook and Google through 5/1/24. These campaigns were targeted at English and Spanish speaking customers over the age of 25 who resided in and around the project areas in Fairfax County, Virginia.

1,125,813 impressions
of ads were delivered to target audiences.

10,826 clicks
have taken audiences to the landing pages.

254,233 video views with an average 41.54% VCR.

0.96% CTR
Most CTRs near or above benchmarks.

94,544 ad engagements
such as reactions, likes, comments, shares and saves have been made on the ads.

Notable Creative

The Spanish DET Edsall Post-Event Facebook ad had the highest CTR at 2.18%, which is 142% higher than the 0.90% Facebook benchmark.

Notable Insights

- Facebook ads had a CTR of 1.77% and 42,300 completed video views for a 47.67% VCR.
- Google Video ads had 63,302 completed video views for a 38.25% VCR, which is 155% above the 15% Google VCR benchmark.
- Ads engaged with males and females aged 25-34 on Google Video and males 25-44 on Facebook.

Facebook CTR Benchmark: 0.90% | Twitter CTR Benchmark: 1.11% | Google Search CTR Benchmark: 3.17% | Google Display CTR Benchmark: 0.50% | Google Video Benchmark: 15%| Nextdoor CTR Benchmark: 0.15%

DET | Edsall | 4/3/24 – 4/9/24 | English Pre-Event Report

The Edsall campaign ran on Facebook and Google through 4/9/24. These campaigns were targeted at English-speaking customers over the age of 25 who resided in and around the project areas in Fairfax County, Virginia.

396,986 impressions
of ads were delivered to target audiences.

3,347 clicks
have taken audiences to the landing pages.

78,286 video views with an average 39.94% VCR.

0.84% CTR
Most CTRs near or above benchmarks.

27,630 ad engagements
such as reactions, likes, comments, shares and saves have been made on the ads.

Notable Creative

The DET Edsall Pre-Event Facebook ad had the highest CTR at 1.42%, which is 58% higher than the 0.90% Facebook benchmark.

Notable Insights

- Facebook ads had a CTR of 1.38% and 12,055 completed video views for a 46.48% VCR.
- Google Video ads had 19,209 completed video views for a 36.69% VCR, which is 144% above the 15% Google VCR benchmark.
- Ads engaged with males aged 25-34 on Google Video and males 35-44 on Facebook.

Facebook CTR Benchmark: 0.90% | Twitter CTR Benchmark: 1.11% | Google Search CTR Benchmark: 3.17% | Google Display CTR Benchmark: 0.50% | Google Video Benchmark: 15%| Nextdoor CTR Benchmark: 0.15%

DET | Edsall | 4/18/24 – 5/1/24 | English Post-Event Report

The Edsall campaign ran on Facebook and Google through 5/1/24. These campaigns were targeted at English-speaking customers over the age of 25 who resided in and around the project areas in Fairfax County, Virginia.

435,828 impressions
of ads were delivered to target audiences.

4,009 clicks
have taken audiences to the landing pages.

95,328 video views with an average 38.76% VCR.

0.92% CTR
Most CTRs near or above benchmarks.

33,187 ad engagements
such as reactions, likes, comments, shares and saves have been made on the ads.

Notable Creative

The DET Edsall Post-Event Facebook ad had the highest CTR at 2.60%, which is 189% higher than the 0.90% Facebook benchmark.

Notable Insights

- Facebook ads had a CTR of 2.60% and 14,619 completed video views for a 46.93% VCR.
- Google Video ads had 22,332 completed video views for a 34.80% VCR, which is 132% above the 15% Google VCR benchmark.
- Ads engaged with males aged 25-34 on Google Video and males 35-44 on Facebook.

Facebook CTR Benchmark: 0.90% | Twitter CTR Benchmark: 1.11% | Google Search CTR Benchmark: 3.17% | Google Display CTR Benchmark: 0.50% | Google Video Benchmark: 15%| Nextdoor CTR Benchmark: 0.15%

DET | Edsall| 4/3/24 – 4/9/24 | Spanish Pre-Event Report

The Edsall campaign ran on Facebook and Google through 4/9/24. These campaigns were targeted at Spanish-speaking customers over the age of 25 who resided in and around the project areas in Fairfax County, Virginia.

149,241 impressions
of ads were delivered to target audiences.

1,506 clicks
have taken audiences to the landing pages.

23,752 video views with an average 43.86% VCR.

1.01% CTR
Most CTRs near or above benchmarks.

15,087 ad engagements
such as reactions, likes, comments, shares and saves have been made on the ads.

Notable Creative

The Spanish DET Edsall Pre-Event Facebook ad had the highest CTR at 1.35%, which is 50% higher than the 0.90% Facebook benchmark.

Notable Insights

- Facebook ads had a CTR of 1.23% and 6,672 completed video views for a 47.16% VCR.
- Google Video ads had 3,746 completed video views for a 39.01% VCR, which is 160% above the 15% Google VCR benchmark.
- Ads engaged with females aged 25-34 on Google Video and males 25-44 on Facebook.

Facebook CTR Benchmark: 0.90% | Twitter CTR Benchmark: 1.11% | Google Search CTR Benchmark: 3.17% | Google Display CTR Benchmark: 0.50% | Google Video Benchmark: 15%| Nextdoor CTR Benchmark: 0.15%

DET | Edsall | 4/18/24 – 5/1/24 | Spanish Post-Event Report

The Edsall campaign ran on Facebook and Google through 5/1/24. These campaigns were targeted at Spanish-speaking customers over the age of 25 who resided in and around the project areas in Fairfax County, Virginia.

143,758 impressions
of ads were delivered to target audiences.

1,964 clicks
have taken audiences to the landing pages.

56,867 video views with an average 47.42% VCR.

1.37% CTR
Most CTRs near or above benchmarks.

18,640 ad engagements
such as reactions, likes, comments, shares and saves have been made on the ads.

Notable Creative

The Spanish DET Edsall Post-Event Facebook ad had the highest CTR at 2.18%, which is 142% higher than the 0.90% Facebook benchmark.

Notable Insights

- Facebook ads had a CTR of 2.18% and 8,954 completed video views for a 51.17% VCR.
- Google Video ads had 18,015 completed video views for a 45.76% VCR, which is 205% above the 15% Google VCR benchmark.
- Ads engaged with females aged 25-34 on Google Display and males 25-44 on Facebook.

Facebook CTR Benchmark: 0.90% | Twitter CTR Benchmark: 1.11% | Google Search CTR Benchmark: 3.17% | Google Display CTR Benchmark: 0.50% | Google Video Benchmark: 15%| Nextdoor CTR Benchmark: 0.15%

Summary:

- All Facebook campaigns were over the 0.90% Facebook benchmark and all Google Video campaigns were over the 15% VCR benchmark.
- Spanish campaigns performed well across both Facebook and Google Video campaigns. All Spanish campaigns exceeded the platform benchmarks.
- The Spanish Edsall Post-Event Facebook ad was the highest-performing social ad with a CTR of 2.18%.
- Males and females aged 25-34 were the top engagers on Google Video campaigns. Males ages 25-44 were the top engagers on Facebook.
- Video ads performed well in this campaign with 254,233 video views. There were 105,602 completed video views across the platforms for a total VCR of 41.54%.

Facebook CTR Benchmark: 0.90% | Twitter CTR Benchmark: 1.11% | Google Search CTR Benchmark: 3.17% | Google Display CTR Benchmark: 0.50% | Google Video Benchmark: 15%| Nextdoor CTR Benchmark: 0.15%

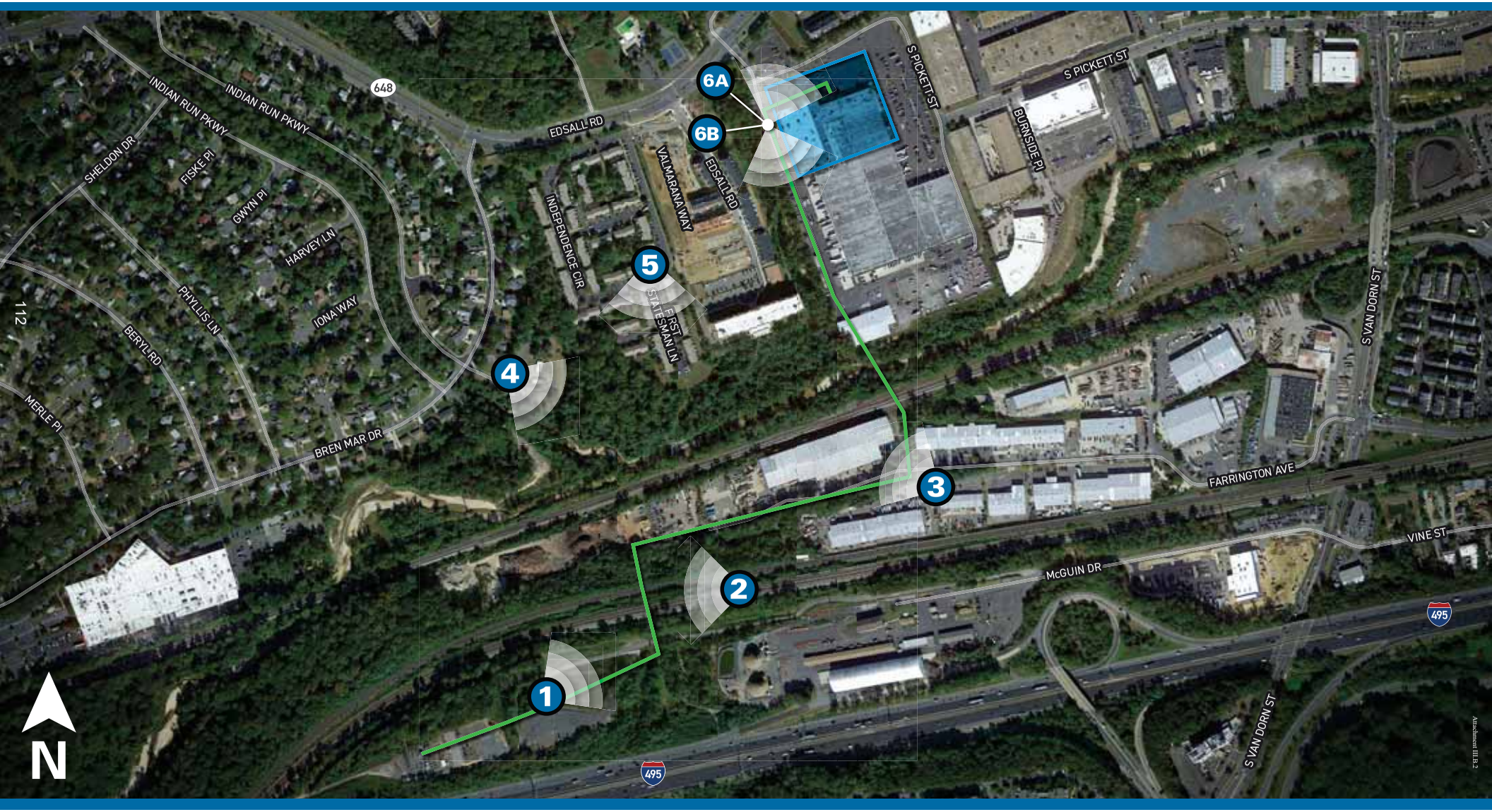

What matters to you matters to us
We're making improvements to ensure electric reliability in your area, and we want your input. Attend a community meeting about an upcoming project to learn more and join the discussion.
Tuesday, April 9, 5:30-7:30 p.m.
Bren Mar Park Elementary School
6344 Beryl Road
Alexandria, VA 22312
Learn more at DominionEnergy.com/edsall
Use your phone's camera or QR reader app to visit the project page directly.
Dominion Energy®
Powering Your Every Day.℠

EDSALL
Substation Project

Photo Location Map

1 Viewpoint Location — Transmission Line — Substation Footprint

Dominion Energy®



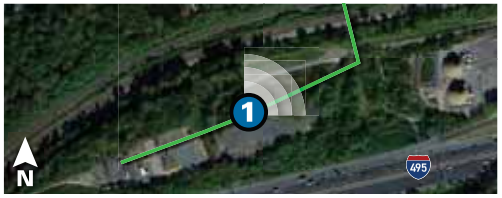
Attachment III.B.2

EDSALL
Substation Project

Viewpoint 1

Date: 01/29/2024 **Time:** 9:24 am **Viewing Direction:** Northeast

1 Viewpoint Location — Transmission Line



Dominion Energy®

EXISTING CONDITIONS

PROPOSED CONDITIONS

Photo simulations are for discussion purposes only. Final design is subject to change pending public, engineering, and regulatory review.

EDSALL
Substation Project

Viewpoint 2

Date: 01/29/2024 **Time:** 10:04 am **Viewing Direction:** West

2 Viewpoint Location — Transmission Line

Dominion Energy®

EXISTING CONDITIONS

PROPOSED CONDITIONS

Photo simulations are for discussion purposes only. Final design is subject to change pending public, engineering, and regulatory review.

EDSALL
Substation Project

Viewpoint 3

Date: 01/29/2024 **Time:** 10:27 am **Viewing Direction:** Northwest

3 Viewpoint Location — Transmission Line

Dominion Energy®

EXISTING CONDITIONS

PROPOSED CONDITIONS

Photo simulations are for discussion purposes only. Final design is subject to change pending public, engineering, and regulatory review.

EDSALL
Substation Project

Viewpoint 4

Date: 01/29/2024 **Time:** 12:36 pm **Viewing Direction:** Southeast

4 Viewpoint Location — Transmission Line

Dominion Energy®

EXISTING CONDITIONS

PROPOSED CONDITIONS

Photo simulations are for discussion purposes only. Final design is subject to change pending public, engineering, and regulatory review.

EDSALL
Substation Project

Viewpoint 4

Date: 01/29/2024 **Time:** 12:36 pm **Viewing Direction:** Southeast

4 Viewpoint Location — Transmission Line

Dominion Energy®

EXISTING CONDITIONS

PROPOSED CONDITIONS | OVERLAY

Objects displayed in yellow will be fully or partially obscured by terrain and vegetation.

Photo simulations are for discussion purposes only. Final design is subject to change pending public, engineering, and regulatory review.

EDSALL
Substation Project

Viewpoint 5

Date: 01/29/2024 **Time:** 11:29 am **Viewing Direction:** South

5 Viewpoint Location — Transmission Line

Dominion Energy®

EXISTING CONDITIONS

PROPOSED CONDITIONS

Photo simulations are for discussion purposes only. Final design is subject to change pending public, engineering, and regulatory review.

EDSALL
Substation Project

Viewpoint 5

Date: 01/29/2024 **Time:** 11:29 am **Viewing Direction:** South

5 Viewpoint Location — Transmission Line

Dominion Energy®

EXISTING CONDITIONS

PROPOSED CONDITIONS OVERLAY

Objects displayed in yellow will be fully or partially obscured by terrain and vegetation.

Photo simulations are for discussion purposes only. Final design is subject to change pending public, engineering, and regulatory review.

EDSALL
Substation Project

Viewpoint 6A

Date: 01/29/2024 **Time:** 11:17 am **Viewing Direction:** Northeast

6A Viewpoint Location — Transmission Line — Substation Footprint

Dominion Energy®

EXISTING CONDITIONS

PROPOSED CONDITIONS

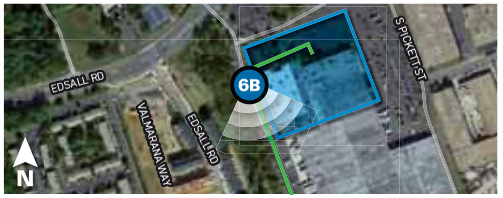
Photo simulations are for discussion purposes only. Final design is subject to change pending public, engineering, and regulatory review.

EDSALL
Substation Project

Viewpoint 6B

Date: 01/29/2024 **Time:** 11:19 am **Viewing Direction:** South

6B Viewpoint Location — Transmission Line — Substation Footprint



Dominion Energy®

EXISTING CONDITIONS

PROPOSED CONDITIONS

Photo simulations are for discussion purposes only. Final design is subject to change pending public, engineering, and regulatory review.

Environmental Justice: Ongoing Commitment to Our Communities

At Dominion Energy, we are committed to providing reliable, affordable, clean energy in accordance with our values of safety, ethics, excellence, embrace change and team work. This includes listening to and learning all we can from the communities we are privileged to serve.

Our values also recognize that environmental justice considerations must be part of our everyday decisions, community outreach and evaluations as we move forward with projects to modernize the generation and delivery of energy.

To that end, communities should have a meaningful voice in our planning and development process, regardless of race, color, national origin, or income. Our neighbors should have early and continuing opportunities to work with us. We pledge to undertake collaborative efforts to work to resolve issues. We will advance purposeful inclusion to ensure a diversity of views in our public engagement processes.

Dominion Energy will be guided in meeting environmental justice expectations of fair treatment and sincere involvement by being inclusive, understanding, dedicated to finding solutions, and effectively communicating with our customers and our neighbors. We pledge to be a positive catalyst in our communities.

November 2018

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

C. Detail the nature, location, and ownership of each building that would have to be demolished or relocated if the project is built as proposed.

Response: The Company did not identify any buildings that would have to be demolished to construct the proposed Project. However, there are two non-residential trailers that will need to be relocated as part of the Project. The Company has communicated with the property owners of the two trailers and does not anticipate issues with moving them out of the Proposed Route right-of-way.

