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June 23, 2023

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 Elmont-White Oak Line #2075, 230 kV Chickahominy-White Oak Line #2294, and White Oak Substation Expansion
Case No. PUR-2023-00110

Dear Mr. Logan:

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

As indicated in Section II.A.12.b of the Appendix, an electronic copy of the map of the Virginia Department of Transportation "General Highway Map" for Henrico 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 June 22, 2023.

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)
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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 Elmont-White Oak Line #2075, 230 kV Chickahoniny-White Oak Line #2294, and White Oak Substation Expansion

Application No. 326

Case No. PUR-2023-00110

Filed: June 23, 2023

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 Elmont-White Oak Line #2075, 230 kV Chickahominy-White Oak Line #2294 and White Oak Substation Expansion

Application No. 326

Case No. PUR-2023-00110

Filed: June 23, 2023

COMMONWEALTH OF VIRGINIA

STATE CORPORATION COMMISSION

APPLICATION OF	)	
	)	
VIRGINIA ELECTRIC AND POWER COMPANY	)	Case No. PUR-2023-00110
	)	
For approval and certification of electric transmission facilities: 230 kV Elmont-White Oak Line #2075, 230 kV Chickahominy-White Oak Line #2294, and White Oak Substation Expansion	)	

APPLICATION OF VIRGINIA ELECTRIC AND POWER COMPANY FOR APPROVAL AND CERTIFICATION OF ELECTRIC TRANSMISSION FACILITIES: 230 kV ELMONT-WHITE OAK LINE #2075, 230 kV CHICKAHOMINY-WHITE OAK LINE #2294, AND WHITE OAK SUBSTATION EXPANSION

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 relieve identified violations of mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards beginning in the summer of 2023 timeframe brought on by significant increases in electrical demand over the past five years as well as expected demand growth projected for the future, and to maintain the structural integrity and reliability of its transmission system, Dominion Energy Virginia proposes in Henrico County, Virginia, to:

(i) Construct two new approximately 4.69-mile overhead 230 kV transmission lines on primarily double circuit monopole structures in a new predominantly 100-foot-wide right-of-way[1] by cutting the Company's existing 230 kV Chickahominy-Elmont Line #2075 at a location between Structures #2075/150 and #2075/151, resulting in (i) 230 kV Elmont-White Oak Line #2075, and (ii) 230 kV

[1] Within the existing 230 kV Chickahominy-Elmont Line #2075 right-of-way, the Company will install two new single circuit three-pole structures to support the proposed 230 kV Elmont-White Oak Line #2075 and the proposed 230 kV Chickahominy-White Oak Line #2294. In order for the conductors to meet clearance requirements when passing beneath the existing 500 kV Chickahominy-Elmont Line #557 that is collocated with Line #2075 in the existing transmission corridor, the width of the White Oak Lines corridor will gradually taper from 180 feet to a 100-foot-wide right-of-way for a total approximately 0.06 mile. The first 0.025 mile will begin at the structure cut-in location in the existing right-of-way and continue to the edge of the existing right-of-way. From the edge of the existing right-of-way, the proposed White Oak Lines will continue to gradually decrease to a 100-foot-wide right-of-way for approximately 0.035 mile. At the cut-in location on Line #2075 between Structures #2075/150 and #2075/151, existing Structure #2075/150 (a double circuit 230 kV weathering steel H-frame structure that is currently supporting only one circuit) will be removed and replaced with two new 230 kV single circuit weathering steel three-pole structures (proposed Structures #2075/150 and #2294/150). The proposed structures will be located within the existing transmission corridor and are estimated to be within 20% of the existing structure heights. The conductors for the White Oak Lines will begin in a horizontal configuration at the cut-in location (using the two new single circuit three-pole structures installed side-by-side) then pass under the existing Line #557. Within that 0.06-mile segment, the White Oak Lines will transition from horizontal arrangement (using two single circuit H-frame structures installed side-by-side) to vertical arrangement (using one double circuit monopole). As the White Oak Lines rotate to a vertical arrangement, the corridor will gradually taper from 180-feet-wide beginning within the existing transmission corridor to a 100-foot-wide right-of-way. A 100-foot-wide right-of-way would then be needed for the remainder of the route (approximately 4.63 miles) to maintain adequate clearances for blowout and forestry maintenance for the double circuit monopole structures. See page 7 of 11 of Appendix Attachment II.A.6 for a map depicting the tapering of the 0.06-mile segment of the Proposed Route of the White Oak Lines from 180 feet to 100 feet.

Chickahominy-White Oak Line #2294 (the "White Oak Lines"). At the cut-in location within the existing right-of-way, the Company will remove one single circuit lattice tower and install one single circuit H-frame structure on 500 kV Chickahominy-Elmont Line #557 to facilitate construction of the White Oak Lines.[2] From the cut-in location within the existing right-of-way, the White Oak Lines will extend a total of approximately 4.69 miles generally in a southwesterly direction before terminating at the expanded White Oak Substation. While the proposed cut-in location is in the existing right-of-way, the proposed White Oak Lines will be constructed in new right-of-way supported primarily by double circuit weathering steel monopoles and will utilize three-phase twin-bundled 768.2 ACSS/TW type conductor with a summer transfer capability of 1,573 MVA;[3]

(ii) Expand the Company's existing White Oak Substation in Henrico County, Virginia, in order to accommodate the termination of the new White Oak Lines (the "White Oak Substation Expansion"). The White Oak Substation Expansion will require an additional approximately 0.7 acre, which the Company will obtain through easement; and

(iii) Perform line-protection resets at the Company's existing Chickahominy and Elmont Substations.

The White Oak Lines, White Oak Substation Expansion, and related substation work are collectively referred to as the "White Oak Electric Transmission Project" or "Project."

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[2] In order to construct the White Oak Lines from the cut-in location on Line #2075 as proposed, the Company will need to cross under existing 500 kV Chickahominy-Elmont Line #557, which is collocated within the right-of-way with Line #2075. Specifically, for the Proposed Route of the White Oak Lines, the Company proposes to remove one single circuit lattice tower and install one single circuit H-frame structure on 500 kV Chickahominy-Elmont Line #557 within the existing right-of-way in order to increase the height of Line #557 to allow for proper clearance of the White Oak Lines. The proposed single circuit H-frame structure will not be more than 20% taller than the existing structure that is being removed on Line #557 at the location of the cut-in. While this is a component of the proposed Project, the Company considers the removal of one single circuit lattice tower and installation of one single circuit H-frame structure on Line #557 to qualify as an "ordinary extension[] or improvement[] in the usual course of business" (i.e., "ordinary course") pursuant to § 56-265.2 A 1 of the Code of Virginia ("Va. Code") and, therefore, does not require approval pursuant to Va. Code § 56-46.1 B or a certificate of public convenience and necessity ("CPCN") from the State Corporation Commission (the "Commission"). This is consistent with the Commission Staff's July 6, 2017 guidance (available at https://scc.virginia.gov/getdoc/7f6ec0f6-7d14-4ca9-bd8a-9bd2511c5cdb/StaffGuidanceOrdvsNonOrd.pdf), as only one structure is being replaced on Line #557 and the proposed structure will not be more than 20% taller than the existing structure. As a component of the proposed Project, the costs associated with this work on Line #557 have been included in the total transmission-related conceptual costs. Should the Commission determine that a CPCN is required for the work associated with Line #557 as described herein, the Company requests that the Commission grant such CPCN as part of its final order in this proceeding.

[3] Apparent power, measured in megavolt amperes ("MVA"), is made up of real power (megawatt or "MW") and reactive power megavolt ampere reactive ("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 the equipment ratings to handle the apparent power, which includes the real and reactive load components.

4. The Project is necessary to relieve identified violations of NERC Reliability Standards in order to maintain and improve reliable electric service to customers in the load area surrounding the Company's existing White Oak Substation ("White Oak Load Area" or "WOLA") in Henrico County, Virginia. These reliability violations, if not relieved, will severely impact the transmission system's ability to provide reliable service to Dominion Energy Virginia's customers in the White Oak Load Area.

5. The Company identified an approximately 4.69-mile overhead proposed route for the Project ("Proposed Route" or "Route 3"), as well as two overhead alternative routes ("Alternative Route 1" and "Alternative Route 2"). The Company is proposing these three routes for Commission consideration and notice. Discussion of the Proposed Route and Alternative Routes, as well as other overhead and hybrid overhead/underground routes that the Company studied but ultimately rejected, is provided in Section II of the Appendix and discussed in more detail in the Environmental Routing Study included with this Application.

6. The Company selected the Proposed Route after evaluating numerous routing constraints and opportunities identified during months of desktop study, stakeholder outreach, and fieldwork. Within the context of the Project study area, the Company's most important factor guiding routing was consistency with Commission guidance to utilize existing corridors when possible, specifically, that (1) existing rights-of-way should be given priority as the locations for additions to existing transmission facilities, (2) the joint use of existing rights-of-way by different kinds of utility services should be considered, and (3) 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.[4] Although the Proposed Route (4.69 miles) is the longest of the route alternatives considered (Alternative Route 1 (4.19 miles) and Alternative Route 2 (3.24 miles)), it was selected because it had the best collocation characteristics, had the least impact on residences and residential neighborhoods, and was the route regarded as most compatible with existing and planned land uses. See Table 4-1 and Section 5 of the Environmental Routing Study for a summary of the impacts by each alternative route and additional discussion and route comparison analysis, respectively.

7. For the White Oak Substation Expansion, the existing White Oak Substation will be expanded in order to accommodate the termination of the new White Oak Lines. The White Oak Substation Expansion will include installation of three 230 kV 4000 ampere breakers to create an 8-breaker hybrid breaker-and-a-half arrangement and will require an additional approximately 0.7 acre of land.

8. The desired in-service target date for the proposed Project is April 30, 2026. The Company estimates it will take approximately 26 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 March 1, 2024. Should the Commission issue a final order by March 1, 2024, the Company estimates that construction should begin around January 1, 2025, and be completed by April 30, 2026. This schedule is contingent upon obtaining the necessary permits and outages. Dates may need to be adjusted based on permitting delays or design modifications to comply with additional agency requirements identified during the permitting

[4] See Guideline #1 in Attachment 1 of the *Guidelines for Transmission Line Applications Filed Under Title 56 of the Code of Virginia*, which is available at https://scc.virginia.gov/getattachment/921b6b42-4e06-4ab5-b296-e73fdcd60cac/Trans.pdf.

application process, as well as the ability to schedule outages, and unpredictable delays due to labor shortages, or materials/supply issues. This schedule is also 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 actively monitoring the regulatory changes and requirements associated with the Northern long-eared bat ("NLEB") and how it could potentially impact construction timing associated with time of year restrictions ("TOYRs"). The existing interim guidance from the U.S. Fish and Wildlife Service ("USFWS") for the NLEB expires on March 31, 2024. The Company is also monitoring potential regulatory changes associated with the potential up-listing of the Tri-colored bat. On September 14, 2022, the Tri-colored bat was proposed to be up-listed to endangered, with an estimated announcement of a final decision within 12 months. Regulatory guidance on the Tri-colored bat will be available upon up-listing. The Company's construction window described above may require adjustment based upon the regulatory guidance and potential TOYRs associated with these two bat species.

9. The estimated conceptual cost of the Project utilizing the Proposed Route is approximately $44.6 million, which includes approximately $34.6 million[5] for transmission-related work and approximately $10.0 million for substation-related work (2023 dollars).

10. 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.

11. Based on the Company's experience, the advice of consultants, and a review of

[5] Note that the estimated costs associated with removing existing Structure #2075/150 at the cut-in location for the Proposed Route (*see supra*, n. 1), the removal and installation of one structure on 500 kV Chickahominy-Elmont Line #557 (*see supra*, n. 2), and the relocation of an existing cell tower within the right-of-way (*see* Section I.F of the Appendix) are included in the total estimated transmission-related conceptual costs for the Project.

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.

12. 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.

13. 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 Mark R. Gill, Emmanuel J. Dobson, Sherrill A. Crenshaw, Antoaneta M. Yanev, Stefan R. Brooks, and Jacob M. Rosenberg filed with this Application.

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

June 23, 2023

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 Elmont-White Oak Line #2075, 230 kV Chickahominy-White Oak Line #2294, and White Oak Substation Expansion

Application No. 326

Appendix

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

Case No. PUR-2023-00110

Filed: June 23, 2023

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EXECUTIVE SUMMARY

In order to relieve identified violations of mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards beginning in the summer of 2023 timeframe brought on by significant increases in electrical demand over the past five years as well as expected demand growth projected for the future, and to maintain the structural integrity and reliability of its transmission system, Virginia Electric and Power Company ("Dominion Energy Virginia" or the "Company") proposes in Henrico County, Virginia, to:

(1) Construct two new approximately 4.69-mile overhead 230 kV transmission lines on primarily double circuit monopole structures in a new predominantly 100-foot-wide right-of-way[1] by cutting the Company's existing 230 kV Chickahominy-Elmont Line #2075 at a location between Structures #2075/150 and #2075/151, resulting in (i) 230 kV Elmont-White Oak Line #2075, and (ii) 230 kV Chickahominy-White Oak Line #2294 (the "White Oak Lines"). At the cut-in location within the existing right-of-way, the Company will remove one single circuit lattice tower and install one single circuit H-frame structure on 500 kV Chickahominy-Elmont Line #557 to facilitate construction of the White Oak Lines.[2] From the cut-in location within the existing right-of-way, the White Oak

[1] Within the existing 230 kV Chickahominy-Elmont Line #2075 right-of-way, the Company will install two new single circuit three-pole structures to support the proposed 230 kV Elmont-White Oak Line #2075 and the proposed 230 kV Chickahominy-White Oak Line #2294. In order for the conductors to meet clearance requirements when passing beneath the existing 500 kV Chickahominy-Elmont Line #557 that is collocated with Line #2075 in the existing transmission corridor, the width of the White Oak Lines corridor will gradually taper from 180 feet to a 100-foot-wide right-of-way for a total approximately 0.06 mile. The first 0.025 mile will begin at the structure cut-in location in the existing right-of-way and continue to the edge of the existing right-of-way. From the edge of the existing right-of-way, the proposed White Oak Lines will continue to gradually decrease to a 100-foot-wide right-of-way for approximately 0.035 mile. At the cut-in location on Line #2075 between Structures #2075/150 and #2075/151, existing Structure #2075/150 (a double circuit 230 kV weathering steel H-frame structure that is currently supporting only one circuit) will be removed and replaced with two new 230 kV single circuit weathering steel three-pole structures (proposed Structures #2075/150 and #2294/150). The proposed structures will be located within the existing transmission corridor and are estimated to be within 20% of the existing structure heights. The conductors for the White Oak Lines will begin in a horizontal configuration at the cut-in location (using the two new single circuit three-pole structures installed side-by-side) then pass under the existing Line #557. Within that 0.06-mile segment, the White Oak Lines will transition from horizontal arrangement (using two single circuit H-frame structures installed side-by-side) to vertical arrangement (using one double circuit monopole). As the White Oak Lines rotate to a vertical arrangement, the corridor will gradually taper from 180-feet-wide beginning within the existing transmission corridor to a 100-foot-wide right-of-way. A 100-foot-wide right-of-way would then be needed for the remainder of the route (approximately 4.63 miles) to maintain adequate clearances for blowout and forestry maintenance for the double circuit monopole structures. See page 7 of 11 of Attachment II.A.6 for a map depicting the tapering of the 0.06-mile segment of the Proposed Route of the White Oak Lines from 180 feet to 100 feet.

[2] In order to construct the White Oak Lines from the cut-in location on Line #2075 as proposed, the Company will need to cross under existing 500 kV Chickahominy-Elmont Line #557, which is collocated within the right-of-way with Line #2075. Specifically, for the Proposed Route of the White Oak Lines, the Company proposes to remove one single circuit lattice tower and install one single circuit H-frame structure on 500 kV Chickahominy-Elmont Line #557 within the existing right-of-way in order to increase the height of Line #557 to allow for proper clearance of the White Oak Lines. The proposed single circuit H-frame structure will not be more than 20% taller than the existing structure that is being removed on Line #557 at the location of the cut-in. While this is a component of the proposed Project, the Company considers the removal of one single circuit lattice tower and installation of one single circuit H-frame structure on Line #557 to qualify as an "ordinary extension[] or improvement[] in the usual course of business" (i.e., "ordinary course") pursuant to § 56-265.2 A 1 of the Code of Virginia ("Va. Code") and, therefore, does not require

Lines will extend a total of approximately 4.69 miles generally in a southwesterly direction before terminating at the expanded White Oak Substation. While the proposed cut-in location is in the existing right-of-way, the proposed White Oak Lines will be constructed in new right-of-way supported primarily by double circuit weathering steel monopoles and will utilize three-phase twin-bundled 768.2 ACSS/TW type conductor with a summer transfer capability of 1,573 MVA;[3]

(2) Expand the Company's existing White Oak Substation in Henrico County, Virginia, in order to accommodate the termination of the new White Oak Lines (the "White Oak Substation Expansion"). The White Oak Substation Expansion will require an additional approximately 0.7 acre, which the Company will obtain through easement; and

(3) Perform line-protection resets at the Company's existing Chickahominy and Elmont Substations.

The White Oak Lines, White Oak Substation Expansion, and related substation work are collectively referred to as the "White Oak Electric Transmission Project" or "Project."

The Project is necessary to relieve identified violations of NERC Reliability Standards in order to maintain and improve reliable electric service to customers in the load area surrounding the Company's existing White Oak Substation ("White Oak Load Area" or "WOLA") in Henrico County, Virginia. These reliability violations, if not relieved, will severely impact the transmission system's ability to provide reliable service to Dominion Energy Virginia's customers in the White Oak Load Area.

The Company identified an approximately 4.69-mile overhead proposed route for the Project ("Proposed Route" or "Route 3"), as well as two overhead alternative routes ("Alternative Route 1" and "Alternative Route 2"). The Company is proposing these three routes for Commission consideration and notice. Discussion of the Proposed Route and Alternative Routes, as well as other overhead and hybrid overhead/underground routes that the Company studied but ultimately rejected, is provided in Section II of the Appendix and discussed in more detail in the Environmental Routing Study (or "Routing Study") included with the Application.

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approval pursuant to Va. Code § 56-46.1 B or a certificate of public convenience and necessity ("CPCN") from the State Corporation Commission (the "Commission"). This is consistent with the Commission Staff's July 6, 2017 guidance (available at https://scc.virginia.gov/getdoc/7f6ec0f6-7d14-4ca9-bd8a-9bd2511c5cdb/StaffGuidanceOrdvsNonOrd.pdf), as only one structure is being replaced on Line #557 and the proposed structure will not be more than 20% taller than the existing structure. As a component of the proposed Project, the costs associated with this work on Line #557 have been included in the total transmission-related conceptual costs. Should the Commission determine that a CPCN is required for the work associated with Line #557 as described herein, the Company requests that the Commission grant such CPCN as part of its final order in this proceeding.

[3] Apparent power, measured in megavolt amperes ("MVA"), is made up of real power (megawatt or "MW") and reactive power megavolt ampere reactive ("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 the equipment ratings to handle the apparent power, which includes the real and reactive load components.

For the White Oak Substation Expansion, the existing White Oak Substation will be expanded in order to accommodate the termination of the new White Oak Lines. The White Oak Substation Expansion will include installation of three 230 kV 4000 ampere ("amp" or "A") breakers to create an 8-breaker hybrid breaker-and-a-half arrangement and will require an additional approximately 0.7 acre of land.

The estimated conceptual cost of the Project utilizing the Proposed Route is approximately $44.6 million, which includes approximately $34.6 million[4] for transmission-related work and approximately $10.0 million for substation-related work (2023 dollars).

The desired in-service target date for the proposed Project is April 30, 2026. The Company estimates it will take approximately 26 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 March 1, 2024. Should the Commission issue a final order by March 1, 2024, the Company estimates that construction should begin around January 1, 2025, and be completed by April 30, 2026. This schedule is contingent upon obtaining the necessary permits and outages. 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 is also 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 actively monitoring the regulatory changes and requirements associated with the Northern long-eared bat ("NLEB") and how it could potentially impact construction timing associated with time of year restrictions ("TOYRs"). The existing interim guidance from the U.S. Fish and Wildlife Service ("USFWS") for the NLEB expires on March 31, 2024. The Company is also monitoring potential regulatory changes associated with the potential up-listing of the Tri-colored bat. On September 14, 2022, the Tri-colored bat was proposed to be up-listed to endangered, with an estimated announcement of a final decision within 12 months. Regulatory guidance on the Tri-colored bat will be available upon up-listing. The Company's construction window described above may require adjustment based upon the regulatory guidance and potential TOYRs associated with these two bat species.

[4] Note that the estimated costs associated with removing existing Structure #2075/150 at the cut-in location for the Proposed Route (*see supra*, n. 1), the removal and installation of one structure on 500 kV Chickahominy-Elmont Line #557 (*see supra*, n. 2), and the relocation of an existing cell tower within the right-of-way (*see* Section I.F) are included in the total estimated transmission-related conceptual costs for 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 to relieve identified violations of NERC Reliability Standards and to maintain reliable service for the overall load growth in the Project area. See Attachment I.A.1.a for an overview map of the proposed Project along the Proposed Route; Attachment I.A.1.b for an overview map of the Proposed and Alternative Routes and approximate boundary of the White Oak Load Area; and Attachment I.A.1.c for an overview of the Project study area, including future load growth areas.

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 "Dominion Energy Zone" or "DOM Zone"). The Company needs to be able to maintain the overall, long-term reliability of its transmission system as its customers require more power 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 166,929 megawatts ("MW") for summer peak demand, of which Dominion Energy Virginia's load portion was approximately 19,256 MW. On August 9, 2022, the Company set a record high of 21,156 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 2023 PJM Load Forecast, the Dominion Energy Zone is expected to grow with average growth rates of 5.0% summer and 4.8% winter over the next 10 years compared to the PJM average of 0.8% and 1.0% over the same period for the summer and winter, respectively.

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 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 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

[5] *See* FAC-001-3 (R1, R3) (effective April 1, 2021), which can be found at https://cdn-dominionenergy-prd-001.azureedge.net/-/media/pdfs/virginia/parallel-generation/facility-interconnection-requirements-signed.pdf?la=en&rev=38f51ffb04b1489f921b32a41d9887c8.

[6] PJM Manual 14B (effective July 1, 2021) 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.

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 mitigate NERC reliability violations identified during the Do-No-Harm ("DNH") analysis of the project solutions presented at the August 9, 2022 TEAC Meeting, and to maintain reliable service for overall load growth in the Project area. While supplemental projects are included in the RTEP, the PJM Board does not actually approve such projects. See Section I.J for a discussion of the PJM process as it relates to this Project.

White Oak Technology Park

The data center market continues to rapidly expand in Virginia. 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.

Located in eastern Henrico County, the 2,278-acre White Oak Technology Park (or "WOTP") is a master-planned, publicly owned industrial park that is home to some of the most advanced manufacturing and distribution facilities and data centers. Existing businesses within the WOTP include manufacturing facilities such as Anord Mardix (critical power solutions) and Polykon (cosmetic and pharmaceutical ingredients); distribution facilities such as Breakthru Beverage (wine and spirits), Lumber Liquidators (flooring), and the United States Postal Service (mail processing); and data centers such as Quality Technology Services ("QTS") and Meta (formerly Facebook).[8]

Importantly, the WOTP also houses both the QTS Richmond Network Access Point ("NAP") and the Deutsche Commercial Internet Exchange ("DE-CIX") Richmond, combining access to 20+ different fiber networks, four subsea cables, more than 3,000 network operators and 500 data centers worldwide, which provide a gateway to the largest interconnection ecosystem in North America.[9] Additionally, as of November 2022, the Henrico County Economic Development Authority ("EDA") indicates that there are approximately 470 acres of build-ready land remaining at WOTP,[10] not including land that was acquired in 2022 by QTS[11] (approximately 200 acres) and Meta[12] (approximately 475 acres) that has not yet been developed. See Attachment I.A.1.c for the location of the WOTP and areas of current and future development.

[8] *See* https://www.henrico.com/white-oak/quick-facts. *See also* https://henrico-eda-site-assets.s3.amazonaws.com/portal-uploads/192444-WOTP+Businesses+Map%5B10%5D.pdf.

[9] *See* https://www.henrico.com/target-sectors/data-centers/ieic.

[10] *See* https://henrico-eda-site-assets.s3.amazonaws.com/portal-uploads/133414-WOTP%20Brochure%20for%20Print%20FINAL.pdf.

[11] *See* https://www.henrico.com/news/press-releases-and-announcements/2022-07-13/qts-july22.

[12] *See* https://www.henrico.com/white-oak/business-climate.

Immediate Need for the Project

There is an immediate need for the Project to solve identified violations of mandatory NERC Reliability Standards and to maintain reliable service for the overall load growth in the White Oak Load Area. The White Oak Load Area (or, WOLA) is defined generally as the area in eastern Henrico County around and including the WOTP, east of Interstate 295 between the Chickahominy River to the north and White Oak Swamp Creek to the south, and the area in western New Kent County, west of the New Kent County Airport between Black Creek to the north and Route 60 (Pocahontas Trail) to the south. As discussed in Section I.C and depicted in Attachment I.G.1, the existing 230 kV Chickahominy-Portugee Line #2091 and Darbytown-White Oak Line #286 currently provide the only transmission sources serving the WOLA, and enter the WOTP from the south. See Attachment I.A.1.b for the approximate boundary of the WOLA. The Company's existing Elko, Portugee, and White Oak Substations serve both residential and commercial load in the WOLA, including the manufacturing and distribution facilities and data centers located in the WOTP.

On September 10, 2021, the Company's Distribution Planning group submitted a Delivery Point ("DP") Request to the Transmission Planning group to modify the existing White Oak Substation by adding two transformers to serve an expansion of the existing QTS data center facility in the WOTP. The DP Request projected a summer peak of 32 MW in 2022, growing to approximately 111.5 MW in 2032, with a requested in-service date of December 2022. See Attachment I.A.2 for a copy of this initial request to modify the White Oak Substation to serve QTS's expanded data center facility. A second DP Request was submitted on the same day to construct a new substation (now named the Techpark Place Substation) on the QTS site to serve a projected summer peak of 156 MW in 2024, growing to approximately 192.9 MW by 2034, with a requested in-service date of January 2024. See Attachment I.A.3 for a copy of this initial request for the new onsite Techpark Place Substation to serve QTS's expanded data center facility. The addition of two transformers of the White Oak Substation (referred to hereinafter as the "White Oak Substation Modification") will provide bridging power to the expanded QTS data center facilities until such time as the onsite Techpark Place Substation is energized. As such, the White Oak Substation Modification and future Techpark Place Substation are needed to interconnect new customer load at the expanded QTS data center facility in the WOTP (collectively referred to as the "Interconnect Projects").[13]

Subsequently, the Company's Distribution Planning group submitted revised DP Requests for the White Oak Substation Modification and the future Techpark Place Substation that adjusted the loading to 20.5 MW in summer 2022 and 168.6 MW

[13] To be clear, while the White Oak Substation Modification and new Techpark Place Substation both will serve the White Oak Load Area, the need for the Interconnect Projects is to interconnect new customer load at the expanded QTS data center facility, which is a separate, unique driver from the proposed Project, as described herein and in Attachment I.A.2 through Attachment I.A.5. Accordingly, the Interconnect Projects are not a component of the proposed Project, and the associated costs are not included in the total Project costs. See also Section I.J.

in 2032 for White Oak Substation with a revised in-service date of March 2023, and 110 MW in summer 2024 and 255 MW in 2034 for Techpark Place Substation with a revised in-service date of April 2024.[14] Copies of the latest revised DP Requests for the White Oak Substation Modification and the future Techpark Place Substation are provided as Attachment I.A.4 and Attachment I.A.5, respectively. The White Oak Substation Modification was completed and energized by the Company in March 2023.

In addition to the Interconnect Projects, the Company is working with QTS to develop an additional substation—the future Lost City Substation[15]—that will be used to serve future data center loads in the WOTP. Specifically, on May 19, 2022, the Company's Transmission Planning group received from the Distribution Planning group a DP Request for the Lost City Substation (initially called Canal Swamp Substation), which projected a summer peak of 4 MW in 2024, growing to approximately 202.8 MW in 2034, with a requested in-service date of August 2024. See Attachment I.A.6. On November 18, 2022, the Company's Transmission Planning group received from the Distribution Planning group a revised DP Request for Lost City Substation that adjusted the loading to 126 MW in summer 2025 and 194.4 MW in 2035, with a revised in-service date of April 2025. See Attachment I.A.7.

In summary, the other upcoming substation projects in the Project area include the following:

Substation Project	**Load – Initial** **Revised**	**Load-Full** **Revised**	**In-Service Date** **Revised**	**Attachment**
White Oak Modification	32 MW (2022) 20.5 MW (2022)	111.5 MW (2032) 168.6 MW (2032)	Dec. 2022 Mar. 2023	I.A.2 I.A.4
Techpark Place Substation	156 MW (2024) 110 MW (2024)	192 MW (2034) 227 MW (2034)	Jan. 2024 Apr. 2024	I.A.3 I.A.5
Lost City Substation	4 MW (2024) 126 MW (2025)	202.8 MW (2034) 194.4 MW (2035)	Aug. 2024 Apr. 2025	I.A.6 I.A.7

Accordingly, without the proposed Project, Lines #2091 and #286 are the only transmission sources for the Company's existing Elko, Portugee, and White Oak Substations, and future Techpark Place and Lost City Substations serving the projected growth in the WOLA. Based on the projected load ramps of the planned and future data center developments in the WOLA, this would create a scenario where a 300 MW load drop could occur for a NERC Category P6 contingency (N-1-1) or a P7 Contingency (Tower) involving the loss of both Lines #2091 and #286. See Section I.C and Attachment I.C.2 for the projected load ramp values of the existing and future substations in the WOLA that were provided by the Company's

[14] The Distribution Planning group submitted additional revised DP Requests for the White Oak Substation Modification and the future Techpark Place Substation since the initial DP Requests were submitted in September 2021; however, the DP Requests provided as Attachment I.A.4 and Attachment I.A.5 are the latest requests and therefore reflect the most up-to-date load and in-service date requirements.

[15] Note while the need slide for the future Lost City Substation has been presented to PJM, the solution slide has not been presented to PJM at this time. This substation, along with other future substations mentioned in Section I.C and represented in Attachment I.C.2, will address future load growth in the WOTP.

Distribution Planning group.

Specifically, based on DNH analysis on the project solutions presented at the August 9, 2022 TEAC Meeting, the Company has identified potential NERC reliability violations that would directly impact the WOLA beginning in the summer of 2023 for the loss of both Line #286 and Line #2091. As part of the RTEP process, Dominion Energy Virginia has determined that the proposed Project, including the proposed White Oak Lines and White Oak Substation Expansion, will provide the most comprehensive solution for resolving the projected NERC reliability violations, as well as provide for future load growth. See Section I.J for a discussion of the Company's presentation of the Project to PJM and associated slides. Construction of the Project, including the White Oak Lines and White Oak Substation Expansion proposed herein, will relieve the identified NERC reliability violations and provide the WOLA with additional transmission sources to reliably serve future load growth.

Attachment I.A.8 provides the existing one-line diagram of the area transmission system. Attachment I.A.9 provides a one-line diagram of the area transmission system, including the proposed Project and other future substations presented to PJM in the WOLA. See Attachment II.A.2 for a map depicting the proposed Project area and constraints.

Future Need for the Project

In addition to the existing load driving the immediate need for the Project as described above, there are over 1,100 acres of yet-to-be developed, build-ready land remaining at the WOTP (including approximately 470 acres unpurchased, 200 acres purchased by QTS in 2022, and 475 acres purchased by Meta in 2022). The approximately 470 acres that are unpurchased within the WOTP are spread among six sites of varying size, as shown on Attachment I.A.10. While the Company is not aware of any specific development plans for the six available sites, the existing uses within the WOTP include large data center, advanced manufacturing, and related logistics facilities,[16] so it is reasonable to assume that at least some of the sites eventually may be developed into data centers. Also, as previously mentioned, the Company is working with QTS to develop an additional substation (Lost City) to serve future data center loads in the WOTP. Accordingly, the Company anticipates that additional transmission infrastructure will be required within the WOTP—above and beyond the future Techpark Place and Lost City Substations described above—as the remaining build-ready land is developed, particularly if that development includes data center requests for onsite substations, which is typically the case. The Project will support this load growth by providing an additional transmission source serving the WOLA.

Northwest of the WOTP but still within the WOLA, the Company also has been made aware that Vienna Finance, Inc., Atlantic Crossing, LLC, and Hourigan Development, LLC ("VAH") are planning to facilitate the development of several

[16] *See* https://www.henrico.com/white-oak/the-site.

data centers (the "future VAH data center campus"), most notably, along the Proposed Route (Route 3) of the White Oak Lines. See Attachment I.A.1.c and Attachment III.E.2. VAH has already acquired multiple parcels between the WOTP and the Norfolk Southern Railroad tracks, which run in an east-west direction approximately one mile north of the WOTP. They have also acquired multiple parcels on the north side of the railroad tracks; however, they have indicated that, at a minimum, they are seeking to develop the parcels to the south of the Norfolk Southern Railroad. As such, VAH is working with an engineering firm to develop a preliminary site plan for the data centers on the parcels it owns south of Williamsburg Road (Rt. 60), on either side of Technology Boulevard. While VAH has not submitted a load letter to the Company at the time of this filing, in the Company's experience with typical loading projections for data center campuses, the peak loading of just one new data center campus can be expected to exceed 100 MW. As with the anticipated full build out of the WOTP described above, the Company anticipates the future VAH data center campus development just outside of the WOTP will require additional transmission infrastructure, including potentially three to four substations. The Project will provide an additional transmission source to serve this new infrastructure.

Additionally, the Distribution Planning group recently was made aware of the potential development of Site or "Tract" 10 at the WOTP. See Attachment I.A.11 for the location of Site 10. It is the Company's understanding that Site 10 will be developed into a data center campus, including five data center buildings at full build out. Based on preliminary load projections at Site 10, the Company anticipates that this future data center campus will be served by a combination of the future Lost City Substation and a new onsite substation currently referred to as the Tract #10 Substation. While the expanded White Oak Substation will not serve this additional load, the Project will provide an additional transmission source to serve this new infrastructure.

Proposed Solution

As discussed in Sections I.C and I.E, the Company performed a comprehensive analysis considering the different potential transmission sources in the WOLA that could be used to mitigate the identified NERC reliability violations by constructing the White Oak Lines. These sources included Line #287 and Line #2050 to the south and Line #2075 to the north. From an electrical perspective, bringing a new source into White Oak Substation from any of these three lines satisfies the immediate need by mitigating the potential for a 300 MW load drop violation. From a planning perspective, however, utilizing one of the southern lines is not considered to be as robust since it is likely that future lines will have to be routed to some, or all, of the six remaining sites within WOTP, as well as having to extend future lines northwest of the WOTP to the land being proposed for development for the future VAH data center campus discussed above. See Attachment I.A.1.c. Further, operational challenges associated with routing new lines from either Line #287 or Line #2050 from the south would include having to cross existing lines, as shown in Attachment I.A.8. This could be particularly challenging since Line #287

is the southernmost line in the corridor (meaning it would have to cross the other three lines, namely, Lines #92, #286, and #2050 as illustrated in Section I.E), but it would be the preferred line to extend to White Oak Substation since it does not have any existing tapped load, unlike Line #2050, which has two industrial substations (ICI and Alpine) tapped from it. This southern alternative utilizing either Line #287 or Line #2050, referred to as the "Southern Electrical Alternative," is discussed further in Section I.E.