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

D. Identify existing physical facilities that the line will parallel, if any, such as existing transmission lines, railroad tracks, highways, pipelines, etc. Describe the current use and physical appearance and characteristics of the existing ROW that would be paralleled, as well as the length of time the transmission ROW has been in use.

Response: The Proposed Route will parallel the western end of Farrington Avenue, which is a small two-lane road passing through an industrial complex. Significant paved and unpaved industrial areas surround Farrington Avenue along the Proposed Route. The northern end of the Proposed Route near the proposed Edsall Substation will parallel existing commercial/industrial buildings as well as a small access road. It is anticipated that this access roadway and adjacent buildings will be eliminated as part of the Customer's industrial redevelopment of the Plaza 500 commercial center. Specifically, the existing business development will be demolished, and the Customer's planned data center development will be constructed on this parcel. No other existing facilities are paralleled by the Proposed Route.

The Proposed Route crosses three existing railroad corridors at roughly perpendicular angles. The first is a three-track railroad corridor running east-to-west owned by the VPRA. The second is a two-track railroad corridor running east-to-west immediately north of the VPRA corridor owned by WMATA. The third is a two-track railroad corridor with two additional auxiliary tracks owned by Norfolk Southern Railway that the Proposed Route crosses immediately south of its crossing of Backlick Run. A gas line also runs parallel to the VPRA corridor.

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

E. Indicate whether the Applicant has investigated land use plans in the areas of the proposed route and indicate how the building of the proposed line would affect any proposed land use.

Response: The Fairfax County Comprehensive Plan[24] ("Comprehensive Plan") was reviewed to evaluate the potential effect the Project could have on future development. The Comprehensive Plan does not explicitly address electric transmission lines within its policies and strategies, nor do the recommendations specific to the planning districts that the Proposed Route fall within address electric transmission lines in particular. However, a review of the recommendations for the planning areas, planning districts, and zoning designations overlapping with the Proposed Route did not identify any stipulations to which the Proposed Route would be contrary. Much of the Project area is intended to remain industrial in use, and the Project would be consistent with the existing and future industrial land use.

In addition to reviewing the Comprehensive Plan, the Company consulted with the FCPA and property managers along the considered routes. The purpose of the consultations was to discuss the Project and determine if there were any constraints present that would conflict with existing or proposed land uses.

Based on these discussions, no conflicting land uses were identified. The FCPA indicated that it would not support any routes that would be located within Backlick Run Park. See Attachment II.A.9.a. The Proposed Route mitigates impacts by avoiding Backlick Run Park entirely. The potential for conflicting land uses along the Proposed Route was evaluated through property manager consultations as well as the Company's review of publicly available site plan and legislative application submissions to Fairfax County. Land use plans crossed by the Proposed Route were investigated by the Company and studied for potential effect and considered as part of the route selection process. Potential impacts to proposed land uses are summarized below. Potential visual impacts to sensitive visual resources are discussed in Section 4.3 of the Routing Study. See Sections 3.1.5 and 4.1.3 of the Routing Study for additional discussion.

The Proposed Route passes through dense, existing industrial developments and transportation corridors, making the potential for future development low within or adjacent to the proposed right-of-way. The Customer's planned data center development is the only foreseeable future development identified in the Project study area. The Company has coordinated with the Customer to avoid proposed buildings and collocate with future utility easement dedications within the proposed redevelopment.

Finally, review of publicly available information (including the Comprehensive

[24] *See* https://www.fairfaxcounty.gov/planning-development/fairfax-county-comprehensive-plan.

Plan) was completed to determine the impact of the Project routes on future road projects. There are no future road projects that would be affected by the Proposed Route.

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

F. Government Bodies

1. Indicate if the Applicant determined from the governing bodies of each county, city and town in which the proposed facilities will be located whether those bodies have designated the important farmlands within their jurisdictions, as required by § 3.2-205 B of the Code.

2. If so, and if any portion of the proposed facilities will be located on any such important farmland:

a. Include maps and other evidence showing the nature and extent of the impact on such farmlands;

b. Describe what alternatives exist to locating the proposed facilities on the affected farmlands, and why those alternatives are not suitable; and

c. Describe the Applicant's proposals to minimize the impact of the facilities on the affected farmland.

Response: (1) Fairfax County designates important farmland based on the recommendations of the County's Agricultural and Forestal District Advisory Committee, which accounts for soil quality, topography, climate, agricultural product markets, farm improvements, agricultural economics, technology, and other factors in their determinations. The Company coordinated with Fairfax County Staff who concluded that the Project will not impact important farmlands.

(2) Not applicable.

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

G. Identify the following that lie within or adjacent to the proposed ROW:

1. **Any district, site, building, structure, or other object included in the National Register of Historic Places maintained by the U.S. Secretary of the Interior;**

2. **Any historic architectural, archeological, and cultural resources, such as historic landmarks, battlefields, sites, buildings, structures, districts or objects listed or determined eligible by the Virginia Department of Historic Resources ("DHR");**

3. **Any historic district designated by the governing body of any city or county;**

4. **Any state archaeological site or zone designated by the Director of the DHR, or its predecessor, and any site designated by a local archaeological commission, or similar body;**

5. **Any underwater historic assets designated by the DHR, or predecessor agency or board;**

6. **Any National Natural Landmark designated by the U.S. Secretary of the Interior;**

7. **Any area or feature included in the Virginia Registry of Natural Areas maintained by the Virginia Department of Conservation and Recreation ("DCR");**

8. **Any area accepted by the Director of the DCR for the Virginia Natural Area Preserves System;**

9. **Any conservation easement or open space easement qualifying under §§ 10.1-1009 – 1016, or §§ 10.1-1700 – 1705, of the Code (or a comparable prior or subsequent provision of the Code);**

10. **Any state scenic river;**

11. **Any lands owned by a municipality or school district; and**

12. **Any federal, state or local battlefield, park, forest, game or wildlife preserve, recreational area, or similar facility. Features, sites, and the like listed in 1 through 11 above need not be identified again.**

Response: (1) None.

(2) The RF&PHD (DHR ID 500-0001) is eligible for listing in the NRHP and is within 0.5 mile of the Proposed Route. See Section 2.I of the DEQ Supplement.

(3) The RF&PHD (DHR ID 500-0001) is eligible for listing in the NRHP and is within 0.5 mile of the Proposed Route. See Section 2.I of the DEQ Supplement.

(4) None.

(5) None.

(6) None.

(7) None.

(8) None.

(9) None.

(10) None.

(11) None.

(12) None.

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

H. List any registered aeronautical facilities (airports, helipads) where the proposed route would place a structure or conductor within the federally-defined airspace of the facilities. Advise of contacts, and results of contacts, made with appropriate officials regarding the effect on the facilities' operations.

Response: The Federal Aviation Administration ("FAA") is responsible for overseeing air transportation in the United States. The FAA manages air traffic in the United States and evaluates physical objects that may affect the safety of aeronautical operations through an obstruction evaluation. The prime objective of the FAA in conducting an obstruction evaluation is to ensure the safety of air navigation and the efficient utilization of navigable airspace by aircraft.

The Company has reviewed the FAA's website[25] to identify airports and heliports within 10.0 nautical miles of the proposed Project. Based on this review, the following FAA-restricted airports and heliports are located within 10.0 nautical miles of the Project:

- Ronald Reagan Washington National Airport, approximately 6.1 miles east-northeast of the Project;
- Davison Army Airfield, approximately 5.5 miles south-southwest of the Project;
- The Pentagon AHP Helipad, approximately 6.7 miles northeast of the Project; and
- South Capital Street Helipad, approximately 7.8 miles east-northeast of the Project.

The Company reviewed the height limitation associated with FAA-defined imaginary surveys for all runways associated with the Ronald Reagan Washington National Airport, Davison Army Airfield, and all other public or private registered airfields to determine whether any of the structure heights associated with each specific structure location would penetrate any of the relevant flight surfaces for any of the runways. Dominion Energy Virginia conducted a preliminary evaluation of the structure heights and locations using the FAA-defined Civil and Department of Defense Airport Imaginary Surfaces and applying standard Geographic Information System tools, including ESRI's ArcMap 3D and Spatial Extension software. This software was used to create and geo-reference the imaginary surfaces in space and in relationship to the transmission structures.

Of these airports, it was determined that none were in close enough proximity to potentially impact navigable airspace. See Section 2.O of the DEQ Supplement.

[25] *See* https://oeaaa.faa.gov/oeaaa/external/portal.jsp and https://adip.faa.gov/agis/public/#/public.

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

I. Advise of any scenic byways that are in close proximity to or that will be crossed by the proposed transmission line and describe what steps will be taken to mitigate any visual impacts on such byways. Describe typical mitigation techniques for other highways' crossings.

Response: No scenic byways are in close proximity to the study area for the proposed Project, and no scenic byways would be crossed by the Proposed Route. Perpendicular road crossings, which are preferred by VDOT and Fairfax County, will be utilized to the extent practicable at other road crossings to mitigate impacts.

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

J. Identify coordination with appropriate municipal, state, and federal agencies.

Response: As described in detail in Sections III.B and V.D of the Appendix, the Company solicited feedback from Fairfax County regarding the proposed Project. Below is a list of coordination that has occurred with municipal, state, and federal agencies:

- Coordination with the U.S. Army Corps of Engineers and DEQ will take place as appropriate to obtain necessary approvals for the Project.
- On April 1, 2024, Company representatives met with Fairfax County Board of Supervisor Andrews F. Jimenez to discuss the proposed Project.
- A letter dated April 9, 2024, was submitted to Fairfax County to describe the Project and request comments. See Section V.D.
- A letter was submitted to the agencies listed in Section V.C on April 9, 2024, describing the Project and requesting comment. See Attachment 2 to the DEQ Supplement.
- A Stage I Pre-Application Analysis has been prepared and was submitted to VDHR on July 25, 2024. See Attachment 2.I.1 to the DEQ Supplement.
- On March 20, 2024, the Company solicited comments via letter from several state and federally recognized Native American tribes, including:

Name	Tribe
Chief Walt "Red Hawk" Brown	Cheroenhaka (Nottoway) Indian Tribe
Mary Frances Wilkerson	Cheroenhaka (Nottoway) Indian Tribe
Chief Stephen Adkins	Chickahominy Indian Tribe
Assistant Chief Reginald Stewart	Chickahominy Indian Tribe
Chief Gerald A. Stewart	Chickahominy Indian Tribe Eastern Division
Jessica Phillips	Chickahominy Indian Tribe Eastern Division
Dana Adkins	Chickahominy Tribe – Director Natural Resources
Chief Mark Custalow	Mattaponi Tribe
Chief Diane Shields	Monacan Indian Nation
Chief Keith Anderson	Nansemond Indian Nation
Chief Lynette Allston	Nottoway Indian Tribe of Virginia
SUB: Ms. Beth Roach	Nottoway Indian Tribe of Virginia
Chief Robert Gray	Pamunkey Indian Tribe

Name	Tribe
Kendall Stevens	Pamunkey Indian Tribal Resource Office
Chief Charles (Bootsie) Bullock	Patawomeck Indian Tribe of Virginia
Chief G. Anne Richardson	Rappahannock Tribe
Assistant Chief	Rappahannock Tribe
Chief W. Frank Adams	Upper Mattaponi Indian Tribe
Leigh Mitchell	Environmental Director Upper Mattaponi Indian Tribe
Ms. Kathy Harris	Haliwa-Saponi Indian Tribe
Dr. Ogletree Richardson	Haliwa-Saponi Indian Tribe
Chief Jonathan Caudill, Jr.	Meherrin Indian Tribe
Mr. Dante Desiderio	Sappony
Chief Otis K. Martin	Sappony
Ms. Vickie Jeffries	Occaneechi Band of the Saponi Nation – Tribal Administrator
Mr. W.A. "Tony" Hayes	Occaneechi Band of the Saponi Nation
Dr. Wenonah G. Haire	Catawba Indian Nation
Ms. Elizabeth Toombs	Cherokee Nation THPO
Chief Deborah Dotson	Delaware Nation, Oklahoma
Ms. Katelyn Lucas	Delaware Nation Oklahoma THPO
Ms. Susan Bachor	Delaware Tribe of Indians
Mr. Larry Heady	Delaware Tribe of Indians THPO
Chief Brad Killscrow	Delaware Tribe of Indians
Principal Chief Richard Sneed	Eastern Band of Cherokee Indians
Mr. Russell Townsend	Eastern Band of Cherokee Indians
Paul Barton	Eastern Shawnee Tribe of Oklahoma
Chief Glenna Wallace	Eastern Shawnee Tribe of Oklahoma
Mr. Turner Hunt	Muscogee (Creek) Nation THPO

A template of the letter is included as Attachment III.J.1.

See also Sections III.B, III.K, and V.D of this Appendix, and the DEQ Supplement.

Dominion Energy Virginia
Electric Transmission
P.O. Box 26666, Richmond, VA 23261-6666
DominionEnergy.com

March 20, 2024

Edsall 230 kV Electric Transmission Line Project

Dear _____,

At Dominion Energy, we are dedicated to finding the best solution for your community's long-term energy needs. As a valued stakeholder with a vested interest in the area, we invite you to participate in the development of a less than 1-mile 230 kilovolt (kV) electric transmission line project in Fairfax County, Virginia.

This project is situated in an industrial area, near the Van Dorn exit on I-495. We are planning to build a new electric transmission line to connect our existing Van Dorn Substation with our proposed Edsall Substation. The project will provide power to a newly proposed data center development in this area.

Based on the existing infrastructure in this area, we have identified one route, with most of the work taking place on property north of I-495.

Currently, this project is in the conceptual phase. Permitting is scheduled for the beginning of 2025. Construction is scheduled to begin spring 2026 with an anticipated completion date of winter 2027.

We are seeking your input as we prepare to submit an application with the Virginia State Corporation Commission (SCC) this spring. Doing so allows us to hear any concerns you may have as we work to meet the needs of the project.

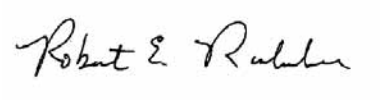
Please feel free to notify other relevant organizations that may have an interest in the project area. For reference, recipients of this letter include other county and statewide historic, cultural, and scenic organizations, and Native American Tribes.

You are invited to attend at a Community Meeting to learn more about the Edsall 230 kV Electric Transmission Project. The meeting will be on April 9, 2024, from 5:30 p.m. to 7:30 p.m. at Bren Mar Park Elementary School, 6344 Beryl Road, 22312. There will not be a formal presentation, so feel free to arrive at the community meeting anytime.

To see a project overview map and photo simulations, please visit our project website at DominionEnergy.com/Edsall.

If you would like any additional information, have questions, or would like to set up a meeting to discuss the project, please do not hesitate to contact Ken Custalow, our Tribal Liaison. He can be reached by email at ken.custalow@dominionenergy.com.

Thank you for your willingness to join us in our commitment to serving the community.
Sincerely,



Robert Richardson
Communications Consultant
The Electric Transmission Project Team
Robert.E.Richardson@DominionEnergy.com

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

K. Identify coordination with any non-governmental organizations or private citizen groups.

Response: On March 20, 2024, the Company began to solicit comments via letter from the nongovernmental organizations and private citizen groups identified below. A template of the letter is provided as Attachment III.K.1.

Name	Organization
Ms. Elizabeth S. Kostelny	Preservation Virginia
Mr. Thomas Gilmore	American Battlefield Trust
Mr. Jim Campi	American Battlefield Trust
Mr. Max Hokit	American Battlefield Trust
Mr. Steven Williams	Colonial National Historical Park
Ms. Eleanor Breen, PhD, RPA	Council of Virginia Archaeologists
Ms. Leighton Powell	Scenic Virginia
Ms. Elaine Chang	National Trust for Historic Preservation
Ms. Julie Bolthouse	Piedmont Environmental Council
Mr. John McCarthy	Piedmont Environmental Council
Dr. Cassandra Newby- Alexander, Dean	Norfolk State University
Mr. Roger Kirchen, Archaeologist	Virginia Department of Historic Resources
Ms. Adrienne Birge-Wilson	Virginia Department of Historic Resources
Mr. Dave Dutton	Dutton + Associates, LLC

Dominion Energy Virginia
Electric Transmission
P.O. Box 26666, Richmond, VA 23261-6666
DominionEnergy.com

March 20, 2024

Edsall 230 kV Electric Transmission Line Project

Dear _____,

At Dominion Energy, we are dedicated to finding the best solution for our long-term needs in the communities we serve. As a valued stakeholder with a vested interest in the community**,** we invite you to participate in the development of a less than 1-mile 230 kilovolt (kV) electric transmission line project in Fairfax County, Virginia.

This project is situated in an industrial area, near the Van Dorn exit on I-495. We are planning to build a new electric transmission line to connect our Van Dorn Substation with our proposed Edsall Substation. The project is needed to provide power to a newly proposed data center development in this area.

Based on the existing infrastructure in this area, we have identified one route, with the work taking place on property north of I-495.

Currently, this project is in the conceptual phase. Permitting is scheduled for the beginning of 2025. Construction is scheduled to begin spring 2026 with an anticipated completion date of winter 2027.

We are seeking your input as we prepare to submit an application with the Virginia State Corporation Commission (SCC) this spring. Doing so allows us to hear any concerns you may have as we work to meet the needs of the project.

Please feel free to notify other relevant organizations that may have an interest in the project area. For reference, recipients of this letter include other county and statewide historic, cultural and scenic organizations and Native American Tribes.

You are invited to attend at a Community Meeting to learn more about the Edsall 230 kV Electric Transmission Project on April 9, 2024. The meeting is between 5:30 p.m. and 7:30 p.m. at Bren Mar Park Elementary School, 6344 Beryl Road, 22312. There will not be a formal presentation, so please arrive at the community meeting anytime.

To see a project overview map and photo simulations, please visit our webpage at DominionEnergy.com/Edsall.

If you would like any additional information, have questions, or would like to set up a meeting to discuss the project, please contact me by sending an email to Robert.E.Richardson@dominionenergy.com or calling 888-291-0190 or please visit our webpage at DominionEnergy.com/Edsall

Thank you for your willingness to join us in our commitment to serving the community.

Sincerely,

Robert E. Richardson

Rob Richardson
Communications Consultant
The Electric Transmission Project Team

III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

L. Identify any environmental permits or special permissions anticipated to be needed.

Response: The permits or special permissions that are likely to be required for the proposed Project are listed below.

Potential Permits

Activity	Potential Permit	Agency/Organization
Impacts to wetlands and other waters of the U.S.	Nationwide Permit 18 or 57	U.S. Army Corps of Engineers
Aerial crossing over state-owned bottomlands	Subaqueous Habitat Management Permit (VGP5)	Virginia Marine Resource Commission
Impacts to state surface waters	Virginia Water Protection Permit	Virginia Department of Environmental Quality
Discharge of stormwater from construction	Construction General Permit	Virginia Department of Environmental Quality
Airspace obstruction evaluation	FAA 7460-1	Federal Aviation Administration
Work within WMATA property	WMATA License Agreement	Washington Metropolitan Area Transportation Authority
Aerial crossing of rail corridor	License Agreement	Norfolk Southern Railway
Aerial crossing of rail corridor	License Agreement	Virginia Passenger Rail Authority

IV. HEALTH ASPECTS OF ELECTROMAGNETIC FIELDS ("EMF")

A. Provide the calculated maximum electric and magnetic field levels that are expected to occur at the edge of the ROW. If the new transmission line is to be constructed on an existing electric transmission line ROW, provide the present levels as well as the maximum levels calculated at the edge of ROW after the new line is operational.

Response: Public exposure to magnetic fields associated with high voltage power lines is best estimated by field levels calculated at annual average loading. For any day of the year, the EMF levels associated with average conditions provide the best estimate of potential exposure. Maximum (peak) values are less relevant as they may occur for only a few minutes or hours each year.

This section describes the levels of EMF associated with the proposed transmission lines. EMF levels are provided for future (2028) annual average and maximum (peak) loading conditions. The EMF values provided in this section were calculated based on the Company's proposed line characteristics of a typical span in both average and peak loading conditions.

Proposed Project – Projected average loading in 2028

EMF levels were calculated for the proposed Project at the ***projected average*** load condition (178 amps for Line #210, 670 amps for Line #243) and at an operating voltage of 241.5 kV when supported on the proposed Project structures – see Attachment II.A.5.a.

These field levels were calculated at mid-span where the conductors are closest to the ground and the conductors are at a projected average load operating temperature.

Projected Average Loading				
Attachment	Left Edge Looking Towards Edsall		Right Edge Looking Towards Edsall	
	Electric Field (kV/m)	Magnetic Field (mG)	Electric Field (kV/m)	Magnetic Field (mG)
II.A.5.a	0.956	24.965	0.965	23.759

Proposed Project – Projected peak loading in 2028

EMF levels were calculated for the proposed Project at the ***projected peak*** load condition (296 amps for Line #210, 1117 amps for Line #243) and at an operating

voltage of 241.5 kV when supported on the proposed Project structures – see Attachment II.A.5.a.

These field levels were calculated at mid-span where the conductors are closest to the ground and the conductors are at a projected peak load operating temperature.

Projected Peak Loading				
Attachment	**Left Edge Looking Towards Edsall**		**Right Edge Looking Towards Edsall**	
	Electric Field (kV/m)	Magnetic Field (mG)	Electric Field (kV/m)	Magnetic Field (mG)
II.A.5.a	0.956	41.611	0.965	39.582

IV. HEALTH ASPECTS OF ELECTROMAGNETIC FIELDS ("EMF")

B. If the Applicant is of the opinion that no significant health effects will result from the construction and operation of the line, describe in detail the reasons for that opinion and provide references or citations to supporting documentation.

Response: The conclusions of multidisciplinary scientific review panels assembled by national and international scientific agencies during the past few decades are the foundation of the Company's opinion that no adverse health effects are anticipated to result from the operation of the proposed Project. Each of these panels has evaluated the scientific research related to health and extremely low frequency ("ELF") EMF, also referred to as power-frequency (50/60 Hertz ("Hz")) EMF, and provided conclusions that form the basis of guidance to governments and industries. The Company regularly monitors the recommendations of these expert panels to guide their approach to EMF.

Research on EMF and human health varies widely in approach. Some studies evaluate the effects on biological responses of high, short-term EMF exposure not typically found in people's day-to-day lives, while others evaluate the effects of common, low EMF exposures found throughout communities. Studies also have evaluated the possibility of effects (*e.g.*, cancer, neurodegenerative diseases, and reproductive effects) of long-term exposure. Altogether, this research includes well over 100 epidemiologic studies of people in their natural environment and many more laboratory studies of animals (*in vivo*) and isolated cells and tissues (*in vitro*). Standard scientific procedures, such as weight-of-evidence methods, were used by the expert panels assembled by scientific agencies to identify, review, and summarize the results of this large and diverse research.

The reviews of ELF EMF-related biological and health research have been conducted by numerous scientific and health agencies, including, for example, the European Health Risk Assessment Network on Electromagnetic Fields Exposure ("EFHRAN"), the International Commission on Non-Ionizing Radiation Protection ("ICNIRP"), the World Health Organization ("WHO"), the IEEE's International Committee on Electromagnetic Safety ("ICES"), the Scientific Committee on Health, Environmental and Emerging Risks ("SCHEER") (formerly the Scientific Committee on Emerging and Newly Identified Health Risks ["SCENIHR"]) of the European Commission, and the Swedish Radiation Safety Authority ("SSM") (formerly the Swedish Radiation Protection Authority ["SSI"]) (WHO, 2007; SCENIHR, 2009, 2015; EFHRAN, 2010, 2012; ICNIRP, 2010; SSM, 2015, 2016, 2018, 2019, 2020, 2021, 2022; ICES, 2019; SCHEER, 2023). The general scientific consensus of the agencies that have reviewed this research, relying on generally accepted scientific methods, is that the scientific evidence does not confirm that common sources of EMF in the environment, including transmission lines and other parts of the electric system, appliances, etc., are a cause of any adverse health effects.

The most recent reviews on this topic include the 2015 and 2023 reports by SCENIHR and SCHEER, respectively, and annual reviews published by SSM (i.e., for the years 2015 through 2022). These reports, similar to previous reviews, found that the scientific evidence does not confirm the existence of any adverse health effects caused by environmental or community exposure to EMF.

WHO has recommended that countries adopt recognized international standards published by ICNIRP and ICES. Typical levels of EMF from Dominion Energy Virginia's high voltage power lines outside its property and rights-of-way are far below the screening reference levels of EMF recommended for the general public and still lower than exposures equivalent to restrictions to limits on fields within the body (ICNIRP, 2010; ICES, 2019).

Thus, based on the conclusions of scientific reviews and the levels of EMF associated with the proposed Project, the Company has determined that no adverse health effects are anticipated to result from the operation of the proposed Project.

References

European Health Risk Assessment Network on Electromagnetic Fields Exposure (EFHRAN). Report on the Analysis of Risks Associated to Exposure to EMF: *In Vitro* and *In Vivo* (Animals) Studies. Milan, Italy: EFHRAN, 2010.

European Health Risk Assessment Network on Electromagnetic Fields Exposure (EFHRAN). Risk Analysis of Human Exposure to Electromagnetic Fields (Revised). Report D2 of the EFHRAN Project. Milan, Italy: EFHRAN, 2012.

International Commission on Non-ionizing Radiation Protection (ICNIRP). Guidelines for limiting exposure to time-varying electric and magnetic fields (1 Hz to 100 kHz). Health Phys 99: 818-36, 2010.

International Committee on Electromagnetic Safety (ICES). IEEE Standard for Safety Levels with Respect to Human Exposure to Electromagnetic Fields 0 to 300 GHz. IEEE Std C95.1-2019. New York, NY: IEEE, 2019.

Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR). Health Effects of Exposure to EMF. Brussels, Belgium: European Commission, 2009.

Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR). Opinion on Potential Health Effects of Exposure to Electromagnetic Fields (EMF). Brussels, Belgium: European Commission, 2015.

Scientific Committee on Health, Environmental and Emerging Risks (SCHEER). Preliminary Opinion on Potential Health Effects of Exposure to Electromagnetic Fields (EMF): Update with regard to frequencies between 1Hz and 100 kHz. Brussels, Belgium: European Commission, 2023.

Swedish Radiation Safety Authority (SSM). Research 2015:19. Recent Research on EMF and Health Risk - Tenth report from SSM's Scientific Council on Electromagnetic Fields. Stockholm, Sweden: Swedish Radiation Safety Authority (SSM), 2015.

Swedish Radiation Safety Authority (SSM). Research 2016:15. Recent Research on EMF and Health Risk - Eleventh report from SSM's Scientific Council on Electromagnetic Fields, 2016. Including Thirteen years of electromagnetic field research monitored by SSM's Scientific Council on EMF and health: How has the evidence changed over time? Stockholm, Sweden: Swedish Radiation Safety Authority (SSM), 2016.

Swedish Radiation Safety Authority (SSM). Research 2018:09. Recent Research on EMF and Health Risk - Twelfth report from SSM's Scientific Council on Electromagnetic Fields, 2017. Stockholm, Sweden: Swedish Radiation Safety Authority (SSM), 2018.

Swedish Radiation Safety Authority (SSM). Research 2019:08. Recent Research on EMF and Health Risk – Thirteenth Report from SSM's Scientific Council on Electromagnetic Fields, 2018. Stockholm, Sweden: Swedish Radiation Safety Authority (SSM), 2019.

Swedish Radiation Safety Authority (SSM). Research 2020:04. Recent Research on EMF and Health Risk – Fourteenth Report from SSM's Scientific Council on Electromagnetic Fields, 2019. Stockholm, Sweden: Swedish Radiation Safety Authority (SSM), 2020.

Swedish Radiation Safety Authority (SSM). Research 2021:08. Recent Research on EMF and Health Risk – Fifteenth report from SSM's Scientific Council on Electromagnetic Fields, 2020. Stockholm, Sweden: Swedish Radiation Safety Authority (SSM), 2021.

Swedish Radiation Safety Authority (SSM). Research 2022:16. Recent Research on EMF and Health Risk – Sixteenth report from SSM's Scientific Council on Electromagnetic Fields, 2021. Stockholm, Sweden: Swedish Radiation Safety Authority (SSM), 2022.

World Health Organization (WHO). Environmental Health Criteria 238: Extremely Low Frequency (ELF) Fields. Geneva, Switzerland: World Health Organization, 2007.

IV. HEALTH ASPECTS OF ELECTROMAGNETIC FIELDS ("EMF")

C. Describe and cite any research studies on EMF the Applicant is aware of that meet the following criteria:

1. Became available for consideration since the completion of the Virginia Department of Health's most recent review of studies on EMF and its subsequent report to the Virginia General Assembly in compliance with 1985 Senate Joint Resolution No. 126;

2. Include findings regarding EMF that have not been reported previously and/or provide substantial additional insight into findings; and

3. Have been subjected to peer review.

Response: The Virginia Department of Health ("VDH") conducted its most recent review and issued its report on the scientific evidence on potential health effects of extremely low frequency ELF EMF in 2000: "[T]he Virginia Department of Health is of the opinion that there is no conclusive and convincing evidence that exposure to extremely low frequency EMF emanated from nearby high voltage transmission lines is causally associated with an increased incidence of cancer or other detrimental health effects in humans."[26]

The continuing scientific research on ELF EMF exposure and health has resulted in many peer-reviewed publications since 2000. The accumulating research results have been regularly and repeatedly reviewed and evaluated by national and international health, scientific, and government agencies, including most notably:

- WHO, which published one of the most comprehensive and detailed reviews of the relevant scientific peer-reviewed literature in 2007;
- SCHEER (formerly SCENIHR), a committee of the European Commission, which published its assessments in 2009, 2015 and 2023;
- The SSM, which has published annual reviews of the relevant peer-reviewed scientific literature since 2003, with its most recent review published in 2022; and,
- EFHRAN, which published its reviews in 2010 and 2012.

The above reviews provide detailed analyses and summaries of relevant recent peer-reviewed scientific publications. The conclusions of these reviews that the evidence overall does not confirm the existence of any adverse health effects due to exposure to EMF below scientifically established guideline values are consistent with the conclusions of the VDH report. With respect to the statistical association observed in some of the childhood leukemia epidemiologic studies, the most recent

[26] *See* http://www.vdh.virginia.gov/content/uploads/sites/12/2016/02/highfinal.pdf.

comprehensive review of the literature by SCENIHR, published in 2015, concluded that "no mechanisms have been identified and no support is existing [*sic*] from experimental studies that could explain these findings, which, together with shortcomings of the epidemiological studies prevent a causal interpretation" (SCENIHR, 2015, p. 16). In their 2023 Preliminary Opinion providing an update on the potential health effects of exposure to electromagnetic fields in the 1 Hz to 100 kilohertz ("kHz") range, SCHEER concluded that "overall, there is weak evidence concerning the association of ELF-MF [magnetic field] exposure with childhood leukaemia" (SCHEER 2023, p. 2).

While research is continuing on multiple aspects of EMF exposure and health, many of the recent publications have focused on an epidemiologic assessment of the relationship between EMF exposure and childhood leukemia and EMF exposure and neurodegenerative diseases. Of these, the following recent publications, published following the inclusion date (June 2014) for the SCENIHR (2015) report through March 2024, provide additional evidence and contribute to clarification of previous findings. Overall, new research studies have not provided evidence to alter the previous conclusions of scientific and health organizations, including WHO and SCENIHR.

Epidemiologic studies of EMF and childhood leukemia published during the above referenced period include:

- Bunch et al. (2015) assessed the potential association between residential proximity to high voltage underground cables and development of childhood cancer in the United Kingdom largely using the same epidemiologic data as in a previously published study on overhead transmission lines (Bunch et al., 2014). No statistically significant associations or trends were reported with either distance to underground cables or calculated magnetic fields from underground cables for any type of childhood cancers.

- Pedersen et al. (2015) published a case-control study that investigated the potential association between residential proximity to power lines and childhood cancer in Denmark. The study included all cases of leukemia (n=1,536), central nervous system tumors, and malignant lymphoma (n=417) diagnosed before the age of 15 between 1968 and 2003 in Denmark, along with 9,129 healthy control children matched on sex and year of birth. Considering the entire study period, no statistically significant increases were reported for any of the childhood cancer types.

- Salvan et al. (2015) compared measured magnetic-field levels in the bedroom for 412 cases of childhood leukemia under the age of 10 and 587 healthy control children in Italy. Although the statistical power of the study was limited because of the small number of highly exposed subjects, no consistent statistical associations or trends were reported between measured magnetic-field levels and the occurrence of leukemia among children in the study.

- Bunch et al. (2016) and Swanson and Bunch (2018) published additional analyses using data from an earlier study (Bunch et al., 2014). Bunch et al. (2016) reported that the association with distance to power lines observed in earlier years was linked to calendar year of birth or year of cancer diagnosis, rather than the age of the power lines. Swanson and Bunch (2018) re-analyzed data using finer exposure categories (*e.g.*, cut-points of every 50-meter distance) and broader groupings of diagnosis date (*e.g.*, 1960-1979, 1980-1999, and 2000 and after) and reported no overall associations between exposure categories and childhood leukemia for the later periods (1980 and after), and consistent pattern for the periods prior to 1980.

- Crespi et al. (2016) conducted a case-control epidemiologic study of childhood cancers and residential proximity to high voltage power lines (60 kV to 500 kV) in California. Childhood cancer cases, including 5,788 cases of leukemia and 3,308 cases of brain tumor, diagnosed under the age of 16 between 1986 and 2008, were identified from the California Cancer Registry. Controls, matched on age and sex, were selected from the California Birth Registry. Overall, no consistent statistically significant associations for leukemia or brain tumor and residential distance to power lines were reported.

- Kheifets et al. (2017) assessed the relationship between calculated magnetic-field levels from power lines and development of childhood leukemia within the same study population evaluated in Crespi et al. (2016). In the main analyses, which included 4,824 cases of leukemia and 4,782 controls matched on age and sex, the authors reported no consistent patterns, or statistically significant associations between calculated magnetic-field levels and childhood leukemia development. Similar results were reported in subgroup and sensitivity analyses. In two subsequent studies, Amoon et al. (2018a, 2019) examined the potential impact of residential mobility (i.e., moving residences between birth and diagnosis) on the associations reported in Crespi et al. (2016) and Kheifets et al. (2017). Amoon et al. (2018a) concluded that changing residences was not associated with either calculated magnetic-field levels or proximity to the power lines, while Amoon et al. (2019) concluded that while uncontrolled confounding by residential mobility had some impact on the association between EMF exposure and childhood leukemia, it was unlikely to be the primary driving force behind the previously reported associations in Crespi et al. (2016) and Kheifets et al. (2017).