Cutting an existing line from the north provides the most robust solution from a planning perspective for both the immediate need and the future need, which is centered within and around the WOTP, as described above. Therefore, the Southern Electrical Alternative was rejected from a planning perspective, as well as from a routing perspective due to the routing challenges associated with this alternative, which are addressed at a high level in the Environmental Routing Study. See Sections I.C and I.E of the Appendix and Section 2.3 of the Routing Study for additional discussion of the comparative analysis performed and rejected alternatives.

Description of the Project

As part of the Project, the Company proposes to construct the two new approximately 4.69-mile overhead 230 kV White Oak Lines on primarily double circuit monopole structures in a new predominantly 100-foot-wide right-of-way by cutting the Company's existing 230 kV Chickahominy-Elmont Line #2075 at a location between Structures #2075/150 and #2075/151, resulting in (i) 230 kV Elmont-White Oak Line #2075, and (ii) 230 kV Chickahominy-White Oak Line #2294.

Within the existing 230 kV Chickahominy-Elmont Line #2075 right-of-way, the Company will install two new single circuit three-pole structures to support the proposed 230 kV Elmont-White Oak Line #2075 and the proposed 230 kV Chickahominy-White Oak Line #2294. In order for the conductors to meet clearance requirements when passing beneath the existing 500 kV Chickahominy-Elmont Line #557 that is collocated with Line #2075 in the existing transmission corridor, the width of the White Oak Lines corridor will gradually taper from 180 feet to a 100-foot-wide right-of-way for a total approximately 0.06 mile. The first 0.025 mile will begin at the structure cut-in location in the existing right-of-way and continue to the edge of the existing right-of-way. From the edge of the existing right-of-way, the proposed White Oak Lines will continue to gradually decrease to a 100-foot-wide right-of-way for approximately 0.035 mile. At the cut-in location on Line #2075 between Structures #2075/150 and #2075/151, existing Structure #2075/150 (a double circuit 230 kV weathering steel H-frame structure that is currently supporting only one circuit) will be removed and replaced with two new 230 kV single circuit weathering steel three-pole structures (proposed Structures #2075/150 and #2294/150). The proposed structures will be located within the existing transmission corridor and are estimated to be within 20% of the existing structure heights. The conductors for the White Oak Lines will begin in a horizontal configuration at the cut-in location (using the two new single circuit three-pole

structures installed side-by-side) then pass under the existing Line #557. Within that 0.06-mile segment, the White Oak Lines will transition from horizontal arrangement (using two single circuit H-frame structures installed side-by-side) to vertical arrangement (using one double circuit monopole). As the White Oak Lines rotate to a vertical arrangement, the corridor will gradually taper from 180-feet-wide beginning within the existing transmission corridor to a 100-foot-wide right-of-way. A 100-foot-wide right-of-way would then be needed for the remainder of the route (approximately 4.63 miles) to maintain adequate clearances for blowout and forestry maintenance for the double circuit monopole structures. See page 7 of 11 of Attachment II.A.6 for a map depicting the tapering of the 0.06-mile segment of the Proposed Route of the White Oak Lines from 180 feet to 100 feet.

Additionally, at the cut-in-location within the existing right-of-way, the Company will remove one single circuit lattice tower and install one single circuit H-frame structure on 500 kV Chickahominy-Elmont Line #557 to facilitate construction of the White Oak Lines.[17]

From the cut-in location within the existing right-of-way, the White Oak Lines will extend a total of approximately 4.69 miles to the southwest before terminating at the expanded White Oak Substation. While the proposed cut-in location is in the existing right-of-way, the proposed White Oak Lines will be constructed in new right-of-way supported primarily by double circuit weathering steel monopoles and will utilize three-phase twin-bundled 768.2 ACSS/TW type conductor with a summer transfer capability of 1,573 MVA.

The Company identified an approximately 4.69-mile overhead Proposed Route (Route 3) for the Project, as well as overhead Alternative Routes 1 and 2. The Company is proposing these three routes for Commission consideration and notice.

Importantly, the Proposed Route is located in areas within and adjacent to the WOTP that are compatible with data center and industrial development, rather than crossing existing residential areas. This includes approximately 2.0 miles of the entire route (almost half (43%) of the 4.69-mile Proposed Route) where it crosses the future VAH data center campus development before entering the WOTP. Indeed, in comparison to Alternative Routes 1 and 2, the Proposed Route has the fewest impacts on residences with only one residence within 250 feet of the proposed centerline, as discussed further in Section II.A.9. Additionally, of all three route alternatives, the Proposed Route (Route 3) is the only route that will allow interconnection with the future VAH data center campus's planned delivery points as it travels south to the terminus at White Oak Substation without the need for an additional source or right-of-way. In contrast, if Alternative Route 1 or 2 were selected, the Company additionally would have to construct two new 230 kV lines (the "Spur Lines") supported by two side-by-side double circuit monopoles on 160-foot-wide right-of-way for a minimum of approximately 0.94 mile to

[17] *See supra*, n. 2.

interconnect the future VAH data center campus development to the White Oak Lines.[18]

For all three route alternatives, additional lines will be needed at some point in the future to connect DPs within the WOTP following energization of the White Oak Lines in order to serve the future development in the WOTP. As the Company is not aware of any specific future development plans within the WOTP, including development of the six available sites in the WOTP, it is not possible to predict where these new lines will need to be routed within the WOTP. However, for Alternative Routes 1 and 2, these future additional lines will be in addition to the Spur Lines.

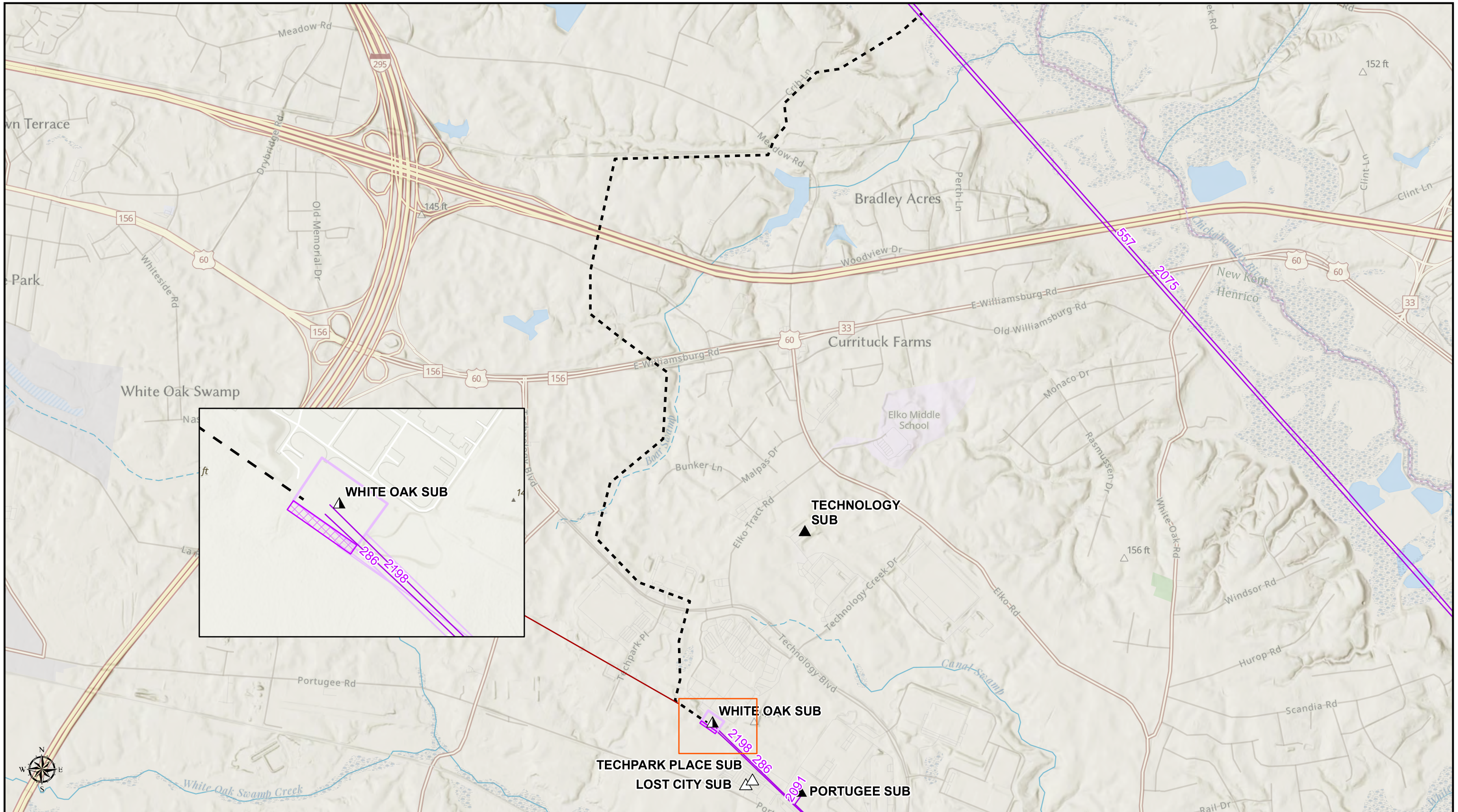
A discussion comparing the Proposed Route and Alternative Routes, the Spur Lines associated with Alternative Routes 1 and 2, as well as other overhead and hybrid overhead/underground routes that the Company studied but ultimately rejected, is provided in Section II.A.9 of the Appendix and discussed in more detail in Sections 2 and 5 of the Environmental Routing Study.

The Company also proposes to expand the existing White Oak Substation in Henrico County, Virginia, as part of the Project in order to accommodate the termination of the new White Oak Lines. The White Oak Substation Expansion will include installation of three 230 kV 4000A breakers to create an eight-breaker hybrid breaker-and-a-half arrangement. The White Oak Substation Expansion will require an additional approximately 0.7 acre, which the Company will obtain through easement. In addition, the Company will perform line protection resets at the Company's existing Chickahominy and Elmont Substations. See Section II.C.

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In summary, the proposed Project will relieve identified violations of mandatory NERC Reliability Standards beginning in the summer of 2023 timeframe and maintain the structural integrity and reliability of the transmission system for the overall load growth in the Project area.

[18] If Alternative Route 1 or 2 were selected by the Commission as the preferred route in this proceeding, the Company would come back before the Commission at a later date when the need to construct the Spur Lines arose. To be clear, the Spur Lines are not a component of this Project and are not included in the total Project costs.



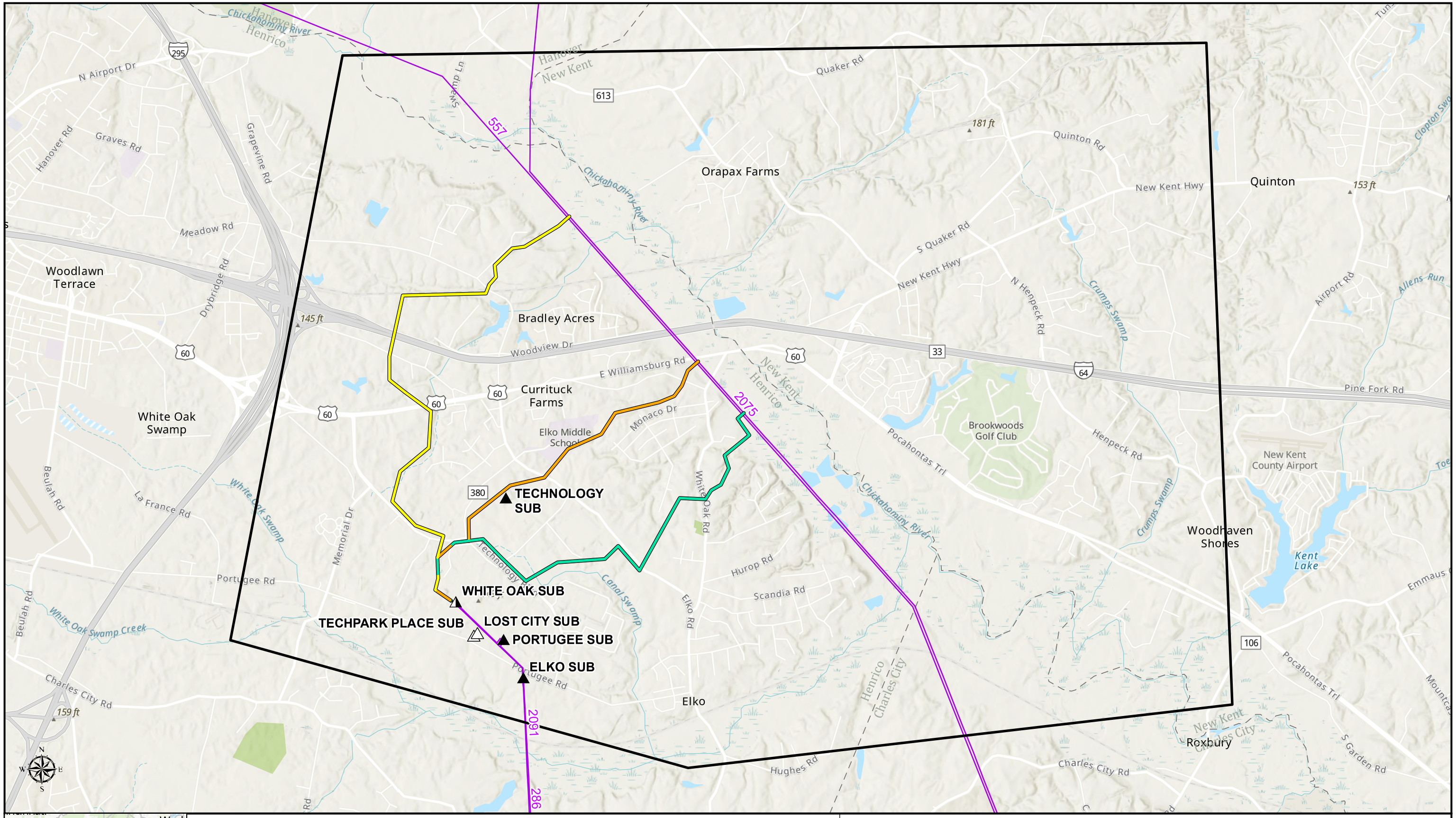
Attachment I.A.1.a
Project Overview
White Oak Electric Transmission Project
Dominion Energy Virginia
Henrico County, Virginia

ERM

Dominion Energy

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Project Location

Existing Substation
Future Substation
Existing Dominion Transmission Line
Approximate boundary of White Oak Load Area

White Oak Alternative Routes
Alternative Route 1
Alternative Route 2
Proposed Route (Route 3)

0 1,000 2,000
Feet
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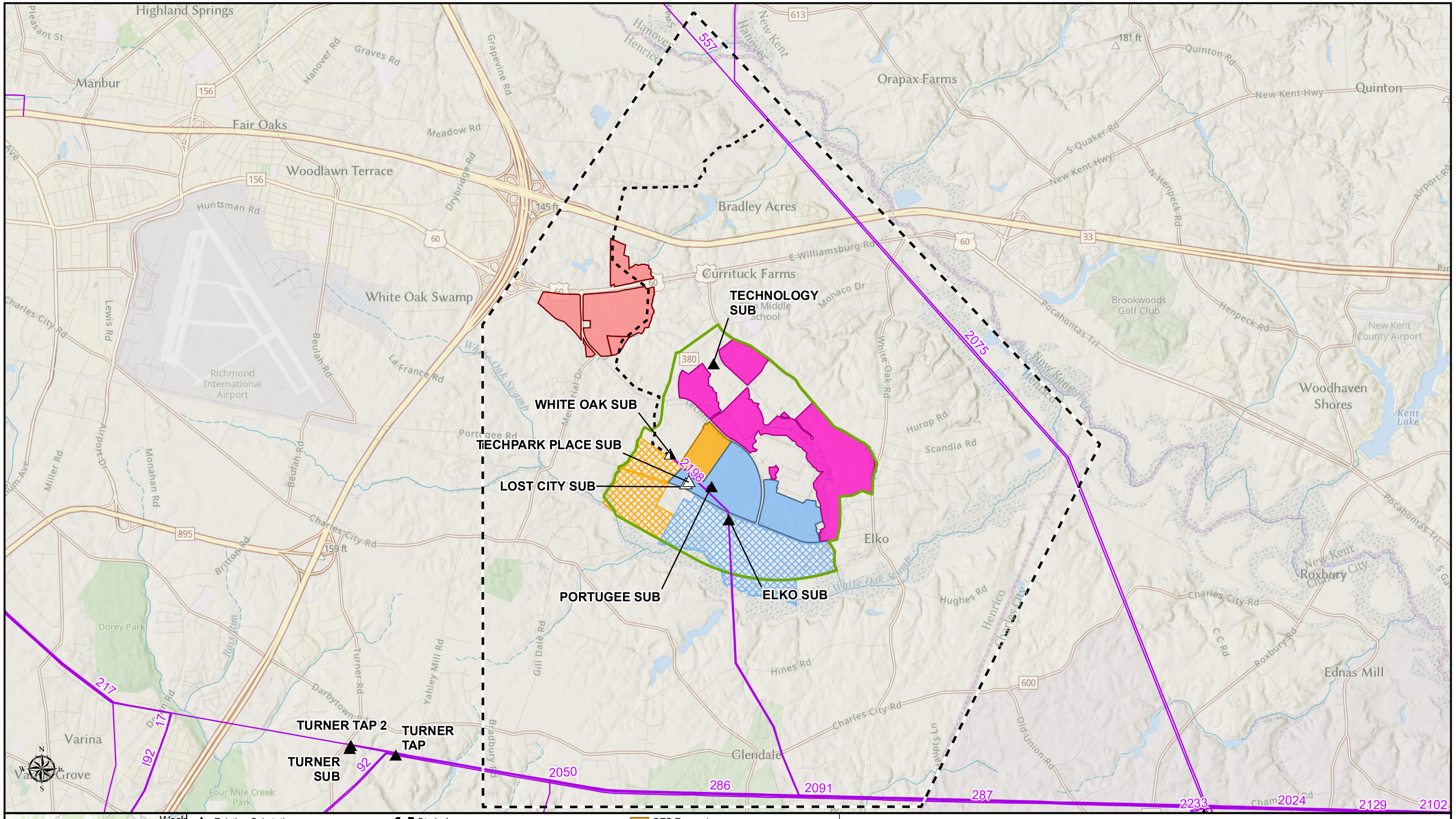
Attachment 1.A.1.b
Project Overview and White Oak Load Area
White Oak Electric Transmission Project
Dominion Energy Virginia
Henrico County, Virginia

ERM

Dominion Energy

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Attachment I.A.1.c
Project Overview and Future Load Growth Areas
White Oak Electric Transmission Project
Dominion Energy Virginia
Henrico County, Virginia

ERM

Dominion Energy

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REQUEST/NOTIFICATION FOR
CHANGES IMPACTING DOMINION FACILITIES

SECTION I – GENERAL

Date: 09 / 10 / 2021 Revision No.: 0

Requestor Name: Dominion Virginia Energy

Requestor Address: 600 Canal Place

Name of Contact Person: Emmanuel Dobson

Contact's Phone: 804-771-4091 Contact's Cell: 804-239-4501

Contact's Fax: 804-771-6450 Contact's Email: Emmanuel.J.Dobson@dominionenergy.com

Signature below authorizes Dominion to proceed with design, engineering, and estimation of Project cost as appropriate for Dominion to evaluate and respond to this request. This authorization is pursuant and subject to all terms and conditions of the Agreement of which this Appendix is a part.

Authorizing Signature: Emmanuel Dobson Auth. Date: 09 / 10 / 2021

Printed Name: Emmanuel Dobson Phone: 804-771-4091

Title: Data Center Planning Engineer

SECTION II – DESCRIPTION OF REQUEST

Name of Delivery Point: White Oak Sub

Brief Description of Request: (attach detail)
QTS is expanding their data center development (attached load ramp sent to transmission dated, 8/17/2021) This will require additional facilities and capacity at White Oak Sub.
We will add 2 additional transformers. A 56 MVA and an 84 MVA transformer to cover the data center expansion.

Brief Reasoning for Request: (attach detail)

Delivery Point Location: White Oak Sub
(attach detail if DP is new)

Noteworthy Load Characteristics: Data Center
(large motors, large fluctuating loads, large harmonic-producing loads, etc.)

PRESENT DELIVERY POINT DATA:

Present Delivery Point Voltage: 230 KV

Present Maximum kVA Capacity of Delivery Point Facilities:

Present Summer Peak kW Demand: 13,175 Present Summer Peak kVAR Demand: 5728

Present Winter Peak kW Demand: 14,500 Present Winter Peak kVAR Demand: 6740

ANTICIPATED NEW DELIVERY POINT FACILITIES DATA:

New Delivery Point Voltage:

New Peak kVA Capacity of Delivery Point Facilities: 250,000

Peak kW and rkVA During First Three Years Following Implementation and Highest Peak Within Ten Years:

Enter Year ➔	Initial Year: 2022	Second Year: 2023	Third Year: 2024	Highest in First Ten Years: 2032
Summer Peak kW:	32,000 (Aug)	74,000 (Aug)	60,000 (Aug)	111,500 (Aug)
Summer Peak rkVA:	Unity	Unity	Unity	Unity
Winter Peak kW:	25,000 (Feb)	46,000 (Feb)	111,500 (Feb)	111,500 (Feb)
Winter Peak rkVA:	Unity	Unity	Unity	Unity

Delivery Point Facilities Route:
(attach detail if new line extension is involved)

Additional Comments:

- The 84 MVA will be used to bridge QTS DC3 and FJ1 buildings until the onsite sub is built. At the point, the building normal feed will be sourced from the new substation. The 84 MVA transformer will remain to support area load and future projects.
- The 56 MVA transformer will not be installed until 1/1/2024.
- New Station tentative energization date is 1/1/2024. See 06-3623-A DP Request for additional information.

SECTION III – CUSTOMER'S EQUIPMENT

Transformer Primary Voltage:	230kV	Transformer Secondary Voltage:	34.5kV
Transformer Nameplate Capacity:	56 MVA and 84 MVA	Temperature Rise:	65 deg C
Transformer Taps:	• 56 MVA, 230000 HV, 13800/7976 LV • 84 MVA, 230000 HV, 36500/21070 LV		
Connection (e.g. Wye-Wye):	D-Y		
Transformer Impedance:	N/A		
Isolation Device Type and Rating:	Cir Switcher		
Protection Device Type and Rating:	S & C		

Required Attachments: [1] One-line diagram [2] Transformer test report [3] Transformer loss curve
[4] Operating procedures description [5] Protection scheme functional diagram
[6] Protection Device information (including device types, serial and model numbers, relay settings, etc.)

SECTION IV – TIMING

Request included in Customer's planning documents submitted to Dominion on:

Most Recent Submission:	08-17-2021	Second Most Recent Submission:	
Expected Date Customer's Construction to Commence:	February 2022		
Expected Completion Date of Customer Work:	November 2022		
Date Requested for Dominion Construction to Commence:	February 2022		
Requested Completion Date of Dominion Work (De-energized):	November 2022		
Requested Date to Energize: **(See Note)**	December 2022		
Other Milestones:	The timeline is based on QTS 8-17-2021 load ramp. Once transmission perform feasibility study, planning will revise the DP Request to reflect accurate dates.		

NOTE: If the "Requested Date to Energize" is marked as (E), then the firm date ultimately supplied must be on or after the estimated date, unless an earlier firm date is mutually agreed-upon prior to submission of the revised request form.

(E) = Estimated

N/A = Not Available

TBD = To Be Determined

REQUEST/NOTIFICATION FOR
CHANGES IMPACTING DOMINION FACILITIES

SECTION I – GENERAL

Date: 09 / 10 / 2021 Revision No.: 0

Requestor Name: Dominion Virginia Energy

Requestor Address: 600 Canal Place

Name of Contact Person: Emmanuel Dobson

Contact's Phone: 804-771-4091 Contact's Cell: 804-239-4501

Contact's Fax: 804-771-6450 Contact's Email: Emmanuel.J.Dobson@dominionenergy.com

Signature below authorizes Dominion to proceed with design, engineering, and estimation of Project cost as appropriate for Dominion to evaluate and respond to this request. This authorization is pursuant and subject to all terms and conditions of the Agreement of which this Appendix is a part.

Authorizing Signature: Emmanuel Dobson Auth. Date: 09 / 10 / 2021

Printed Name: Emmanuel Dobson Phone: 804-771-4091

Title: Data Center Planning Engineer

SECTION II – DESCRIPTION OF REQUEST

Name of Delivery Point: White Oak Sub #2 (Name Not Approved)- New Substation

Brief Description of Request: (attach detail)
QTS is expanding their data center development (attached load ramp sent to transmission dated, 8/17/2021) This will require a new 230/34.5 KV station.

Brief Reasoning for Request: (attach detail)

Delivery Point Location: (attach detail if DP is new)
White Oak Sub #2 (Name Not Approved)- New Substation

Noteworthy Load Characteristics: (large motors, large fluctuating loads, large harmonic-producing loads, etc.)
Data Center

PRESENT DELIVERY POINT DATA:

Present Delivery Point Voltage: N/A

Present Maximum kVA Capacity of Delivery Point Facilities:

Present Summer Peak kW Demand: N/A Present Summer Peak kVAR Demand: N/A

Present Winter Peak kW Demand: N/A Present Winter Peak kVAR Demand: N/A

ANTICIPATED NEW DELIVERY POINT FACILITIES DATA:

New Delivery Point Voltage: 230

New Peak kVA Capacity of Delivery Point Facilities: 448,000

Peak kW and rkVA During First Three Years Following Implementation and Highest Peak Within Ten Years:

	Initial Year:	Second Year:	Third Year:	Highest in First Ten Years:
Enter Year ➔	2024	2025	2026	2034
Summer Peak kW:	156,000 (Aug)	192,890 (Aug)	192,890 (Aug)	192,890 (Aug)
Summer Peak rkVA:	Unity	Unity	Unity	Unity
Winter Peak kW:	79,800 (Feb)	192,890 (Feb)	192,890 (Feb)	192,890 (Feb)
Winter Peak rkVA:	Unity	Unity	Unity	Unity

Delivery Point Facilities Route:
(attach detail if new line extension is involved)

Additional Comments:

- The 84 MVA installed on project 06-3622-A will be used to bridge DCA and FJ1 until the onsite substation is ready. Once the onsite substation is ready DCA and FJ1 buildings will be sourced from this new substation.
- New Station tentative energization date is 1/1/2024. See 06-3622-A DP Request for bridging information.

SECTION III – CUSTOMER'S EQUIPMENT

Transformer Primary Voltage:	230kV	Transformer Secondary Voltage:	34.5kV
Transformer Nameplate Capacity:	112MVA	Temperature Rise:	65 deg C
Transformer Taps:	230000 HV, 36500/21070 LV		
Connection (e.g. Wye-Wye):	D-Y		
Transformer Impedance:	N/A		
Isolation Device Type and Rating:	Cir Switcher		
Protection Device Type and Rating:	S & C		

Required Attachments: [1] One-line diagram [2] Transformer test report [3] Transformer loss curve
[4] Operating procedures description [5] Protection scheme functional diagram
[6] Protection Device information (including device types, serial and model numbers, relay settings, etc.)

SECTION IV – TIMING

Request included in Customer's planning documents submitted to Dominion on:

Most Recent Submission:	08-17-2021	Second Most Recent Submission:	
Expected Date Customer's Construction to Commence:	January 2023		
Expected Completion Date of Customer Work:	October 2023		
Date Requested for Dominion Construction to Commence:	January 2023		
Requested Completion Date of Dominion Work (De-energized):	October 2023		
Requested Date to Energize: **(See Note)**	January 2024		

Other Milestones:

The timeline is based on QTS 8-17-2021 load ramp. Once transmission perform feasibility study, planning will revise the DP Request to reflect accurate dates.

NOTE: If the "Requested Date to Energize" is marked as (E), then the firm date ultimately supplied must be on or after the estimated date, unless an earlier firm date is mutually agreed-upon prior to submission of the revised request form.

(E) = Estimated

N/A = Not Available

TBD = To Be Determined

REQUEST/NOTIFICATION FOR
CHANGES IMPACTING DOMINION FACILITIES

SECTION I – GENERAL

Date: 10 / 20 / 2021 Revision No.: 4

Requestor Name: Dominion Virginia Energy

Requestor Address: 600 Canal Place

Name of Contact Person: Emmanuel Dobson

Contact's Phone: 804-771-4091 Contact's Cell: 804-239-4501

Contact's Fax: 804-771-6450 Contact's Email: Emmanuel.J.Dobson@dominionenergy.com

Signature below authorizes Dominion to proceed with design, engineering, and estimation of Project cost as appropriate for Dominion to evaluate and respond to this request. This authorization is pursuant and subject to all terms and conditions of the Agreement of which this Appendix is a part.

Authorizing Signature: Emmanuel Dobson Auth. Date: 12 / 09 / 2021

Printed Name: Emmanuel Dobson Phone: 804-771-4091

Title: Data Center Planning Engineer

SECTION II – DESCRIPTION OF REQUEST

Name of Delivery Point: White Oak Sub

Brief Description of Request: (attach detail)
QTS is expanding their data center development. This will require additional facilities and capacity at White Oak Sub.
We will add 2 additional transformers. 2-56 MVA transformers to cover the data center expansion.

Brief Reasoning for Request: (attach detail)

Delivery Point Location: (attach detail if DP is new)
White Oak Sub (Existing Station)

Noteworthy Load Characteristics: (large motors, large fluctuating loads, large harmonic-producing loads, etc.)
Data Center

PRESENT DELIVERY POINT DATA:

Present Delivery Point Voltage: 230 KV

Present Maximum kVA Capacity of Delivery Point Facilities:

Present Summer Peak kW Demand: 20,480 Present Summer Peak kVAR Demand: 7110

Present Winter Peak kW Demand: 14,500 Present Winter Peak kVAR Demand: 6740

ANTICIPATED NEW DELIVERY POINT FACILITIES DATA:

New Delivery Point Voltage:

New Peak kVA Capacity of Delivery Point Facilities: 222,000

Peak kW and rkVA During First Three Years Following Implementation and Highest Peak Within Ten Years:

Enter Year ➔	Initial Year: 2022	Second Year: 2023	Third Year: 2024	Highest in First Ten Years: 2032
Summer Peak kW:	20,480 (Aug)	162,200 (Aug)	168,600 (Aug)	168,600 (Aug)
Summer Peak rkVA:	Unity	Unity	Unity	Unity
Winter Peak kW:	14,500 (Feb)	114,400 (Feb)	162,200 (Feb)	168,600 (Feb)
Winter Peak rkVA:	Unity	Unity	Unity	Unity

Delivery Point Facilities Route:
(attach detail if new line extension is involved)

Additional Comments:

- This document has been converted from an “engineering only” to a “construction” DP Request.
- 2-56 MVA transformer will be installed. Energization date for new transformers is 3/2023.
- No Diversification Applied. The projections are based on full contract amount.
- 2022 August Projection is actual peak. Customer hasn’t started ramp on new development when the 2022 projections were extracted.

SECTION III – CUSTOMER'S EQUIPMENT

Transformer Primary Voltage: 230kV Transformer Secondary Voltage: 34.5kV

Transformer Nameplate Capacity: 2-56 MVA Temperature Rise: 65 deg C

Transformer Taps: N/A

Connection (e.g. Wye-Wye): D-Y

Transformer Impedance: N/A

Isolation Device Type and Rating: Cir Switcher

Protection Device Type and Rating: S & C

Required Attachments: [1] One-line diagram [2] Transformer test report [3] Transformer loss curve
[4] Operating procedures description [5] Protection scheme functional diagram
[6] Protection Device information (including device types, serial and model numbers, relay settings, etc.)

SECTION IV – TIMING

Request included in Customer's planning documents submitted to Dominion on:

Most Recent Submission: 09-27-2021 Second Most Recent Submission:

Expected Date Customer's Construction to Commence: May 2022

Expected Completion Date of Customer Work: January 2022

Date Requested for Dominion Construction to Commence: May 2022

Requested Completion Date of Dominion Work (De-energized): January 2022

Requested Date to Energize: **(See Note)** March 2023

Other Milestones:

NOTE: If the "Requested Date to Energize" is marked as (E), then the firm date ultimately supplied must be on or after the estimated date, unless an earlier firm date is mutually agreed-upon prior to submission of the revised request form.

(E) = Estimated

N/A = Not Available

TBD = To Be Determined

REQUEST/NOTIFICATION FOR
CHANGES IMPACTING DOMINION FACILITIES

SECTION I – GENERAL

Date: 12 / 07 / 2021 Revision No.: 3

Requestor Name: Dominion Virginia Energy

Requestor Address: 600 Canal Place

Name of Contact Person: Emmanuel Dobson

Contact's Phone: 804-771-4091 Contact's Cell: 804-317-6896

Contact's Fax: 804-771-6450 Contact's Email: Emmanuel.J.Dobson@dominionenergy.com

Signature below authorizes Dominion to proceed with design, engineering, and estimation of Project cost as appropriate for Dominion to evaluate and respond to this request. This authorization is pursuant and subject to all terms and conditions of the Agreement of which this Appendix is a part.

Authorizing Signature: *Emmanuel Dobson* Auth. Date: 12 / 09 / 2021

Printed Name: Emmanuel Dobson Phone: 804-771-4091

Title: Data Center Planning Engineer

SECTION II – DESCRIPTION OF REQUEST

Name of Delivery Point: Techpark Place Sub- New Substation

Brief Description of Request: (attach detail)
QTS is expanding their data center development (load letters sent 2021-11-19) This will require a new 230/34.5 KV station.
The station will be a 5-112 transformer ultimate buildout

Brief Reasoning for Request: (attach detail)

Delivery Point Location: (attach detail if DP is new)
Techpark Place Sub - New Substation

Noteworthy Load Characteristics: (large motors, large fluctuating loads, large harmonic-producing loads, etc.)
Data Center

PRESENT DELIVERY POINT DATA:

Present Delivery Point Voltage: N/A

Present Maximum kVA Capacity of Delivery Point Facilities:

Present Summer Peak kW Demand: N/A Present Summer Peak kVAR Demand: N/A

Present Winter Peak kW Demand: N/A Present Winter Peak kVAR Demand: N/A

ANTICIPATED NEW DELIVERY POINT FACILITIES DATA:

New Delivery Point Voltage: 230

New Peak kVA Capacity of Delivery Point Facilities: 560,000

Peak kW and rkVA During First Three Years Following Implementation and Highest Peak Within Ten Years:

Enter Year ➔	Initial Year: 2024	Second Year: 2025	Third Year: 2026	Highest in First Ten Years: 2034
Summer Peak kW:	110,000 (Aug)	214,000 (Aug)	255,000 (Aug)	255,000 (Aug)
Summer Peak rkVA:	Unity	Unity	Unity	Unity
Winter Peak kW:	0 (Feb)	200,000 (Feb)	244,000 (Feb)	255,000 (Feb)
Winter Peak rkVA:	Unity	Unity	Unity	Unity

Delivery Point Facilities Route:
(attach detail if new line extension is involved)

Additional Comments:

- Energization Date, 4/1/2024
- Projections based on load letter received from QTS 11/22/21.
- This document has been converted from an “engineering only” to a “construction” DP Request.