- Amoon et al. (2018b) conducted a pooled analysis of 29,049 cases and 68,231 controls from 11 epidemiologic studies of childhood leukemia and residential distance from high voltage power lines. The authors reported no statistically-significant association between childhood leukemia and proximity to transmission lines of any voltage. Among subgroup analyses, the reported associations were slightly stronger for leukemia cases diagnosed before 5 years of age and in study periods prior to 1980. Adjustment for various potential confounders (*e.g.*, socioeconomic status, dwelling type, residential mobility) had little effect on the estimated associations.

- Kyriakopoulou et al. (2018) assessed the association between childhood acute leukemia and parental occupational exposure to social contacts, chemicals, and electromagnetic fields. The study was conducted at a major pediatric hospital in Greece and included 108 cases and 108 controls matched for age, gender, and ethnicity. Statistically non-significant associations were observed between paternal exposure to magnetic fields and childhood acute leukemia for any of the exposure periods examined (1 year before conception; during pregnancy; during breastfeeding; and from birth until diagnosis); maternal exposure was not assessed due to the limited sample size. No associations were observed between childhood acute leukemia and exposure to social contacts or chemicals.

- Auger et al. (2019) examined the relationship between exposure to EMF during pregnancy and risk of childhood cancer in a cohort of 784,000 children born in Quebec. Exposure was defined using residential distance to the nearest high voltage transmission line or transformer station. The authors reported statistically non-significant associations between proximity to transformer stations and any cancer, hematopoietic cancer, or solid tumors. No associations were reported with distance to transmission lines.

- Crespi et al. (2019) investigated the relationship between childhood leukemia and distance from high voltage lines and calculated magnetic-field exposure, separately and combined, within the California study population previously analyzed in Crespi et al. (2016) and Kheifets et al. (2017). The authors reported that neither close proximity to high voltage lines nor exposure to calculated magnetic fields alone were associated with childhood leukemia; an association was observed only for those participants who were both close to high voltage lines (< 50 meters) and had exposure to high calculated magnetic fields (≥ 0.4 microtesla ["μT"]) (i.e., ≥ 4 milligauss ["mG"]). No associations were observed with low-voltage power lines (< 200 kV). In a subsequent study, Amoon et al. (2020) examined the potential impact of dwelling type on the associations reported in Crespi et al. (2019). Amoon et al. (2020) concluded that while the type of dwelling at which a child resides (*e.g.*, single-family home, apartment, duplex, mobile home) was associated with socioeconomic status and race or ethnicity, it was not associated with childhood leukemia and did not appear to be a potential confounder in the relationship between childhood leukemia and magnetic-field exposure in this study population.

- Swanson et al. (2019) conducted a meta-analysis of 41 epidemiologic studies of childhood leukemia and magnetic-field exposure published between 1979 and 2017 to examine trends in childhood leukemia development over time. The authors reported that while the estimated risk of childhood leukemia initially increased during the earlier period, a statistically non-significant decline in estimated risk has been observed from the mid-1990s until the present (i.e., 2019).

- Talibov et al. (2019) conducted a pooled analysis of 9,723 cases and 17,099

controls from 11 epidemiologic studies to examine the relationship between parental occupational exposure to magnetic fields and childhood leukemia. No statistically significant association was found between either paternal or maternal exposure and leukemia (overall or by subtype). No associations were observed in the meta-analyses.

- Núñez-Enríquez et al. (2020) assessed the relationship between residential magnetic-field exposure and B-lineage acute lymphoblastic leukemia ("B-ALL") in children under 16 years of age in Mexico. The study included 290 cases and 407 controls matched on age, gender, and health institution; magnetic-field exposure was assessed through the collection of 24-hour measurements in the participants' bedrooms. While the authors reported some statistically significant associations between elevated magnetic-field levels and development of B-ALL, the results were dependent on the chosen cut-points.

- Seomun et al. (2021) performed a meta-analysis based on 33 previously published epidemiologic studies investigating the potential relationship between magnetic-field exposure and childhood cancers, including leukemia and brain cancer. For childhood leukemia, the authors reported statistically significant associations with some, but not all, of the chosen cut-points for magnetic-field exposure. The associations between magnetic-field exposure and childhood brain cancer were statistically non-significant. The study provided limited new insight as most of the studies included in the current meta-analysis, were included in previously conducted meta- and pooled analyses.

- Amoon et al. (2022) conducted a pooled analysis of four studies of residential exposure to magnetic fields and childhood leukemia published following a 2010 pooled analysis by Kheifets et al. (2010). The study by Amoon et al. (2022) compared the exposures of 24,994 children with leukemia to the exposures of 30,769 controls without leukemia in California, Denmark, Italy, and the United Kingdom. Exposure was assessed by measured or calculated magnetic fields at their residences. The exposure of these two groups to magnetic fields were found not to significantly differ. A decrease in the combined effect estimates in epidemiologic studies was observed over time, and the authors concluded that their findings, based on the most recent studies, were "not in line" with previous pooled analyses that reported an increased risk of childhood leukemia.

- Brabant et al. (2022) performed a literature review and meta-analysis of studies of childhood leukemia and magnetic-field exposure. The overall analysis included 21 epidemiologic studies published from 1979 to 2020. The authors reported a statistically significant association, which they noted was "mainly explained by the studies conducted before 2000." The authors reported a statistically significant association between childhood leukemia and measured or calculated magnetic-field exposures > 0.4 μT (4 mG); no statistically significant overall associations were reported between childhood leukemia and lower magnetic-field exposure (< 0.4 μT [4 mG]), residential distance from power lines, or wire coding configuration. An association between childhood

leukemia and electric blanket use was also reported. The overall results were likely influenced by the inclusion of a large number of earlier studies; 10 of the 21 studies in the main analysis were published prior to 2000. Studies published prior to 2000 included fewer studies deemed to be of higher study quality, as determined by the authors, compared to studies published after 2000.

- Nguyen et al. (2022) investigated whether potential pesticide exposure from living in close proximity to commercial plant nurseries confounds the association between magnetic-field exposure and childhood leukemia development reported within the California study population previously analyzed in Crespi et al. (2016) and Kheifets et al. (2017). The authors in Nguyen et al. (2022) noted that while the association between childhood leukemia and magnetic-field exposure was "slightly attenuated" after adjusting for nursery proximity or when restricting to subjects living > 300 meters from nurseries, their results "do not support plant nurseries as an explanation for observed childhood leukemia risks." The authors further noted that close residential proximity to nurseries may be an independent risk factor for childhood leukemia.

- Guo et al. (2023) reported conducting a systematic review and meta-analysis of studies published from 2015 to 2022 that evaluated associations between magnetic-field exposure and childhood leukemia development. Three meta-analyses were conducted to evaluate the relationship using different exposure metrics. In the first meta-analysis, magnetic-field levels ranging from 0.4 μT (4 mG) to 0.2 μT (2 mG) were associated with a statistically significant reduced risk of childhood leukemia development (i.e., a protective association). In the second meta-analysis, exposure was based on wiring configuration codes, and the reported pooled relative risk estimates demonstrated a statistically significant increased association with childhood leukemia. In the third meta-analysis, exposure was categorized into groupings of magnetic-field strength; no statistically significant associations with childhood leukemia were reported for any of the groupings, including for magnetic-field levels ≥ 0.4 μT (4 mG). There are significant limitations of this study that prevent meaningful interpretations of the results. Most of the analyses of magnetic fields did not state whether measurements and calculations were included, and the authors provided no description of the methods used for their analyses, no data tables to support their findings, and no references to the number and type of studies included. In fact, much of the article's introduction discusses ionized radiation. The authors also do not report relevant metrics for evaluating meta-analyses such as study heterogeneity.

- Malagoli et al. (2023) examined associations between exposure to magnetic fields from high voltage power lines (≥ 132 kV) and childhood leukemia development in a case-control study of children in Italy. The study included 182 cases diagnosed with childhood leukemia between 1998 and 2019 and 726 controls matched based on age, sex, and Italian province. The authors assessed magnetic-field exposure by calculating the distance from each participant's

residence to the nearest high voltage power line and classifying that distance into one of three exposed categories (participants living < 100 meters, 100 to < 200 meters, or 200 to < 400 meters from the power lines) or as unexposed (participants living ≥ 400 meters from the power lines). The authors reported a non-statistically significant association between childhood leukemia and a residence distance of <100 meters; no statistically significant associations were reported for any distance, including when stratifying by age (< 5 or ≥ 5 years) or when restricting to acute lymphoblastic leukemia (ALL).

- Nguyen et al. (2023) extended their previous investigation (Nguyen et al., 2022) into whether pesticide exposure was an independent risk factor or confounder for childhood leukemia in the presence of magnetic-field exposure from high voltage power lines by examining the potential impact of specific pesticide exposure factors (*e.g.*, intended use, chemical class, active ingredient). The authors found no statistically significant associations between distance to high voltage power lines or magnetic-field exposure and childhood leukemia, including when adjusting for pesticide exposures. Several of the examined pesticides were determined by the authors to be potential independent risk factors for childhood leukemia.

- Zagar et al. (2023) examined the relationship between magnetic fields and childhood cancers, including childhood leukemia, in Slovenia. Cancer cases, including 194 cases of leukemia, were identified from the Slovenian Cancer Registry; cases were then classified into one of five calculated magnetic-field exposure levels (ranging from < 0.1 μT [< 1 mG] to ≥ 0.4 μT [≥ 4 mG]) based on residential distance to high voltage (*e.g.*, 110-kV, 220-kV, and 400-kV) power lines. The authors reported that less than 1% of Slovenian children and adolescents lived in an area near high voltage power lines. No differences in the development of childhood cancers, including leukemia, brain tumors, or all cancers combined, were reported across the five exposure categories.

- Crespi et al. (2024) assessed the association between residential proximity to electricity transformers in multi-story residential buildings and childhood leukemia development in the International Transformer Exposure study. Participants were required to live in an apartment building that contained a built-in transformer; exposure was estimated using the participants' apartment location relative to the transformer and categorized as high exposure (located above or adjacent to the transformer), intermediate exposure (located on the same floor as apartments in the high exposure category), or unexposed (all other apartments). In the pooled analyses of five countries' data, a total of 74 cases and 20,443 controls were included; 18 of the 74 cases were identified in the intermediate or high exposure categories. No significant associations were reported between proximity to residential transformers and childhood leukemia. Sensitivity analyses performed using the data from one of the five countries (Finland) where a cohort study design was used, also reported no significant associations. The authors concluded that the evidence for an elevated risk of childhood leukemia from proximity to residential transformers was "weak."

- Duarte-Rodríguez et al. (2024) conducted a population-based case-control study to examine the geographical distribution of childhood ALL cases in Mexico City, Mexico. Cases and controls were geolocated using the most recent residential address, and a spatial scan statistic was used to detect spatial clusters of cancer cases. The authors identified eight spatial clusters of cases, representing nearly 40% of all cases included in the study (n=1,054 cases). The authors noted that six of the eight spatial clusters were located in proximity to high voltage power lines and high voltage electric installations (distances not specified), and that the remaining two clusters were located near former petrochemical industrial facility sites. Since the study did not directly assess magnetic-field exposure and made no conclusions about magnetic-field exposure and cancer development, this study adds little value to the existing literature regarding a potential association between exposure to ELF EMF and childhood leukemia development.

- Malavolti et al. (2024) examined the association between magnetic-field exposure from transformer stations and childhood leukemia in the same Italian study population as Malagoli et al. (2023). Magnetic-field exposure was estimated based on residential distance to the nearest transformer station, and participants were then categorized as exposed or unexposed using two different distance cut-points: residing within a radius of 15 or 25 meters from the transformer station (exposed); residing ≥ 15 meters or ≥ 25 meters from the transformer station (unexposed). No significant associations were reported for all leukemias, or ALL specifically, when either distance cut-point was used, and in fact no association at all (an odds ratio = 1.0) was observed when the more stringent cut-point of 15 meters was used. In sub-analyses that stratified by participant age (< 5 years vs. ≥ 5 years), no significant associations were reported for either age category.

Epidemiologic studies of EMF and neurodegenerative diseases published during the above referenced period include:

- Seelen et al. (2014) conducted a population-based case-control study in the Netherlands and included 1,139 cases diagnosed with amyotrophic lateral sclerosis ("ALS") between 2006 and 2013 and 2,864 frequency-matched controls. The shortest distance from the case and control residences to the nearest high voltage power line (50 to 380 kV) was determined by geocoding. No statistically significant associations between residential proximity to power lines with voltages of either 50 to 150 kV or 220 to 380 kV and ALS were reported.

- Sorahan and Mohammed (2014) analyzed mortality from neurodegenerative diseases in a cohort of approximately 73,000 electricity supply workers in the United Kingdom. Cumulative occupational exposure to magnetic-fields was calculated for each worker in the cohort based on their job titles and job locations. Death certificates were used to identify deaths from neurodegenerative diseases. No associations or trends for any of the included

neurodegenerative diseases (Alzheimer's disease, Parkinson's disease, and ALS) were observed with various measures of calculated magnetic fields.

- Koeman et al. (2015, 2017) analyzed data from the Netherlands Cohort Study of approximately 120,000 men and women who were enrolled in the cohort in 1986 and followed up until 2003. Lifetime occupational history, obtained through questionnaires, and job-exposure matrices on ELF magnetic fields and other occupational exposures were used to assign exposure to study subjects. Based on 1,552 deaths from vascular dementia, the researchers reported a statistically not significant association of vascular dementia with estimated exposure to metals, chlorinated solvents, and ELF magnetic fields. However, because no exposure-response relationship for cumulative exposure was observed and because magnetic fields and solvent exposures were highly correlated with exposure to metals, the authors attributed the association with ELF magnetic fields and solvents to confounding by exposure to metals (Koeman et al., 2015). Based on a total of 136 deaths from ALS among the cohort members, the authors reported a statistically significant, approximately two-fold association with ELF magnetic fields in the highest exposure category. This association, however, was no longer statistically significant when adjusted for exposure to insecticides (Koeman et al., 2017).

- Fischer et al. (2015) conducted a population-based case-control study that included 4,709 cases of ALS diagnosed between 1990 and 2010 in Sweden and 23,335 controls matched to cases on year of birth and sex. The study subjects' occupational exposures to ELF magnetic fields and electric shocks were classified based on their occupations, as recorded in the censuses and corresponding job-exposure matrices. Overall, neither magnetic fields nor electric shocks were related to ALS.

- Vergara et al. (2015) conducted a mortality case-control study of occupational exposure to electric shock and magnetic fields and ALS. They analyzed data on 5,886 deaths due to ALS and over 58,000 deaths from other causes in the United States between 1991 and 1999. Information on occupation was obtained from death certificates and job-exposure matrices were used to categorize exposure to electric shocks and magnetic fields. Occupations classified as "electric occupations" were moderately associated with ALS. The authors reported no consistent associations for ALS, however, with either electric shocks or magnetic fields, and they concluded that their findings did not support the hypothesis that exposure to either electric shocks or magnetic fields explained the observed association of ALS with "electric occupations."

- Pedersen et al. (2017) investigated the occurrence of central nervous system diseases among approximately 32,000 male Danish electric power company workers. Cases were identified through the national patient registry between 1982 and 2010. Exposure to ELF magnetic fields was determined for each worker based on their job titles and area of work. A statistically significant increase was reported for dementia in the high exposure category when

compared to the general population, but no exposure-response pattern was identified, and no similar increase was reported in the internal comparisons among the workers. No other statistically significant increases among workers were reported for the incidence of Alzheimer's disease, Parkinson's disease, motor neuron disease, multiple sclerosis, or epilepsy, when compared to the general population, or when incidence among workers was analyzed across estimated exposure levels.

- Vinceti et al. (2017) examined the association between ALS and calculated magnetic-field levels from high voltage power lines in Italy. The authors included 703 ALS cases and 2,737 controls; exposure was assessed based on residential proximity to high voltage power lines. No statistically significant associations were reported and no exposure-response trend was observed. Similar results were reported in subgroup analyses by age, calendar period of disease diagnosis, and study area.

- Checkoway et al. (2018) investigated the association between Parkinsonism[27] and occupational exposure to magnetic fields and several other agents (endotoxins, solvents, shift work) among 800 female textile workers in Shanghai. Exposure to magnetic fields was assessed based on the participants' work histories. The authors reported no statistically significant associations between Parkinsonism and occupational exposure to any of the agents under study, including magnetic fields.

- Gunnarsson and Bodin (2018) conducted a meta-analysis of occupational risk factors for ALS. The authors reported a statistically significant association between occupational exposures to EMF, estimated using a job-exposure matrix, and ALS among the 11 studies included. Statistically significant associations were also reported between ALS and jobs that involve working with electricity, heavy physical work, exposure to metals (including lead) and chemicals (including pesticides), and working as a nurse or physician. The authors reported some evidence for publication bias. In a subsequent publication, Gunnarsson and Bodin (2019) updated their previous meta-analysis to also include Parkinson's disease and Alzheimer's disease. A slight, statistically significant association was reported between occupational exposure to EMF and Alzheimer's disease; no association was observed for Parkinson's disease.

- Huss et al. (2018) conducted a meta-analysis of 20 epidemiologic studies of ALS and occupational exposure to magnetic fields. The authors reported a weak overall association; a slightly stronger association was observed in a subset analysis of six studies with full occupational histories available. The authors noted substantial heterogeneity among studies, evidence for publication

[27] Parkinsonism is defined by Checkoway et al. (2018) as "a syndrome whose cardinal clinical features are bradykinesia, rest tremor, muscle rigidity, and postural instability. Parkinson disease is the most common neurodegenerative form of [parkinsonism]" (p. 887).

bias, and a lack of a clear exposure-response relationship between exposure and ALS.

- Jalilian et al. (2018) conducted a meta-analysis of 20 epidemiologic studies of occupational exposure to magnetic fields and Alzheimer's disease. The authors reported a moderate, statistically significant overall association; however, they noted substantial heterogeneity among studies and evidence for publication bias.

- Röösli and Jalilian (2018) performed a meta-analysis using data from five epidemiologic studies examining residential exposure to magnetic fields and ALS. A statistically non-significant negative association was reported between ALS and the highest exposed group, where exposure was defined based on distance from power lines or calculated magnetic-field level.

- Gervasi et al. (2019) assessed the relationship between residential distance to overhead power lines in Italy and risk of Alzheimer's dementia and Parkinson's disease. The authors included 9,835 cases of Alzheimer's dementia and 6,810 cases of Parkinson's disease; controls were matched by sex, year of birth, and municipality of residence. A weak, statistically non-significant association was observed between residences within 50 meters of overhead power lines and both Alzheimer's dementia and Parkinson's disease, compared to distances of over 600 meters.

- Peters et al. (2019) examined the relationship between ALS and occupational exposure to both magnetic fields and electric shock in a pooled study of data from three European countries. The study included 1,323 ALS cases and 2,704 controls matched for sex, age, and geographic location; exposure was assessed based on occupational title and defined as low (background), medium, or high. Statistically significant associations were observed between ALS and ever having been exposed above background levels to either magnetic fields or electric shocks; however, no clear exposure-response trends were observed with exposure duration or cumulative exposure. The authors also noted significant heterogeneity in risk by study location.

- Filippini et al. (2020) investigated the associations between ALS and several environmental and occupational exposures, including electromagnetic fields, within a case-control study in Italy. The study included 95 cases and 135 controls matched on age, gender, and residential province; exposure to electromagnetic fields was assessed using the participants' responses to questions related to occupational use of electric and electronic equipment, occupational EMF exposure, and residential distance to overhead power lines. The authors reported a statistically significant association between ALS and residential proximity to overhead power lines and a statistically non-significant association between ALS and occupational exposure to EMF; occupational use of electric and electronic equipment was associated with a statistically non-significant decrease in ALS development.

- Huang et al. (2020) conducted a meta-analysis of 43 epidemiologic studies examining potential occupational risk factors for dementia or mild cognitive impairment. The authors included five cohort studies and seven case-control studies related to magnetic-field exposure. For both study types, the authors reported positive associations between dementia and work-related magnetic-field exposures. The paper, however, provided no information on the occupations held by the study participants, their magnetic-field exposure levels, or how magnetic-field levels were assessed; therefore, the results are difficult to interpret. The authors also reported a high level of heterogeneity among studies. Thus, this analysis adds little, if any, to the overall weight of evidence on a potential association between dementia and magnetic fields.

- Jalilian et al. (2020) conducted a meta-analysis of ALS and occupational exposure to both magnetic fields and electric shocks within 27 studies from Europe, the United States, and New Zealand. A weak, statistically significant association was reported between magnetic-field exposure and ALS; however, the authors noted evidence of study heterogeneity and publication bias. No association was observed between ALS and electric shocks.

- Chen et al. (2021) conducted a case-control study to examine the association between occupational exposure to electric shocks, magnetic fields, and motor neuron disease ("MND") in New Zealand. The study included 319 cases with a MND diagnosis (including ALS) and 604 controls, matched on age and gender; exposure was assessed using the participants' occupational history questionnaire responses and previously developed job-exposure matrices for electric shocks and magnetic fields. The authors reported no associations between MND and exposure to magnetic fields; positive associations were reported between MND and working at a job with the potential for electric shock exposure.

- Grebeneva et al. (2021) evaluated disease rates among electric power company workers in the Republic of Kazakhstan. The authors included three groups of "exposed" workers who "were in contact with equipment generating [industrial frequency EMF]" (a total of 161 workers), as well as 114 controls "who were not associated with exposure to electromagnetic fields." Disease rates were assessed "based on analyzing the sick leaves of employees" from 2010 to 2014 and expressed as "incidence rate per 100 employees." The authors reported a higher "incidence rate" of "diseases of the nervous system" in two of the exposed categories compared to the non-exposed group. No meaningful conclusions from the study could be drawn, however, because no specific diagnoses within "diseases of the nervous system" were identified in the paper and no clear description was provided on how the authors defined and calculated "incidence rate" for the evaluated conditions. In addition, no measured or calculated magnetic-field levels were presented by the authors.

- Filippini et al. (2021) conducted a meta-analysis to assess the dose-response relationship between residential exposure to magnetic fields and ALS. The

authors identified six ALS epidemiologic studies, published between 2009 and 2020, that assessed exposure to residential magnetic fields by either distance from overhead power lines or magnetic-field modeling. They reported a decrease in risk of ALS in the highest exposure categories for both distance-based and modeling-based exposure estimates. The authors also reported that their dose-response analyses "showed little association between distance from power lines and ALS"; the data were too sparse to conduct a dose-response analysis for modeled magnetic-field estimates. The authors noted that their study was limited by small sample size, "imprecise" exposure categories, the potential for residual confounding, and by "some publication bias."

- Jalilian et al. (2021) conducted a meta-analysis of occupational exposure to ELF magnetic fields and electric shocks and development of ALS. The authors included 27 studies from Europe, the United States, and New Zealand that were published between 1983 and 2019. A weak, statistically significant association was reported between magnetic-field exposure and ALS, and no association was observed between electric shocks and ALS. Indications of publication bias and "moderate to high" heterogeneity were identified for the studies of magnetic-field exposure and ALS, and the authors noted that "the results should be interpreted with caution."

- Goutman et al. (2022) examined occupational exposures, including "electromagnetic radiation" exposure, and associations with ALS in a case-control study of Michigan workers across various industries. The study included 381 cases diagnosed with ALS, all patients at the University of Michigan's Pranger ALS clinic, and 272 controls recruited from an online database for the University of Michigan. Participants were enrolled from 2010 to 2020 and completed a written survey of their work history and occupational exposures to nine exposure categories, including electromagnetic fields, particulate matter (PM), and pesticides. Exposure to electromagnetic fields was ascertained with a binary question asking whether they were "[e]xposed to power lines, transformation [*sic*] stations or other EM [electromagnetic radiation]?" The analysis was adjusted for age, sex, and military service. No association was observed between electromagnetic field exposure and ALS, while exposure to PM, pesticides, and metals, among others, were determined by the authors to be "associated with an increased ALS risk in this cohort."

- Sorahan and Nichols (2022) investigated magnetic-field exposure and mortality from MND in a large cohort of employees of the former Central Electricity Generating Board of England and Wales. The study included nearly 38,000 employees first hired between 1942 and 1982 and still employed in 1987. Estimates of exposure magnitude, frequency, and duration were calculated using data from the power stations and the employees' job histories, and were described in detail in a previous publication (Renew et al., 2003). Mortality from MND in the total cohort was observed to be similar to national rates. No statistically significant dose-response trends were observed with lifetime, recent, or distant magnetic-field exposure; statistically significant associations

were observed for some categories of recent exposure, but not for the highest exposure category.

- Duan et al. (2023) conducted a meta-summary of ALS and exposure to magnetic fields, which was 1 of 22 non-genetic risk factors evaluated across 67 studies for its association with ALS. Six of the 67 studies examined magnetic-field exposure and associations with ALS; of the six studies identified, the authors included four case-control studies and one cohort study in their meta-analysis. Pooling results from these studies resulted in significant increased odds of ALS among individuals with higher (but undefined) exposure to magnetic fields. However, this pooled odds ratio for magnetic-field exposure (1.22) was below the minimum odds ratio threshold of 1.3 set by the authors as the criterion for defining an exposure as an ALS risk factor. In addition, the authors identified "substantial" heterogeneity between studies evaluating magnetic-field exposure and ALS.

- In a subsequent publication of the same study as Goutman et al. (2022), Goutman et al. (2023) assessed the potential for the same nine exposure categories, including "electromagnetic radiation" exposure, to be risk factors for ALS progression, including survival and onset segment (bulbar, cervical, lumbar). Electromagnetic field exposure was not significantly associated with ALS survival or with bulbar onset compared to lumbar, but was significantly associated with cervical onset compared to lumbar. It is worth noting that an association with cervical onset compared to lumbar was observed in the majority (7/9) of the exposure categories. The authors make no concluding statements on electromagnetic field exposure and ALS and instead emphasize that occupational pesticide exposure and working in military operations were significantly associated with worse ALS survival.

- Saucier et al. (2023) carried out three systematic reviews of studies that evaluated relationships between urbanization, air pollution, and water pollution, and ALS development. The authors identified five studies that assessed whether electromagnetic fields (of varying frequencies) and high voltage infrastructure were significant urbanization risk factors for ALS, but make no conclusion about magnetic-field exposure and ALS development based on these studies, therefore adding little value to the existing literature.

- Vasta et al. (2023) examined the relationship between residential distance to power lines and ALS development in a cohort study of 1,098 participants in Italy. The authors reported no differences in the age of ALS onset or ALS progression rate between low-exposed and high-exposed participants based on residential distance to power lines at the time of the participants' diagnosis. Similarly, no differences were observed when exposure was based on residential distance to repeater antennas.

- Vitturi et al. (2023) conducted a systematic review and meta-analysis of case-control studies examining potential occupational risk factors related to multiple

sclerosis, including solvents, mercury, pesticides, and low-frequency magnetic fields. The authors included 24 studies in their review, but only one of the included studies investigated exposure to magnetic fields (Pedersen et al., 2017, discussed above), thereby adding little new information to the existing body of research.

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V. NOTICE

A. Furnish a proposed route description to be used for public notice purposes. Provide a map of suitable scale showing the route of the proposed project. For all routes that the Applicant proposed to be noticed, provide minimum, maximum and average structure heights.

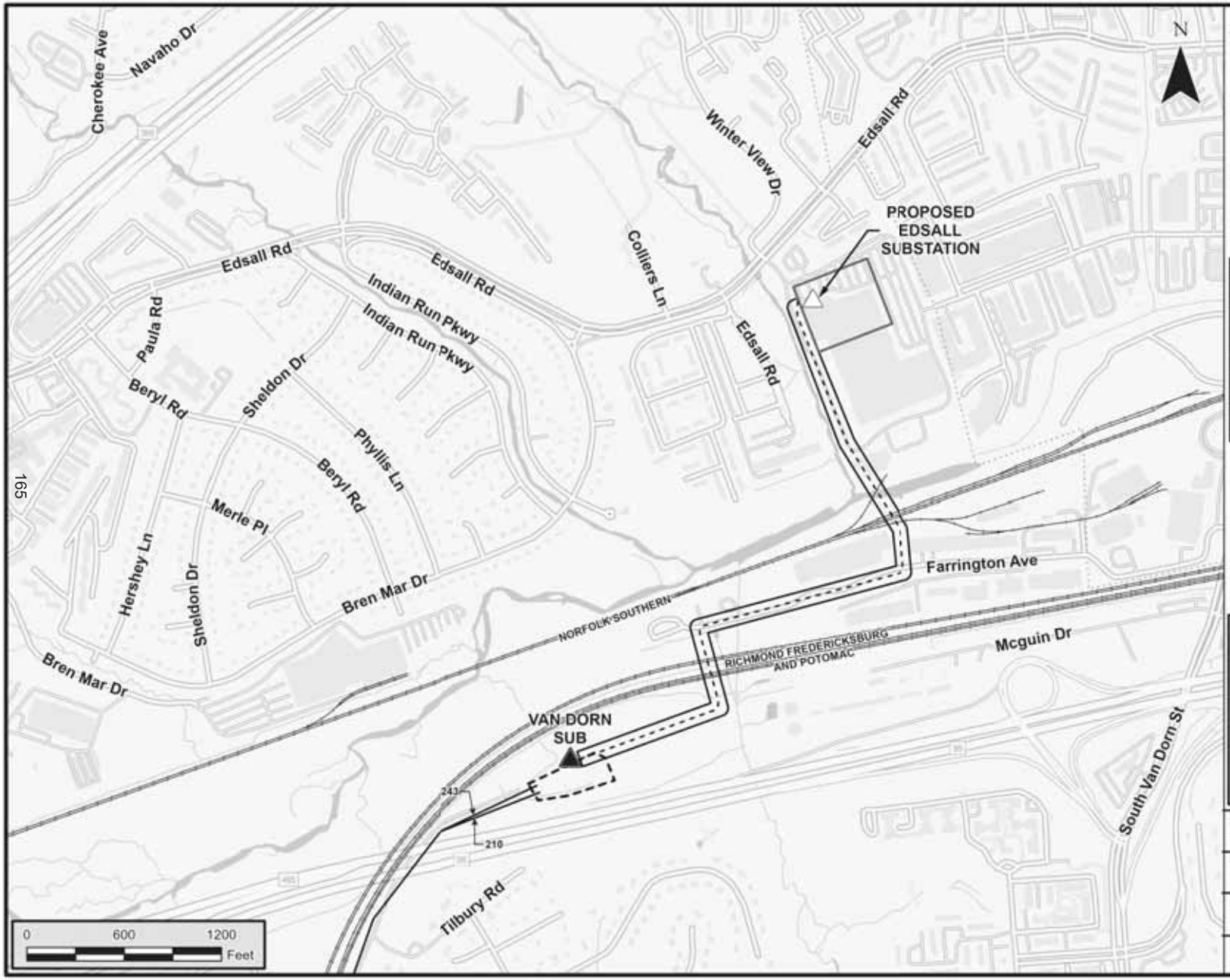
Response: The Project includes extension of the Company's existing overhead single circuit Hayfield-Van Dorn Line #210 and Ox-Van Dorn Line #243 (the "Edsall Lines") from the existing Van Dorn Substation to the proposed Edsall Substation.

A map is provided in Attachment V.A showing the overhead Proposed Route of the Edsall Lines and location of the proposed Edsall Substation. A written description of the Proposed Route is as follows:

Proposed Route – Edsall Lines

The Proposed Route is approximately 0.9 mile in length. The route originates within the eastern side of the existing Van Dorn Substation, which is located approximately 900 feet east-northeast of the I-495/I-95 overpass over the Virginia Passenger Rail Authority ("VPRA") and Washington Metropolitan Area Transit Authority ("WMATA") railroad corridors, and south of the Bren Mar community. The route travels eastward for approximately 925 feet and then turns north for approximately 500 feet, crossing the WMATA and VPRA Richmond, Fredericksburg, and Potomac rail corridors. The route then turns east and continues through the Farrington Avenue industrial complex for approximately 1,350 feet before turning north between two industrial buildings. The Proposed Route continues north for approximately 700 feet, crossing over the Norfolk Southern rail line and Backlick Run. At this point, the route continues north just east of Turkeycock Run for a distance of approximately 1,100 feet where it turns eastward before terminating at the proposed Edsall Substation, which is located approximately 250 feet southeast of the intersection between Edsall Road and Winter View Drive.

The Proposed Route will be constructed within a new 100-foot-wide right-of-way on galvanized steel double circuit monopole structures with a minimum structure height of approximately 100 feet, a maximum structure height of approximately 150 feet, and an average structure height of approximately 125 feet, based on preliminary conceptual design, not including foundation reveal, and subject to change based on final engineering design.



ATTACHMENT
V.A.

TITLE:

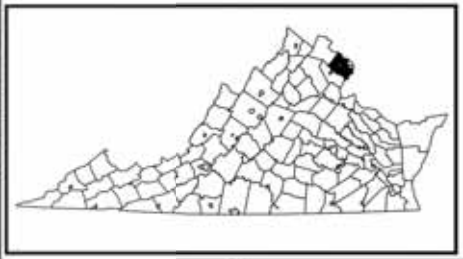
NOTICE MAP

PROJECT:

230 KV LINES #210 AND #243
EXTENSION AND EDSALL SUBSTATION

LEGEND
- EXISTING SUBSTATIONS
- PROPOSED EDSALL SUBSTATION
- EXISTING SUBSTATION BOUNDARY
- PROPOSED ROUTE CENTERLINE AND RIGHT-OF-WAY
- PROPOSED SUBSTATION BOUNDARY
- EXISTING DOMINION TRANSMISSION LINES
- RAILROADS

KEY PLAN



PROJECT NUMBER: 50163606	
SCALE: 1"= 600 FEET	DATE: 5/1/2024
PROJECT MANAGER: TL	Dewberry
DRAWN BY: MGH	

V. NOTICE

B. List Applicant offices where members of the public may inspect the application. If applicable, provide a link to website(s) where the application may be found.