SECTION III – CUSTOMER'S EQUIPMENT

Transformer Primary Voltage:	230kV	Transformer Secondary Voltage:	34.5kV
Transformer Nameplate Capacity:	112 MVA	Temperature Rise:	65 deg C
Transformer Taps:	230000 HV, 36500/21070 LV		
Connection (e.g. Wye-Wye):	D-Y		
Transformer Impedance:	N/A		
Isolation Device Type and Rating:	Cir Switcher		
Protection Device Type and Rating:	S & C		

Required Attachments: [1] One-line diagram [2] Transformer test report [3] Transformer loss curve
[4] Operating procedures description [5] Protection scheme functional diagram
[6] Protection Device information (including device types, serial and model numbers, relay settings, etc.)

SECTION IV – TIMING

Request included in Customer's planning documents submitted to Dominion on:

Most Recent Submission:	11-19-2021 (Load Letters)	Second Most Recent Submission:	

Expected Date Customer's Construction to Commence:	January 2023
Expected Completion Date of Customer Work:	October 2023
Date Requested for Dominion Construction to Commence:	January 2023
Requested Completion Date of Dominion Work (De-energized):	October 2023
Requested Date to Energize: **(See Note)**	April 2024
Other Milestones:	

The timeline is based on QTS submitted 11/19/2021 load letters.

NOTE: If the "Requested Date to Energize" is marked as (E), then the firm date ultimately supplied must be on or after the estimated date, unless an earlier firm date is mutually agreed-upon prior to submission of the revised request form.

(E) = Estimated

N/A = Not Available

TBD = To Be Determined

REQUEST/NOTIFICATION FOR
CHANGES IMPACTING DOMINION FACILITIES

SECTION I – GENERAL

Date: 05 / 16 / 2022 Revision No.: 0

Requestor Name: Dominion Virginia Energy

Requestor Address: 600 Canal Place

Name of Contact Person: Emmanuel Dobson

Contact's Phone: 804-771-4091 Contact's Cell: 804-317-6896

Contact's Fax: 804-771-6450 Contact's Email: Emmanuel.J.Dobson@dominionenergy.com

Signature below authorizes Dominion to proceed with design, engineering, and estimation of Project cost as appropriate for Dominion to evaluate and respond to this request. This authorization is pursuant and subject to all terms and conditions of the Agreement of which this Appendix is a part.

Authorizing Signature: *Emmanuel Dobson* Auth. Date: 05 / 17 / 2022

Printed Name: Emmanuel Dobson Phone: 804-771-4091

Title: Data Center Planning Engineer

SECTION II – DESCRIPTION OF REQUEST

Name of Delivery Point: Canal Swamp Sub- New Substation

Brief Description of Request: (attach detail)
QTS is expanding their data center development (load letters sent 2022-04-23) This will require a new 230/34.5 KV station.
The station will be an initial 4-112 transformer buildout. The ultimate build out will be a 5 transformer station.

Brief Reasoning for Request: (attach detail)

Delivery Point Location: (attach detail if DP is new)
Canal Swamp Sub - New Substation

Noteworthy Load Characteristics: (large motors, large fluctuating loads, large harmonic-producing loads, etc.)
Data Center

PRESENT DELIVERY POINT DATA:

Present Delivery Point Voltage: N/A

Present Maximum kVA Capacity of Delivery Point Facilities:

Present Summer Peak kW Demand: N/A Present Summer Peak kVAR Demand: N/A

Present Winter Peak kW Demand: N/A Present Winter Peak kVAR Demand: N/A

ANTICIPATED NEW DELIVERY POINT FACILITIES DATA:

New Delivery Point Voltage: 230

New Peak kVA Capacity of Delivery Point Facilities: 448,000

Peak kW and rkVA During First Three Years Following Implementation and Highest Peak Within Ten Years:

Enter Year ➔	Initial Year: 2024	Second Year: 2025	Third Year: 2026	Highest in First Ten Years: 2034
Summer Peak kW:	4,000 (Aug)	54,000 (Aug)	126,000 (Aug)	202,800 (Aug)
Summer Peak rkVA:	Unity	Unity	Unity	Unity
Winter Peak kW:	0 (Feb)	23,000 (Feb)	90,000 (Feb)	202,800 (Feb)
Winter Peak rkVA:	Unity	Unity	Unity	Unity

Delivery Point Facilities Route:
(attach detail if new line extension is involved)

Additional Comments:

- Winter 2024 load is 0 MVA, due to the customer to start ramp in June 2024 (based on received load letters).
- Energization Date (Referenced Load Letters), Q3/Q4 2024

Projections based on load letter received from QTS 04/23/22

SECTION III – CUSTOMER'S EQUIPMENT

Transformer Primary Voltage:	230kV	Transformer Secondary Voltage:	34.5kV
Transformer Nameplate Capacity:	112MVA	Temperature Rise:	65 deg C
Transformer Taps:	230000 HV, 36500/21070 LV		
Connection (e.g. Wye-Wye):	D-Y		
Transformer Impedance:	N/A		
Isolation Device Type and Rating:	Cir Switcher		
Protection Device Type and Rating:	S & C		

Required Attachments: [1] One-line diagram [2] Transformer test report [3] Transformer loss curve
[4] Operating procedures description [5] Protection scheme functional diagram
[6] Protection Device information (including device types, serial and model numbers, relay settings, etc.)

SECTION IV – TIMING

Request included in Customer's planning documents submitted to Dominion on:

Most Recent Submission:	04-23-2022 (Load Letters)	Second Most Recent Submission:	

Expected Date Customer's Construction to Commence:	October 2023
Expected Completion Date of Customer Work:	June 2024
Date Requested for Dominion Construction to Commence:	October 2023
Requested Completion Date of Dominion Work (De-energized):	June 2024
Requested Date to Energize: **(See Note)**	August 2024
Other Milestones:	

The timeline is based on QTS submitted 04/23/2022 load letters.

Energization date will need to be solidified with construction. Date subject to change. Will update DP Request with date, upon confirmation.

NOTE: If the "Requested Date to Energize" is marked as (E), then the firm date ultimately supplied must be on or after the estimated date, unless an earlier firm date is mutually agreed-upon prior to submission of the revised request form.

(E) = Estimated

N/A = Not Available

TBD = To Be Determined

REQUEST/NOTIFICATION FOR
CHANGES IMPACTING DOMINION FACILITIES

SECTION I – GENERAL Date: 05 / 16 / 2022 Revision No.: 2

Requestor Name: Dominion Virginia Energy

Requestor Address: 600 Canal Place

Name of Contact Person: Emmanuel Dobson

Contact's Phone: 804-771-4091 Contact's Cell: 804-317-6896

Contact's Fax: 804-771-6450 Contact's Email: Emmanuel.J.Dobson@dominionenergy.com

Signature below authorizes Dominion to proceed with design, engineering, and estimation of Project cost as appropriate for Dominion to evaluate and respond to this request. This authorization is pursuant and subject to all terms and conditions of the Agreement of which this Appendix is a part.

Authorizing Signature: Emmanuel Dobson Auth. Date: 05 / 17 / 2022

Printed Name: Emmanuel Dobson Phone: 804-771-4091

Title: Data Center Planning Engineer

SECTION II – DESCRIPTION OF REQUEST

Name of Delivery Point: Lost City Sub- New Substation

Brief Description of Request: (attach detail)
QTS is expanding their data center development (load letters sent 2022-04-23) This will require a new 230/34.5 KV station.
The station will be an initial 4-112 transformer buildout. The ultimate build out will be a 5-transformer station.

Brief Reasoning for Request: (attach detail)

Delivery Point Location: (attach detail if DP is new)
Lost City Sub - New Substation

Noteworthy Load Characteristics: (large motors, large fluctuating loads, large harmonic-producing loads, etc.)
Data Center

PRESENT DELIVERY POINT DATA:

Present Delivery Point Voltage: N/A

Present Maximum kVA Capacity of Delivery Point Facilities:

Present Summer Peak kW Demand: N/A Present Summer Peak kVAR Demand: N/A

Present Winter Peak kW Demand: N/A Present Winter Peak kVAR Demand: N/A

ANTICIPATED NEW DELIVERY POINT FACILITIES DATA:

New Delivery Point Voltage: 230

New Peak kVA Capacity of Delivery Point Facilities: 448,000

Peak kW and rkVA During First Three Years Following Implementation and Highest Peak Within Ten Years:

Enter Year ➔	Initial Year: 2025	Second Year: 2026	Third Year: 2027	Highest in First Ten Years: 2035
Summer Peak kW:	126,000 (Aug)	167,600 (Aug)	191,600 (Aug)	194,400 (Aug)
Summer Peak rkVA:	Unity	Unity	Unity	Unity
Winter Peak kW:	0 (Feb)	155,600 (Feb)	179,600 (Feb)	194,400 (Feb)
Winter Peak rkVA:	Unity	Unity	Unity	Unity

Delivery Point Facilities Route:
(attach detail if new line extension is involved)

Additional Comments:

- Winter 2025 load is 0 MVA, due to energization of substation in 4/1/2025.
- Energization Date (Referenced Load Letters), 4/1/2024
- Projections based on load letter received from QTS 09/23/22
- This document has been converted from an “engineering only” to a “construction” DP Request.

SECTION III – CUSTOMER'S EQUIPMENT

Transformer Primary Voltage:	230kV	Transformer Secondary Voltage:	34.5kV
Transformer Nameplate Capacity:	112MVA	Temperature Rise:	65 deg C
Transformer Taps:	230000 HV, 36500/21070 LV		
Connection (e.g. Wye-Wye):	D-Y		
Transformer Impedance:	N/A		
Isolation Device Type and Rating:	Cir Switcher		
Protection Device Type and Rating:	S & C		

Required Attachments: [1] One-line diagram [2] Transformer test report [3] Transformer loss curve
[4] Operating procedures description [5] Protection scheme functional diagram
[6] Protection Device information (including device types, serial and model numbers, relay settings, etc.)

SECTION IV – TIMING

Request included in Customer's planning documents submitted to Dominion on:

Most Recent Submission:	04-23-2022 (Load Letters)	Second Most Recent Submission:	

Expected Date Customer's Construction to Commence:	April 2024
Expected Completion Date of Customer Work:	February 2025
Date Requested for Dominion Construction to Commence:	April 2024
Requested Completion Date of Dominion Work (De-energized):	February 2025
Requested Date to Energize: **(See Note)**	April 2025

Other Milestones:

The timeline is based on QTS submitted 04/23/2022 load letters.

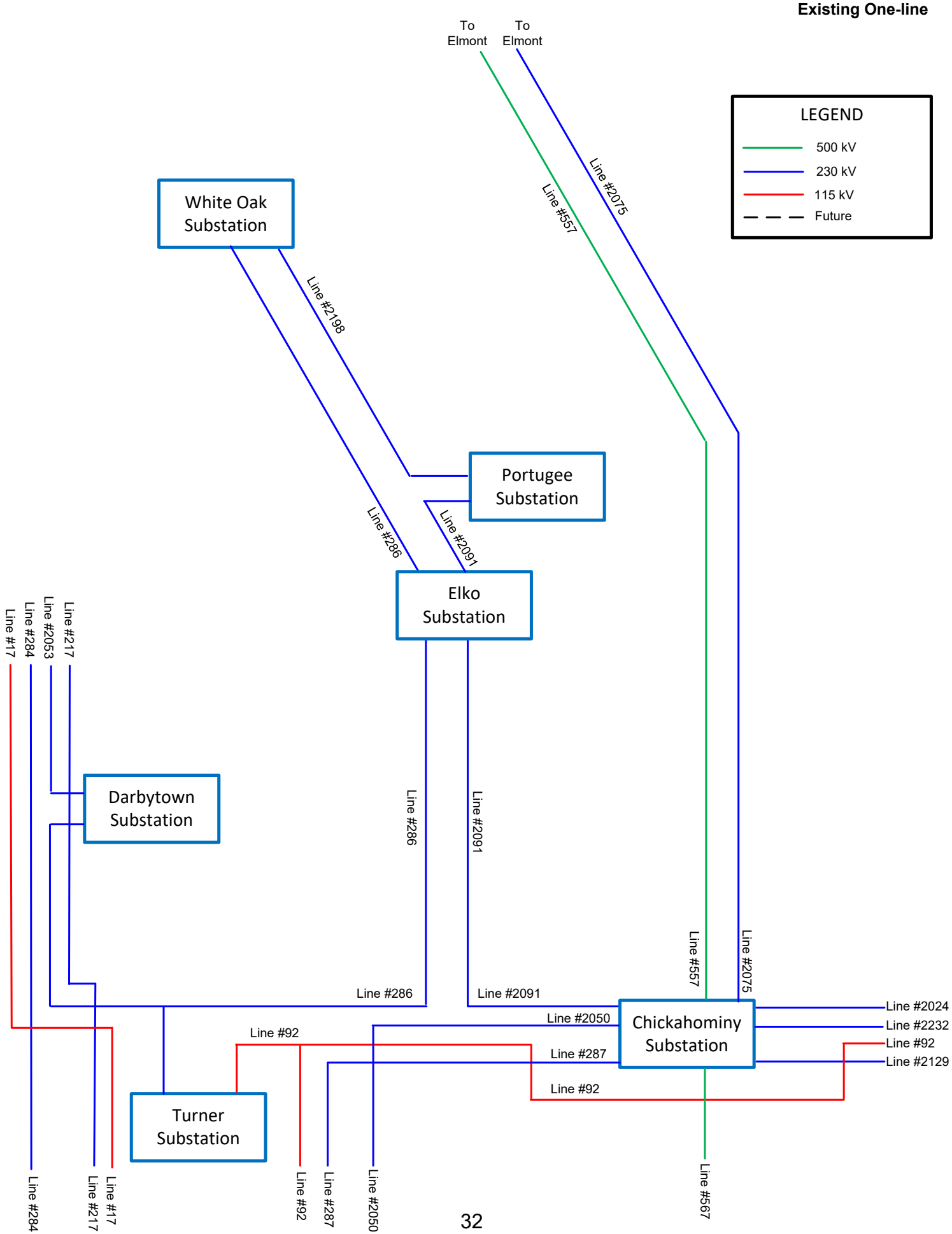
NOTE: If the "Requested Date to Energize" is marked as (E), then the firm date ultimately supplied must be on or after the estimated date, unless an earlier firm date is mutually agreed-upon prior to submission of the revised request form.

(E) = Estimated

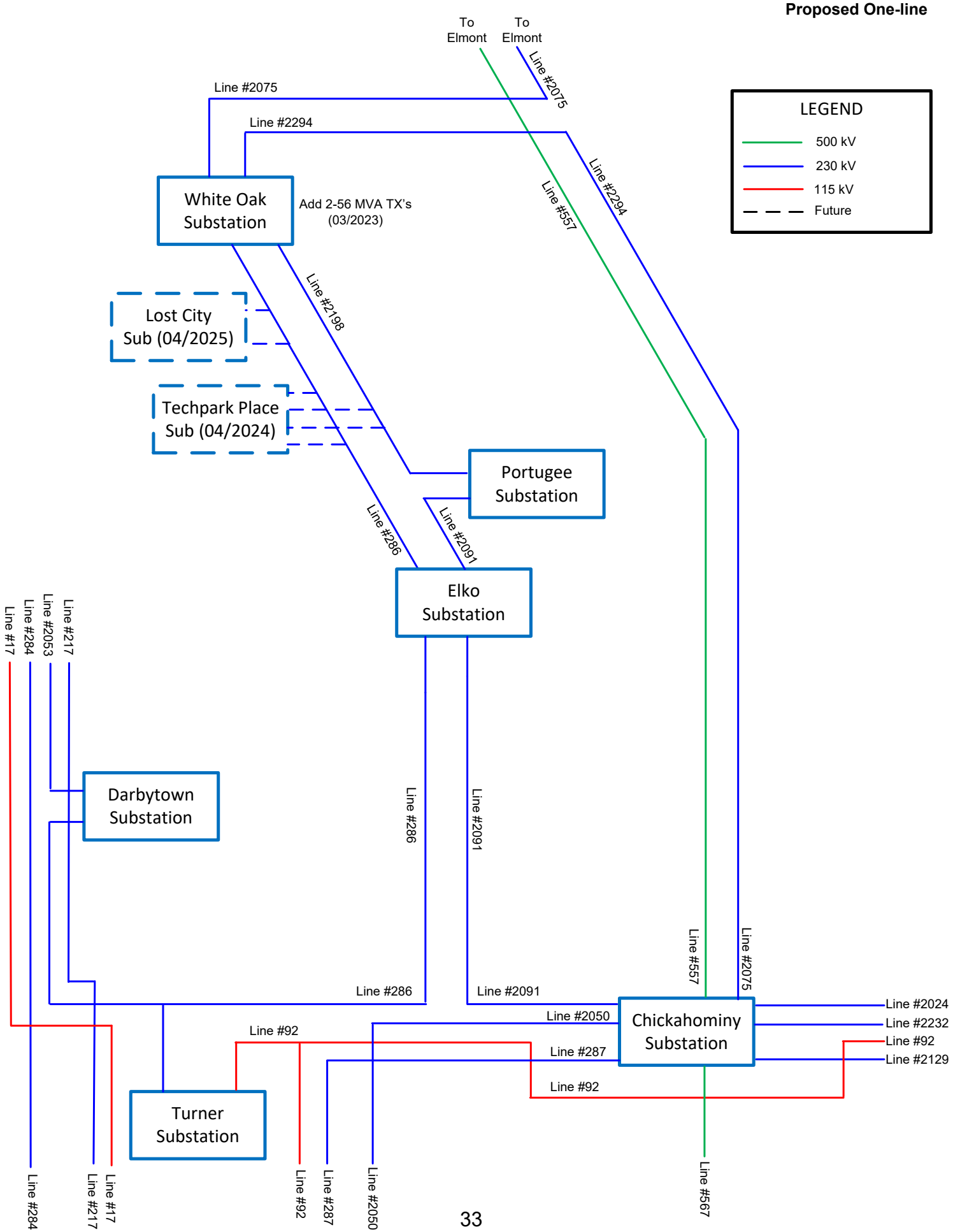
N/A = Not Available

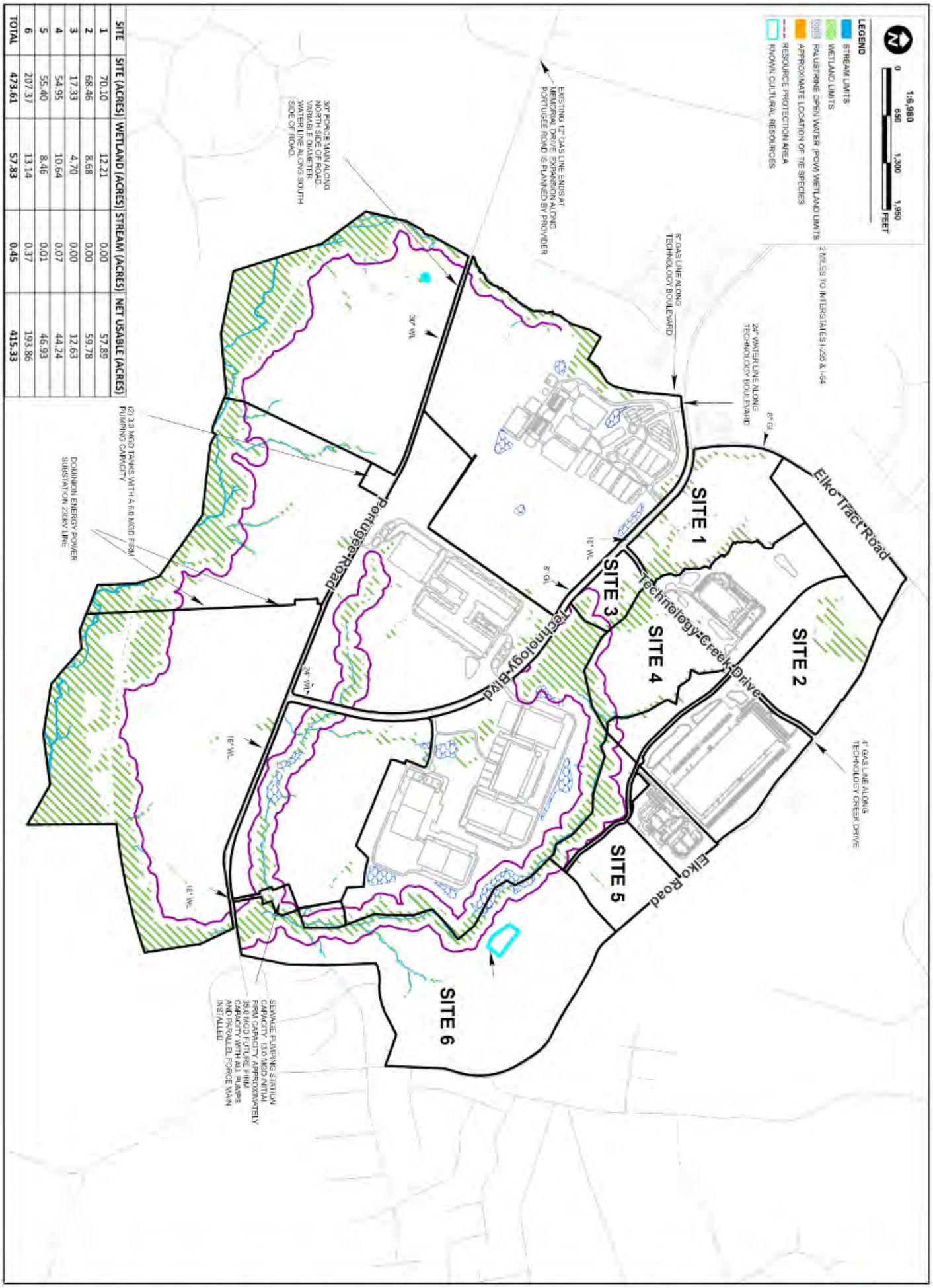
TBD = To Be Determined

Existing One-line



Proposed One-line





SITE	SITE (ACRES)	WETLAND (ACRES)	STREAM (ACRES)	NET USABLE (ACRES)
1	70.10	12.21	0.00	57.89
2	68.46	8.68	0.00	59.78
3	17.33	4.70	0.00	12.63
4	54.95	10.64	0.07	44.24
5	55.40	8.46	0.01	46.93
6	207.37	13.14	0.37	193.86
TOTAL	473.61	57.83	0.45	415.33

White Oak Technology Park

Henrico County, Virginia

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SITE 10
LEASED
SITE 11
SITE 12
SITE 1
SITE 2
SITE 3
SITE 4
SITE 5
SITE 6
Elko Tract Road
Pocahontas Road
Technology Blvd
Technology Creek Drive
Engineered Wood Way
Elko Road
White Oak Technology Park
Henrico County, Virginia
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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: **Engineering Justification for Project**

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.

Known Future Projects

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 resolve violations of mandatory NERC Reliability Standards and prepare for the future demand growth projected in the White Oak Load Area. See Section I.A. While future distribution and transmission projects are located generally within the same load area (as discussed in Section I.A), each has its own unique load growth driver, and as such, these future projects do not "require" that the proposed Project be constructed.

Planning Studies

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.

The Transmission Planning group ran comprehensive analysis considering the different sources in the WOLA that could be used to mitigate the identified NERC reliability violations, including cutting Line #287 or Line #2050 to the south of the WOLA (*i.e.*, the Southern Electrical Alternative), and cutting Line #2075 to the north (*i.e.*, the proposed Project). The substations that would be impacted by the

Project include the Company's existing Elko, Portugee, and White Oak Substations and any future substations in the WOLA.

Facilities List

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

None of the future substations discussed in Section I.A are in service. White Oak Substation is in service and the White Oak Modification installing two additional transformers was completed in March 2023. See Attachment I.A.9.

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.

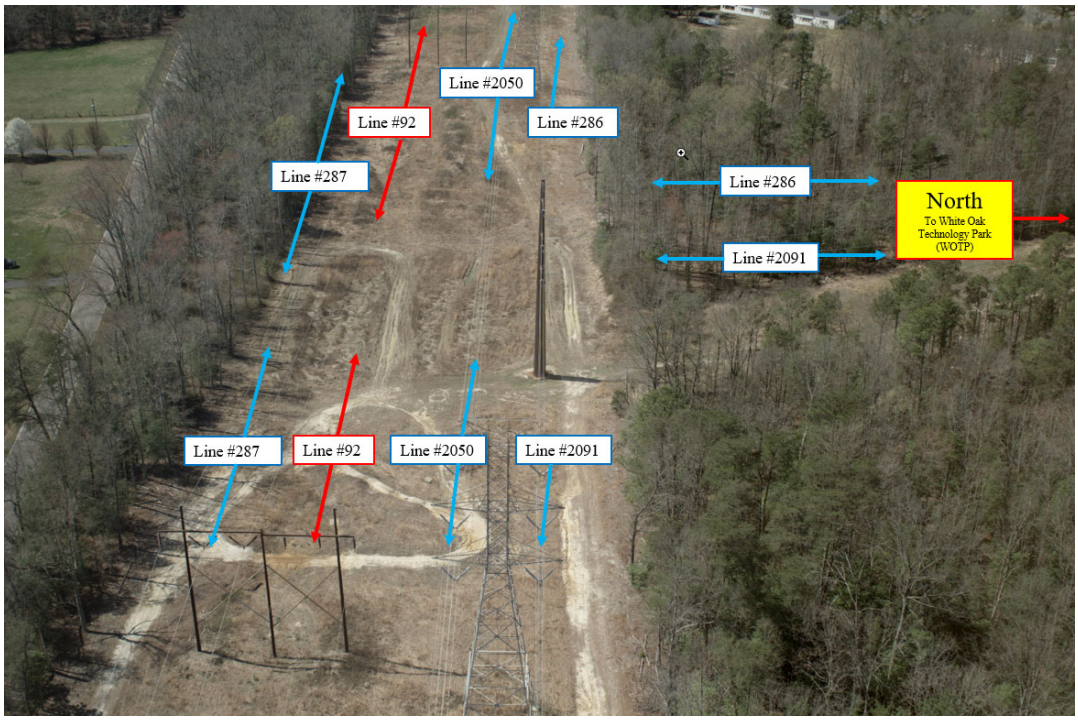
Response: As described in Section I.A, for this Application, the White Oak Load Area (or, WOLA) is defined generally as the area in eastern Henrico County around and including the previously mentioned WOTP, east of Interstate 295 between the Chickahominy River to the north and White Oak Swamp Creek to the south, and the area in western New Kent County, west of New Kent County Airport between Black Creek to the north and Route 60 (Pocahontas Trail) to the south. See Attachment I.G.1 for the portion of the Company's transmission facilities in the area of the Project and Attachment I.A.1.b for the approximate boundary of the WOLA.

Existing 230 kV Chickahominy-Portugee Line #2091 and Darbytown-White Oak Line #286 serve the WOLA and enter the WOTP from the south on double circuit structures. The substations in the WOTP include the Company's existing Elko, Portugee, and White Oak Substations as well as the future Techpark Place and Lost City Substations. There is also a 34.5-13.2 kV distribution substation called Technology Substation within the WOTP that is sourced from one of the 34.5 kV distribution circuits out of Elko Substation. It should be noted that Elko Substation is considered a tapped substation versus a terminal substation[19] since its transformers are tapped off of the two transmission lines (Lines #286 and #2091) that fly over the substation. Portugee and White Oak Substations are terminal stations since their source transmission lines terminate at each of the stations. Line #2198 is the 230 kV line between Portugee and White Oak Substations.

Approximately 2.0 miles south of the WOLA is a transmission corridor running east-west that contains not only Lines #2091 and #286 described above, but also 230 kV Chesterfield-Chickahominy Line #287 and Allied-Chickahominy Line #2050, and 115 kV Chesterfield-Lanexa Line #92. Lines #287 and #92 share three-pole double circuit H-frame structures, with Line #287 being in the southernmost position on the right-of-way. Line #2050 is in the southernmost position on the double circuit lattice towers that it shares with Line #2091, east of the WOTP junction (where Lines #2091 and #286 turn north toward the WOTP), and Line #286, west of the WOTP junction. The following illustrates the position of these

[19] Substations where the load is ***tapped*** off a transmission line will be exposed to any interruption, momentary or sustained, experienced by the transmission line. Loads served from substations where the transmission lines ***terminate*** into a ring bus or breaker-and-a-half arrangement typically will not experience interruptions associated with line outages.

lines in the existing transmission corridors. As noted in Section I.A, Line #287 would be the preferred line to extend to the White Oak Substation since it does not have any existing tapped load, however, as illustrated below, it would have to cross three other lines (Lines #92, #2050, and #286). See Section I.E regarding additional challenges associated with the Southern Electrical Alternative.



Additionally, Turner Substation, located west of the WOTP junction, is a tapped substation that has its Transformer #1 tapped from Line #286 and its Transformer #2 tapped from 115 kV Line #92. For the purpose of determining the 300 MW load drop due to the loss of sources into the WOLA, the load on Turner Transformer #1 counts toward the total since it would be lost when Line #286 goes out.

Moreover, 500 kV Line #557 and 230 kV Line #2075 extend from Chickahominy Substation in a northwest direction to Elmont Substation and cut across the WOLA in Henrico County, east of the WOTP.

Without the proposed Project, Lines #2091 and #286 are the only transmission sources for the aforementioned existing and future substations serving the existing and projected load growth in the WOLA. As mentioned in Section I.A, this would create a scenario where a 300 MW load drop could occur for a NERC Category P6 contingency (N-1-1) or a P7 Contingency (Tower) involving the loss of both Lines #2091 and #286.

Attachment I.C.1 provides five years of historical peak loads coincident with the system peak for the existing substations serving the WOLA. Of particular note is the recent growth on the Company's existing Portugee and White Oak Substations, which serve Meta and QTS existing data center campuses, respectively.

Additionally, the last three years of annual peak loads shown on Attachment I.C.1 (2020-2022) illustrates that the load in the WOTP does not necessarily peak at the same time as the system and continues to grow.

Attachment I.C.2 provides 10 years of projected growth for the WOLA, with most of the growth being attributed to the current and future developments taking place within the WOTP described in Section I.A. Two sets of projections from the Company's Distribution Planning group are shown on Attachment I.C.2 from January 12, 2022, and from November 7, 2022, to reflect the dynamic nature of the development plans. As discussed in Section I.A, QTS and Meta have purchased additional land within WOTP, and Dominion Energy Virginia is working with QTS to develop additional substations (Lost City and Techpark Place) that will be used to serve future data center loads in the WOTP, as well as a future substation to serve a new development in the WOTP that the Distribution Planning group recently was made aware of (Tract #10 Substation).[20] However, even without the new substations, the recent load projections for the existing Elko, Turner, Portugee, and White Oak Substations show the potential for a 300 MW NERC reliability load drop issue by summer of 2023. Thus, additional sources are required in the WOLA in order to mitigate this reliability violation. Moreover, the projected loads in Attachment I.C.2 demonstrate an immediate need for the Project to serve the area. Over the period from 2022 to 2032, the electrical demand for this area is projected to change from under 200 MW to potentially over 1 GW.

Failure to relieve the identified NERC criteria violations will severely impact the transmission system's ability to provide reliable service to Dominion Energy Virginia's customers in the White Oak Load Area. The proposed Project, as described herein, will provide the most comprehensive solution for resolving the projected NERC reliability violations by winter of 2025-2026, as well as provide for future load growth.

[20] Note that in Attachment I.C.2, the January 12, 2022 summer and winter charts contain projected load at Future Sub #1 (now known as Lost City Substation) and Future Sub #2 (now known as Tract #10 Substation). The November 17, 2022 summer and winter charts contain projected load at Future Sub (now known as Tract #10 Substation).

Attachment I.C.1 – White Oak Load Area (WOLA)

Historical Loads (Summer, Winter, Annual Peak)

SUMMER LOADS	Historical MW (Coincident with System Peak)				
Date	7/2/2018	7/20/2019	7/20/2020	8/12/2021	8/9/2022
Elko TX#1	9.2	8.6	9.6	11.3	13.2
Elko TX#2	26.6	30.2	28.6	12.5	10.0
Portugee #1	0.0	0.0	0.0	33.1	0.0
Portugee #2	0.0	0.0	25.4	33.8	84.9
Turner TX#1	22.1	17.4	16.0	19.4	17.9
White Oak TX#1	1.4	2.9	4.9	6.9	9.2
White Oak TX#2	8.3	9.1	6.6	7.3	11.2
TOTAL	**67.6**	**68.2**	**91.1**	**124.3**	**146.5**

WINTER LOADS	Historical MW (Coincident with System Peak)				
Date	1/7/2018	1/31/2019	1/21/2020	1/29/2021	1/27/2022
Elko TX#1	7.2	8.0	7.5	8.3	12.6
Elko TX#2	60.9	49.2	32.4	31.6	37.6
Portugee #1	0.0	0.0	0.0	0.0	12.9
Portugee #2	0.0	0.0	10.5	37.7	56.0
Turner TX#1	34.2	21.3	18.7	18.8	17.8
White Oak TX#1	0.7	2.2	1.4	4.4	14.4
White Oak TX#2	8.7	8.9	9.5	6.2	0.2
TOTAL	**111.7**	**89.7**	**80.0**	**107.0**	**151.4**

ANNUAL PEAK	Historical MW (Annual Peak - Coincident but not with System)				
Date	1/7/2018 (08:00)	1/22/2019 (08:00)	12/27/2020 (08:00)	12/31/2021 (08:00)	8/30/2022* (18:00)
Elko TX#1	7.5	8.4	7.5	12.0	13.1
Elko TX#2	46.4	49.8	32.2	31.7	21.8
Portugee #1	0.0	0.0	0.0	0.0	0.1
Portugee #2	0.0	0.0	36.8	79.3	82.5
Turner TX#1	28.7	21.0	16.3	19.2	16.1
White Oak TX#1	0.8	2.1	4.2	9.0	16.2
White Oak TX#2	8.7	9.0	6.2	0.0	19.5
TOTAL	**92.0**	**90.4**	**103.2**	**151.3**	**169.3**

* 2022 Annual Peak is as of 11/13/2022

Attachment I.C.2 – White Oak Load Area (WOLA)

Projected Loads (Summer and Winter)

From Dominion Distribution - January 12, 2022										
SUMMER LOADS	Projected MVA									
Year (August)	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Elko	42.3	42.7	43.2	43.6	44.0	44.5	44.9	45.4	45.8	46.3
Turner	23.6	23.8	24.1	24.3	24.6	24.8	25.1	25.3	25.6	25.8
Portugee	123.7	128.9	128.8	128.7	136.7	148.7	160.7	162.0	162.0	162.0
White Oak	82.7	118.2	139.2	139.2	139.2	139.2	139.2	139.2	139.2	139.2
Techpark Place	24.0	96.0	198.7	266.2	283.6	283.6	283.6	283.6	283.6	283.6
Future Sub #1			11.0	25.0	51.0	87.0	123.0	156.0	180.0	199.0
Future Sub #2							11.0	32.0	65.0	110.0
TOTAL	296.3	409.6	545.0	627.0	679.1	727.8	787.5	843.5	901.2	965.9

From Dominion Distribution - January 12, 2022										
WINTER LOADS	Projected MVA									
Year (February)	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Elko	42.2	42.6	43.0	43.5	43.9	44.4	44.8	45.2	45.7	46.2
Turner	25.3	25.6	25.8	26.1	26.3	26.6	26.9	27.1	27.4	27.7
Portugee	116.3	128.7	129.0	128.7	130.7	142.7	154.7	162.0	162.0	162.0
White Oak	56.0	114.2	135.2	139.2	139.2	139.2	139.2	139.2	139.2	139.2
Techpark Place	8.0	54.0	150.0	239.4	280.9	283.6	283.6	283.6	283.6	283.6
Future Sub #1			5.0	17.0	37.0	69.0	105.0	141.0	168.0	192.0
Future Sub #2							5.0	20.0	47.0	86.0
TOTAL	247.8	365.1	488.0	593.9	658.0	705.5	759.2	818.1	872.9	936.7

From Dominion Distribution - November 17, 2022										
SUMMER LOADS	Projected MVA									
Year (August)	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Elko	42.3	42.7	43.2	43.6	44.0	44.5	44.9	45.4	45.8	46.3
Turner	23.6	23.8	24.1	24.3	24.6	24.8	25.1	25.3	25.6	25.8
Portugee	123.7	128.9	128.8	128.7	136.7	148.7	160.7	162.0	162.0	162.0
White Oak	162.2	168.6	168.6	168.6	168.6	168.6	168.6	168.6	168.6	168.6
Techpark Place		110.0	214.0	255.0	255.0	255.0	255.0	255.0	255.0	255.0
Lost City			131.0	167.6	191.6	194.4	194.4	194.4	194.4	194.4
Future Sub							110.0	214.0	255.0	255.0
TOTAL	351.8	474.0	709.7	787.8	820.5	836.0	958.7	1064.7	1106.4	1107.1

From Dominion Distribution - November 17, 2022										
WINTER LOADS	Projected MVA									
Year (February)	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Elko	42.2	42.6	43.0	43.5	43.9	44.4	44.8	45.2	45.7	46.2
Turner	25.3	25.6	25.8	26.1	26.3	26.6	26.9	27.1	27.4	27.7
Portugee	116.3	128.7	129.0	128.7	130.7	142.7	154.7	162.0	162.0	162.0
White Oak	114.2	122.2	168.6	168.6	168.6	168.6	168.6	168.6	168.6	168.6
Techpark Place			200.0	244.0	255.0	255.0	255.0	255.0	255.0	255.0
Lost City				155.6	179.6	194.4	194.4	194.4	194.4	194.4
Future Sub								200.0	244.0	255.0
TOTAL	298.0	319.1	566.4	766.5	804.1	831.7	844.4	1052.3	1097.1	1108.9

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 one transmission electrical alternative to the Project. No distribution alternatives were considered due to the 300 MW load drop violations described in Sections I.A and I.C.

Transmission Alternative

One feasible transmission electrical alternative was identified and analyzed but ultimately rejected. The electrical alternative, referred to as the Southern Electrical Alternative, would cut one of the Company's existing 230 kV Lines #287 or #2050 approximately 3.1 miles south of the White Oak Substation, as described below.

Southern Electrical Alternative: *Cut Chesterfield-Chickahominy Line #287 or Allied-Chickahominy Line #2050 and extend new 230 kV lines to White Oak Substation*.

The Southern Electrical Alternative would extend two new overhead 230 kV transmission lines approximately 3.1 miles from either the existing Line #287 or Line #2050 located south of the White Oak Substation to an expanded White Oak Substation. The Southern Electrical Alternative was rejected from further consideration in favor of the proposed Project from the north for reasons related to transmission planning, land use compatibility, and avoidance of environmental and cultural resources.

The Southern Electrical Alternative would place two new 230 kV overhead transmission lines farther from the future data center and industrial developments in the WOTP and require new transmission right-of-way through largely rural residential and agricultural areas to the south. Because existing and future development is driving the increased load demand, the proposed Project from the north has the advantage of routing the two new 230 kV overhead transmission lines through planned customer delivery points.

With respect to current zoning and land use patterns, the proposed Project would avoid routing the White Oak Lines where a new transmission corridor would be less compatible with the existing and future land uses, as the route alternatives from the north would cross industrial, office/commercial, and other mixed-use zoning districts within and adjacent to WOTP. In contrast, the Southern Electrical Alternative would require two new 230 kV overhead transmission lines to cross mainly land within Henrico County's agricultural zoning district in order to connect to the expanded White Oak Substation. Furthermore, the Henrico County Vision 2026 Comprehensive Plan's ("Comprehensive Plan") future land use policies support the preservation of agricultural, rural residential, and environmentally sensitive land uses in the area south of White Oak Swamp that would be crossed by

the Southern Electrical Alternative. Designated almost entirely as *Prime Agriculture* and *Environmental Protection Area* in the Comprehensive Plan, the primary land use policy in the area south of WOTP is to promote a continuation of the historic, rural pattern, including farms, pastureland, and preserved natural and historic sites as the desired character for these areas. In contrast, the Comprehensive Plan intends for the area north of White Oak Swamp where the proposed Project is located to support industrial and commercial land uses, policies evidenced by the continued development of WOTP under the aegis of the Henrico County EDA.

Finally, the Richmond National Battlefield Park, the Park's Proclamation Boundary, and other important cultural resources (including core battlefield areas) are concentrated south of the White Oak Swamp, including along the existing Line #286 and #2091 rights-of-way, and where the Southern Electrical Alternative could potentially cut-in either Line #287 or Line #2050. The Company consulted with the National Park Service ("NPS") staff who expressed opposition to a new transmission right-of-way encroachment within the Richmond National Battlefield Park and the Park's Proclamation Boundary, as discussed further below.

For these reasons, the Company determined that the Southern Electrical Alternative is inferior compared to the proposed Project from the north and no routes were developed for further study. See Section 2.4.1 of the Environmental Routing Study for additional discussion of this rejected electrical alternative.

While no routes were developed for the Southern Electrical Alternative, the Company reviewed the existing corridor of Lines #286 and #2091 as a possible collocation opportunity (referred to as the "Southern Conceptual Collocation Corridor"), in accordance with Commission guidance to utilize existing corridors when possible (see Guideline #1 in Attachment 1 to these Guidelines ("Guideline #1")). Existing Lines #2198 and #286 run from the existing White Oak Substation to the existing Portugee Substation, and Lines #286 and #2091 run from the existing Portugee Substation south to the existing Lines #287 and #2050. However, in addition to the reasons listed above explaining why the Southern Electrical Alternative is inferior to the proposed Project, the following issues specific to paralleling this existing corridor were identified:

Outages: The Company's existing White Oak, Portugee, and Elko Substations are served by Lines #2091 and #286 from the south and have no redundant transmission source. To collocate along the existing transmission line corridor, two new 230 kV overhead transmission lines would need to cross the existing corridor at least twice to avoid existing residences and a community center. Crossing over existing Lines #2091 and #286 with a new transmission line would require de-energization of those existing lines during construction. De-energization of those existing lines would cause a loss of service to customers within the WOLA, including residents and the existing WOTP data centers and industrial facilities, as no redundant electrical source exists. In addition, as Line #287 would be the preferred line to cut-in new lines from the south, the Southern Conceptual Collocation Corridor would require crossing Lines #92, #2050, and #286 to connect to the existing east-

west Line #287, which would necessitate outages on all of those lines, as discussed in Section I.C. The Company deems these outages to be not operationally feasible and therefore does not support the Southern Conceptual Collocation Corridor.

Proximity to Residences: There are several residences and other structures located along or near the Company's existing right-of-way for Lines #286 and #2091 between the cut-in location to the south and Hines Road to the north, including two single family homes and one community center within 60 feet of the existing right-of-way. The residences within 60 feet of the right-of-way are within existing residential subdivisions that cannot easily be avoided unless the new transmission lines were to cross the existing right-of-way. Avoidance of these residences would require crossing the existing transmission lines at least twice or require the purchase and demolition of residences so two new 230 kV overhead transmission lines could maintain collocation along one side of the existing right-of-way. The Company prefers to avoid existing residences and the service outages caused by crossing over the existing lines.

Richmond National Battlefield Park: A corridor collocated with the existing right-of-way would cross approximately 0.4 mile of the NPS Richmond National Battlefield Park Proclamation Boundary in an area just north of Charles City Road. The Company discussed the possibility of crossing the Proclamation Boundary with the NPS staff in December 2022. NPS staff indicated that new utility rights-of-way are not compatible with the purpose and intent of the Proclamation Boundary. NPS staff indicated that the NPS would not support siting of new utilities on NPS land or land within the Proclamation Boundary that may be obtained by NPS at some point in the future. Therefore, collocation of new transmission lines along the existing right-of-way crossing the Richmond National Battlefield Park Proclamation Boundary is not considered practicable or advisable.

Analysis of Demand-Side Resources:

Pursuant to the Commission's November 26, 2013, Order entered in Case No. PUE-2012-00029, and its November 1, 2018, Final Order entered in Case No. PUR-2018-00075 ("2018 Final Order"), the Company is required to provide analysis of demand-side 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 Project based on the need to address violations of NERC Reliability Standards, thereby enabling the Company to maintain the overall long-term reliability of its transmission system.[21] 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

[21] 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.

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 absolve the need for the Project. As reflected in Attachment I.C.2, the projected load in the WOLA will, potentially, exceed 1 GW by 2032. By way of comparison, statewide, the Company achieved demand savings of 264.8 MW (net) / 404.8 MW (gross) from its DSM Programs in 2022.

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: As part of the proposed Project, the Company will remove one single circuit weathering steel lattice tower supporting Line #557 and replace it with one single circuit weathering steel H-frame structure.[22]

Additionally, the proposed Project will require the removal of existing Structure #2075/150, a double circuit 230 kV weathering steel H-frame structure that is currently supporting only one circuit, which will be replaced with two new 230 kV single circuit weathering steel three-pole structures (proposed Structures #2075/150 and #2294/150) to effectuate the cut-in of the Proposed Route. See Section II.A.9.

Finally, there is a cell tower located within the Company's existing right-of-way that will need to be relocated to accommodate the termination of the White Oak Lines into the expanded White Oak Substation.[23] See Section II.C as it pertains to work being performed at the Company's existing White Oak Substation.

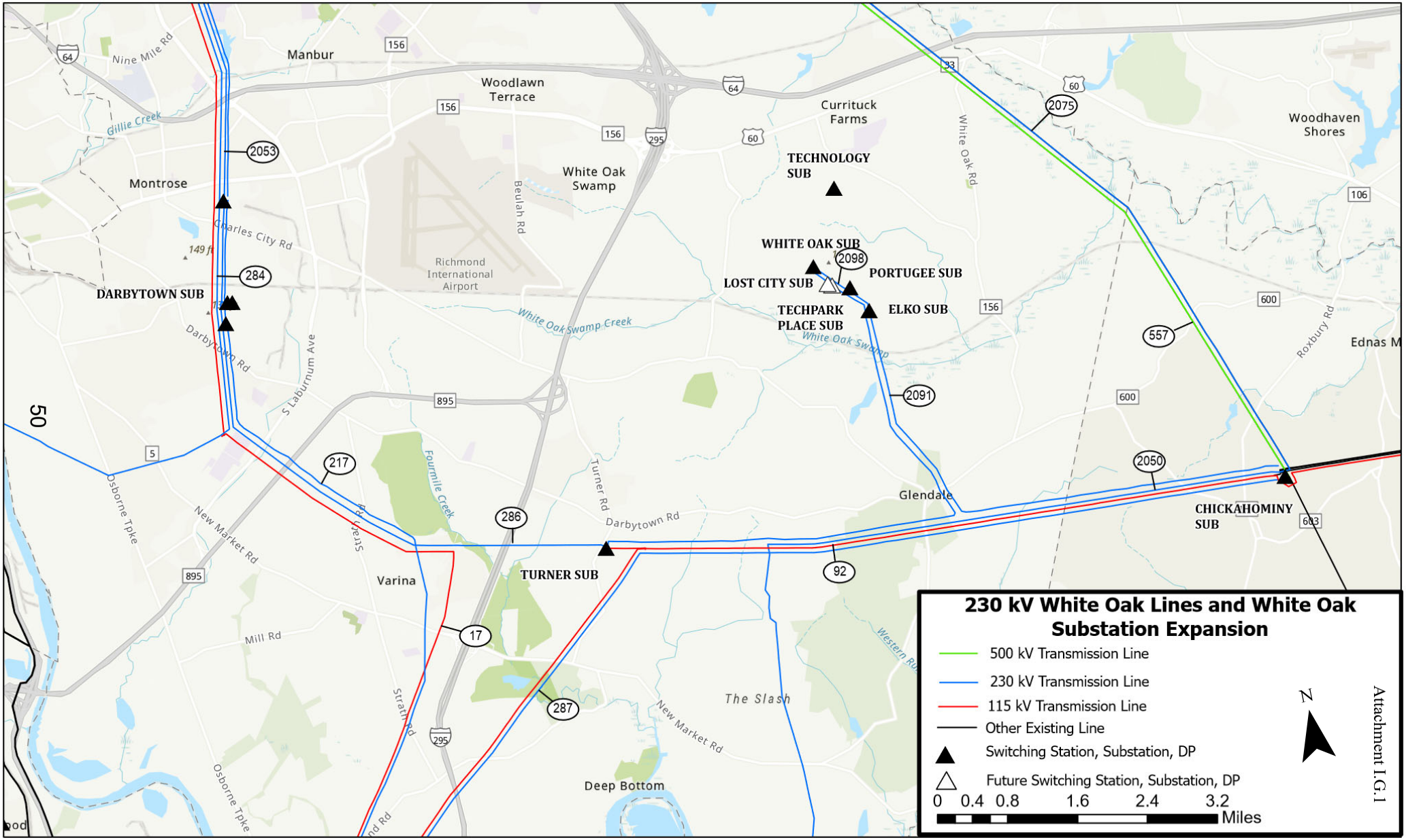
[22] *See supra*, n. 2.

[23] *See supra*, n. 4.

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 White Oak Lines and White Oak Substation Expansion
500 kV Transmission Line
230 kV Transmission Line
115 kV Transmission Line
Other Existing Line
Switching Station, Substation, DP
Future Switching Station, Substation, DP
0 0.4 0.8 1.6 2.4 3.2
Miles
N
Attachment I.G.1
DARBYTOWN SUB
TURNER SUB
WHITE OAK SUB
LOST CITY SUB
PORTUGEE SUB
TECHPARK PLACE SUB
ELKO SUB
TECHNOLOGY SUB
CHICKAHOMINY SUB
Manbur
Woodlawn Terrace
Currituck Farms
Woodhaven Shores
Montrose
White Oak Swamp
Richmond International Airport
Glendale
Varina
Deep Bottom
The Slash
Gillie Creek
Nine Mile Rd
Charles City Rd
Beulah Rd
White Oak Rd
White Oak Swamp Creek
Darbytown Rd
S Laburnum Ave
Osborne Tpke
New Market Rd
Fourmile Creek
Turner Rd
Mill Rd
Strath Rd
Roxbury Rd
2053
284
217
286
287
17
92
2091
2098
2075
2050
557
64
156
295
60
33
106
600
603
895
5
50

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 April 30, 2026.

The Company estimates it will take approximately 26 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 March 1, 2024. Should the Commission issue a final order by March 1, 2024, the Company estimates that construction should begin around January 1, 2025, and be completed by April 30, 2026. This schedule is contingent upon obtaining the necessary permits and outages. 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 is also 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 actively monitoring the regulatory changes and requirements associated with the NLEB and how it could potentially impact construction timing associated with TOYRs. The existing interim guidance from the USFWS for the NLEB expires on March 31, 2024. The Company is also monitoring potential regulatory changes associated with the potential up-listing of the Tri-colored bat. On September 14, 2022, the Tri-colored bat was proposed to be up-listed to endangered, with an estimated announcement of a final decision within 12 months. The regulatory guidance on the Tri-colored bat will available upon up-listing. The Company's construction window described above may require adjustment based upon the regulatory guidance and potential TOYRs associated with these two bat species.

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 $44.6 million, which includes approximately $34.6 million[24] for transmission-related work and approximately $10.0 million for substation-related work (2023 dollars).

The estimated conceptual costs for the transmission-related work associated with Alternative Routes 1 and 2 are provided in Section II.A.9. The substation-related costs associated with those routes are the same as the Proposed Route.

[24] *See supra*, n. 4.

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: As discussed in Section I.A, in order to interconnect new customer load at the expanded QTS data center facility in the WOTP, the Company submitted the Interconnect Projects to PJM in 2022. The White Oak Substation Modification and the future Techpark Place Substation have been designated as supplemental projects in the PJM RTEP process and have been assigned Dominion Need Numbers DOM-2022-0038 and DOM-2022-0039, respectively. Attachment I.J.1 and Attachment I.J.2 include the need and solution slides for DOM-2022-0038 and DOM-2022-0039 that were presented at PJM's July 12, 2022 and August 09, 2022 TEAC Meetings, respectively.

Because the DNH analysis performed by the Company prior to submitting the solution slides identified a potential 300 MW load drop violation for the loss of Line #286 and Line #2091 (for either an N-1-1 or Tower contingency), the proposed solution for DOM-2022-0038 contains two components: the first is to interconnect the customer load in early 2023 (*i.e.*, the White Oak Substation Modification, which was completed in March 2023), and the second is to resolve the 300 MW load drop violation by late 2025/early 2026 (*i.e.*, the proposed Project), which is the earliest the Company believes a solution could be implemented. While the Interconnect Projects both will serve the WOLA, only the proposed Project, which will resolve the potential 300 MW load drop violation identified during the DNH analysis for DOM-2022-0038, is proposed for Commission approval in this proceeding.[25]

The proposed Project is classified as a supplemental project initiated by the TO in order to mitigate NERC reliability violations identified during the DNH analysis of the project solutions presented at the August 9, 2022 TEAC Meeting, and to maintain reliable service for overall growth in the Project Area. See Attachment I.J.2.

At the time of this filing, PJM is experiencing a backlog of several months in their DNH analysis and will not assign Supplemental ID #'s to any of the solutions presented at the August 09, 2022 TEAC Meeting until that analysis is complete and PJM has confirmed the Company's DNH results. Without Supplemental ID #'s, these projects cannot be included in the Company's 2022 Local Plan. During a recent call with PJM, the Company was informed that PJM anticipated only projects submitted through June 2022 would be considered for inclusion in the 2022 Local Plan. Given the information above, it is expected that these projects (DOM-2022-0038 and DOM-2022-0039) will ultimately be included as part of the 2023 Local Plan. Regardless, as discussed in Section I.A, supplemental projects are not approved by the PJM Board and, as such, the Company believes it is more

[25] *See supra*, n. 13.

important to continue moving forward to interconnect customer load and address any harm created in a timely manner than to create constraints due to administrative backlog.

The Project will be 100% cost allocated to DOM Zone.

Dominion Supplemental Projects

Transmission Expansion Advisory Committee
July 12, 2022

Attachment I.J.1

5

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

Dominion Transmission Zone: Supplemental Customer Load Request

Need Number: DOM-2022-0038

Process Stage: Need Meeting 07/12/2022

Project Driver: Customer Service

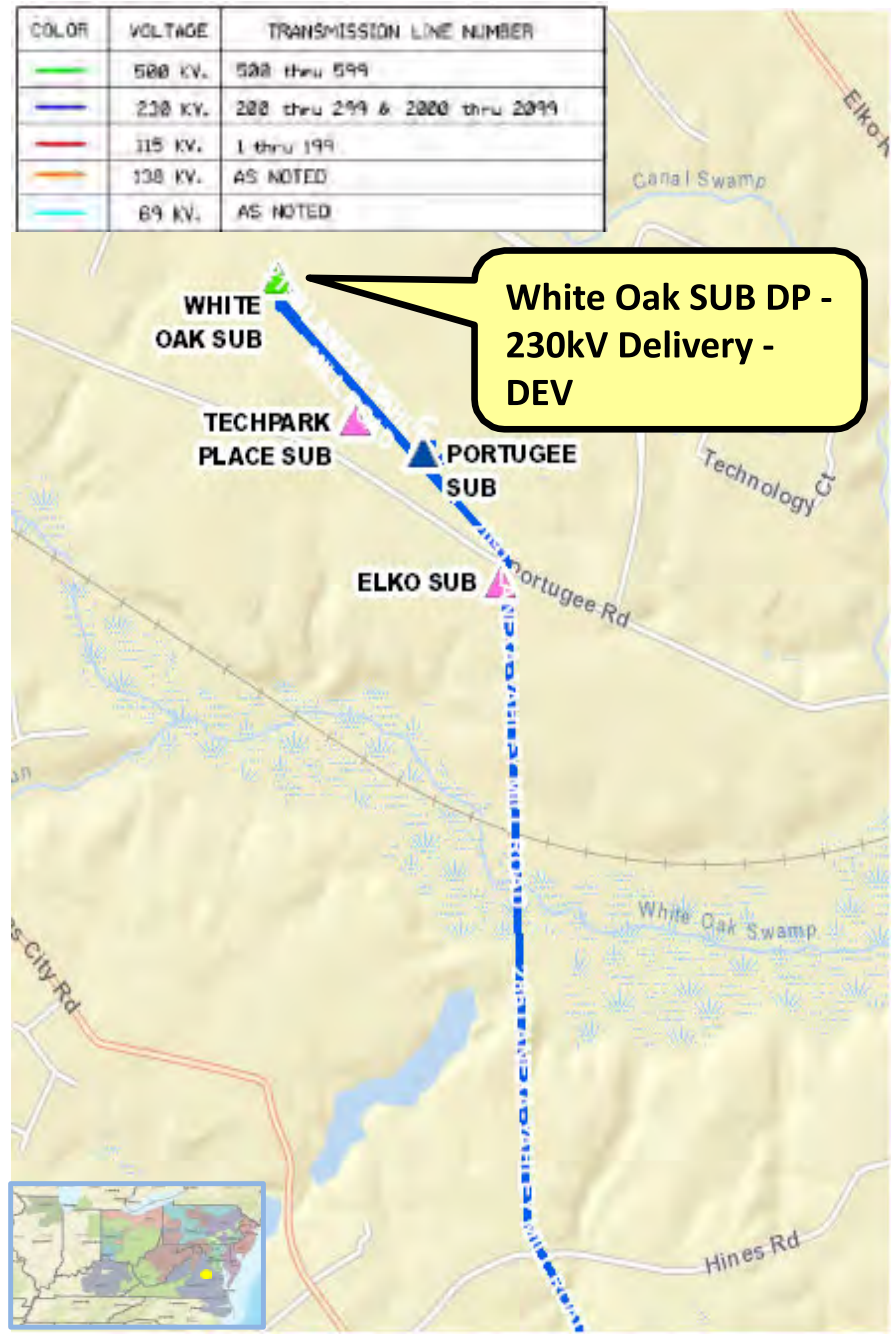
Specific Assumption References:

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

Problem Statement:

DEV Distribution has submitted a delivery point request at White Oak SUB to serve a data center customer in Henrico County with a total load in excess of 100 MW. The customer requests service by March 1, 2023.

Initial Substation Load	Projected 2027 Load
Summer: 43.2 MW	Summer: 146.5 MW



Dominion Transmission Zone: Supplemental Customer Load Request

Need Number: DOM-2022-0039

Process Stage: Need Meeting 07/12/2022

Project Driver: Customer Service

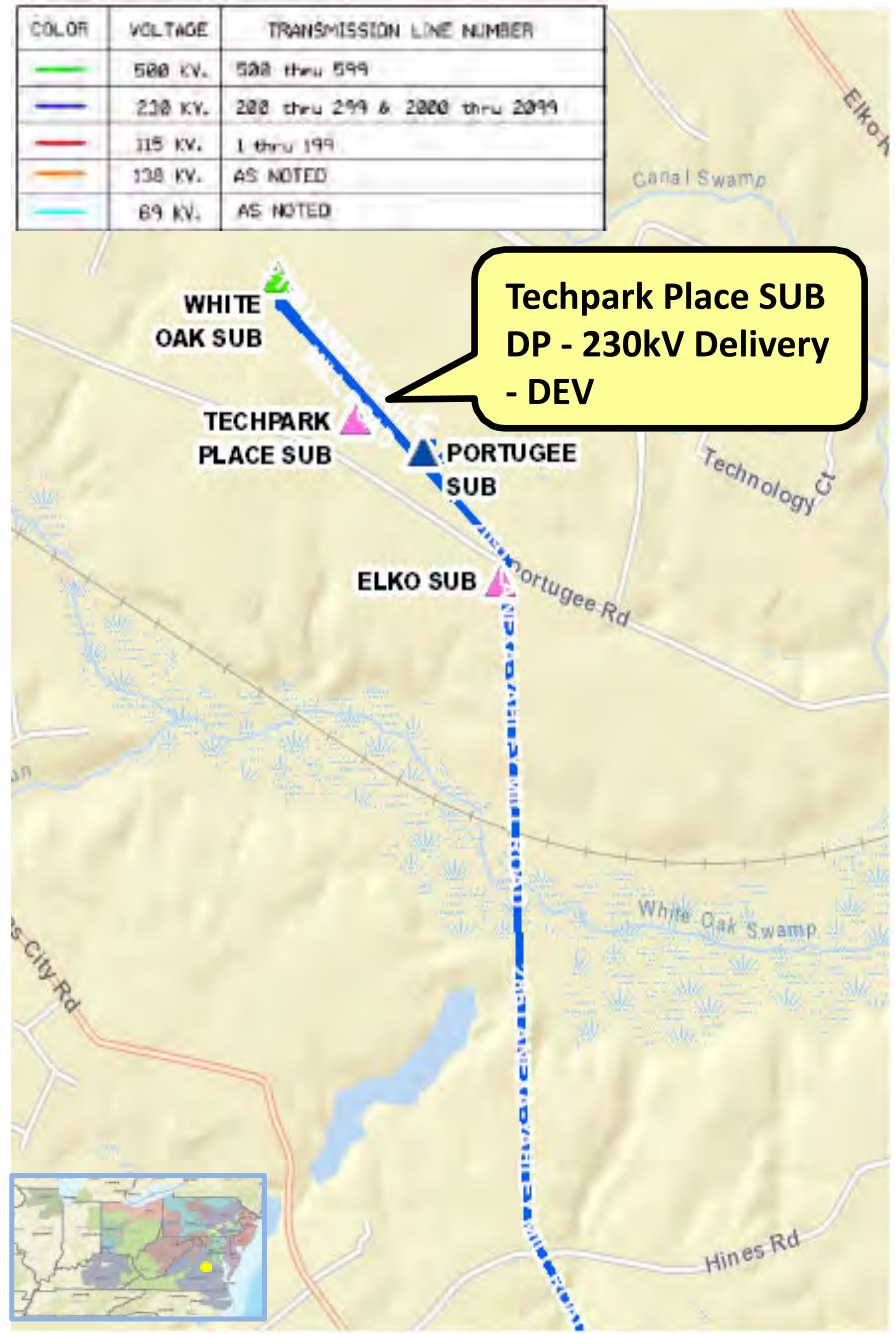
Specific Assumption References:

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

Problem Statement:

DEV Distribution has submitted a new delivery point request for Techpark Place SUB to serve data center customer in Henrico County with a total load in excess of 100 MW. The customer requests service by January 1, 2024.

Initial Substation Load	Projected 2027 Load
Summer: 96.0 MW	Summer: 283.6 MW



Revision History

07/01/2022 – V1 – Original version posted to pjm.com

Dominion Supplemental Projects

Transmission Expansion Advisory Committee
August 9, 2022

Dominion Energy

Attachment I.J.2

8

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

Dominion Transmission Zone: Supplemental Customer Load Request

Need Number: DOM-2022-0038
Process Stage: Solution Meeting 08/09/2022
Previously Presented: Need Meeting 07/12/2022
Project Driver: Customer Service

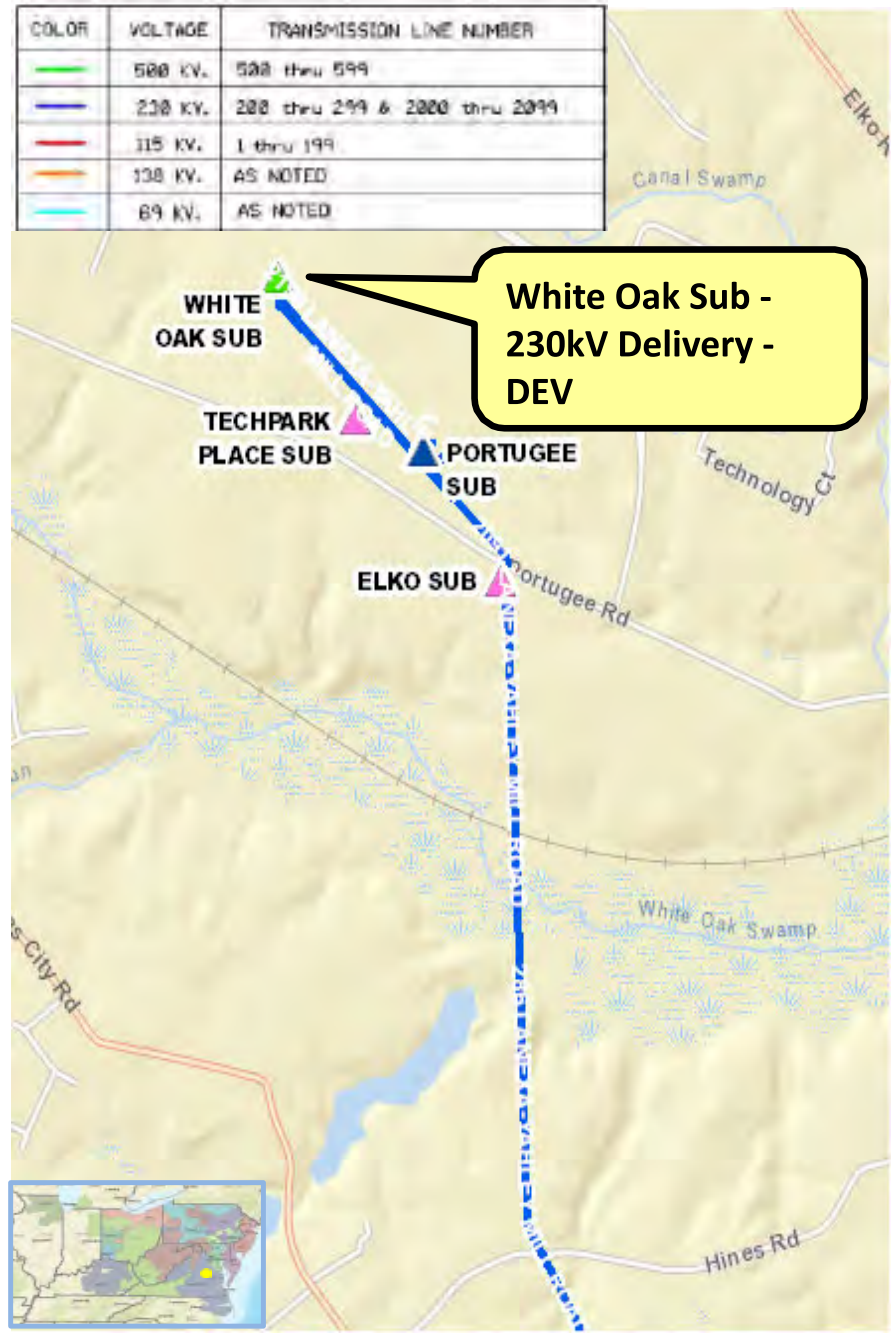
Specific Assumption References:

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

Problem Statement:

DEV Distribution has submitted a delivery point request at White Oak Substation to serve a data center customer in Henrico, VA. The total load is in excess of 100 MW. The customer requests service by March 1, 2023.

Initial Substation Load	Projected 2027 Load
Summer: 43.2 MW	Summer: 146.5 MW



Dominion Transmission Zone: Supplemental White Oak 230kV Delivery - DEV

Need Number: DOM-2022-0038

Process Stage: Solutions Meeting 08/09/2022

Proposed Solution:

To interconnect Customer Load:

- Install equipment and bus work to support the installation of 2-56 MVA distribution transformers.

To Resolve DNH 300 MW N-1-1 Load Drop Violation:

- Cut Line #2075 and extend double circuit 230kV lines into White Oak Substation. Install 2-1200 Amp switches and upgrade bus work and existing equipment at the White Oak Substation. Add 3 additional 230kV breakers to terminate 230kV lines.