Response: Shortly after filing, the Application will be made available electronically for public inspection at: www.dominionenergy.com/Edsall.

V. NOTICE

C. List all federal, state, and local agencies and/or officials that may reasonably be expected to have an interest in the proposed construction and to whom the Applicant has furnished or will furnish a copy of the application.

Response:

Ms. Bettina Rayfield
Virginia Department of Environmental Quality
Office of Environmental Impact Review
1111 East Main Street, Suite 1400
Richmond, Virginia 23219

Ms. Michelle Henicheck
Virginia Department of Environmental Quality
Office of Wetlands and Streams
1111 East Main Street, Suite 1400
Richmond, Virginia 23219

Ms. Rene Hypes
Virginia Department of Conservation and Recreation
Division of Natural Heritage
600 East Main Street, Suite 1400
Richmond, Virginia 23219

Environmental Reviewer
Virginia Department of Conservation and Recreation
Planning & Recreation Bureau
600 East Main Street, 17th Floor
Richmond, Virginia 23219

Mr. Roger Kirchen
Department of Historic Resources
Review and Compliance Division
2801 Kensington Avenue
Richmond, Virginia 23221

Ms. Amy Martin
Virginia Department of Wildlife Resources
Wildlife Information and Environmental Services
7870 Villa Park, Suite 400
Henrico, Virginia 23228

Mr. Keith Tignor
Virginia Department of Agriculture and Consumer Services
Office of Plant Industry Services
102 Governor Street
Richmond, Virginia 23219

Mr. Clint Folks
Virginia Department of Forestry
Forestland Conservation Division
900 Natural Resources Drive, Suite 800
Charlottesville, Virginia 22903

Scoping at VMRC
Virginia Marine Resources Commission
Habitat Management Division
Building 96, 380 Fenwick Road
Ft. Monroe, Virginia 23651

Mr. Troy Andersen
US Fish and Wildlife Service
Virginia Field Office, Ecological Services
6669 Short Lane
Gloucester, Virginia 23061

Ms. Regena Bronson
US Army Corps of Engineers
Norfolk District
10300 Spotsylvania Parkway, Suite 230
Fredericksburg, Virginia 22408

Mr. Scott Denny
Virginia Department of Aviation
Airport Services Division
5702 Gulfstream Road
Richmond, Virginia 23250

Ms. Martha Little
Virginia Outdoors Foundation
600 East Main Street, Suite 402
Richmond, Virginia 23219

Steven E. Welch
Assistant District Administrator
Director of Transportation & Land Use – Fairfax & Arlington Counties
Virginia Department of Transportation, Northern Virginia District Office
4975 Alliance Drive
Fairfax, Virginia 22030

Ms. Arlene F. Warren
Virginia Department of Health
Office of Drinking Water
109 Governor Street, 6th Floor
Richmond, Virginia 23219

Samantha Hudson
Assistant Division Director for Planning & Real Estate
Fairfax County Park Authority
12055 Government Center Parkway, Suite 421
Fairfax, Virginia 22035

Tracy Strunk
Director, Planning and Development
Fairfax County
12055 Government Center Parkway
Fairfax, Virginia 22035

Fairfax County Supervisors:
Andres F. Jimenez
Mason District County Supervisor, Fairfax County
6507 Columbia Pike
Annandale, Virginia 22003

Rodney L. Lusk
Franconia District County Supervisor, Fairfax County
6121 Franconia Road
Alexandria, Virginia 22310

Mr. Benli Li, Manager Adjacent Construction
Washington Metropolitan Area Transit Authority
Office of Joint Development & Adjacent Construction
4100 Garden City Drive,
8th Floor, 803-20B
Hyattsville, Maryland 20785

Joshua Lineberger
Senior Real Estate & Asset Manager
Virginia Passenger Rail Authority
919 E Main Street, Ste 2400
Richmond, Virginia 23219

V. NOTICE

D. If the application is for a transmission line with a voltage of 138 kV or greater, provide a statement and any associated correspondence indicating that prior to the filing of the application with the SCC the Applicant has notified the chief administrative officer of every locality in which it plans to undertake construction of the proposed line of its intention to file such an application, and that the Applicant gave the locality a reasonable opportunity for consultation about the proposed line (similar to the requirements of § 15.2-2202 of the Code for electric transmission lines of 150 kV or more).

Response: In accordance with Va. Code § 15.2-2202 E, a letter dated April 9, 2024, was delivered to Bryan Hill, County Executive of Fairfax County, where the Project is located. The letter stated the Company's intention to file this Application and invited the County to consult with the Company about the Project. This letter is included as Attachment V.D.1.

Dominion Energy Services, Inc.
120 Tredegar Street, Richmond, VA 23219
DominionEnergy.com

Mr. Bryan Hill
Fairfax County Executive
12000 Government Center Parkway
Fairfax, Virginia 22035

April 9, 2024

RE: Dominion Energy Virginia's 230 kV Lines #210 and #243 Extension and proposed 230-34.5 kV Edsall Substation
Notice Pursuant to Va. Code § 15.2-2202 E

Dear Mr. Hill:

Dominion Energy Virginia (the "Company") is proposing to construct a new 230-34.5 kV substation (the "Edsall Substation") and extend its existing single circuit Hayfield-Van Dorn Line #210 and Ox-Van Dorn Line #243 from within the Company's existing Van Dorn Substation to the proposed Edsall Substation (the "Edsall Lines") in Fairfax County, Virginia (collectively, the "Project").

The Project is necessary to ensure that Dominion Energy Virginia can provide service requested by a data center customer (the "Customer") in Fairfax County, Virginia, to maintain reliable service for the overall growth in the load area surrounding the Company's existing Van Dorn Substation, and to comply with mandatory North American Electric Reliability Corporation Reliability Standards.

The Company is preparing to file an application for a certificate of public convenience and necessity ("CPCN") with the State Corporation Commission of Virginia (the "Commission"). In advance of filing an application for a CPCN from the Commission, the Company respectfully requests that you submit any comments or additional information that would have bearing on the proposed Project within 30 days of the date of this letter.

Enclosed is a Project Overview Map depicting the route of the Edsall Lines, as well as the general Project location. All final materials, including maps, will be available in the Company's application filing to the Commission.

If you would like to receive a GIS shapefile of the transmission line route to assist in the project review or if there are any questions, please do not hesitate to contact Christa McDonald at (571) 319-2582 or C.McDonald@dominionenergy.com. We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

Regards,

Christa McDonald
Siting and Permitting Specialist, Electric Transmission

Attachment: Project Overview Map

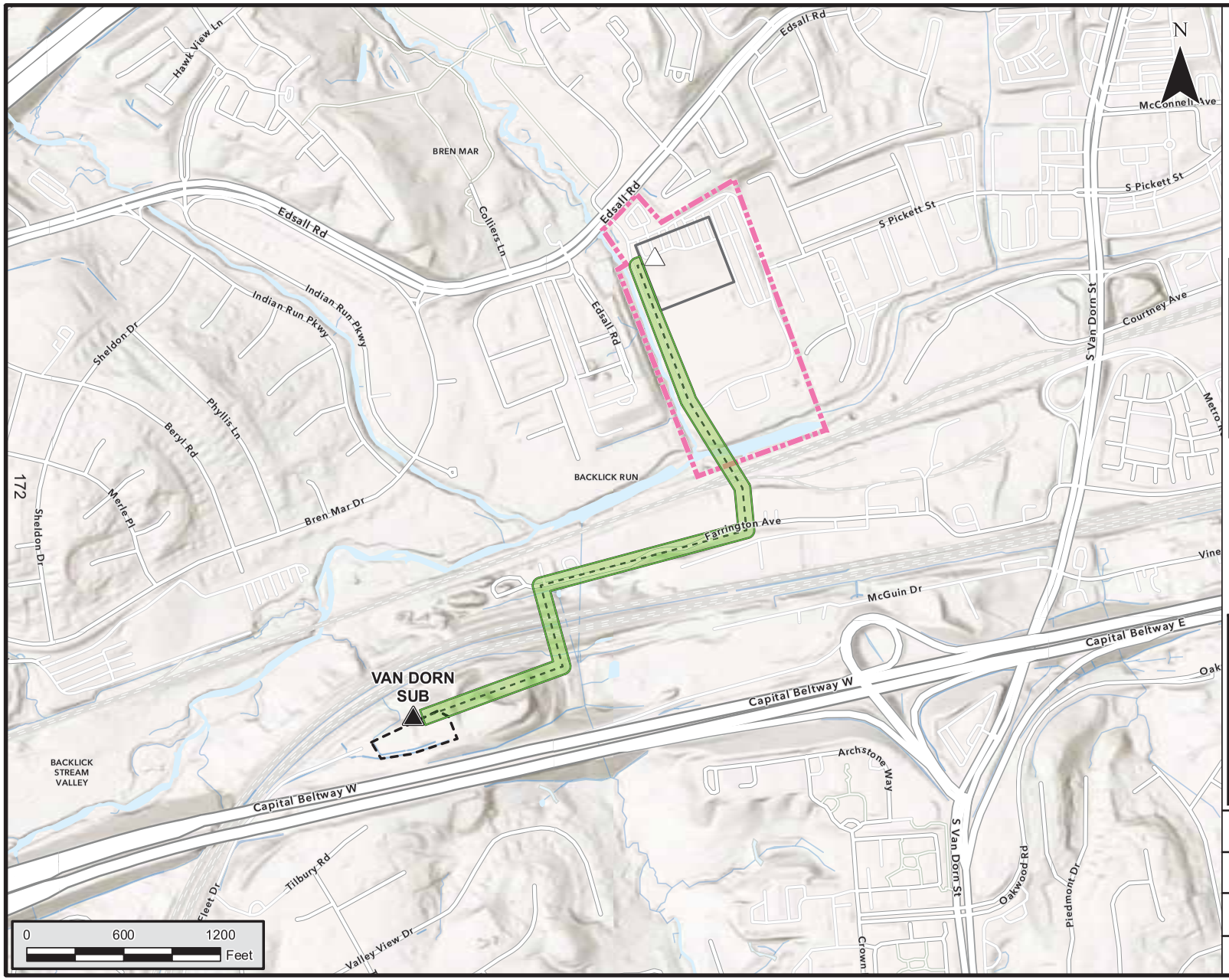


FIGURE NO.

TITLE:

PROJECT OVERVIEW MAP

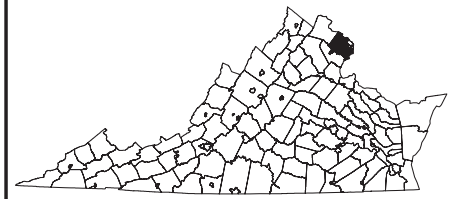
PROJECT:

230 KV LINES #210 AND #243 EXTENSION AND EDSALL SUBSTATION

LEGEND

- PROPOSED EDSALL SUBSTATION
- EXISTING SUBSTATIONS
- EXISTING SUBSTATION BOUNDARY
- PROPOSED SUBSTATION BOUNDARY
- PROPOSED TRANSMISSION LINE ROUTE
- CUSTOMER DATA CENTER CAMPUS

KEY PLAN



PROJECT NUMBER: 50163606	
SCALE: 1"= 600 FEET	DATE: 4/9/2024
PROJECT MANAGER: TL	Dewberry
DRAWN BY: MH	

COMMONWEALTH OF VIRGINIA

STATE CORPORATION COMMISSION

APPLICATION OF	)	
	)	
VIRGINIA ELECTRIC AND POWER COMPANY	)	Case No. PUR-2024-00135
	)	
For approval and certification of electric transmission facilities: 230 kV Lines #210 and #243 Extension and 230-34.5 kV Edsall Substation	)	

IDENTIFICATION, SUMMARIES, AND TESTIMONY OF DIRECT WITNESSES OF VIRGINIA ELECTRIC AND POWER COMPANY

Bradley S. Lowe

Witness Direct Testimony Summary
Direct Testimony
Appendix A: Background and Qualifications

Grace L. Gaudin

Witness Direct Testimony Summary
Direct Testimony
Appendix A: Background and Qualifications

Chloe A. Genova

Witness Direct Testimony Summary
Direct Testimony
Appendix A: Background and Qualifications

Mohammad M. Othman

Witness Direct Testimony Summary
Direct Testimony
Appendix A: Background and Qualifications

Christiaanna C. McDonald

Witness Direct Testimony Summary
Direct Testimony
Appendix A: Background and Qualifications

Andrew E. Dietrich

Witness Direct Testimony Summary
Direct Testimony
Appendix A: Background and Qualifications

WITNESS DIRECT TESTIMONY SUMMARY

Witness: Bradley S. Lowe

Title: Engineer III – Electric Transmission Planning

Summary:

Company Witness Bradley S. Lowe sponsors those portions of the Appendix describing the Company's electric transmission system and the need for, and benefits of, the proposed Project, as follows:

- Section I.G: This section provides a system map for the affected area.
- Section I.J: This section provides information about the project if approved by the RTO.
- Section I.K: This section, when applicable, provides outage history and maintenance history for existing transmission lines if the proposed project is a rebuild and is due in part to reliability issues.
- Section I.M: This section, when applicable, contains information for transmission lines interconnecting a non-utility generator.
- Section II.A.3: This section provides color maps of existing or proposed rights-of-way in the vicinity of the proposed project.
- Section II.A.10: This section provides details of the construction plans for the proposed project, including requested line outage schedules.

Additionally, Company Witness Lowe co-sponsors the following sections of the Appendix:

- Section I.A (co-sponsored with Company Witnesses Grace L. Gaudin, Chloe A. Genova, Mohammad M. Othman, Christiaanna C. McDonald, and Andrew E. Dietrich): This section details the primary justifications for the proposed project.
- Section I.B (co-sponsored with Company Witness Grace L. Gaudin): This section details the engineering justifications for the proposed project.
- Section I.C (co-sponsored with Company Witness Grace L. Gaudin): This section describes the present system and details how the proposed project will effectively satisfy present and projected future load demand requirements.
- Section I.D (co-sponsored with Company Witness Grace L. Gaudin): This section, when applicable, describes critical contingencies and associated violations due to the inadequacy of the existing system.
- Section I.E (co-sponsored with Company Witness Grace L. Gaudin): This section explains feasible project alternatives, when applicable.
- Section I.H (co-sponsored with Company Witnesses Grace L. Gaudin and Christiaanna C. McDonald): This section provides the desired in-service date of the proposed project and the estimated construction time.
- Section I.L (co-sponsored with Company Witness Chloe A. Genova): This section, when applicable, provides details on the deterioration of structures and associated equipment.
- Section I.N (co-sponsored with Company Witness Grace L. Gaudin): This section provides the proposed and existing generating sources, distribution circuits or load centers planned to be served by all new substations, switching stations, and other ground facilities associated with the proposed project.

A statement of Mr. Lowe's background and qualifications is attached to his testimony as Appendix A.

DIRECT TESTIMONY
OF
BRADLEY S. LOWE
ON BEHALF OF
VIRGINIA ELECTRIC AND POWER COMPANY
BEFORE THE
STATE CORPORATION COMMISSION OF VIRGINIA
CASE NO. PUR-2024-00135

Q. Please state your name, position with Virginia Electric and Power Company ("Dominion Energy Virginia" or the "Company"), and business address.

A. My name is Bradley S. Lowe, and I am an Engineer III in the Electric Transmission Planning Department for the Company. My business address is 5000 Dominion Boulevard, Glen Allen, Virginia 23060. A statement of my qualifications and background is provided as Appendix A.

Q. Please describe your areas of responsibility with the Company.

A. I am responsible for planning the Company's electric transmission system for voltages of 69 kilovolt ("kV") through 500 kV.

Q. What is the purpose of your testimony in this proceeding?

A. In order to provide service requested by a data center customer (the "Customer"); to maintain reliable service for the overall load growth in the area; and to comply with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, Dominion Energy Virginia proposes in Fairfax County, Virginia, to:

- Extend the Company's existing overhead single circuit Hayfield-Van Dorn Line #210 and Ox-Van Dorn Line #243 from Van Dorn Substation to the proposed 230-34.5 kV Edsall Substation, resulting in (i) 230 kV Edsall-Hayfield Line #210 and (ii) 230 kV Edsall-Ox Line #243 (collectively, the "Edsall Lines"). Specifically, extend existing Lines #210 and #243 approximately 0.9 mile starting from the eastern side of the Van Dorn Substation and terminating at the proposed Edsall Substation. The proposed Edsall Lines will be constructed on entirely new 100-foot-wide right-of way supported by galvanized steel double

circuit monopoles utilizing three-phase twin-bundled 768.2 Aluminum Conductor Steel Supported/Trapezoidal Wire/High Strength conductor with a summer transfer capability of 1,573 MVA.

- Construct a new 230-34.5 kV substation in Fairfax County, Virginia, on property to be obtained by the Company (the "Edsall Substation") and perform substation-related work at the Company's existing Van Dorn Substation, in Fairfax County, Virginia.

The Edsall Lines, Edsall Substation, and substation-related work at the Van Dorn Substation are collectively referred to as the "230 kV Edsall Lines and Substation Project" or the "Project."

The Project is necessary to ensure that Dominion Energy Virginia can provide service requested by the Customer in Fairfax County, Virginia; to maintain reliable service for the overall growth in the load area surrounding the Company's existing Van Dorn Substation (the "Van Dorn Load Area"); and to comply with mandatory NERC Reliability Standards. Specifically, the Customer has requested a total of 176 MW of projected load from Dominion Energy Virginia to serve its planned data center development in Fairfax County, Virginia.

The purpose of my testimony is to describe the Company's electric transmission system and the need for, and benefits of, the proposed Project. I sponsor Sections I.G, I.J, I.K, I.M, II.A.3, and II.A.10 of the Appendix. Additionally, I co-sponsor the Executive Summary and Section I.A with Company Witnesses Grace L. Gaudin, Chloe A. Genova, Mohammad M. Othman, Christiaanna C. McDonald, and Andrew E. Dietrich; Sections I.B, I.C, I.D, I.E, and I.N with Company Witness Grace L. Gaudin; Section I.H with Company Witnesses Grace L. Gaudin and Christiaanna C. McDonald; and Section I.L with Company Witness Chloe A. Genova.

Q. Does this conclude your pre-filed direct testimony?

A. Yes, it does.

APPENDIX A

BACKGROUND AND QUALIFICATIONS OF BRADLEY S. LOWE

Bradley S. Lowe received his Bachelor of Science and Master of Science degrees in Electrical Engineering from Virginia Polytechnic Institute and State University in 2014 and 2015 respectively. Mr. Lowe received his NERC Reliability Coordinator and PJM Interconnection Owner/Operator certifications in 2019. Mr. Lowe has been employed by Dominion Energy since 2015 where he has worked on several teams within the Power Delivery group including System Protection, Substation Control Design, Substation Engineering, Transmission Operations, and Transmission Planning. He has been with the Transmission Area Planning team since February 2023.

WITNESS DIRECT TESTIMONY SUMMARY

Witness: Grace L. Gaudin

Title: Engineer I – Distribution Planning Team

Summary:

Company Witness Grace L. Gaudin co-sponsors those sections of the Appendix describing the Company's electric distribution system and the need for, and benefits of, the proposed Project, as follows:

- Section I.A (co-sponsored with Company Witnesses Bradley S. Lowe, Chloe A. Genova, Mohammad M. Othman, Christiaanna C. McDonald, and Andrew E. Dietrich): This section details the primary justifications for the proposed project.

- Section I.B (co-sponsored with Company Witness Bradley S. Lowe): This section details the engineering justifications for the proposed project.

- Section I.C (co-sponsored with Company Witness Bradley S. Lowe): This section describes the present system and details how the proposed project will effectively satisfy present and projected future load demand requirements.

- Section I.D (co-sponsored with Company Witness Bradley S. Lowe): Although not applicable to the proposed project, this section, when applicable, describes critical contingencies and associated violations due to the inadequacy of the existing system.

- Section I.E (co-sponsored with Company Witness Bradley S. Lowe): This section explains feasible project alternatives, when applicable.

- Section I.H (co-sponsored with Company Witnesses Bradley S. Lowe and Christiaanna C. McDonald): This section provides the desired in-service date of the proposed project and the estimated construction time.

- Section I.N (co-sponsored with Company Bradley S. Lowe): This section provides the proposed and existing generating sources, distribution circuits or load centers planned to be served by all new substations, switching stations, and other ground facilities associated with the proposed project.

A statement of Ms. Gaudin's background and qualifications is attached to her testimony as Appendix A.

DIRECT TESTIMONY
OF
GRACE L. GAUDIN
ON BEHALF OF
VIRGINIA ELECTRIC AND POWER COMPANY
BEFORE THE
STATE CORPORATION COMMISSION OF VIRGINIA
CASE NO. PUR-2024-00135

Q. Please state your name, business address and position with Virginia Electric and Power Company ("Dominion Energy Virginia" or the "Company").

A. My name is Grace L. Gaudin, and I am an Engineer I – Distribution Planning for the Company. My business address is 600 East Canal Street, Richmond, Virginia 23219. A statement of my qualifications and background is provided as Appendix A.

Q. Please describe your areas of responsibility with the Company.

A. I am responsible for planning the Company's electric distribution system that serves data centers, primarily in the Company's Northern Virginia offices, for voltage under 69 kilovolt ("kV").

Q. What is the purpose of your testimony in this proceeding?

A. In order to provide service requested by a data center customer (the "Customer"); to maintain reliable service for the overall load growth in the area; and to comply with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, Dominion Energy Virginia proposes in Fairfax County, Virginia, to:

- Extend the Company's existing overhead single circuit Hayfield-Van Dorn Line #210 and Ox-Van Dorn Line #243 from Van Dorn Substation to the proposed 230-34.5 kV Edsall Substation, resulting in (i) 230 kV Edsall-Hayfield Line #210 and (ii) 230 kV Edsall-Ox Line #243 (collectively, the "Edsall Lines"). Specifically, extend existing Lines #210 and #243 approximately 0.9 mile starting from the eastern side of the Van Dorn Substation and terminating at the proposed Edsall Substation. The proposed Edsall Lines will be constructed on entirely new 100-foot-wide right-of way supported by galvanized steel double

circuit monopoles utilizing three-phase twin-bundled 768.2 Aluminum Conductor Steel Supported/Trapezoidal Wire/High Strength conductor with a summer transfer capability of 1,573 MVA.

- Construct a new 230-34.5 kV substation in Fairfax County, Virginia, on property to be obtained by the Company (the "Edsall Substation") and perform substation-related work at the Company's existing Van Dorn Substation, in Fairfax County, Virginia.

The Edsall Lines, Edsall Substation, and substation-related work at the Van Dorn Substation are collectively referred to as the "230 kV Edsall Lines and Substation Project" or the "Project."

The Project is necessary to ensure that Dominion Energy Virginia can provide service requested by the Customer in Fairfax County, Virginia; to maintain reliable service for the overall growth in the load area surrounding the Company's existing Van Dorn Substation (the "Van Dorn Load Area"); and to comply with mandatory NERC Reliability Standards. Specifically, the Customer has requested a total of 176 MW of projected load from Dominion Energy Virginia to serve its planned data center development in Fairfax County, Virginia.

The purpose of my testimony is to describe the Company's electric distribution system and the need for, and benefits of, the proposed Project. I co-sponsor the Executive Summary and Section I.A with Company Witnesses Bradley S. Lowe, Chloe A. Genova, Mohammad M. Othman, Christiaanna C. McDonald, and Andrew E. Dietrich. Additionally, I co-sponsor Sections I.B, I.C, I.D, I.E, and I.N of the Appendix with Company Witness Bradley S. Lowe; and Section I.H with Company Witnesses Bradley S. Lowe and Christiaanna C. McDonald.

Q. Does this conclude your pre-filed direct testimony?

A. Yes, it does.

APPENDIX A

BACKGROUND AND QUALIFICATIONS
OF
GRACE L. GAUDIN

Grace L. Gaudin is a 2023 graduate from George Mason University with a Bachelor of Science in Electrical Engineering. She has been employed full time by the Company since 2023 in distribution planning.

WITNESS DIRECT TESTIMONY SUMMARY

Witness: Chloe A. Genova

Title: Engineering Technical Specialist III

Summary:

Company Witness Chloe A. Genova sponsors those sections of the Appendix providing an overview of the design characteristics of the transmission facilities for the proposed Project, and discussing electric and magnetic field levels, as follows:

- Section I.F: This section, when applicable, describes any lines or facilities that will be removed, replaced, or taken out of service upon completion of the proposed project.
- Section II.A.5: This section provides drawings of the right-of-way cross section showing typical transmission lines structure placements.
- Sections II.B.1 to II.B.2: These sections provide the line design and operational features of the proposed project, as applicable.
- Section IV: This section provides analysis on the health aspects of electric and magnetic field levels.

Additionally, Company Witness Genova co-sponsors the following sections of the Appendix:

- Section I.A (co-sponsored with Company Witnesses Bradley S. Lowe, Grace L. Gaudin, Mohammad M. Othman, Christiaanna C. McDonald, and Andrew E. Dietrich): This section details the primary justifications for the proposed project.
- Section I.I. (co-sponsored with Company Witness Mohammad M. Othman): This section provides the estimated total cost of the proposed project.
- Section I.L (co-sponsored with Company Witness Bradley S. Lowe): This section, when applicable, provides details on the deterioration of structures and associated equipment.
- Sections II.B.3 to II.B.5 (co-sponsored with Company Witness Christiaanna C. McDonald): These sections, when applicable, provide supporting structure details along the proposed and alternative routes.
- Section II.B.6 (co-sponsored with Company Witnesses Christiaanna C. McDonald and Andrew E. Dietrich): This section provides photographs of existing facilities, representations of proposed facilities, and visual simulations.
- Section V.A (co-sponsored with Company Witnesses Christiaanna C. McDonald and Andrew E. Dietrich): This section provides the proposed route description and structure heights for notice purposes.

A statement of Ms. Genova's background and qualifications is attached to her testimony as Appendix A.

DIRECT TESTIMONY
OF
CHLOE A. GENOVA
ON BEHALF OF
VIRGINIA ELECTRIC AND POWER COMPANY
BEFORE THE
STATE CORPORATION COMMISSION OF VIRGINIA
CASE NO. PUR-2024-00135

Q. Please state your name, business address and position with Virginia Electric and Power Company ("Dominion Energy Virginia" or the "Company").

A. My name is Chloe A. Genova, and I am an Engineer Technical Specialist III in the Electric Transmission Line Engineering Department of the Company. My business address is 5000 Dominion Boulevard, Glen Allen, Virginia 23060. A statement of my qualifications and background is provided as Appendix A.

Q. Please describe your areas of responsibility with the Company.

A. I am responsible for the estimating and conceptual design of high voltage transmission line projects from 69 kilovolt ("kV") to 500 kV.

Q. What is the purpose of your testimony in this proceeding?

A. In order to provide service requested by a data center customer (the "Customer"); to maintain reliable service for the overall load growth in the area; and to comply with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, Dominion Energy Virginia proposes in Fairfax County, Virginia, to:

- Extend the Company's existing overhead single circuit Hayfield-Van Dorn Line #210 and Ox-Van Dorn Line #243 from Van Dorn Substation to the proposed 230-34.5 kV Edsall Substation, resulting in (i) 230 kV Edsall-Hayfield Line #210 and (ii) 230 kV Edsall-Ox Line #243 (collectively, the "Edsall Lines"). Specifically, extend existing Lines #210 and #243 approximately 0.9 mile starting from the eastern side of the Van Dorn Substation and terminating at the proposed Edsall Substation. The proposed Edsall Lines will be constructed on entirely new 100-foot-wide right-of way supported by galvanized steel double

circuit monopoles utilizing three-phase twin-bundled 768.2 Aluminum Conductor Steel Supported/Trapezoidal Wire/High Strength conductor with a summer transfer capability of 1,573 MVA.

- Construct a new 230-34.5 kV substation in Fairfax County, Virginia, on property to be obtained by the Company (the "Edsall Substation") and perform substation-related work at the Company's existing Van Dorn Substation, in Fairfax County, Virginia.

The Edsall Lines, Edsall Substation, and substation-related work at the Van Dorn Substation are collectively referred to as the "230 kV Edsall Lines and Substation Project" or the "Project."

The Project is necessary to ensure that Dominion Energy Virginia can provide service requested by the Customer in Fairfax County, Virginia; to maintain reliable service for the overall growth in the load area surrounding the Company's existing Van Dorn Substation (the "Van Dorn Load Area"); and to comply with mandatory NERC Reliability Standards. Specifically, the Customer has requested a total of 176 MW of projected load from Dominion Energy Virginia to serve its planned data center development in Fairfax County, Virginia.

The purpose of my testimony is to describe the design characteristics of the transmission facilities for the proposed Project and to discuss electric and magnetic field levels. I sponsor Sections I.F, II.A.5, II.B.1, II.B.2, and IV of the Appendix. Additionally, I co-sponsor the Executive Summary and Section I.A with Company Witnesses Bradley Lowe, Grace L. Gaudin, Mohammad M. Othman, Christiaanna C. McDonald, and Andrew E. Dietrich; Section I.I with Company Witness Mohammad M. Othman; Section I.L with Company Witness Bradley S. Lowe; Sections II.B.3 to II.B.5 with Company Witness Christiaanna C. McDonald; and Sections II.B.6 and V.A with Company

Witnesses Christiaanna C. McDonald and Andrew E. Dietrich.

Q. Does this conclude your pre-filed direct testimony?

A. Yes, it does.

APPENDIX A

BACKGROUND AND QUALIFICATIONS
OF
CHLOE A. GENOVA

Chloe A. Genova received a Bachelor of Science degree in Civil Engineering Technology from the Pennsylvania College of Technology in 2018. She currently possesses an Engineer-in-Training certification in Virginia. She worked as a contractor for Dominion Energy for three years before being hired as a full-time employee in July 2021. Ms. Genova's experience with the Company includes Overhead Electric Transmission Line Design (July 2018-Present).

Ms. Genova has previously submitted pre-filed testimony to the State Corporation Commission of Virginia.

WITNESS DIRECT TESTIMONY SUMMARY

Witness: Mohammad M. Othman

Title: Engineer III—Substation Engineering

Summary:

Company Witness Mohammad M. Othman sponsors or co-sponsors the following sections of the Appendix describing the substation work to be performed for the proposed Project as follows:

- Section I.A (co-sponsored with Company Witnesses Bradley S. Lowe, Grace L. Gaudin, Chloe A. Genova, Christiaanna C. McDonald, and Andrew E. Dietrich): This section details the primary justifications for the proposed project.

- Section I.I (co-sponsored with Company Witness Chloe A. Genova): This section provides the estimated total cost of the proposed project.

- Section II.C: This section describes and furnishes a one-line diagram of the substation associated with the proposed project.

A statement of Mr. Othman's background and qualifications is attached to his testimony as Appendix A.

DIRECT TESTIMONY
OF
MOHAMMAD M. OTHMAN
ON BEHALF OF
VIRGINIA ELECTRIC AND POWER COMPANY
BEFORE THE
STATE CORPORATION COMMISSION OF VIRGINIA
CASE NO. PUR-2024-00135

Q. Please state your name, business address and position with Virginia Electric and Power Company ("Dominion Energy Virginia" or the "Company").

A. My name is Mohammad M. Othman, and I am an Engineer III in the Substation Engineering section of the Electric Transmission group of the Company. My business address is 5000 Dominion Boulevard, Glen Allen, Virginia 23060. A statement of my qualifications and background is provided as Appendix A.

Q. Please describe your areas of responsibility with the Company.

A. I am responsible for evaluation of the substation project requirements, feasibility studies, conceptual physical design, scope development, preliminary engineering, and cost estimating for high voltage transmission and distribution substations.

Q. What is the purpose of your testimony in this proceeding?

A. In order to provide service requested by a data center customer (the "Customer"); to maintain reliable service for the overall load growth in the area; and to comply with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, Dominion Energy Virginia proposes in Fairfax County, Virginia, to:

- Extend the Company's existing overhead single circuit Hayfield-Van Dorn Line #210 and Ox-Van Dorn Line #243 from Van Dorn Substation to the proposed 230-34.5 kilovolt ("kV") Edsall Substation, resulting in (i) 230 kV Edsall-Hayfield Line #210 and (ii) 230 kV Edsall-Ox Line #243 (collectively, the "Edsall Lines"). Specifically, extend existing Lines #210 and #243 approximately 0.9 mile starting from the eastern side of the Van Dorn

Substation and terminating at the proposed Edsall Substation. The proposed Edsall Lines will be constructed on entirely new 100-foot-wide right-of way supported by galvanized steel double circuit monopoles utilizing three-phase twin-bundled 768.2 Aluminum Conductor Steel Supported/Trapezoidal Wire/High Strength conductor with a summer transfer capability of 1,573 MVA.

- Construct a new 230-34.5 kV substation in Fairfax County, Virginia, on property to be obtained by the Company (the "Edsall Substation") and perform substation-related work at the Company's existing Van Dorn Substation, in Fairfax County, Virginia.

The Edsall Lines, Edsall Substation, and substation-related work at the Van Dorn Substation are collectively referred to as the "230 kV Edsall Lines and Substation Project" or the "Project."

The Project is necessary to ensure that Dominion Energy Virginia can provide service requested by the Customer in Fairfax County, Virginia; to maintain reliable service for the overall growth in the load area surrounding the Company's existing Van Dorn Substation (the "Van Dorn Load Area"); and to comply with mandatory NERC Reliability Standards. Specifically, the Customer has requested a total of 176 MW of projected load from Dominion Energy Virginia to serve its planned data center development in Fairfax County, Virginia.

The purpose of my testimony is to describe the work to be performed as part of the Project. As it pertains to station work, I sponsor Section II.C of the Appendix. Additionally, I co-sponsor the Executive Summary and Section I.A with Company Witnesses Bradley S. Lowe, Grace L. Gaudin, Chloe A. Genova, Christiaanna C. McDonald, and Andrew E. Dietrich; and Section I.I of the Appendix with Company Witness Chloe A. Genova.