Estimated Project Cost: $30 M (Total)

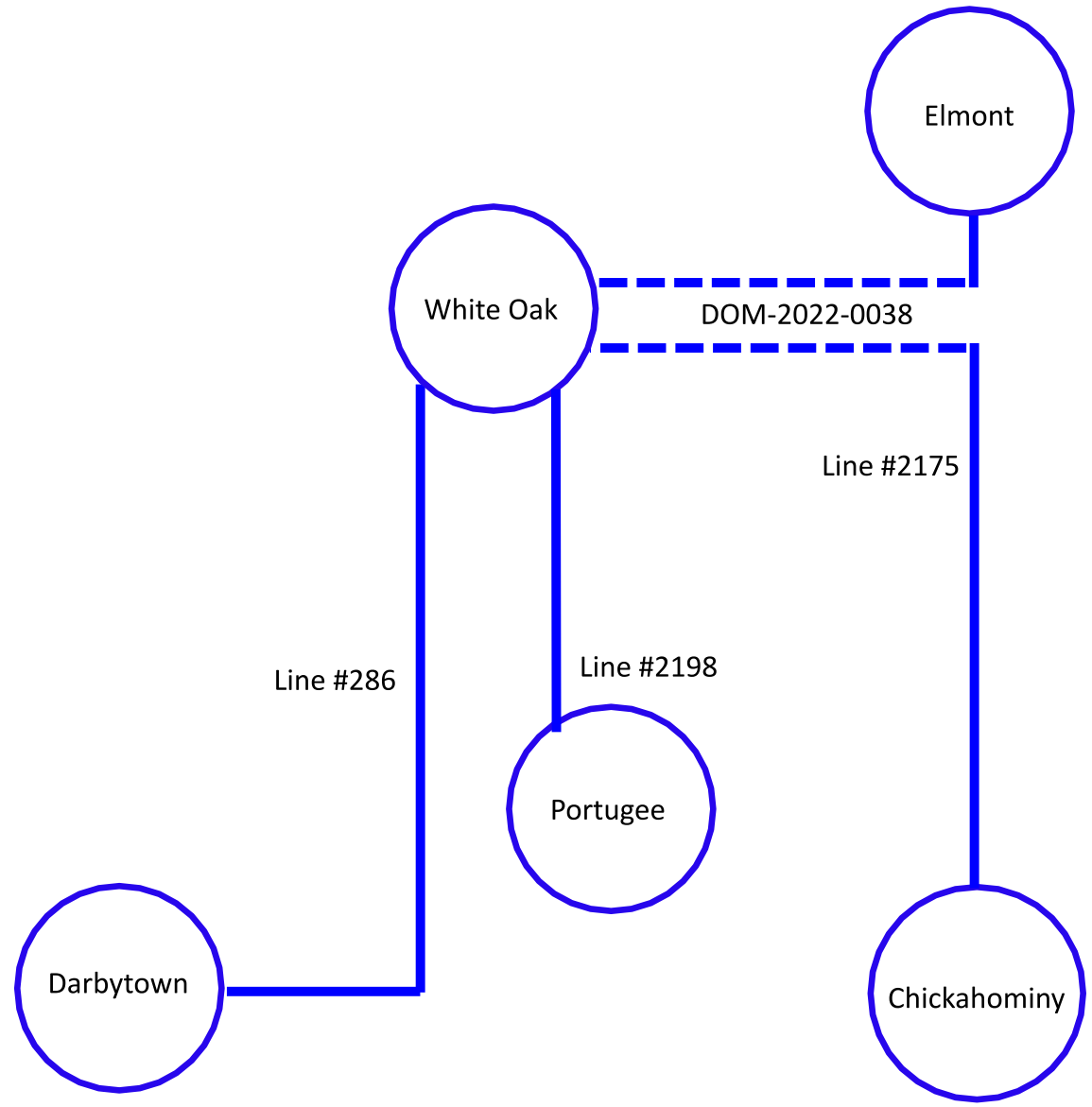
Alternatives Considered:

No feasible alternatives

Projected In-service Date: March 2023 (to connect Distribution TX)
Dec 2025 (to cut line #2075 into White Oak)

Project Status: Engineering

Model: 2025 RTEP



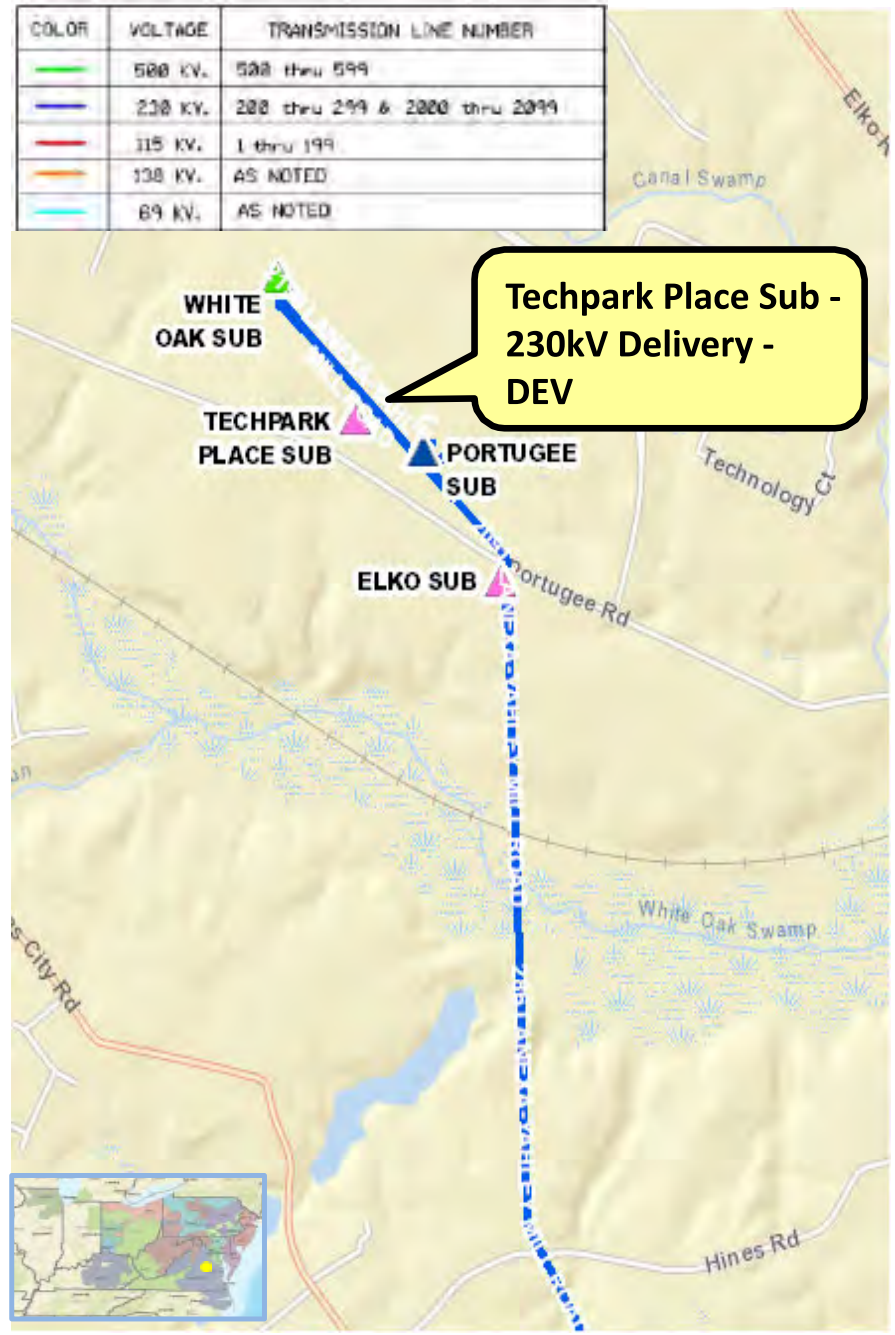
Dominion Transmission Zone: Supplemental Customer Load Request

Need Number: DOM-2022-0039
Process Stage: Solution Meeting 08/09/2022
Previously Presented: Need Meeting 07/12/2022
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:
DEV Distribution has submitted a new delivery point request for Techpark Place (TPP) Substation to serve a data center customer in Henrico, VA. The total load is in excess of 100 MW. The customer requests service by January 1, 2024.

Initial Substation Load	Projected 2027 Load
Summer: 96.0 MW	Summer: 283.6 MW



Dominion Transmission Zone: Supplemental Techpark Place 230kV Delivery - DEV

Need Number: DOM-2022-0039

Process Stage: Solution Meeting 08/09/2022

Proposed Solution:
Cut Line #286 (Darbytown-White Oak) and Line #2198 (Portugee-White Oak) and terminate at new TPP Substation in a 6-breaker 230kV ring bus. Include associated equipment (bus, switches, relays, etc.) as required.

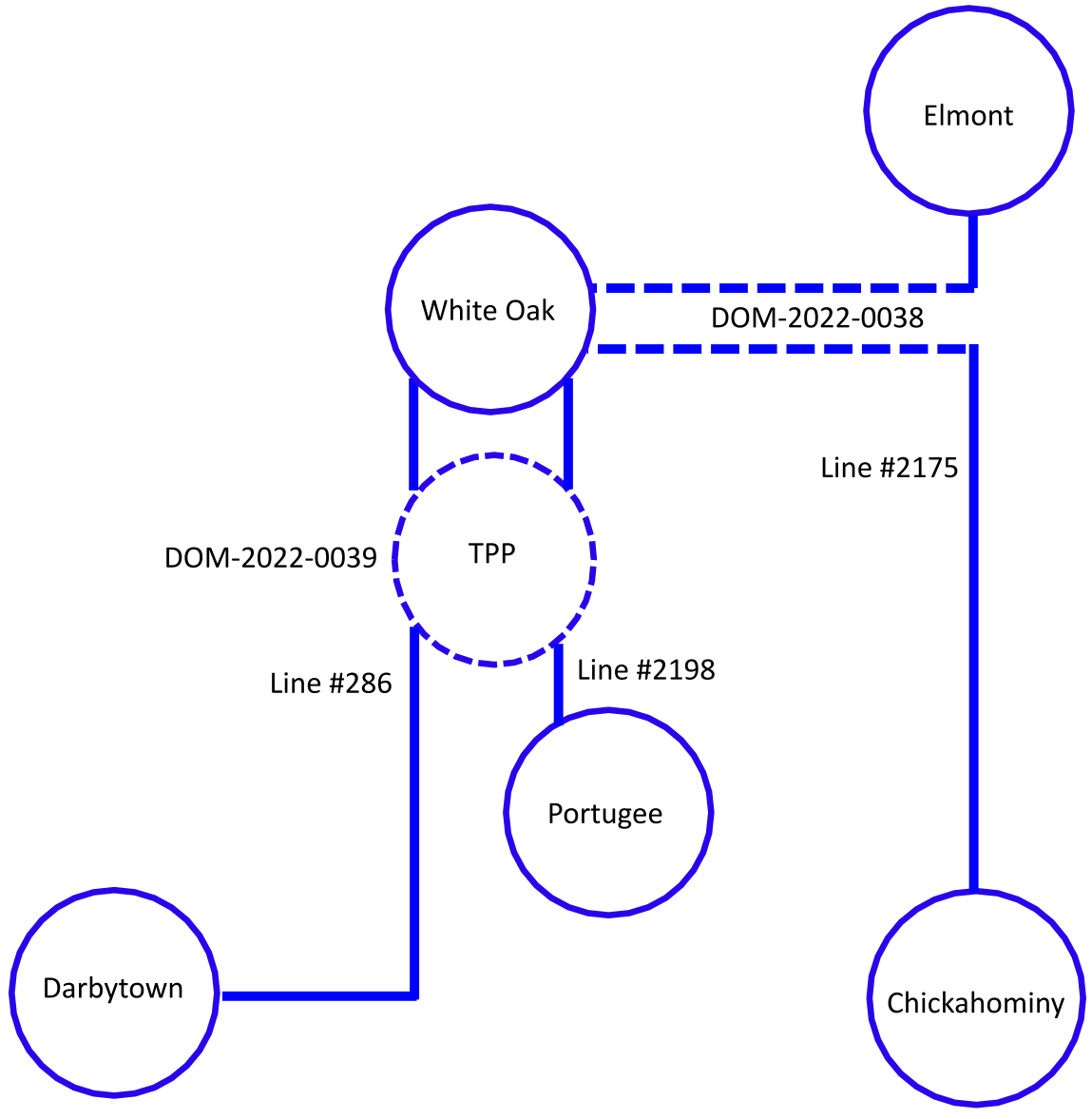
Estimated Project Cost: $25 M (Total)

Alternatives Considered:
No feasible alternatives

Projected In-service Date: Jan 2024

Project Status: Engineering

Model: 2025 RTEP



Revision History

07/29/2022 – V1 – Original version posted to pjm.com

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 Sections I.A and I.C.

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 expanded White Oak Substation will serve the White Oak Load Area described in Section I.C and generally depicted in Attachment I.A.1.b. The Project will also be used to support future load centers 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.

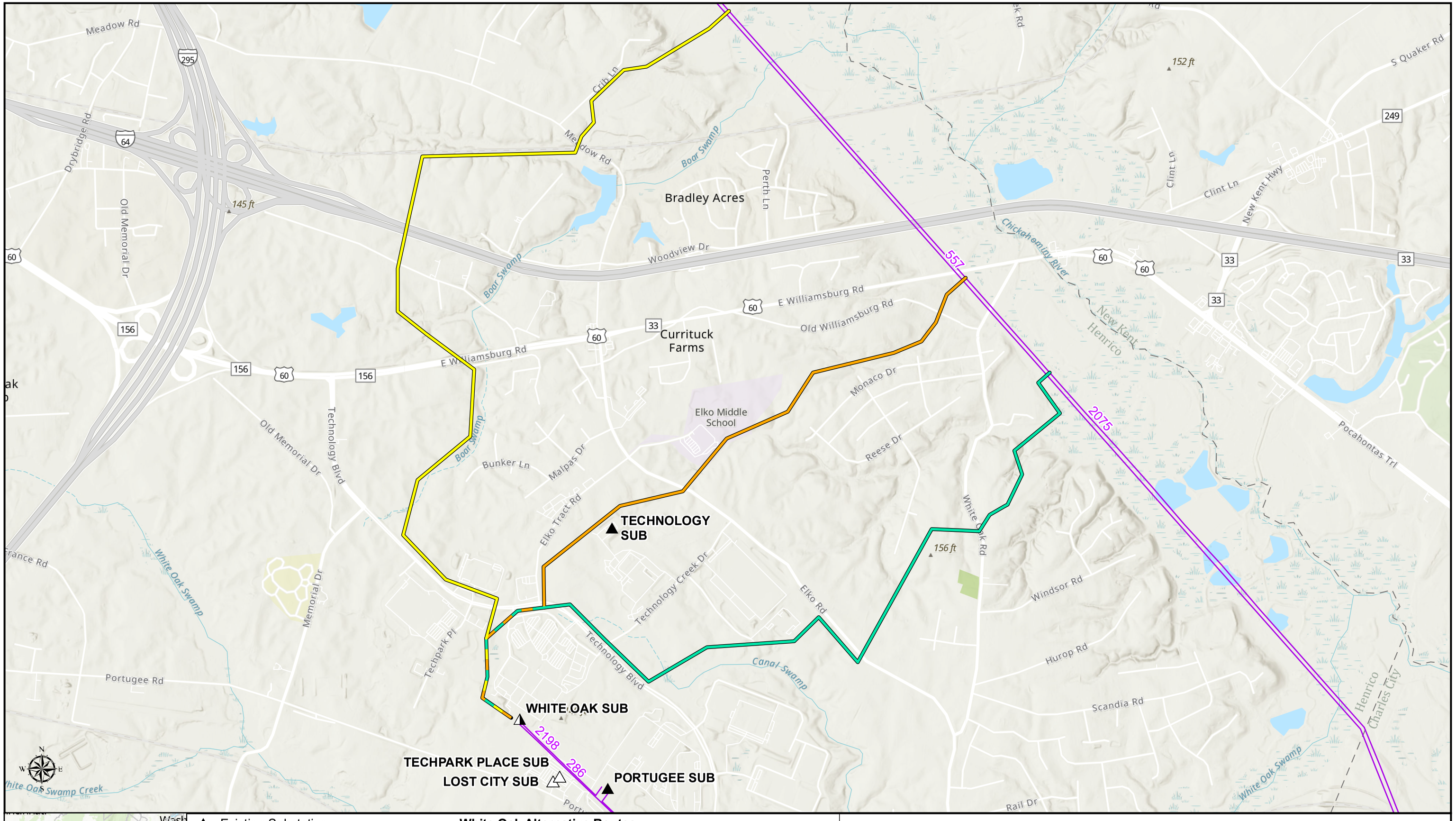
Response: The approximate lengths of the Proposed and Alternative Routes for the White Oak Lines are as follows:

Proposed Route (Route 3): 4.69 miles

Alternative Route 1: 4.19 miles

Alternative Route 2: 3.24 miles

See Section II.A.9 for an explanation of the Company's route selection process, as well as the Environmental Routing Study referenced therein. Also, see Attachment II.A.1 for an overview map of the route alternatives.



Attachment II.A.1
Route Overview
White Oak Electric Transmission Project
Dominion Energy Virginia
Henrico County, Virginia

ERM

Dominion Energy

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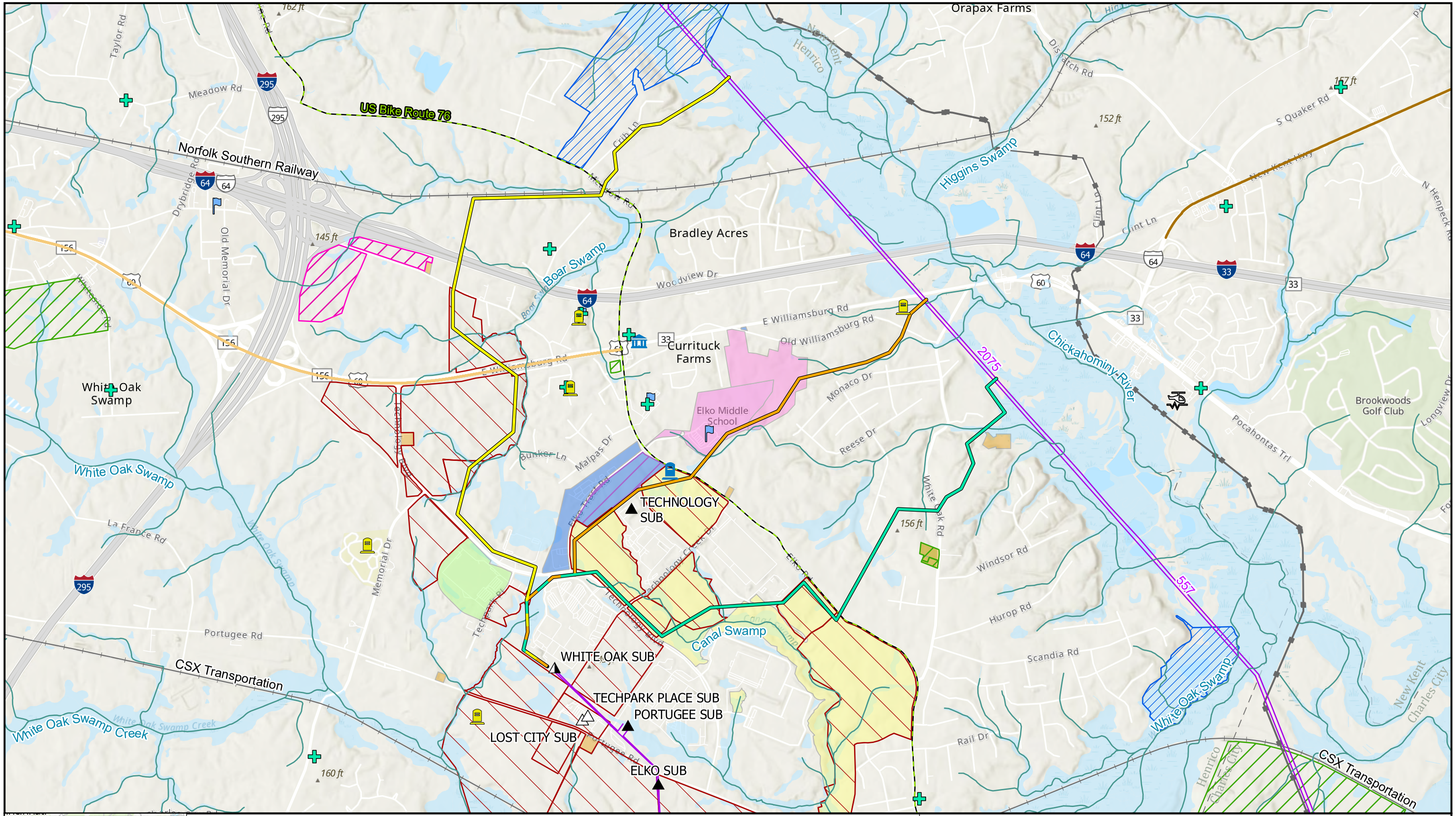
II. DESCRIPTION OF THE PROPOSED PROJECT

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. The Proposed Route will parallel approximately 0.50 mile of existing roadways, approximately 0.66 mile of existing railroads, and approximately 0.59 mile of a planned future sewer easement. No portion of the right-of-way is proposed to be quitclaimed or relinquished.

Dominion Energy Virginia will make the digital Geographic Information Systems ("GIS") shape file available to interested persons upon request to the Company's legal counsel as listed in the Project Application.



Project Location

- Existing Substation
- Future Substation
- Proposed Substation Expansion
- Existing Dominion Transmission Line

White Oak Alternative Routes

- Alternative Route 1
- Alternative Route 2
- Proposed Route (Route 3)

- School
- Place of Worship
- Cemetery
- Heliport
- Garthwright Fisher Memorial
- Meadows Fire Tower

- Natural Gas Pipeline
- Railroad
- Scenic Byway
- Scenic Road
- State Trail
- River
- NWI Wetland

- Planned Development
- Parks
- Richmond United Open Space
- VDCR Land Holding
- The Nature Conservancy Easement

Government Owned Land

- County School Board Owned Land
- Economic Development Authority Owned Land
- County Owned Land
- Federal Owned Land
- State Owned Land

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ERM

Attachment II.A.2
Project Overview and Constraints Map
White Oak Electric Transmission Project
Dominion Energy Virginia
Henrico County, Virginia

Dominion Energy

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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.

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 Company-owned right-of-way that serves the White Oak Substation that is adequate to accommodate the Project as proposed.

The Company has an existing transmission line corridor containing Lines #2198 and #286 that extend south from the White Oak Substation to the Portugee Substation. South of the Portugee Substation, the corridor continues with Lines #2091 and #286 to the Elko Substation and southward to the junction just north of Warriner Road where the lines share a corridor with the existing east/west Line #2050. The Company considered the possibility of constructing new transmission lines along this existing right-of-way corridor (*i.e.*, the Southern Conceptual Collocation Corridor) but rejected a Southern Electrical Alternative for the reasons discussed in Section I.E.

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;

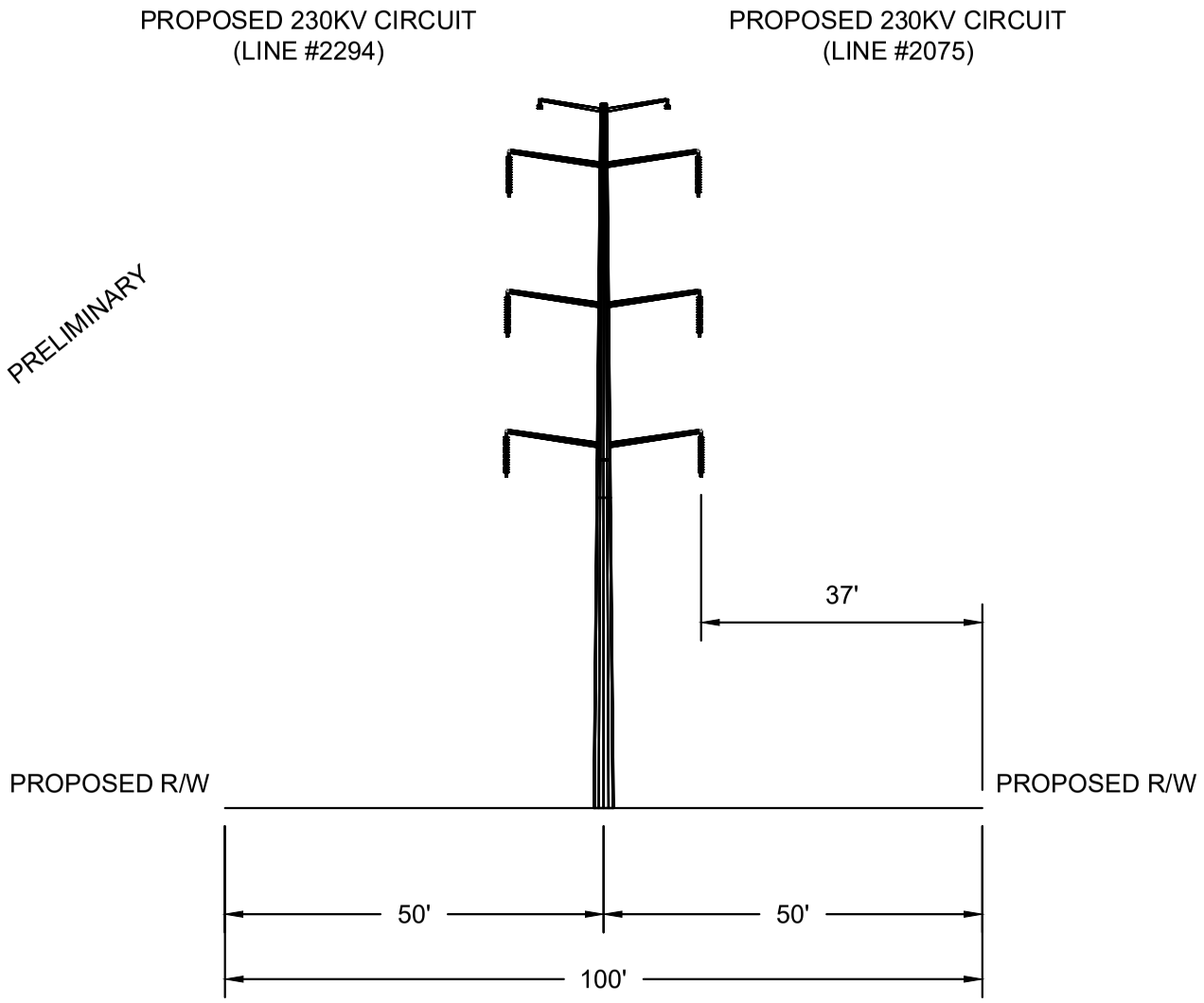
c. Existing utility facilities on the ROW; and

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 Attachments II.A.5.a-b.

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

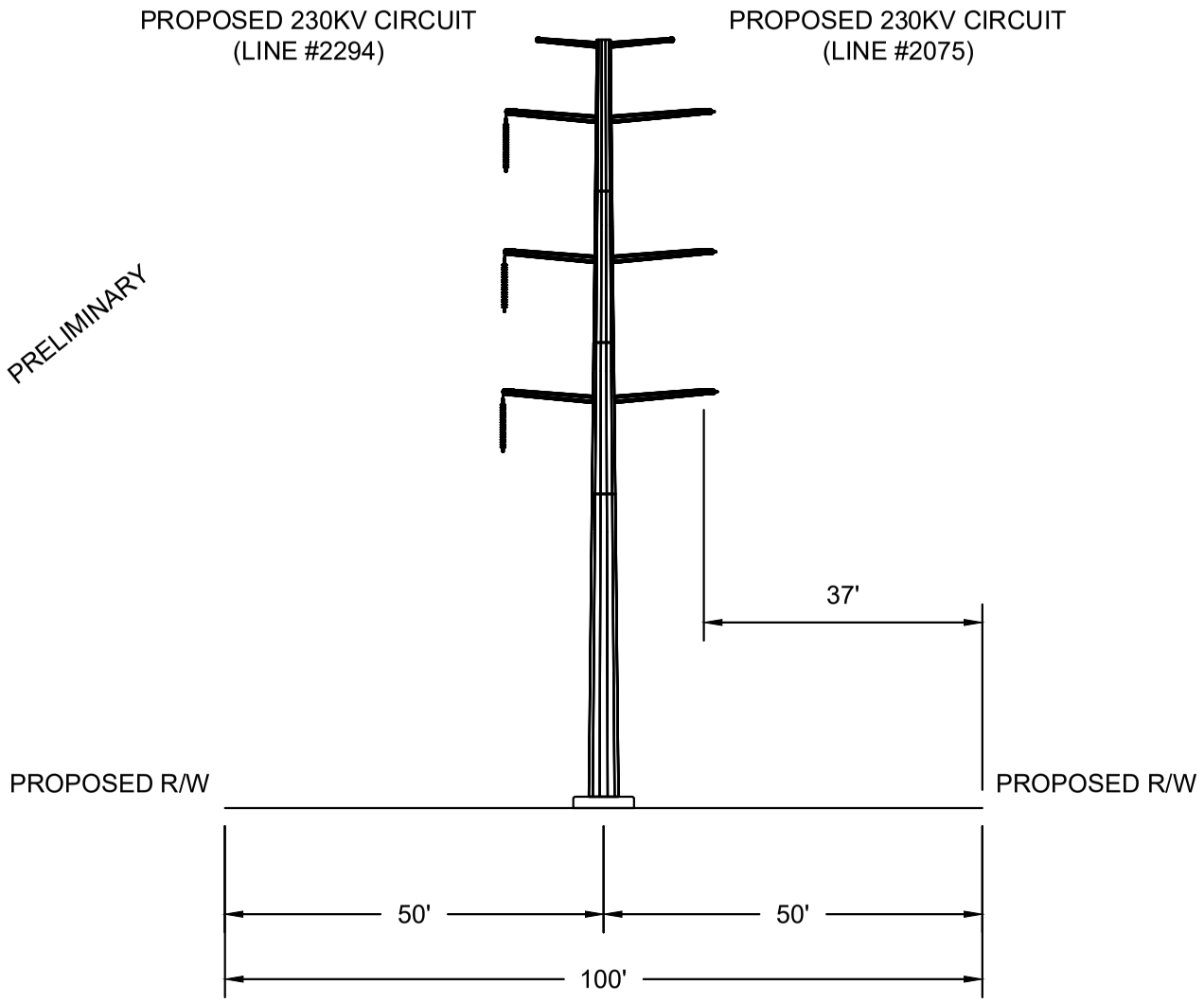
WHITE OAK LINES
PROPOSED ROUTE 3



PROPOSED CONFIGURATION
TYPICAL RIGHT OF WAY LOOKING TOWARD WHITE OAK

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

WHITE OAK LINES
PROPOSED ROUTE 3



PROPOSED CONFIGURATION
TYPICAL RIGHT OF WAY LOOKING TOWARD WHITE OAK

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

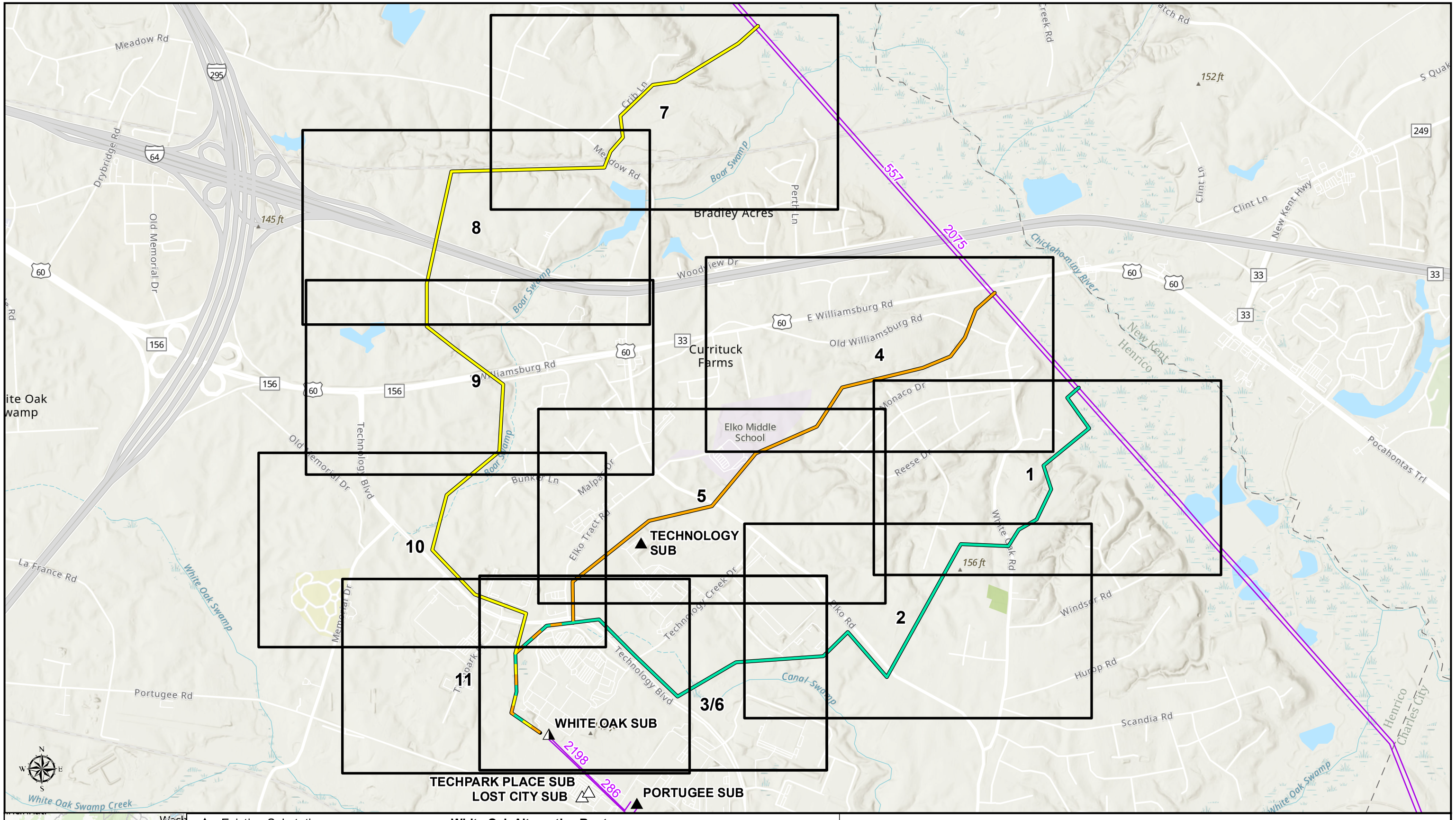
II. DESCRIPTION OF THE PROPOSED PROJECT

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 Company-owned right-of-way that serves the White Oak Substation that is adequate to accommodate the Project as proposed.

The entire right-of-way of the Proposed Route for the White Oak Lines will require easements for a new-build transmission line except for where the route intersects the Company's existing 230 kV Chickahominy-Elmont Line #2075 and 500 kV Chickahominy-Elmont Line #557 right-of-way and where the White Oak Lines enter the existing White Oak Substation. The White Oak Substation Expansion component of the Project will require an additional approximately 0.7 acre of land, which the Company will obtain through easement. See Attachment II.A.6.



Project Location

Existing Substation
Future Substation
Proposed Substation Expansion
Existing Dominion Transmission Line
Index Page

White Oak Alternative Routes
Alternative Route 1
Alternative Route 2
Proposed Route (Route 3)

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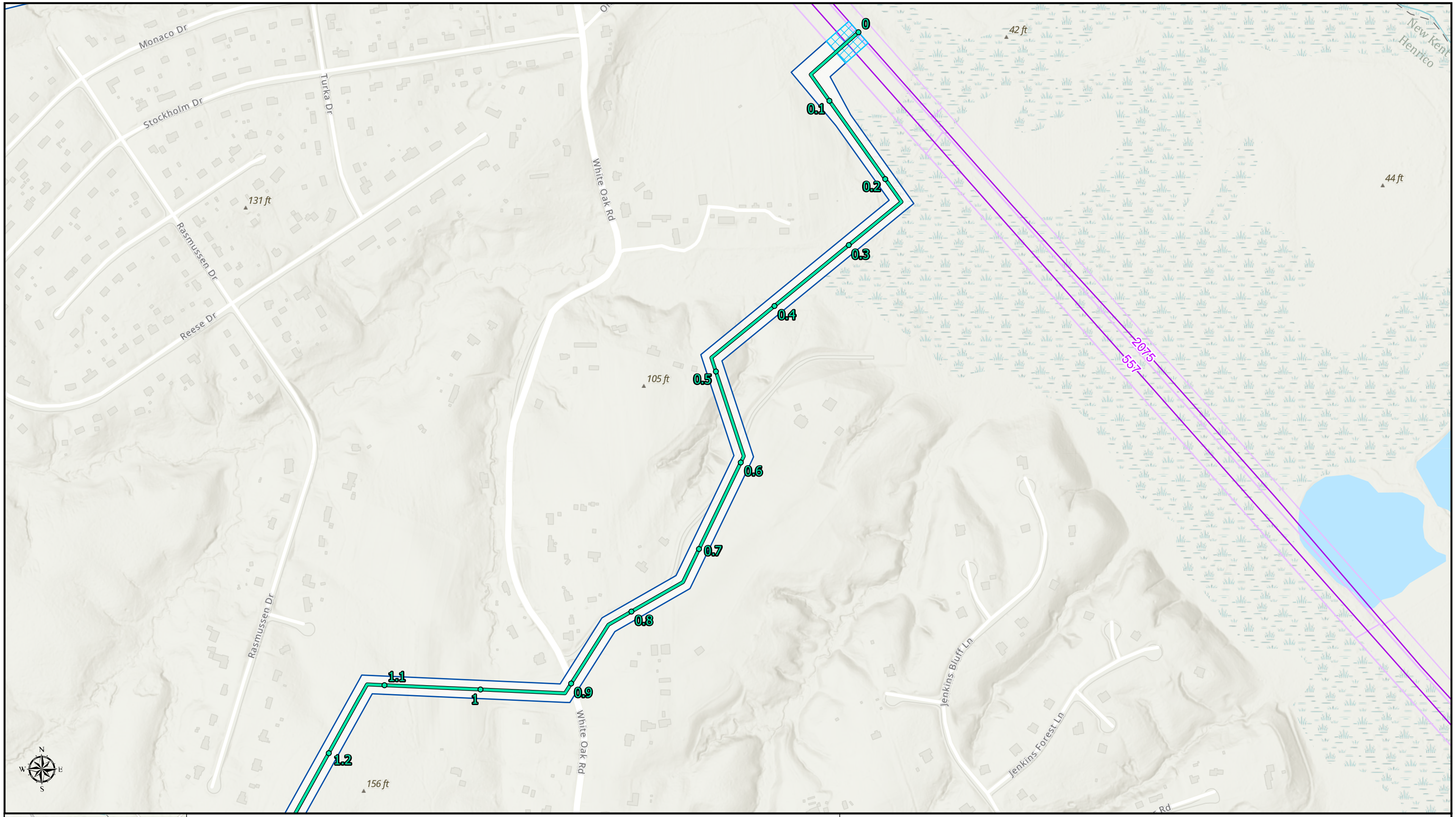
Attachment II.A.6 Index
Right-of-Way Subject to New and Existing Easements
White Oak Electric Transmission Project
Dominion Energy Virginia
Henrico County, Virginia

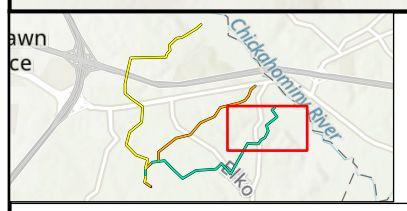
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Dominion Energy

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Existing Dominion Transmission Line
Existing Dominion Right-of-Way

Milepost
- Alternative Route 1

White Oak Alternative Routes
- Alternative Route 1

Right-of-Way Type
- Existing Right-of-Way
- Proposed Right-of-Way

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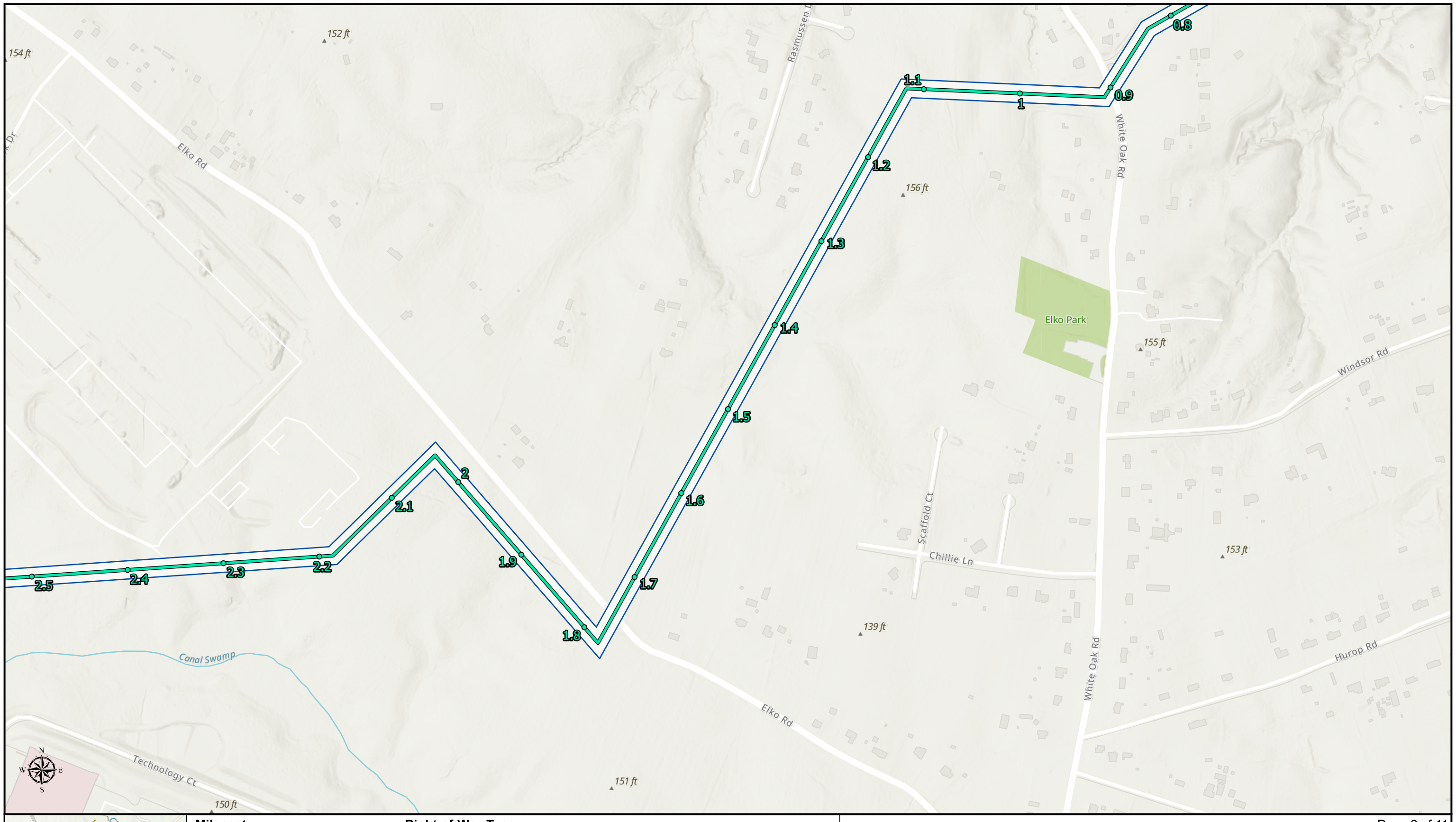
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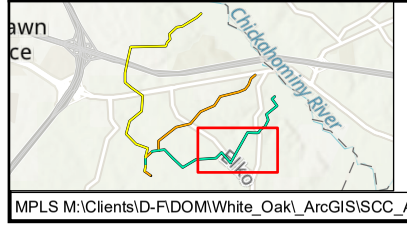
Attachment II.A.6
Right-of-Way Subject to New and Existing Easements
White Oak Electric Transmission Project
Dominion Energy Virginia
Henrico County, Virginia

Dominion Energy

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Milepost
- Alternative Route 1

White Oak Alternative Routes
- Alternative Route 1

Right-of-Way Type
- Proposed Right-of-Way

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1:6,000

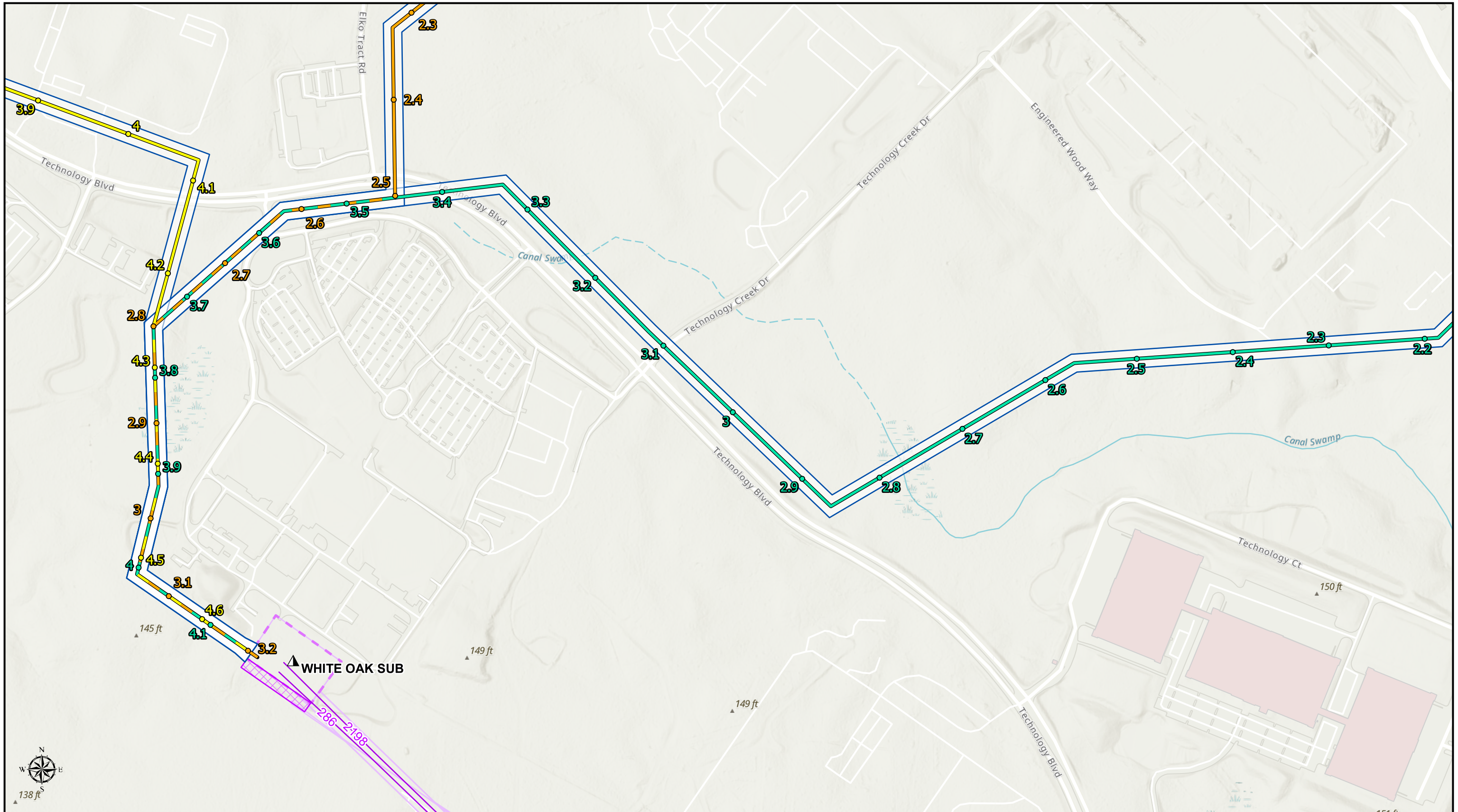
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Attachment II.A.6
Right-of-Way Subject to New and Existing Easements
White Oak Electric Transmission Project
Dominion Energy Virginia
Henrico County, Virginia

Dominion Energy

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Proposed Substation Expansion
Existing Dominion Transmission Line
Existing Dominion Right-of-Way

White Oak Substation
Existing White Oak Substation
Proposed White Oak Substation Expansion

Milepost
Alternative Route 1
Alternative Route 2
Proposed Route (Route 3)

White Oak Alternative Routes
Alternative Route 1
Alternative Route 2
Proposed Route (Route 3)

Right-of-Way Type
Proposed Right-of-Way

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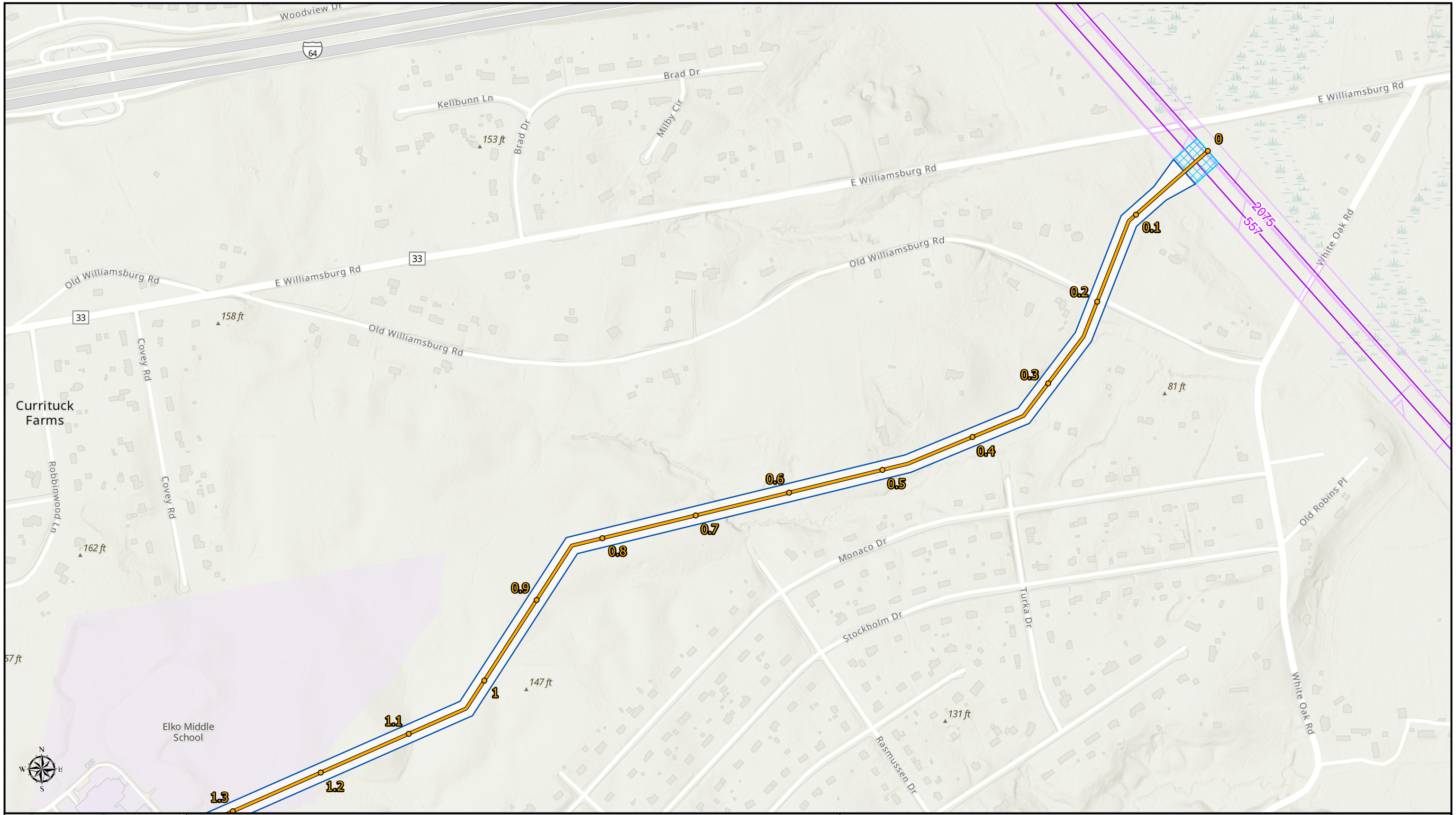
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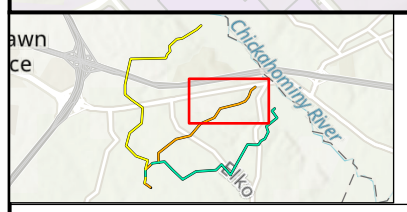
Attachment II.A.6
Right-of-Way Subject to New and Existing Easements
White Oak Electric Transmission Project
Dominion Energy Virginia
Henrico County, Virginia

Dominion Energy

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Existing Dominion Transmission Line
Existing Dominion Right-of-Way

Milepost
- Alternative Route 2

White Oak Alternative Routes
- Alternative Route 2

Right-of-Way Type
- Existing Right-of-Way
- Proposed Right-of-Way

0 250 500
Feet
1:6,000

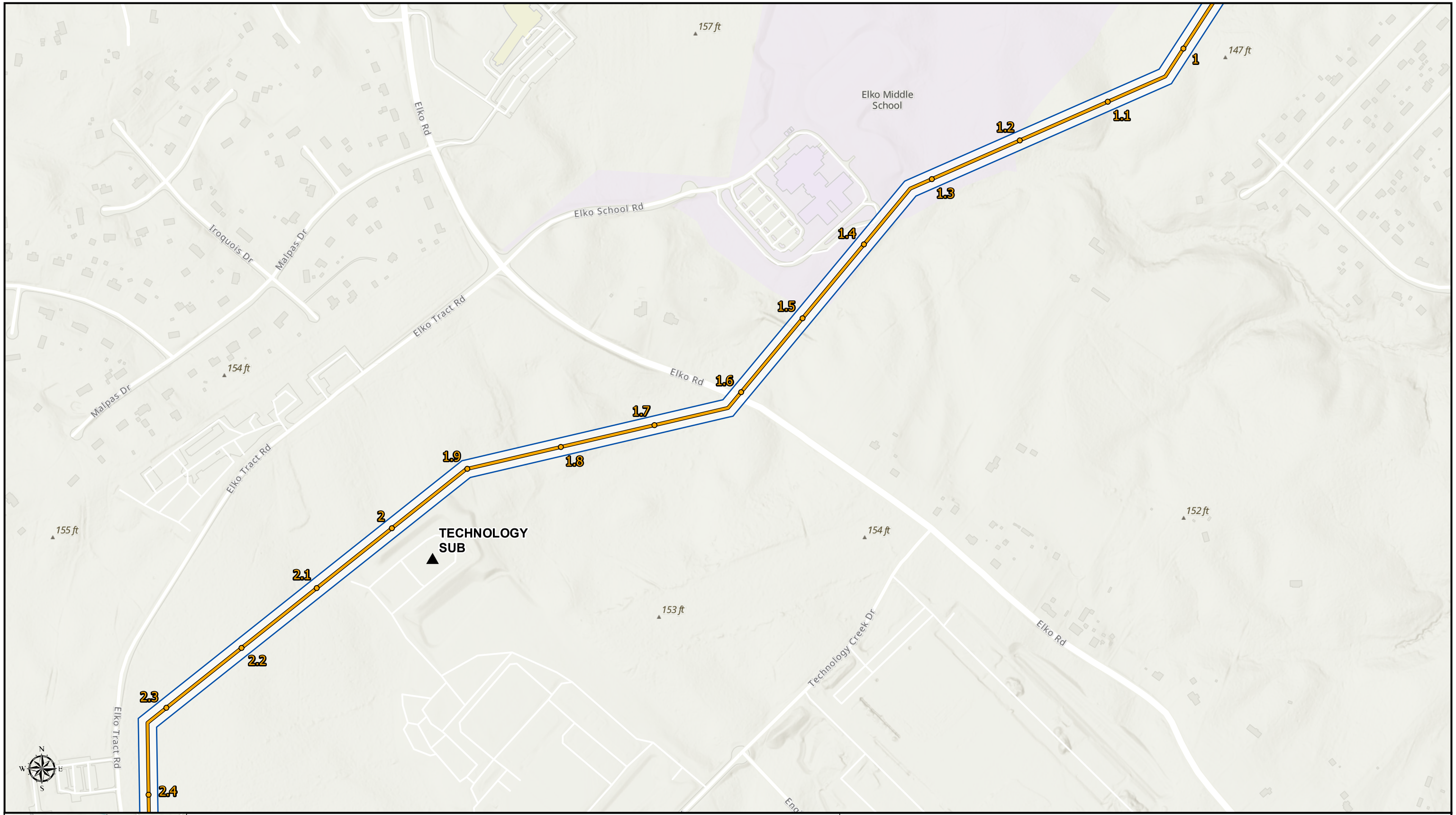
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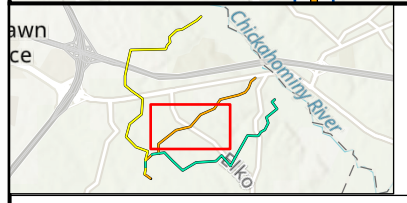
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Henrico County, Virginia

Dominion Energy

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▲ Existing Substation

Milepost

○ Alternative Route 2

White Oak Alternative Routes

Alternative Route 2

Right-of-Way Type

Proposed Right-of-Way

0 250 500

Feet

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ERM

Attachment II.A.6

Right-of-Way Subject to New and Existing Easements

White Oak Electric Transmission Project

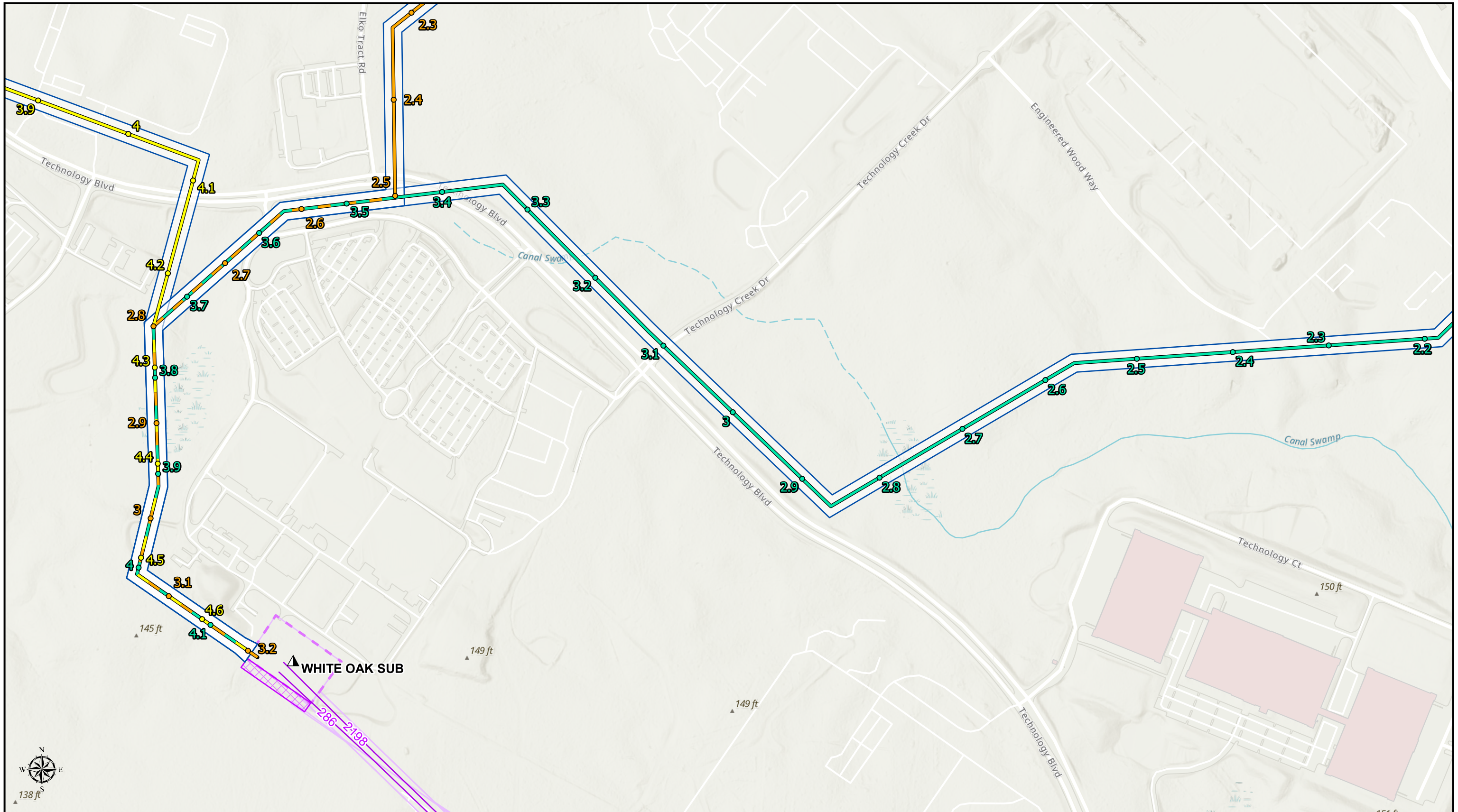
Dominion Energy Virginia

Henrico County, Virginia

Dominion Energy

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Proposed Substation Expansion
Existing Dominion Transmission Line
Existing Dominion Right-of-Way

White Oak Substation
Existing White Oak Substation
Proposed White Oak Substation Expansion

Milepost
Alternative Route 1
Alternative Route 2
Proposed Route (Route 3)

White Oak Alternative Routes
Alternative Route 1
Alternative Route 2
Proposed Route (Route 3)

Right-of-Way Type
Proposed Right-of-Way

0 250 500
Feet
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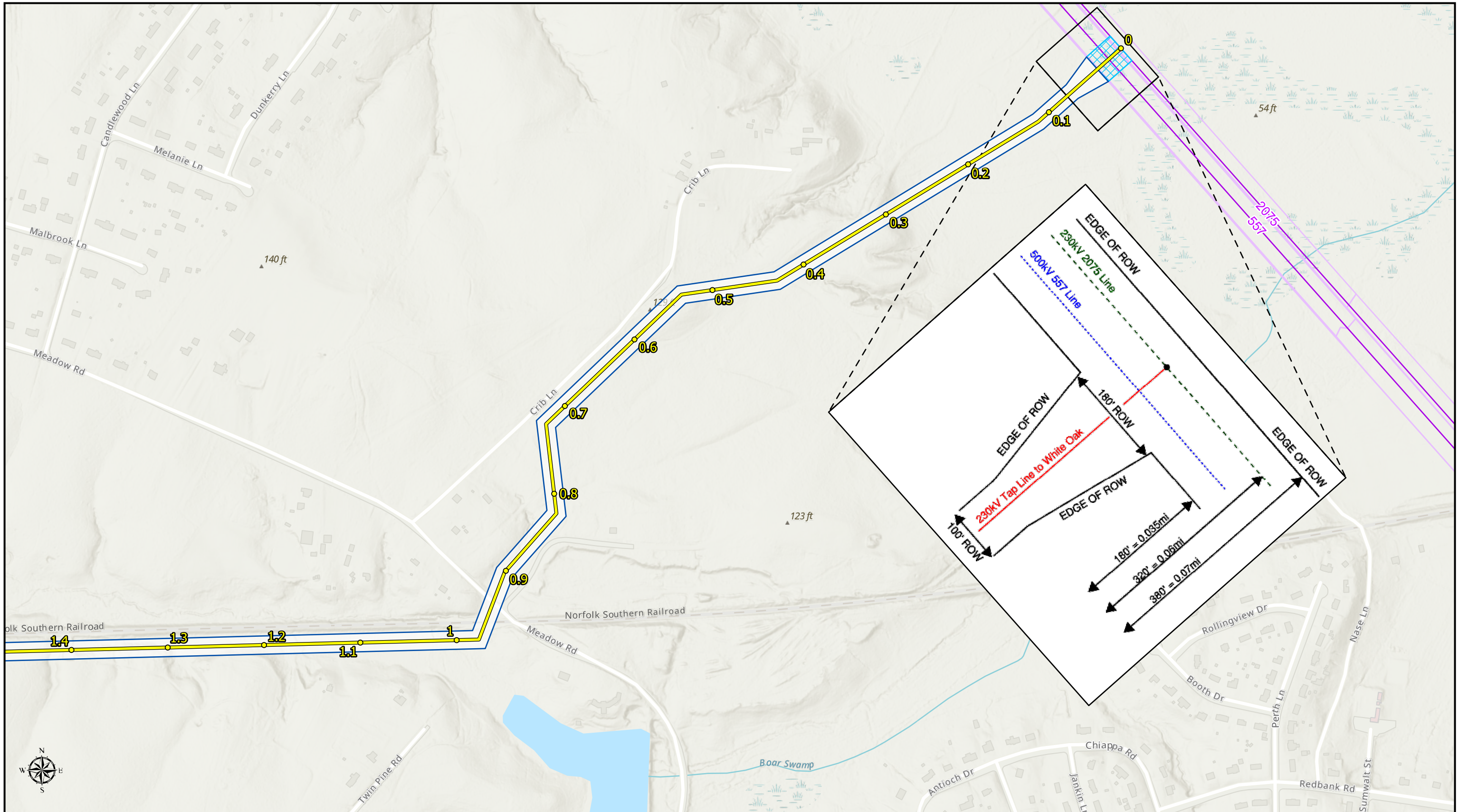
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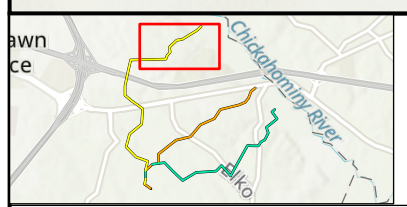
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Henrico County, Virginia

Dominion Energy

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Existing Dominion Transmission Line
Existing Dominion Right-of-Way

Milepost
- Proposed Route (Route 3)

White Oak Alternative Routes
- Proposed Route (Route 3)

Right-of-Way Type
- Existing Right-of-Way
- Proposed Right-of-Way

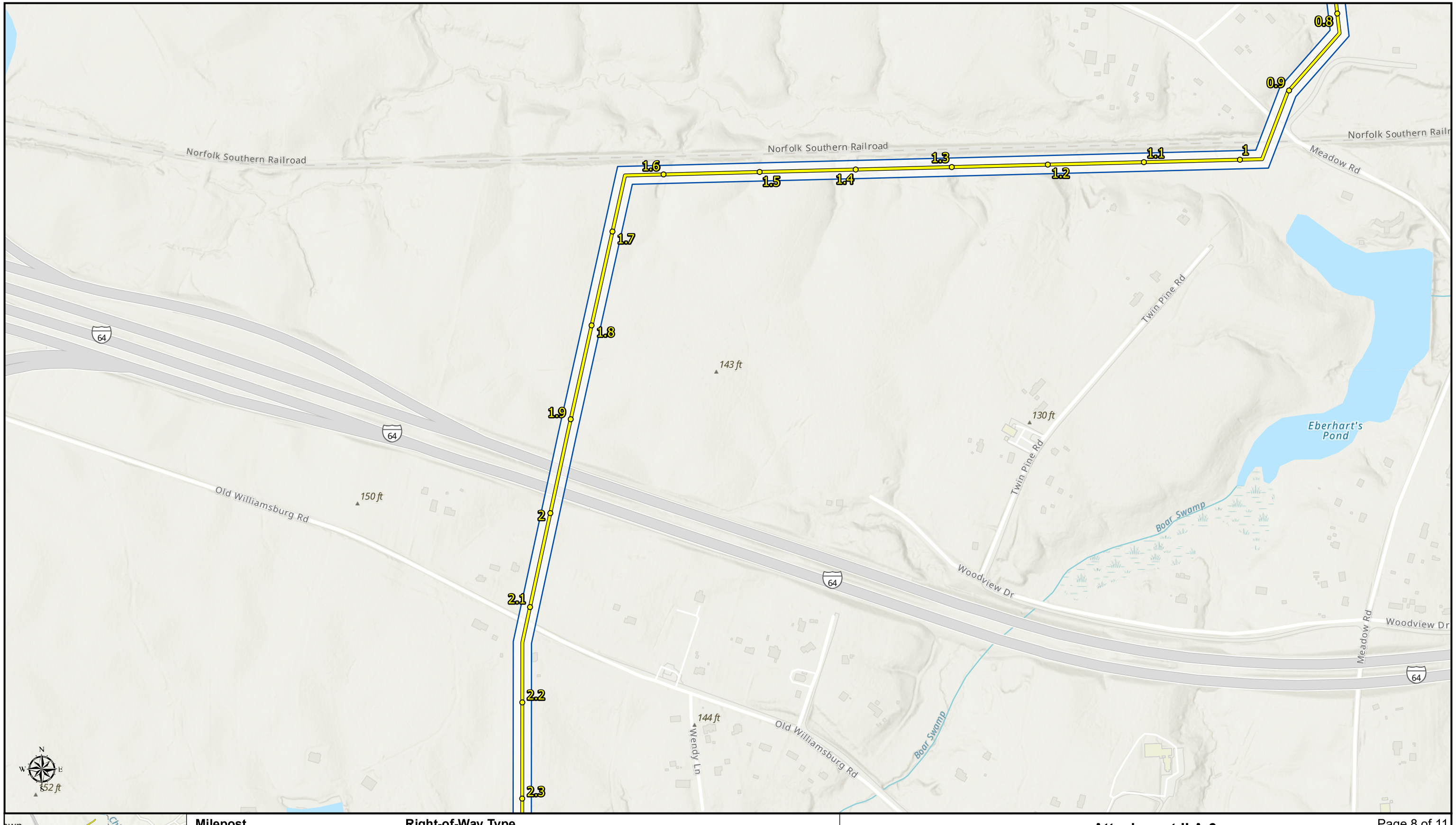
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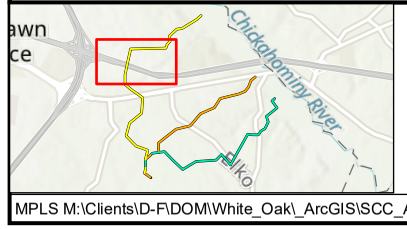
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Milepost
- Proposed Route (Route 3)

White Oak Alternative Routes
- Proposed Route (Route 3)

Right-of-Way Type
- Proposed Right-of-Way

0 250 500
Feet
1:6,000

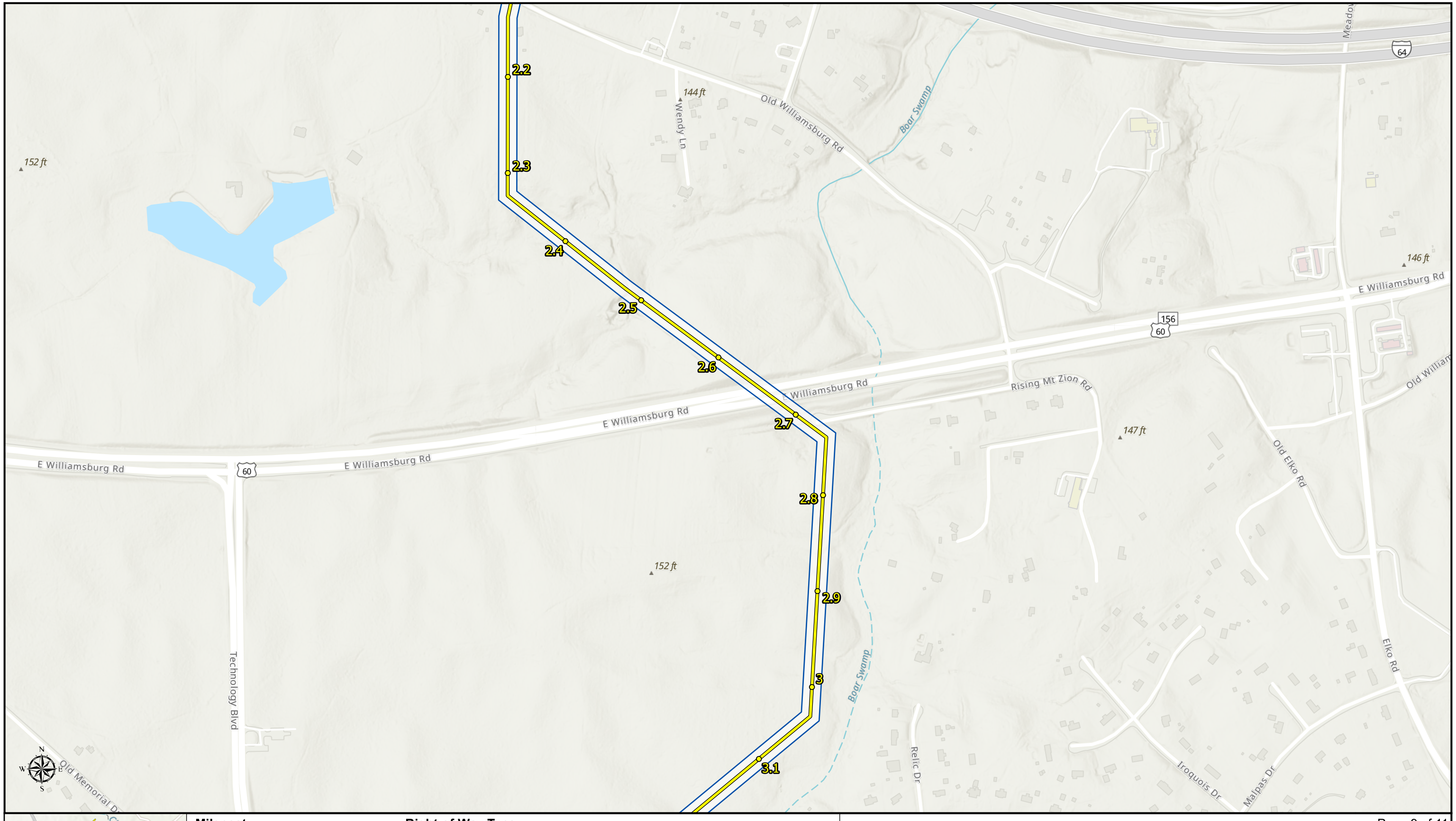
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Milepost
- Proposed Route (Route 3)