Q. Does this conclude your pre-filed direct testimony?

A. Yes, it does.

APPENDIX A

BACKGROUND AND QUALIFICATIONS OF MOHAMMAD M. OTHMAN

Mohammad M. Othman received a Bachelor of Science degree in Electrical Engineering from Virginia Commonwealth University in 2008. Mr. Othman's responsibilities include the evaluation of the substation project requirements, development of scope documents and schedules, preparation of estimates and proposals, preparation of specifications and bid documents, material procurement, design substation physical layout, development of detailed physical drawings, bill of materials, electrical schematics, and wiring diagrams. Mr. Othman joined the Dominion Energy Virginia Substation Engineering department in 2010 as an Engineer II and was later promoted to Engineer III, the title he currently holds.

Mr. Othman has previously submitted pre-filed testimony to the State Corporation Commission of Virginia.

WITNESS DIRECT TESTIMONY SUMMARY

Witness: Christiaanna C. McDonald

Title: Senior Siting and Permitting Specialist – Siting and Permitting Group

Summary:

Company Witness Christiaanna C. McDonald sponsors those portions of the Appendix providing an overview of the design of the route for the proposed Project, and related permitting, as follows:

- Section II.A.12: This section identifies the counties and localities through which the proposed project will pass and provides General Highway Maps for these localities.
- Sections V.B–D: These sections provide information related to public notice of the proposed project.

Additionally, Company Witness McDonald co-sponsors the following portion of the Appendix:

- Section I.A (co-sponsored with Company Witnesses Bradley S. Lowe, Grace L. Gaudin, Chloe A. Genova, Mohammad M. Othman, and Andrew E. Dietrich): This section details the primary justifications for the proposed project.
- Section I.H (co-sponsored with Company Witnesses Bradley S. Lowe and Grace L. Gaudin): This section provides the desired in-service date of the proposed project and the estimated construction time.
- Section II.A.1 (co-sponsored with Company Witness Andrew E. Dietrich): This section provides the length of the proposed corridor and viable alternatives to the proposed project.
- Section II.A.2 (co-sponsored with Company Witness Andrew E. Dietrich): This section provides a map showing the route of the proposed project in relation to notable points close to the proposed project.
- Section II.A.4 (co-sponsored with Company Witness Andrew E. Dietrich): This section explains why the existing right-of-way is not adequate to serve the need.
- Sections II.A.6 to II.A.8 (co-sponsored with Company Andrew E. Dietrich): These sections provide detail regarding the right-of-way for the proposed project.
- Section II.A.9 (co-sponsored with Company Witness Andrew E. Dietrich): This section describes the proposed route selection procedures and details alternative routes considered.
- Section II.A.11 (co-sponsored with Company Witness Andrew E. Dietrich): This section details how the construction of the proposed project follows the provisions discussed in Attachment 1 of the Transmission Appendix Guidelines.
- Sections II.B.3 to II.B.5 (co-sponsored with Company Witness Chloe A. Genova): These sections, when applicable, provide supporting structure details along the proposed and alternative routes.
- Section II.B.6 (co-sponsored with Company Witnesses Chloe A. Genova and Andrew E. Dietrich): This section provides photographs of existing facilities, representations of proposed facilities, and visual simulations.
- Section III (co-sponsored with Company Witness Andrew E. Dietrich): This section details the impact of the proposed project on scenic, environmental, and historic features.
- Section V.A (co-sponsored with Company Witnesses Chloe A. Genova and Andrew E. Dietrich): This section provides the proposed route description and structure heights for notice purposes.

Finally, Ms. McDonald sponsors the DEQ Supplement filed with the Application with Company Witness Andrew E. Dietrich. A statement of Ms. McDonald's background and qualifications is attached to her testimony as Appendix A.

DIRECT TESTIMONY
OF
CHRISTIAANNA C. MCDONALD
ON BEHALF OF
VIRGINIA ELECTRIC AND POWER COMPANY
BEFORE THE
STATE CORPORATION COMMISSION OF VIRGINIA
CASE NO. PUR-2024-00135

Q. Please state your name, position with Virginia Electric and Power Company ("Dominion Energy Virginia" or the "Company"), and business address.

A. My name is Christiaanna C. McDonald, and I serve as a Senior Siting and Permitting Specialist in the Siting and Permitting Group for the Company. My business address is 5000 Dominion Boulevard, 3rd Floor, Glen Allen, Virginia 23060. A statement of my qualifications and background is provided as Appendix A.

Q. Please describe your areas of responsibility with the Company.

A. I am responsible for identifying appropriate routes for transmission lines and obtaining necessary federal, state, and local approvals and environmental permits for those facilities. In this position, I work closely with government officials, permitting agencies, property owners, and other interested parties, as well as with other Company personnel, to develop facilities needed by the public so as to reasonably minimize environmental and other impacts on the public in a reliable, cost-effective manner.

Q. What is the purpose of your testimony in this proceeding?

A. In order to provide service requested by a data center customer (the "Customer"); to maintain reliable service for the overall load growth in the area; and to comply with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, Dominion Energy Virginia proposes in Fairfax County, Virginia, to:

- Extend the Company's existing overhead single circuit Hayfield-Van Dorn Line #210 and Ox-Van Dorn Line #243 from Van Dorn Substation to the proposed 230-34.5 kilovolt ("kV") Edsall Substation, resulting in (i) 230 kV Edsall-Hayfield Line #210 and (ii) 230 kV Edsall-Ox Line #243 (collectively, the "Edsall Lines"). Specifically, extend existing Lines #210 and #243 approximately 0.9 mile starting from the eastern side of the Van Dorn Substation and terminating at the proposed Edsall Substation. The proposed Edsall Lines will be constructed on entirely new 100-foot-wide right-of way supported by galvanized steel double circuit monopoles utilizing three-phase twin-bundled 768.2 Aluminum Conductor Steel Supported/Trapezoidal Wire/High Strength conductor with a summer transfer capability of 1,573 MVA.

- Construct a new 230-34.5 kV substation in Fairfax County, Virginia, on property to be obtained by the Company (the "Edsall Substation") and perform substation-related work at the Company's existing Van Dorn Substation, in Fairfax County, Virginia.

The Edsall Lines, Edsall Substation, and substation-related work at the Van Dorn Substation are collectively referred to as the "230 kV Edsall Lines and Substation Project" or the "Project."

The Project is necessary to ensure that Dominion Energy Virginia can provide service requested by the Customer in Fairfax County, Virginia; to maintain reliable service for the overall growth in the load area surrounding the Company's existing Van Dorn Substation (the "Van Dorn Load Area"); and to comply with mandatory NERC Reliability Standards. Specifically, the Customer has requested a total of 176 MW of projected load from Dominion Energy Virginia to serve its planned data center development in Fairfax County, Virginia.

The purpose of my testimony is to provide an overview of the route and permitting for the proposed Project. I sponsor Sections II.A.12 and V.B to V.D of the Appendix. Additionally, I co-sponsor the Executive Summary and Section I.A with Company Witnesses Bradley S. Lowe, Grace L. Gaudin, Chloe A. Genova, Mohammad M.

Othman, and Andrew E. Dietrich; Section I.H with Company Witnesses Bradley S. Lowe and Grace L. Gaudin; Sections II.A.1, II.A.2, II.A.4, II.A.6 to II.A.9, II.A.11, and III with Company Witness Andrew E. Dietrich; Sections II.B.3 to II.B.5 with Company Chloe A. Genova; and Sections II.B.6 and V.A with Company Witnesses Chloe A. Genova and Andrew E. Dietrich. Finally, I co-sponsor the DEQ Supplement with Company Witness Andrew E. Dietrich.

Q. Has the Company complied with Va. Code § 15.2-2202 E?

A. Yes. In accordance with Va. Code § 15.2-2202 E, a letter dated April 9, 2024, was sent to Mr. Bryan Hill, County Executive of Fairfax County, where the Project is located. The letter stated the Company's intention to file this Application and invited the County to consult with the Company about the Project. A copy of the letter is included as Appendix Attachment V.D.1.

Q. Does this conclude your pre-filed direct testimony

A. Yes, it does.

APPENDIX A

BACKGROUND AND QUALIFICATIONS
OF
CHRISTIAANNA C. MCDONALD

Christiaanna C. McDonald joined the Company in 2015 as a contractor in the Strategic Underground Program. In that role, Ms. McDonald was responsible for drafting easement plats, securing executed easements, and permitting underground electric distribution projects. Ms. McDonald became an employee of the Company in 2017. Ms. McDonald's experience with the Company includes Distribution Design Associate (2017-2021), Siting and Permitting Specialist (2021-2024), and Senior Siting and Permitting Specialist (2024-present). Ms. McDonald took undergraduate courses in Mass Communication.

Ms. McDonald has previously submitted pre-filed testimony to the State Corporation Commission of Virginia.

WITNESS DIRECT TESTIMONY SUMMARY

Witness: Andrew E. Dietrich

Title: Environmental Scientist, Dewberry Engineers, Inc

Summary:

Company Witness Andrew E. Dietrich sponsors the Environmental Routing Study provided as part of the Company's Application.

Additionally, Mr. Dietrich co-sponsors the following portion of the Appendix:

- Section I.A (co-sponsored with Company Witnesses Bradley S. Lowe, Grace L. Gaudin, Chloe A. Genova, Mohammad M. Othman, and Christiaanna C. McDonald): This section details the primary justifications for the proposed project.
- Section II.A.1 (co-sponsored with Company Witness Christiaanna C. McDonald): This section provides the length of the proposed corridor and viable alternatives to the proposed project.
- Section II.A.2 (co-sponsored with Company Witness Christiaanna C. McDonald): This section provides a map showing the route of the proposed project in relation to notable points close to the proposed project.
- Section II.A.4 (co-sponsored with Company Witness Christiaanna C. McDonald): This section explains why the existing right-of-way is not adequate to serve the need.
- Sections II.A.6 to II.A.8 (co-sponsored with Company Witness Christiaanna C. McDonald): These sections provide detail regarding the right-of-way for the proposed project.
- Section II.A.9 (co-sponsored with Company Witness Christiaanna C. McDonald): This section describes the proposed route selection procedures and details alternative routes considered.
- Section II.A.11 (co-sponsored with Company Witness Christiaanna C. McDonald): This section details how the construction of the proposed project follows the provisions discussed in Attachment 1 of the Transmission Appendix Guidelines.
- Section II.B.6 (co-sponsored with Company Witnesses Chloe A. Genova and Christiaanna C. McDonald): This section provides photographs of existing facilities, representations of proposed facilities, and visual simulations.
- Section III (co-sponsored with Company Witness Christiaanna C. McDonald): This section details the impact of the proposed project on scenic, environmental, and historic features.
- Section V.A (co-sponsored with Company Witnesses Shannon L. Genova and Christiaanna C. McDonald): This section provides the proposed route description and structure heights for notice purposes.

Finally, Mr. Dietrich co-sponsors the DEQ Supplement filed with this Application with Company Witness Christiaanna C. McDonald.

A statement of Mr. Dietrich's background and qualifications is attached to his testimony as Appendix A.

DIRECT TESTIMONY
OF
ANDREW E. DIETRICH
ON BEHALF OF
VIRGINIA ELECTRIC AND POWER COMPANY
BEFORE THE
STATE CORPORATION COMMISSION OF VIRGINIA
CASE NO. PUR-2024-00135

Q. Please state your name, position and place of employment and business address.

A. My name is Andrew E. Dietrich. I am employed as an Environmental Scientist with Dewberry Engineers, Inc. ("Dewberry"). My business address is 8301 Arlington Boulevard, Fairfax, Virginia 22031. A statement of my qualifications and background is provided as Appendix A.

Q. What professional experience does Dewberry have with the routing of linear energy transportation facilities?

A. Dewberry has extensive experience in the routing, feasibility assessments, and permitting of energy infrastructure projects. It has assisted its clients in the identification, evaluation, and development of linear energy facilities for the past four years. During this time, it has developed a#horough approach for linear facility routing and route selection based on the identification, mapping, and comparative evaluation of routing constraints and opportunities within defined study areas. Dewberry uses data-intensive Geographic Information System spatial and dimensional analysis and the most current and refined data layers and aerial photography resources available for the identification, evaluation, and selection of transmission line routes.

In addition to Virginia Electric and Power Company ("Dominion Energy Virginia" or the "Company"), Dewberry has also served the linear energy transportation needs of

Mattawoman Energy. Dewberry has assisted Mattawoman Energy with two projects in Maryland, including an 8.0-mile gas line in Charles and Prince George's County, Maryland, and a 2.5-mile overhead transmission line in Prince George's County, Maryland.

In Virginia, Dewberry served as routing consultant to Dominion Energy Virginia for routing projects over the last four years, including two to-be filed cases in Northern Virginia. Additionally, Dewberry served as a consultant to Dominion Energy Virginia for the Beaumeade-Belmont 230kV Transmission Line #227 Reconductor and Partial Rebuild in Case No. PUR-2021-00100.

Q. What were you asked to do in connection with this case?

A. In order to provide service requested by a data center customer (the "Customer"); to maintain reliable service for the overall load growth in the area; and to comply with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, Dominion Energy Virginia proposes in Fairfax County, Virginia, to:

- Extend the Company's existing overhead single circuit Hayfield-Van Dorn Line #210 and Ox-Van Dorn Line #243 from Van Dorn Substation to the proposed 230-34.5 kilovolt ("kV") Edsall Substation, resulting in (i) 230 kV Edsall-Hayfield Line #210 and (ii) 230 kV Edsall-Ox Line #243 (collectively, the "Edsall Lines"). Specifically, extend existing Lines #210 and #243 approximately 0.9 mile starting from the eastern side of the Van Dorn Substation and terminating at the proposed Edsall Substation. The proposed Edsall Lines will be constructed on entirely new 100-foot-wide right-of way supported by galvanized steel double circuit monopoles utilizing three-phase twin-bundled 768.2 Aluminum Conductor Steel Supported/Trapezoidal Wire/High Strength conductor with a summer transfer capability of 1,573 MVA.

- Construct a new 230-34.5 kV substation in Fairfax County, Virginia, on property to be obtained by the Company (the "Edsall Substation") and perform substation-related work at the Company's existing Van Dorn Substation, in Fairfax County, Virginia.

The Edsall Lines, Edsall Substation, and substation-related work at the Van Dorn Substation are collectively referred to as the "230 kV Edsall Lines and Substation Project" or the "Project."

The Project is necessary to ensure that Dominion Energy Virginia can provide service requested by the Customer in Fairfax County, Virginia; to maintain reliable service for the overall growth in the load area surrounding the Company's existing Van Dorn Substation (the "Van Dorn Load Area"); and to comply with mandatory NERC Reliability Standards. Specifically, the Customer has requested a total of 176 MW of projected load from Dominion Energy Virginia to serve its planned data center development in Fairfax County, Virginia.

Dewberry was engaged on behalf of the Company to assist it in the identification and evaluation of route alternatives to resolve the identified electrical need that would meet the applicable criteria of Virginia law and the Company's operating needs.

The purpose of my testimony is to introduce and sponsor the Environmental Routing Study, which is included as part of the Application filed by the Company in this proceeding. Additionally, I co-sponsor the Executive Summary and Section I.A with Company Witnesses Bradley S. Lowe, Grace L. Gaudin, Chloe A. Genova, Mohammad M. Othman, and Christiaanna C. McDonald; Sections II.A.1, II.A.2, II.A.4, II.A.6 to II.A.9, II.A.11, and III with Company Witness Christiaanna C. McDonald; and Sections II.B.6 and V.A with Company Witnesses Chloe A. Genova and Christiaanna C. McDonald. Lastly, I co-sponsor the DEQ Supplement with Company Witness Christiaanna C. McDonald.

Q. Does this conclude your pre-filed direct testimony?

A. Yes, it does.

BACKGROUND AND QUALIFICATIONS OF ANDREW E. DIETRICH

Andrew E. Dietrich earned a Bachelor of Science degree from the University of Maryland and a Master of Science degree from Portland State University. Mr. Dietrich has fifteen years of professional experience in the environmental science field including approximately five years of experience directly related to working in the utility-related consulting field specializing in the siting and regulatory permitting of numerous linear utility lines, including electric transmission lines, water and sewer lines, and their associated facilities and appurtenances in the Mid-Atlantic. Mr. Dietrich also has extensive experience coordinating with local, state, and federal government agencies and spearheading public outreach efforts. During this time, he has been employed for the last five years with Dewberry Engineers Inc. (Dewberry), a privately-owned consulting company with experience in environmental services including regulatory permitting, National Environmental Policy Act (NEPA) documentation, and environmental compliance. Prior to his experience as a consultant with Dewberry, Mr. Dietrich worked for ten years for the U.S. Geological Survey (USGS) as a Research Technician and Field Biologist for the Northeast Amphibian Research and Monitoring Initiative, coordinating field studies, obtaining research permits from cooperating agencies and assisting with publication of scientific papers.

Mr. Dietrich's professional experience related to electric transmission line projects includes the direct management of field studies, impact assessments, and agency consultations associated with the reconductoring, routing, and permitting of multiple transmission line projects in the mid-Atlantic region. Work on these projects included studies to identify and delineate routing and reconductor project constraints and options; identification and evaluation of route alternatives; and the direction of field studies to inventory wetlands, stream crossings, cultural resources, and sensitive habitats and land uses. Within the last several years, Mr. Dietrich has assisted with or managed the reconductoring or routing of several 230 kV transmission line projects in the Commonwealth for Dominion Energy Virginia.