White Oak Alternative Routes
- Proposed Route (Route 3)

Right-of-Way Type
- Proposed Right-of-Way

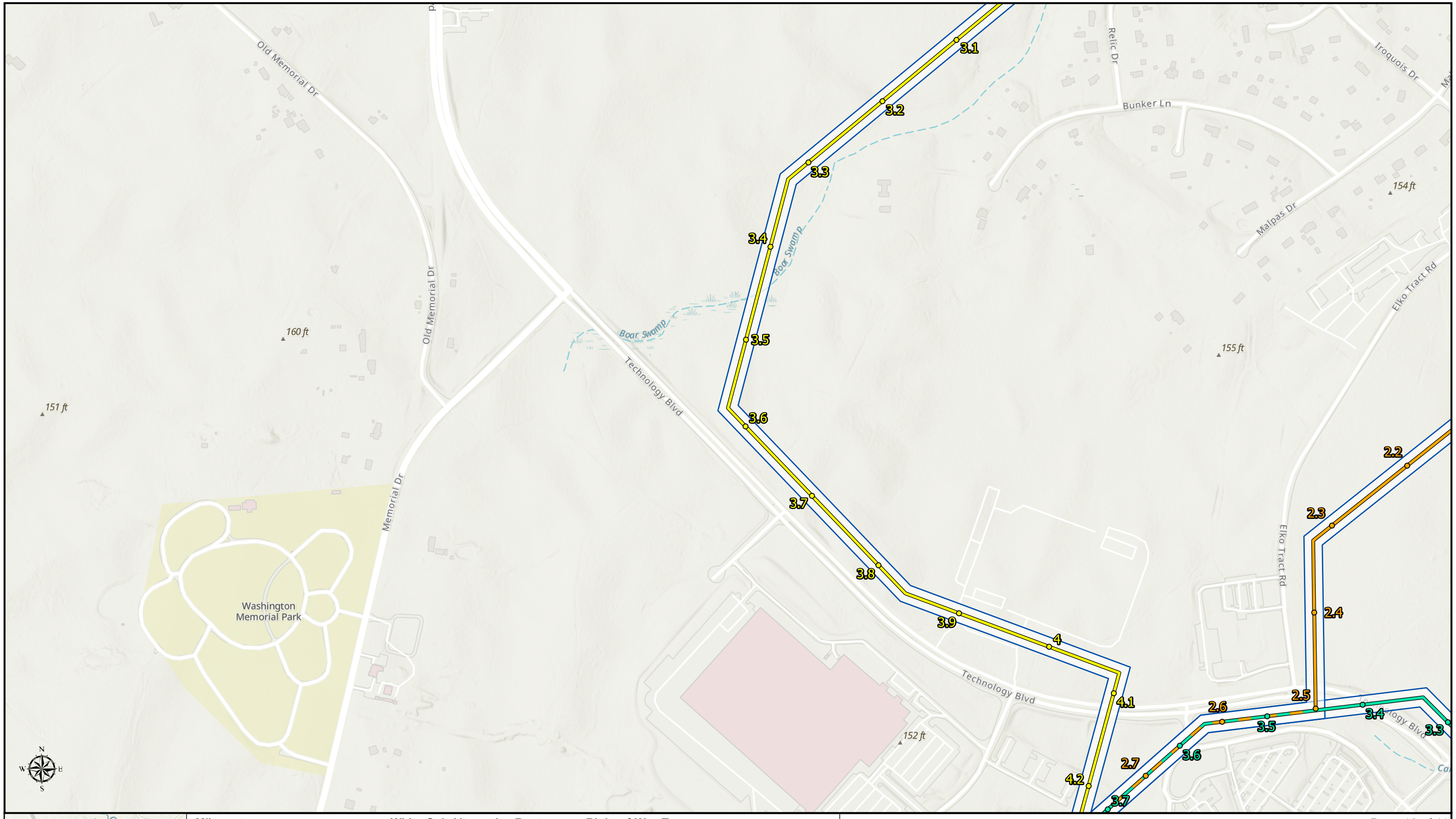
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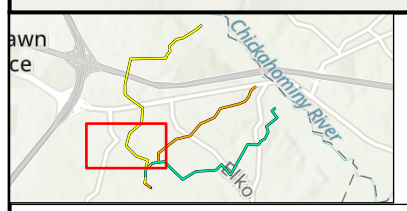
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Milepost
- Alternative Route 1
- Alternative Route 2
- Proposed Route (Route 3)

White Oak Alternative Routes
- Alternative Route 1
- Alternative Route 2
- Proposed Route (Route 3)

Right-of-Way Type
- Proposed Right-of-Way

0 250 500
Feet
1:6,000

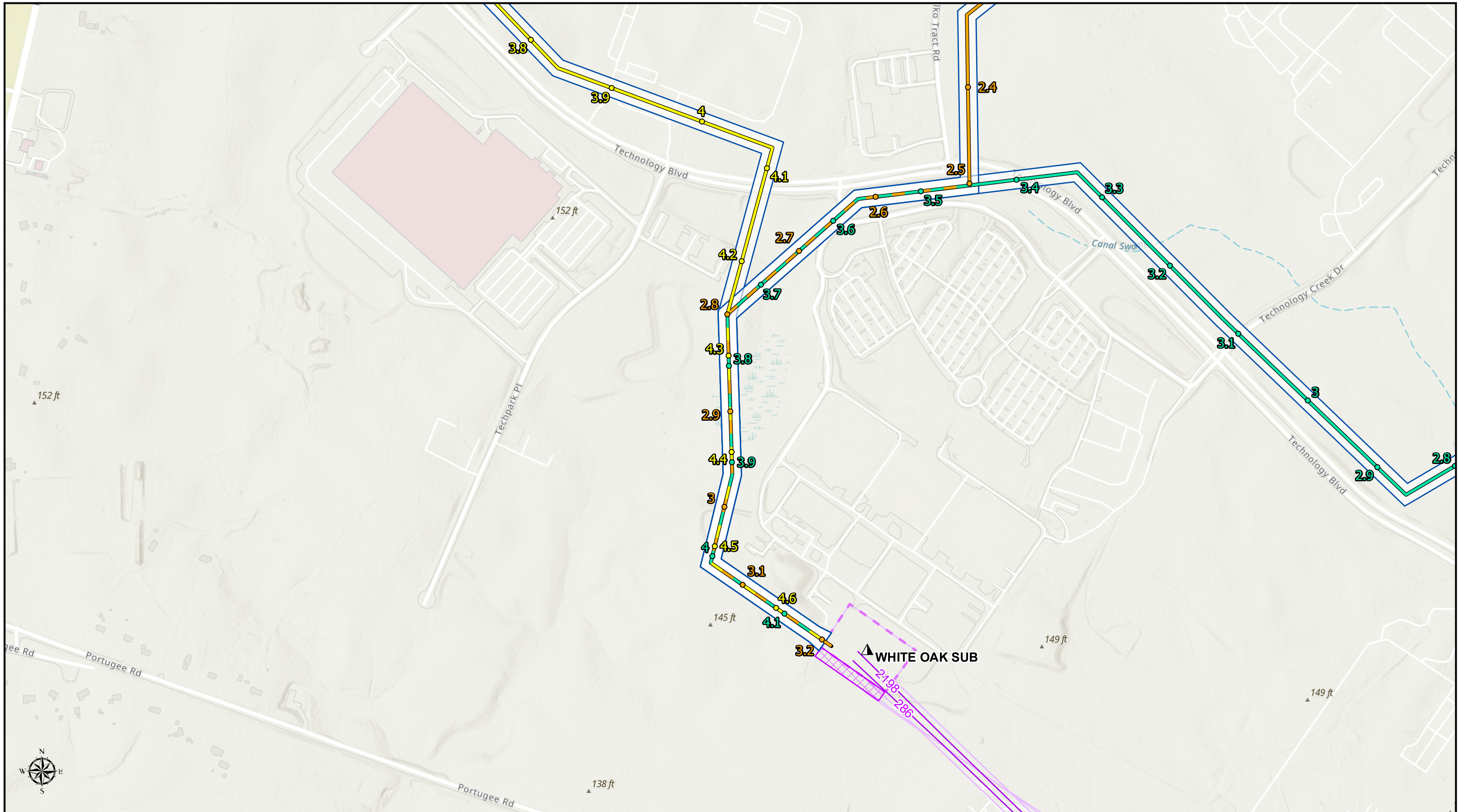
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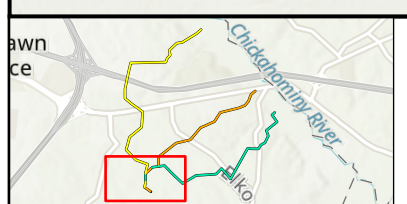
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Proposed Substation Expansion
Existing Dominion Transmission Line
Existing Dominion Right-of-Way

White Oak Substation
Existing White Oak Substation
Proposed White Oak Substation Expansion

Milepost
Alternative Route 1
Alternative Route 2
Proposed Route (Route 3)

White Oak Alternative Routes
Alternative Route 1
Alternative Route 2
Proposed Route (Route 3)

Right-of-Way Type
Proposed Right-of-Way

0 250 500
Feet
1:6,000

ERM

Attachment II.A.6
Right-of-Way Subject to New and Existing Easements
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Dominion Energy Virginia
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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 primarily will be 100 feet wide.[26] Based on existing conditions, tree clearing would be required along the majority of the Proposed Route (Route 3). However, only minimal vegetation clearing is anticipated in a commercial managed timber area that was recently clear cut by the landowner between Structures #2075/150 and #2075/154.

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 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 in order to patrol and make emergency repairs. Periodic maintenance to control woody growth will consist of hand cutting, machine mowing and herbicide application.

Based on recommendations by the Virginia Department of Wildlife Resources ("DWR"), the Company will endeavor to adhere to the TOYRs for cutting trees and

[26] *See supra*, n. 1.

vegetations favorable to winged animals from March 15 – November 15, to the extent practicable. This includes further minimizing potential effects by avoiding trees favorable for bat maternity roosting locations nesting bird habitat, to the extent practicable.

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 Department. 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 suitable for a transmission line can be identified.

For the Project, the Company retained the services of Environmental Resources Management ("ERM") 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, the Company identified one electrical option for the Project, which is located entirely within Henrico County, Virginia.

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

- The Company's existing Chickahominy-Elmont Lines #2075 and #557 and the Henrico County and Charles City County borders to the north and east;
- The Company's existing Darbytown-White Oak Line #286, Chesterfield-Chickahominy Line #287, Chickahominy-Portugee Line #2091, and Allied-Chickahominy Line #2050 to the south; and
- Interstate 295 (I-295) to the northwest and west.

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.

As discussed in more detail below and in the Environmental Routing Study, the Company identified three viable overhead route alternatives for the White Oak Lines between the existing White Oak Substation and potential cut-in locations along the Company's existing 230 kV Chickahominy-Elmont Line #2075. Ultimately, the Company selected Route 3 as the Proposed Route. Routes 1 and 2 were selected as viable alternatives to the Proposed Route and designated Alternative Routes 1 and 2.

Because the Company's existing right-of-way for Line #2075 is located almost entirely within the floodplain and wetlands along the Chickahominy River, cut-in locations for the White Oak Lines are limited to a few small areas of upland. Accordingly, ERM next identified constructable upland areas within the existing Line #2075 right-of-way corridor as the starting point for Routes 1, 2, and 3. Utilization of upland areas allows for less impact to wetlands during construction and operation and maintenance of the lines, including access installation, transport of equipment to the work site, foundation construction, wire pulling, future line maintenance, and fiber splicing. Additionally, permitting the lines likely will be easier when the two three-pole structures are not in standing water. The adjacent Line #557 within the existing corridor will also require installation of a new structure to raise the 500 kV wires so as to allow the new 230 kV wires to cross underneath, providing proper National Electrical Safety Code ("NESC") clearances.[27] The 500 kV H-frame structure being installed on Line #557 as part of the Project may be in wetlands depending on which route is selected. For the Proposed Route (Route 3), the 500 kV structure would be in wetlands, but accessed from an existing woods road with a timber bridge crossing the wetland channel and installed from a previously used construction pad within the existing right-of-way. The woods road also would provide access for installing the two three-pole structures on the Proposed Route (Route 3).

One additional overhead route for the proposed Project was identified, but ultimately rejected. The route (Route 4 in the Environmental Routing Study) was developed in response to public comments received at the White Oak Community Meeting held on September 15, 2022, as a potential route alternative that would avoid residences proximate to the Proposed Route and Alternative Routes. The rejected Route 4 cut into the 230 kV Chickahominy-Elmont Line #2075 at a location approximately 3.7 miles east of White Oak Substation between the CSX Railroad and White Oak Swamp. The route generally followed the south side of the CSX Railroad right-of-way before turning north, crossing portions of the WOTP and terminating at the expanded White Oak Substation. Although the route largely avoided residential areas, it had several significant flaws. Notably, Route 4 was longest of all routes considered; it affected the most wetlands, forested lands, waterbodies, and areas of ecological significance; and it crossed the most privately-owned land. Due to the route length, environmental impacts, and high permitting

[27] *See supra*, n. 2. *See also infra*, n. 28, 29, and 30, and related text.

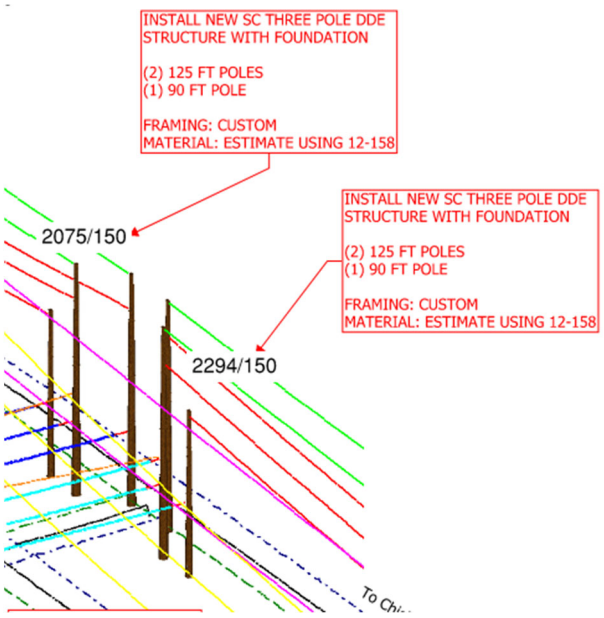
risk in comparison to other routes, the route was rejected. Route 4 is discussed in more detail in the Environmental Routing Study.

PROPOSED AND ALTERNATIVE ROUTES

Proposed Route (Route 3)

The Proposed Route would involve constructing two new overhead 230 kV transmission lines on primarily double circuit monopole structures in a new predominantly 100-foot-wide right-of-way by cutting the Company's existing 230 kV Chickahominy-Elmont Line #2075 at a location between the Structure #2075/150 and #2075/151 and extending approximately 4.69 miles to the expanded White Oak Substation. The estimated conceptual cost of the Proposed Route is approximately $34.6 million (2023 dollars).[28]

The Proposed Route originates at a cut-in location along Line #2075 between Structures #2075/150 and #2075/151 in the area east of Crib Lane and north of the Norfolk Southern Railroad. Specifically, existing Structure #2075/150, a double circuit 230 kV weathering steel H-frame structure that is currently supporting only one circuit, will be removed and replaced with two new 230 kV single circuit weathering steel three-pole structures (proposed Structures #2075/150 and #2294/150). The proposed structures will be located within the existing transmission corridor and are estimated to be within 20% of the existing structure heights. A three-dimensional diagram of the cut-in location for the Proposed Route is provided below, subject to final engineering and design.



[28] Note that the estimated transmission-related conceptual costs for the Proposed Route (Route 3) include costs associated with removing existing Structure #2075/150 at the cut-in location for the Proposed Route (*see supra*, n. 1), the removal and installation of one structure on 500 kV Chickahominy-Elmont Line #557 (*see supra*, n. 2), and the relocation of an existing cell tower within the right-of-way (*see* Section I.F). *See supra*, n. 4.

From the cut-in location, the Proposed Route heads southwest for about 0.98 mile to a point just west of the intersection of the railroad and Meadow Road. The route then turns and heads west for about 0.66 mile, paralleling the south side of the railroad tracks. Next, the route turns and heads south (away from the railroad) for about 0.68 mile, crossing I-64 and Old Williamsburg Road. The route then heads southeast for about 0.42 mile, crossing East Williamsburg Road, then southwest for about 0.83 mile, generally parallel to Boar Swamp. This segment of the route (*i.e.*, the area approximately between Old Williamsburg Road and Technology Boulevard) crosses the future VAH data center campus development discussed in more detail in the Environmental Routing Study, Section 3.3.1, Planned Developments. The route then heads southeast for about 0.51 mile, paralleling the east side of Technology Boulevard. At a point just east of Techpark Place, the route crosses Technology Boulevard as it heads south for 0.43 mile and spans a pond in two locations. It then turns and continues southeast for about 0.18 mile, terminating on the west side of the expanded White Oak Substation. In total, the Proposed Route measures approximately 4.69 miles in length.

The Proposed Route will cross a total of 22 parcels affecting 57.69 acres of right-of-way. All 22 parcels crossed are privately owned. Land use along the right-of-way consists of 43.20 acres of forested land, 1.85 acres of agricultural land, 5.86 acres of open space, 3.10 acres of open water, and 3.68 acres of developed area.

Based on ERM's desktop wetland and waterbody analysis, the right-of-way of the Proposed Route will encompass approximately 27.10% (15.63 acres) of land with a medium or higher probability of containing wetlands and waterbodies. Of these, the majority (11.98 acres) consist of forested wetlands. The Proposed Route has a total of eight waterbody crossings, including seven intermittent streams and one swamp/marsh. Lastly, the Proposed Route will require the clearing of approximately 43.20 acres of forested land, including approximately 5.6 acres that is managed timber. While the Proposed Route requires the greatest amount of forest clearing anticipated for any of the routes for the White Oak Lines, the Proposed Route has the least impact on forested lands with Forest Conservation Value ("FCV") classification of "very high" when compared with the Alternative Routes. As discussed in Section 3.3.6 of the Environmental Routing Study, qualitatively, the type and location of forest impacts is a significant factor to consider when comparing routes.

The Proposed Route is the longest route (4.69 miles) but provides opportunities to parallel linear facilities such as roadways, railroads, and planned sewer lines. The Proposed Route parallels the south side of the Norfolk Southern Railroad, the north side of Technology Boulevard, and a planned sewer easement on the west side of Boar Swamp. The approximately 2.0-mile crossing of the future VAH data center campus-owned lands also represents the greatest crossing of a willing landowner and customer, comprising about 43% of the total route length. Avoiding the residential neighborhood west of Elko Road, Route 3 crosses forestlands ranked "Average" and "Moderate" in the FCV ranking regarding ecological integrity in an area that is proposed for the future VAH data center campus development and

parallel to a proposed trunk sewer, and likely will be cleared by the future VAH data center campus regardless of which route is selected. The Proposed Route has the fewest impacts on residences compared to the route alternatives with only one residence within 250 feet and 15 residences within 500 feet of the proposed centerline. The Proposed Route also avoids crossing future suburban residential areas designated in Henrico County's Comprehensive Plan and avoids crossing the Elko Middle School property, both of which would be crossed by Alternative Route 2. Moreover, the Proposed Route is compatible with existing and proposed industrial zoning as well as future land uses envisioned in Henrico County's Comprehensive Plan and WOTP Master Plan. Although the Proposed Route is longer than Alternative Routes 1 and 2, it has the best collocation characteristics, would result in the least impact on residences and residential neighborhoods, and is the most compatible with existing and planned land uses relative to the other alternatives. The Proposed Route is therefore best aligned with Guideline #1 when compared to Alternative Routes 1 and 2.

In addition to the reasons listed above, the Proposed Route is preferred because it would eliminate the potential need to construct Spur Lines connecting the White Oak Lines to the future VAH data center campus development north of the WOTP. The Spur Lines would add a minimum of 0.94 mile in length and increase the overall environmental impacts to Alternative Routes 1 and 2. While the Proposed Route is the most compatible with Guideline #1 on its own, when these cumulative impacts are considered with the Spur Lines, the Proposed Route would be the least impactful and most efficient route serving demand in the WOLA and WOTP. See Table 4-1 for a summary of the impacts by each alternative route and Section 5 of the Environmental Routing Study for additional discussion and route comparison analysis.

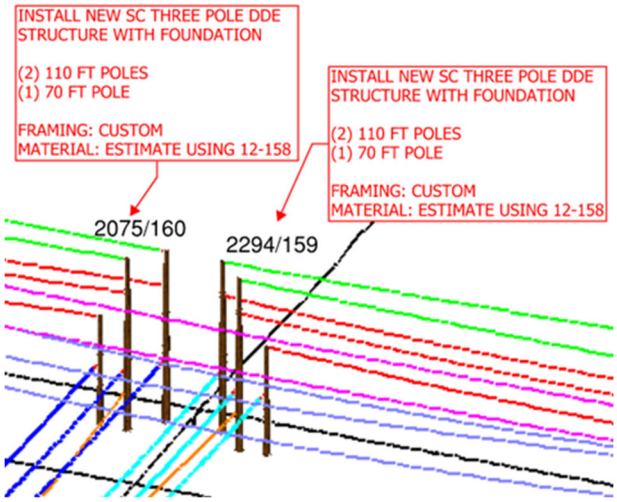
Alternative Route 1

Alternative Route 1 would involve constructing two new overhead 230 kV transmission lines on primarily double circuit monopole structures in a new predominantly 100-foot-wide right-of-way by cutting the Company's existing 230 kV Chickahominy-Elmont Line #2075 at a location between Structures #2075/159 and #2075/160 and extending approximately 4.19 miles to the expanded White Oak Substation. The estimated conceptual cost of Alternative Route 1 is approximately $32.2 million (2023 dollars).[29]

Alternative Route 1 originates at a cut-in location along Line #2075 between

[29] Note that the estimated transmission-related conceptual costs for Alternative Route 1 include costs associated with the installation (but no removal due to the cut-in location being mid-span) of one structure on 500 kV Chickahominy-Elmont Line #557, and the relocation of an existing cell tower within the right-of-way (*see* Section I.F). Because the cut-in location on Line #2075 occurs mid-span, no Line #2075 structures require removal. To the extent that Alternative Route 1 is selected by the Commission for the Project, the Company would assert that the work associated with the installation of one structure supporting Line #557 is ordinary course not requiring approval pursuant to Va. Code § 56-46.1 B or a CPCN from the Commission. *See supra*, n. 2. Should the Commission determine that a CPCN is required for the work associated with Line #557 as described herein, the Company requests that the Commission grant such CPCN as part of its final order in this proceeding.

Structures #2075/159 and #2075/160 in the area east of White Oak Road and south of East Williamsburg Road. Because the cut-in of Line #2075 for Route 1 is located mid-span between these two existing structures, no Line #2075 structures would be removed. At this mid-span location, two new 230 kV single circuit weathering steel three-pole structures (proposed Structures #2075/160 and #2294/159) will be installed. The proposed structures will be located within the existing transmission corridor and are estimated to be within 20% of the existing structure heights. A three-dimensional diagram of the cut-in location for Alternative Route 1 is provided below, subject to final engineering and design.



From the cut-in location, the route heads southeast for about 0.23 mile, then southwest for 0.26 mile, passing east and south of a horse farm along White Oak Road. The route then continues to the south/southwest for about 0.43 mile along a private road towards a crossing of White Oak Road. On the west side of White Oak Road, Alternative Route 1 turns and continues west for about 0.21 mile, then heads southwest towards Elko Road for about 0.66 mile. After crossing the road, the route enters Henrico County EDA-owned land in the WOTP, before turning sharply northwest to parallel the west side of Elko Road for about 0.26 mile. From there, it heads west/southwest for about 0.82 mile, crossing Engineered Wood Way, paralleling a short segment of an existing sewer line easement, and crossing Canal Swamp. At Technology Boulevard, Alternative Route 1 turns northwest to parallel the east side of the boulevard for about 0.48 mile, crossing Technology Creek Drive. It then heads west for about 0.23 mile, exiting the Henrico County EDA-owned land in the WOTP and crossing and paralleling a short segment of Technology Boulevard near an intersection with Elko Tract Road. From there, the route heads southwest for about 0.19 mile and then follows the same alignment south as the Proposed Route for about 0.42 mile to its terminus at the expanded White Oak Substation. In total, Alternative Route 1 measures approximately 4.19 miles in length.

Alternative Route 1 will cross a total of 16 parcels affecting 51.72 acres of right-of-way. Fifteen parcels crossed are privately owned, and one parcel is owned by Henrico County. Land use along the right-of-way consists of 35.85 acres of

forested land, 7.89 acres of agricultural land, 1.87 acres of open space, 3.02 acres of open water, and 3.09 acres of developed area. Alternative Route 1 would cross within 250 feet of 5 dwellings, and within 500 feet of 25 dwellings and 45 non-residential buildings, where the route crosses within a residential neighborhood near the cut-in location.

Based on ERM's desktop wetland and waterbody analysis, the right-of-way for Alternative Route 1 will encompass approximately 30.92% (15.99 acres) of land with a medium or higher probability of containing wetlands and waterbodies. Of these, the majority (12.43 acres) consist of forested wetlands. Alternative Route 1 has a total of six waterbody crossings, including two perennial stream crossings, three intermittent stream crossings, and one swamp/marsh crossing. Lastly, Alternative Route 1 will require the clearing of approximately 35.85 acres of forested land. When compared to the Proposed Route, Alternative Route 1 would affect more residences within 250 and 500 feet of the centerline, more conservation districts, more wetlands (including forested wetlands), and more "very high" and "outstanding" ranking FCV lands, and would have less total collocation with existing linear features.

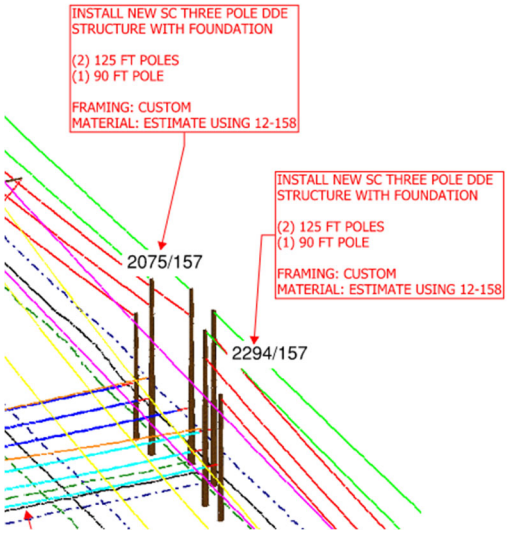
As previously discussed, if Alternative Route 1 is constructed, the additional Spur Lines would be needed to serve the load at the future VAH data center campus development north of the WOTP. Construction of the Spur Lines would require the installation of two new 230 kV lines supported by two side-by-side double circuits monopoles on 160-foot-wide right-of-way for a minimum of approximately 0.94 mile, amounting to greater cumulative impacts as compared to the Proposed Route. When Alternative Route 1 and the Spur Lines are considered as a whole, they are longer than the Proposed Route by 0.41 mile and would have a total construction footprint approximately 11.9 acres larger than the Proposed Route. In addition to these cumulative impacts and the individual impacts discussed above, Alternative Route 1 would impose greater impacts to residences than the Proposed Route because it crosses residential neighborhoods rather than land planned for industrial use or currently used for silviculture. Additionally, Alternative Route 1 is largely incompatible with the residential neighborhood in the vicinity of White Oak Road and the County's future land use policies for the area east of WOTP. See Table 4-1 and Sections 5 and 6 of the Environmental Routing Study for the route analysis and additional discussion.

Alternative Route 2

Alternative Route 2 would involve constructing two new overhead 230 kV transmission lines on primarily double circuit monopole structures in a new predominantly 100-foot-wide right-of-way by cutting the Company's existing 230 kV Chickahominy-Elmont Line #2075 at a location between Structures #2075/157 and #2075/158 and extending approximately 3.24 miles to the expanded White Oak Substation. The estimated conceptual cost of Alternative Route 2 is approximately

$26.9 million (2023 dollars).[30]

Alternative Route 2 originates at a cut-in location along Line #2075 between Structures #2075/157 and #2075/158 near the intersection of White Oak Boulevard and East Williamsburg Road. Specifically, existing Structure #2075/157, a double circuit 230 kV weathering steel H-frame structure that is currently supporting only one circuit, will be removed and replaced with two new 230 kV single circuit weathering steel three-pole structures (proposed Structures #2075/157 and #2294/157). The proposed structures will be located within the existing transmission corridor and are estimated to be within 20% of the existing structure heights. A three-dimensional diagram of the cut-in location for Alternative Route 2 is provided below, subject to final engineering and design.



From the cut-in location, Alternative Route 2 heads to the south/southwest for about 0.34 mile, crossing Old Williamsburg Road. The route then continues to the west/southwest for about 0.50 mile in the area approximately between Old Williamsburg Road to the north and Monaco Drive to the south. Alternative Route 2 then continues to the southwest for about 0.79 mile, crossing land owned by the Henrico County School Board east of Elko Road. The route parallels the southeasternmost edge of the School Board property line, passing about 170 feet southeast of Elko Middle School. After crossing Elko Road, the route continues southwest for about 0.88 mile, crossing land owned by the Henrico County EDA within the WOTP as well as a developed parcel containing the Company's existing

[30] Note that the estimated transmission-related conceptual costs for Alternative Route 2 include costs associated with removing existing Structure #2075/157 at the cut-in location for Route 2, the removal and installation of one structure on 500 kV Chickahominy-Elmont Line #557, and the relocation of an existing cell tower within the right-of-way (*see* Section I.F). To the extent that Alternative Route 2 is selected by the Commission for the Project, the Company would assert that the work associated with the removal and installation of one structure supporting Line #557 is ordinary course not requiring approval pursuant to Va. Code § 56-46.1 B or a CPCN from the Commission. *See supra*, n. 2. Should the Commission determine that a CPCN is required for the work associated with Line #557 as described herein, the Company requests that the Commission grant such CPCN as part of its final order in this proceeding.

Technology Substation. This segment of the route additionally passes near a future memorial site and cemetery for the Garthright-Fisher families (described in Section 3.1.1 of the Routing Study, Planned Developments). After crossing Technology Boulevard, Alternative Route 2 follows the same alignment as the Proposed Route for 0.71 mile to its terminus at the expanded White Oak Substation. In total, Alternative Route 2 measures approximately 3.24 miles in length.

Construction of Alternative Route 2 will cross a total of 22 parcels affecting 40.02 acres of right-of-way. Nineteen parcels crossed are privately owned and three parcels are owned by Henrico County. Land use along the right-of-way consists of 32.32 acres of forested land, 1.31 acres of open space, 3.55 acres of open water, 2.84 acres of developed area, and no agricultural land.

Based on ERM's desktop wetland and waterbody analysis, the right-of-way required for Alternative Route 2 will cross approximately 29.26% (11.71 acres) of land with a medium or higher probability of containing wetlands and waterbodies. Of these, the majority (7.09 acres) consist of forested wetlands. The route has a total of seven waterbody crossings, including five intermittent streams, one lake/pond, and one swamp/marsh crossing. Lastly, the route will require the clearing of approximately 32.32 acres of forested land, which is the least amount of forest clearing anticipated of the three route alternatives. When compared to the Proposed Route, Alternative Route 2 would affect more residences within 250 and 500 feet of the centerline (4 and 20 residences, respectively), cross Elko Middle School property, affect more predicted suitable habitat, and utilize less collocation with existing linear corridors.

As previously discussed, if Alternative Route 2 is constructed, the additional Spur Lines would be needed to serve the load at the future VAH data center campus north of the WOTP. Construction of the Spur Lines would require the installation of two new 230 kV lines supported by two side-by-side double circuit monopoles on 160-foot-wide right-of-way for a minimum of approximately 0.94 mile, amounting to greater cumulative impacts as compared to the Proposed Route. In addition to the impacts listed above comparing Alternative Route 2 and the Proposed Route, Alternative Route 2 and the Spur Lines would cumulatively affect more forested land, more landowners, and have a slightly larger total construction footprint than the Proposed Route. In addition to these impacts, Alternative Route 2 would cross within 500 feet of the Elko Middle School and is generally incompatible with the existing residential neighborhood east of Elko Middle School and the WOTP. The Comprehensive Plan designated this area as suburban residential land use, the policy objective of which is to avoid the encroachment of nonresidential uses and reduce impacts of such uses in residential areas. While shortest in length, Alternative Route 2 would impose new electric infrastructure into an area intended to be buffered from the impacts of the WOTP development. See Table 4-1 and Sections 5 and 6 of the Environmental Routing Study for the route analysis and additional discussion.

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 times on Chickahominy-Elmont Lines #2075 and #557. Assuming a final order is entered by the Commission by March 1, 2024, and construction commences around January 1, 2025, the cut-in of the White Oak Lines going to the expanded White Oak Substation should start March 1, 2025. As noted in Section I.H of the Appendix, the Company estimates that construction of the Project will be completed by April 30, 2026.

The cut-in of 230 kV Chickahominy-Elmont Line #2075 will require a 60-day outage in the fall/winter of 2025. ITOA 25-00059 was issued by the Company's Systems Operation Center ("SOC") for the Project for the cut-in of Line #2075. The Company received an eDart ticket (#1058977) for this outage from PJM.

The work required by the Project in the existing right-of-way on Line #557 will also require an outage in the fall of 2025.[31] ITOA 25-00064 was issued by the Company's SOC for the installation of this structure on Line #557. The Company received an eDart ticket (#1058976) for this outage from PJM.

It is customary for PJM not to grant approval of outages until shortly before the outages are expected to occur and, therefore, they may be subject to change.

[31] Construction of the Project utilizing either the Proposed Route or Alternative Route 2 require the removal of a lattice structure and installation of an H-frame structure in the existing right-of-way on Line #557. *See* Section II.A.9 and n. 28 and 30. Construction of the Project utilizing Alternative Route 1 requires installation of the H-frame structure in the existing Line #557 right-of-way, but does not require removal of the existing lattice structure. *See* Section II.A.9 and n. 29. Regardless of the route selected, an outage will be required to complete the described 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: Attachment 1 to these Guidelines[32] provides a tool routinely used by the Company 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.). As discussed in Section I.E, collocation opportunities along existing transmission facilities were evaluated but rejected from further consideration. However, the Proposed Route has the greatest amount of collocation with other linear rights-of-way including an existing railroad and planned sewer line, as discussed in Section 4.6 of the Environmental Routing Study.

The proposed Project will have no impact to any site listed on the National Register of Historic Places ("NRHP"). Thus, it is consistent with Guideline #2 (where practical, rights of-way should avoid sites listed on the NRHP). A Stage I Pre-Application Analysis prepared by ERM on behalf of the Company, which is included with the Environmental Routing Study as Appendix G and was submitted to the Virginia Department of Historic Resources ("VDHR") on June 16, 2023.

The Company communicated with local, state, and federal agencies and relevant private organizations 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 Henrico County. See Sections III.B and III.J of this Appendix.

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.

[32] See Guideline #1 in Attachment 1 of the *Guidelines for Transmission Line Applications Filed Under Title 56 of the Code of Virginia*, which is available at https://scc.virginia.gov/getattachment/921b6b42-4e06-4ab5-b296-e73fdcd60cac/Trans.pdf.

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")

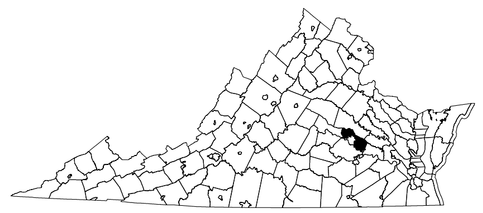
12. a. Detail counties and localities through which the line will pass. If any portion of the line will be located outside of the Applicant's certificated service area: (1) identify each electric utility affected; (2) state whether any affected electric utility objects to such construction; and (3) identify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

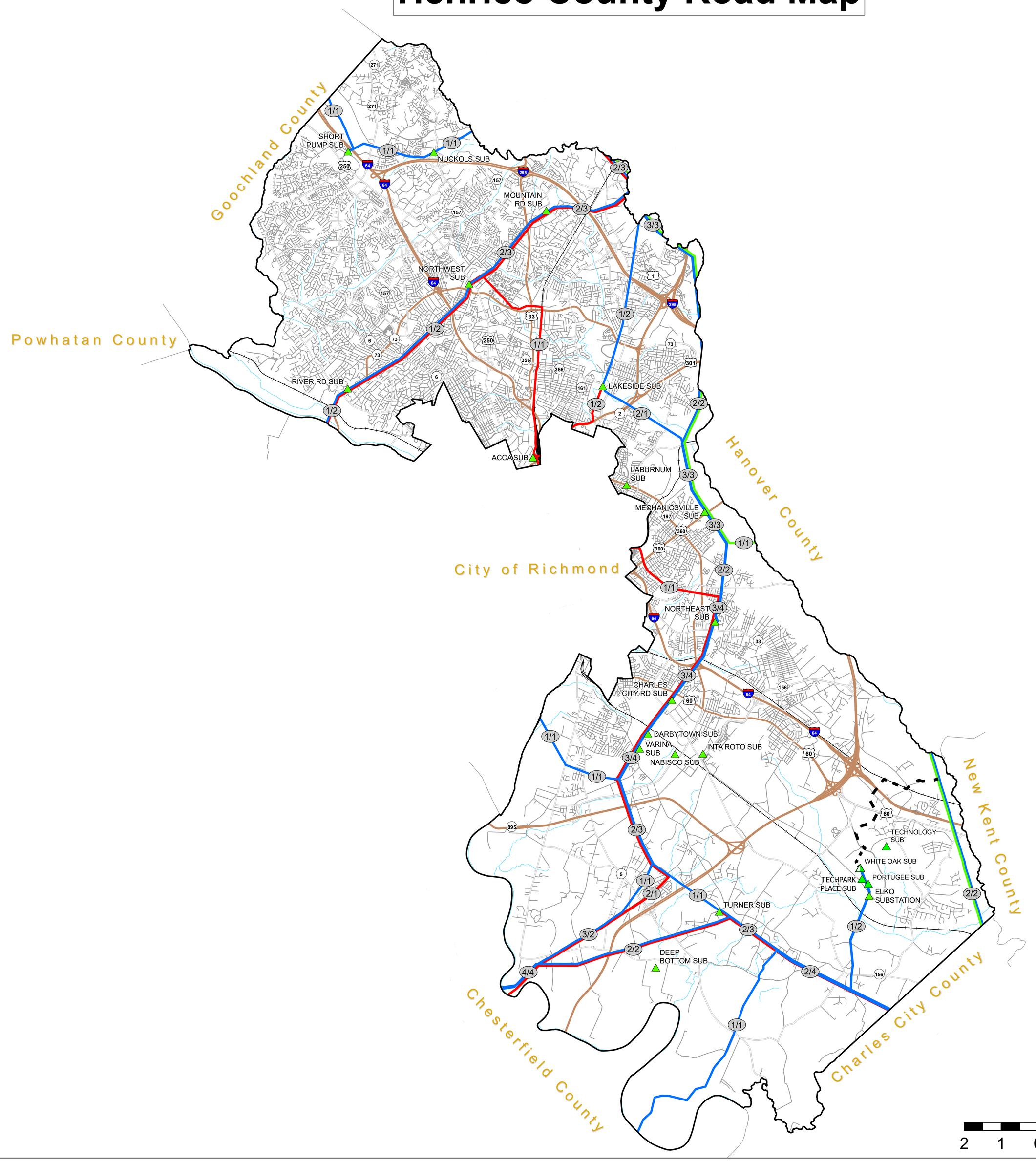
Response: a. The proposed Project crosses Henrico County for a total of approximately 4.69 miles and is located entirely within Dominion Energy Virginia's service territory.

b. An electronic copy of the VDOT "General Highway Map" for Henrico 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.

Henrico County Road Map



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 6/19/2023. Other Company facilities previously authorized by the SCC may be depicted on prior SCC approved county maps.



Legend

- Proposed 230 kV Line
- Number of Structures/Number of Circuits
- Proposed Substation
- Proposed Substation Expansion
- Existing Substation
- 115 kV
- 230 kV
- 500 kV
- Railroad

Provider Service Territory

- VEPCO

Miles 2 1 0 2 4 6

*VDOT and other road data obtained from Navteq and County data, current as of September 2009.

Attachment II.A.12.b

Henrico

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 two proposed 230 kV White Oak Lines will be designed and operated at 230 kV with no anticipated voltage upgrade and have a transfer capability of 1,573 MVA.

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: The two proposed 230 kV lines will include three-phase twin-bundled 768.2 ACSS/TW type conductor arranged as shown in Attachments II.B.3.a-d. The twin-bundled 768.2 ACSS/TW 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

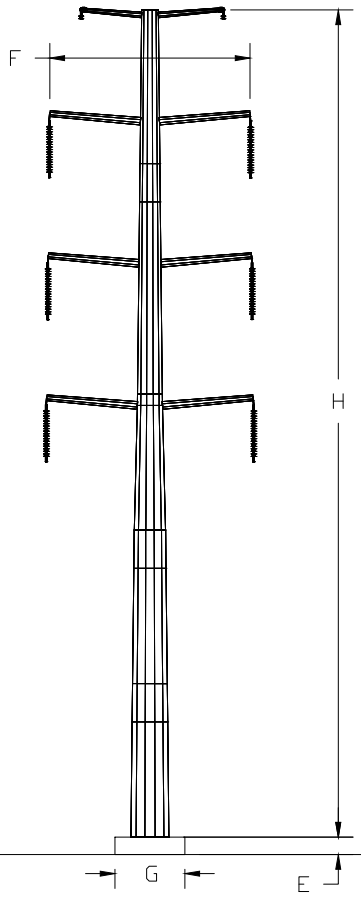
j. the minimum conductor-to-ground clearances under maximum operating conditions.

Response: See Attachments II.B.3.a-d.

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

WHITE OAK LINES
PROPOSED ROUTE 3
STRUCTURES #2075/154, 2075/157, 2075/162-2075/164, 2075/166, 2075/168, 2075/170, 2075/172, 2075/174, 2075/176, 2075/178, 2075/180, 2075/182

PROPOSED 230KV CIRCUIT
(LINE #2294)



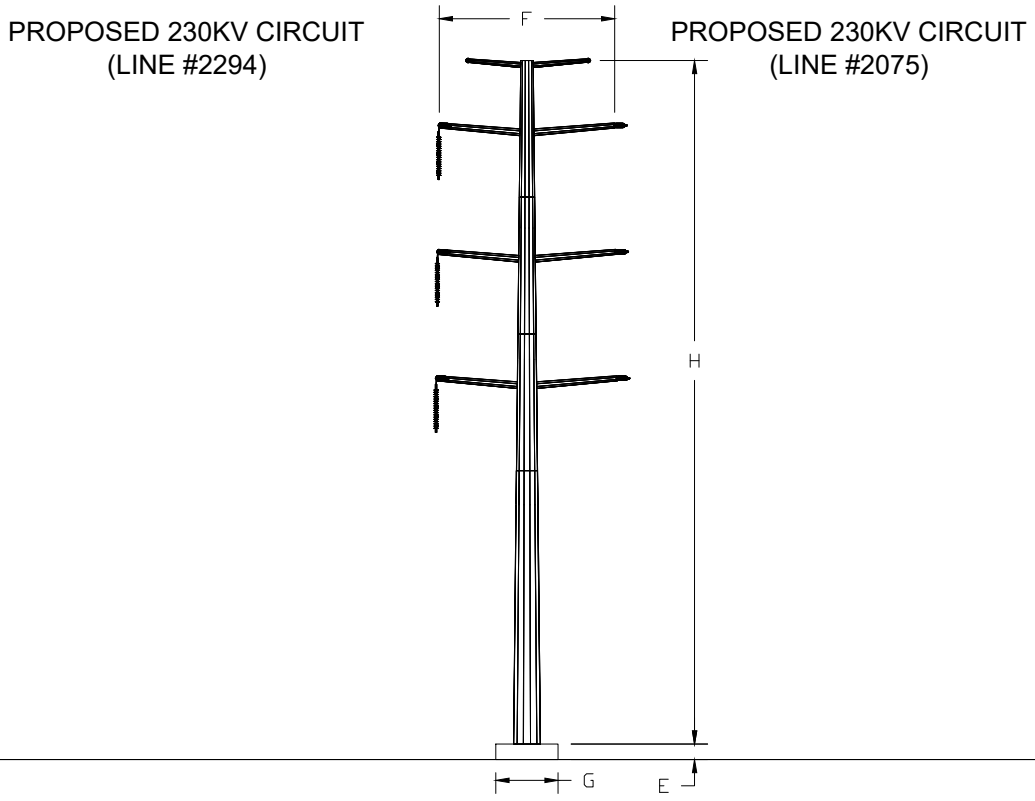
PROPOSED 230KV CIRCUIT
(LINE #2075)

DOUBLE CIRCUIT 1-POLE DEAD END STRUCTURE

A. MAPPING OF THE ROUTE:	SEE ATTACHMENT II.B.3.e
B. RATIONALE FOR STRUCTURE TYPE:	TYPICAL CONFIGURATION FOR DOUBLE CIRCUIT SUSPENSION STRUCTURES.
C. LENGTH OF R/W (STRUCTURE QTY):	4.6 MILES (14)
D. STRUCTURE MATERIAL:	WEATHERING STEEL
RATIONALE FOR MATERIAL:	THE COMPANY'S STANDARD FOR DRILLED PIER MONOPOLE CONSTRUCTION IS WEATHERING STEEL
E. FOUNDATION MATERIAL:	CONCRETE
AVERAGE FOUNDATION REVEAL:	SEE NOTE 2
F. AVERAGE WIDTH AT CROSS ARM:	26'
G. AVERAGE WIDTH AT BASE:	6' DIAMETER FOUNDATION (SEE NOTE 3)
H. MINIMUM STRUCTURE HEIGHT:	105'
MAXIMUM STRUCTURE HEIGHT:	130'
AVERAGE STRUCTURE HEIGHT:	116'
I. AVERAGE SPAN LENGTH (RANGE):	716' (463' - 881')
J. MINIMUM CONDUCTOR-TO-GROUND:	25.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTE:
1. INFORMATION CONTAINED ON DRAWING IS PRELIMINARY IN NATURE AND SUBJECT TO CHANGE DURING FINAL DESIGN.
2. MINIMUM FOUNDATION REVEAL SHALL BE 1.5'.
3. FINAL FOUNDATION DIAMETER SHALL BE BASED UPON FINAL ENGINEERING.
4. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE.

WHITE OAK LINES
PROPOSED ROUTE 3
STRUCTURES #2075/152, 2075/153, 2075/155, 2075/156, 2075/158-2075/161, 2075/165, 2075/167, 2075/169, 2075/171, 2075/173, 2075/175, 2075/177, 2075/179, 2075/181, 2075/183-2075/187



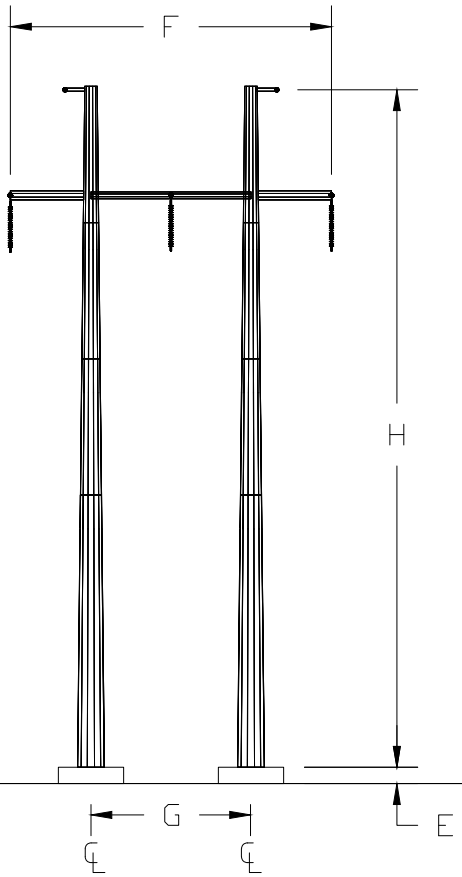
DOUBLE CIRCUIT 1-POLE DEAD END STRUCTURE

A. MAPPING OF THE ROUTE:	SEE ATTACHMENT II.B.3.e
B. RATIONALE FOR STRUCTURE TYPE:	TYPICAL CONFIGURATION FOR DOUBLE CIRCUIT DEAD END STRUCTURES.
C. LENGTH OF R/W (STRUCTURE QTY):	4.6 MILES (22)
D. STRUCTURE MATERIAL:	WEATHERING STEEL
RATIONALE FOR MATERIAL:	THE COMPANY'S STANDARD FOR DRILLED PIER MONOPOLE CONSTRUCTION IS WEATHERING STEEL
E. FOUNDATION MATERIAL:	CONCRETE
AVERAGE FOUNDATION REVEAL:	SEE NOTE 2
F. AVERAGE WIDTH AT CROSS ARM:	26'
G. AVERAGE WIDTH AT BASE:	8' DIAMETER FOUNDATION (SEE NOTE 3)
H. MINIMUM STRUCTURE HEIGHT:	85'
MAXIMUM STRUCTURE HEIGHT:	125'
AVERAGE STRUCTURE HEIGHT:	109'
I. AVERAGE SPAN LENGTH (RANGE):	657' (285' - 981'
J. MINIMUM CONDUCTOR-TO-GROUND:	25.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTE:
1. INFORMATION CONTAINED ON DRAWING IS PRELIMINARY IN NATURE AND SUBJECT TO CHANGE DURING FINAL DESIGN.
2. MINIMUM FOUNDATION REVEAL SHALL BE 1.5'.
3. FINAL FOUNDATION DIAMETER SHALL BE BASED UPON FINAL ENGINEERING.
4. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE.

WHITE OAK LINES
PROPOSED ROUTE 3
STRUCTURES #2075/151 & 2294/149

PROPOSED 230KV CIRCUIT
(LINE #2075 & LINE #2294)



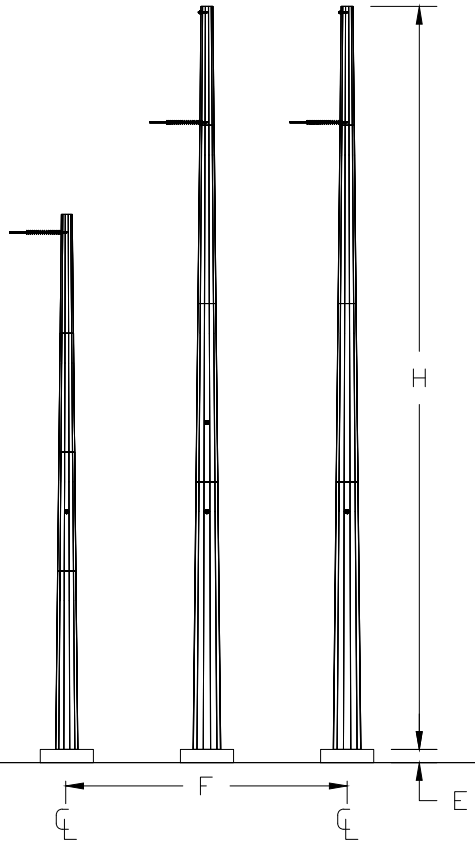
DOUBLE CIRCUIT 1-POLE DEAD END STRUCTURE

A. MAPPING OF THE ROUTE:	SEE ATTACHMENT II.B.3.e
B. RATIONALE FOR STRUCTURE TYPE:	MAINTAINS CLEARANCES BELOW EXISTING CONDUCTOR AND ROLLING CLEARANCES.
C. LENGTH OF R/W (STRUCTURE QTY):	4.6 MILES (2)
D. STRUCTURE MATERIAL:	WEATHERING STEEL
RATIONALE FOR MATERIAL:	THE COMPANY'S STANDARD FOR DRILLED PIER H-FRAME CONSTRUCTION IS WEATHERING STEEL
E. FOUNDATION MATERIAL:	CONCRETE
AVERAGE FOUNDATION REVEAL:	SEE NOTE 2
F. AVERAGE WIDTH AT CROSS ARM:	47'
G. AVERAGE WIDTH AT BASE:	23.5'
H. MINIMUM STRUCTURE HEIGHT:	55'
MAXIMUM STRUCTURE HEIGHT:	55'
AVERAGE STRUCTURE HEIGHT:	55'
I. AVERAGE SPAN LENGTH (RANGE):	147'
J. MINIMUM CONDUCTOR-TO-GROUND:	25.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTE:
1. INFORMATION CONTAINED ON DRAWING IS PRELIMINARY IN NATURE AND SUBJECT TO CHANGE DURING FINAL DESIGN.
2. MINIMUM FOUNDATION REVEAL SHALL BE 1.5'.
3. FINAL FOUNDATION DIAMETER SHALL BE BASED UPON FINAL ENGINEERING.
4. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE.

WHITE OAK LINES
PROPOSED ROUTE 3
STRUCTURES #2075/150 & 2294/150

PROPOSED 230KV CIRCUIT
(LINE #2075 & LINE #2294)

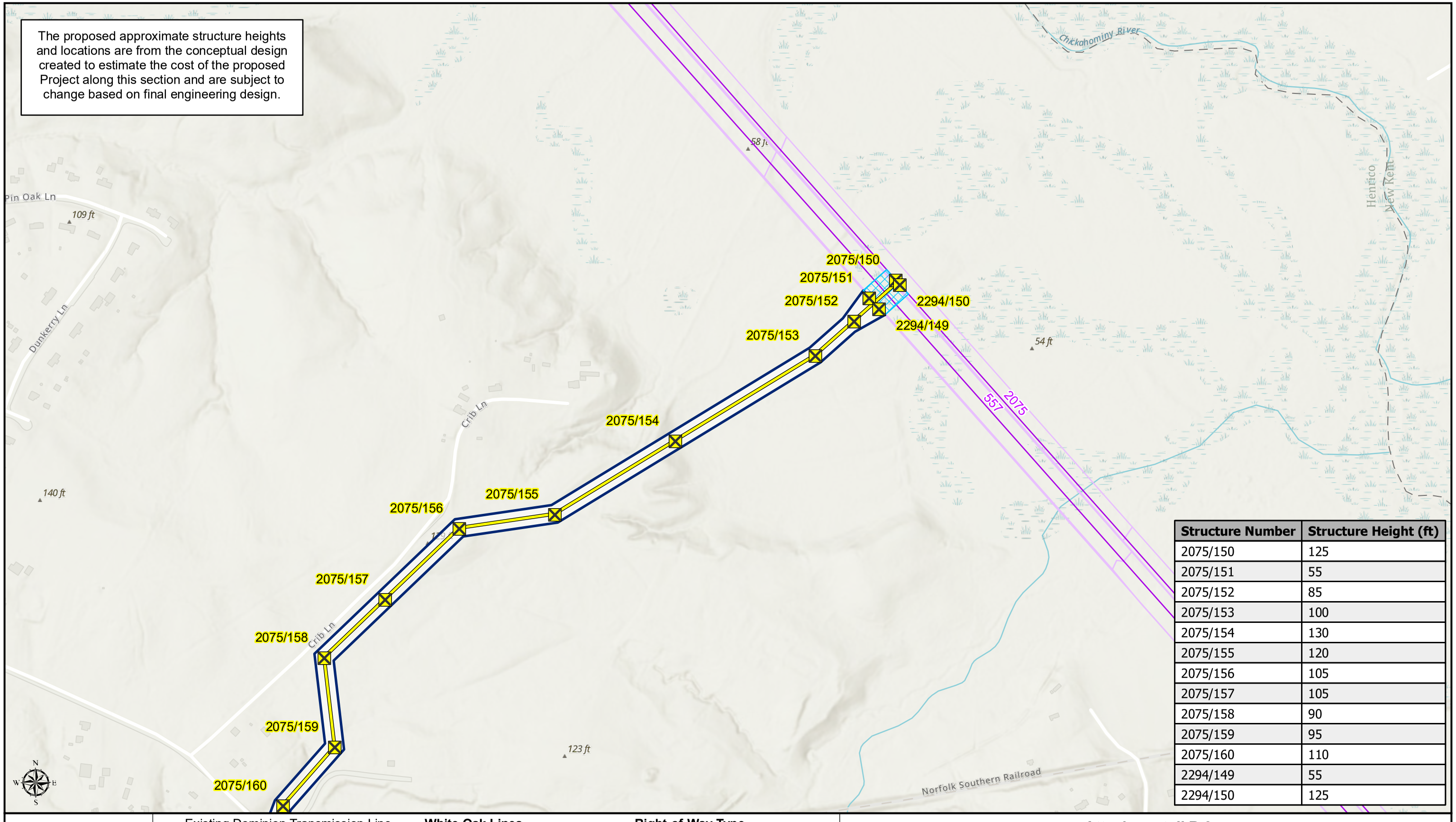


SINGLE CIRCUIT 3-POLE DEAD END TAP STRUCTURE

A. MAPPING OF THE ROUTE:	SEE ATTACHMENT II.B.3.e
B. RATIONALE FOR STRUCTURE TYPE:	MAINTAINS UNDERCROSSING CLEARANCE AND LINE ANGLE WITH EXISTING STRUCTURES.
C. LENGTH OF R/W (STRUCTURE QTY):	4.6 MILES (2)
D. STRUCTURE MATERIAL:	WEATHERING STEEL
RATIONALE FOR MATERIAL:	THE COMPANY'S STANDARD FOR DRILLED PIER THREE POLE CONSTRUCTION IS WEATHERING STEEL
E. FOUNDATION MATERIAL:	CONCRETE
AVERAGE FOUNDATION REVEAL:	SEE NOTE 3
F. AVERAGE WIDTH AT CROSS ARM:	48' (OUTSIDE POLE TO OUTSIDE POLE)
G. AVERAGE WIDTH AT BASE:	6' DIAMETER (SEE NOTE 4)
H. MINIMUM STRUCTURE HEIGHT:	125'
MAXIMUM STRUCTURE HEIGHT:	125'
AVERAGE STRUCTURE HEIGHT:	125'
I. AVERAGE SPAN LENGTH (RANGE):	174'
J. MINIMUM CONDUCTOR-TO-GROUND:	25.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTE:
1. INFORMATION CONTAINED ON DRAWING IS PRELIMINARY IN NATURE AND SUBJECT TO CHANGE DURING FINAL DESIGN.
2. INDIVIDUAL POLE HEIGHTS MAY VARY, SUBJECT FINAL ENGINEERING.
3. MINIMUM FOUNDATION REVEAL SHALL BE 1.5'.
4. FINAL FOUNDATION DIAMETER SHALL BE BASED UPON FINAL ENGINEERING.
5. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE.

The proposed approximate structure heights and locations are from the conceptual design created to estimate the cost of the proposed Project along this section and are subject to change based on final engineering design.



Structure Number	Structure Height (ft)
2075/150	125
2075/151	55
2075/152	85
2075/153	100
2075/154	130
2075/155	120
2075/156	105
2075/157	105
2075/158	90
2075/159	95
2075/160	110
2294/149	55
2294/150	125

0 250 500
Feet
1:6,000

Existing Dominion Transmission Line
Existing Dominion Right-of-Way

White Oak Lines
Route 3 (Proposed Route)
Proposed Structure

Right-of-Way Type
Existing Right-of-Way
Proposed Right-of-Way

Attachment II.B.3.e
Structure Locations Along the Proposed Route
White Oak Electric Transmission Project
Dominion Energy Virginia
Henrico County, Virginia

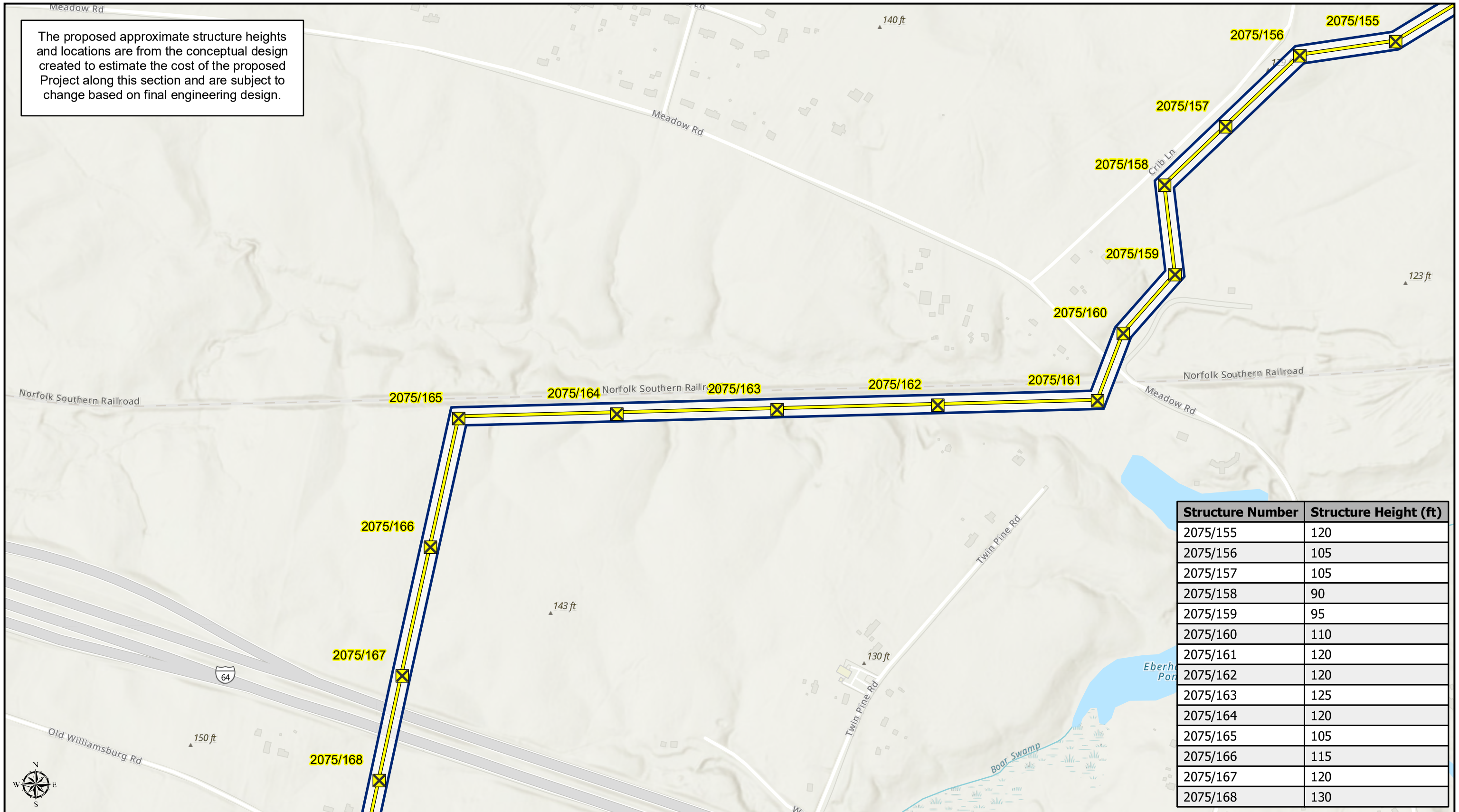
ERM

Dominion Energy

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DRAWN BY: Nicole.Dunn

The proposed approximate structure heights and locations are from the conceptual design created to estimate the cost of the proposed Project along this section and are subject to change based on final engineering design.



Structure Number	Structure Height (ft)
2075/155	120
2075/156	105
2075/157	105
2075/158	90
2075/159	95
2075/160	110
2075/161	120
2075/162	120
2075/163	125
2075/164	120
2075/165	105
2075/166	115
2075/167	120
2075/168	130

0 250 500
Feet
1:6,000

White Oak Lines
- Route 3 (Proposed Route)
- Proposed Structure

Right-of-Way Type
- Proposed Right-of-Way

ERM

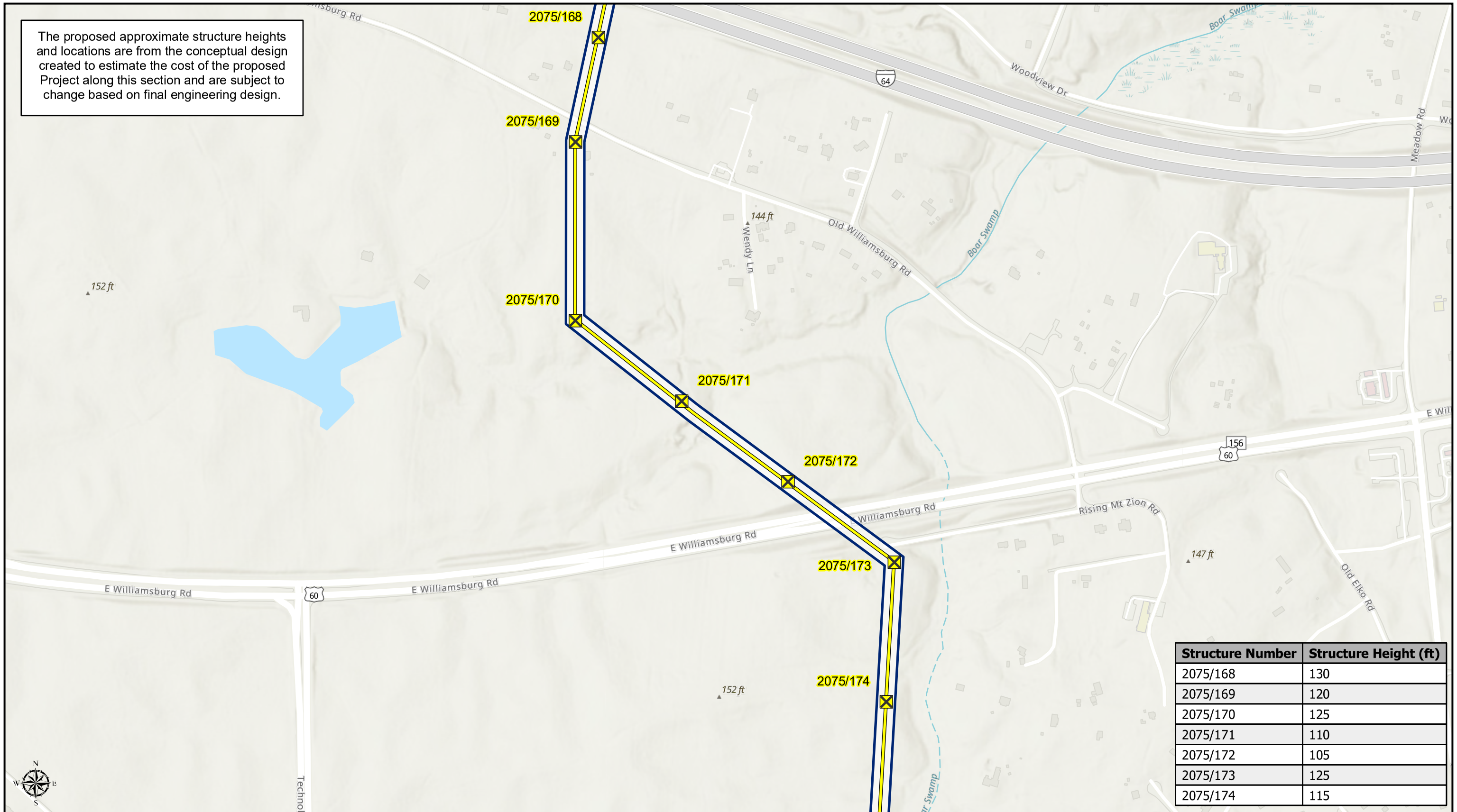
Attachment II.B.3.e
Structure Locations Along the Proposed Route
White Oak Electric Transmission Project
Dominion Energy Virginia
Henrico County, Virginia

Dominion Energy

MPLS M:\US\Projects\D-F\Dominion\White_Oak_ArcGIS\SCC_Appendix_DOM_WTOK_SCC_Appendix_Update.aprx\Attachment II.B.3.e | REVISED: 05/18/2023 | SCALE: 1:6,000 when printed at 11x17

DRAWN BY: Nicole.Dunn

The proposed approximate structure heights and locations are from the conceptual design created to estimate the cost of the proposed Project along this section and are subject to change based on final engineering design.



Structure Number	Structure Height (ft)
2075/168	130
2075/169	120
2075/170	125
2075/171	110
2075/172	105
2075/173	125
2075/174	115

0 250 500
Feet
1:6,000

White Oak Lines
- Route 3 (Proposed Route)
- Proposed Structure

Right-of-Way Type
- Proposed Right-of-Way

Attachment II.B.3.e
Structure Locations Along the Proposed Route
White Oak Electric Transmission Project
Dominion Energy Virginia
Henrico County, Virginia

ERM

Dominion Energy

MPLS M:\US\Projects\D-F\Dominion\White_Oak_ArcGIS\SCC_Appendix_DOM_WTOK_SCC_Appendix_Update.aprx\Attachment II.B.3.e | REVISED: 05/18/2023 | SCALE: 1:6,000 when printed at 11x17

DRAWN BY: Nicole.Dunn

The proposed approximate structure heights and locations are from the conceptual design created to estimate the cost of the proposed Project along this section and are subject to change based on final engineering design.

2075/175
2075/176
2075/177
2075/178
2075/179
2075/180
2075/181
2075/182
2075/183

TECHNOLOGY SUB

Structure Number	Structure Height (ft)
2075/175	115
2075/176	120
2075/177	115
2075/178	115
2075/179	105
2075/180	110
2075/181	105
2075/182	105
2075/183	115

0 250 500
Feet
1:6,000

▲ Existing Substation

White Oak Lines
Route 3 (Proposed Route)
Proposed Structure

Right-of-Way Type
Proposed Right-of-Way

Attachment II.B.3.e
Structure Locations Along the Proposed Route
White Oak Electric Transmission Project
Dominion Energy Virginia
Henrico County, Virginia

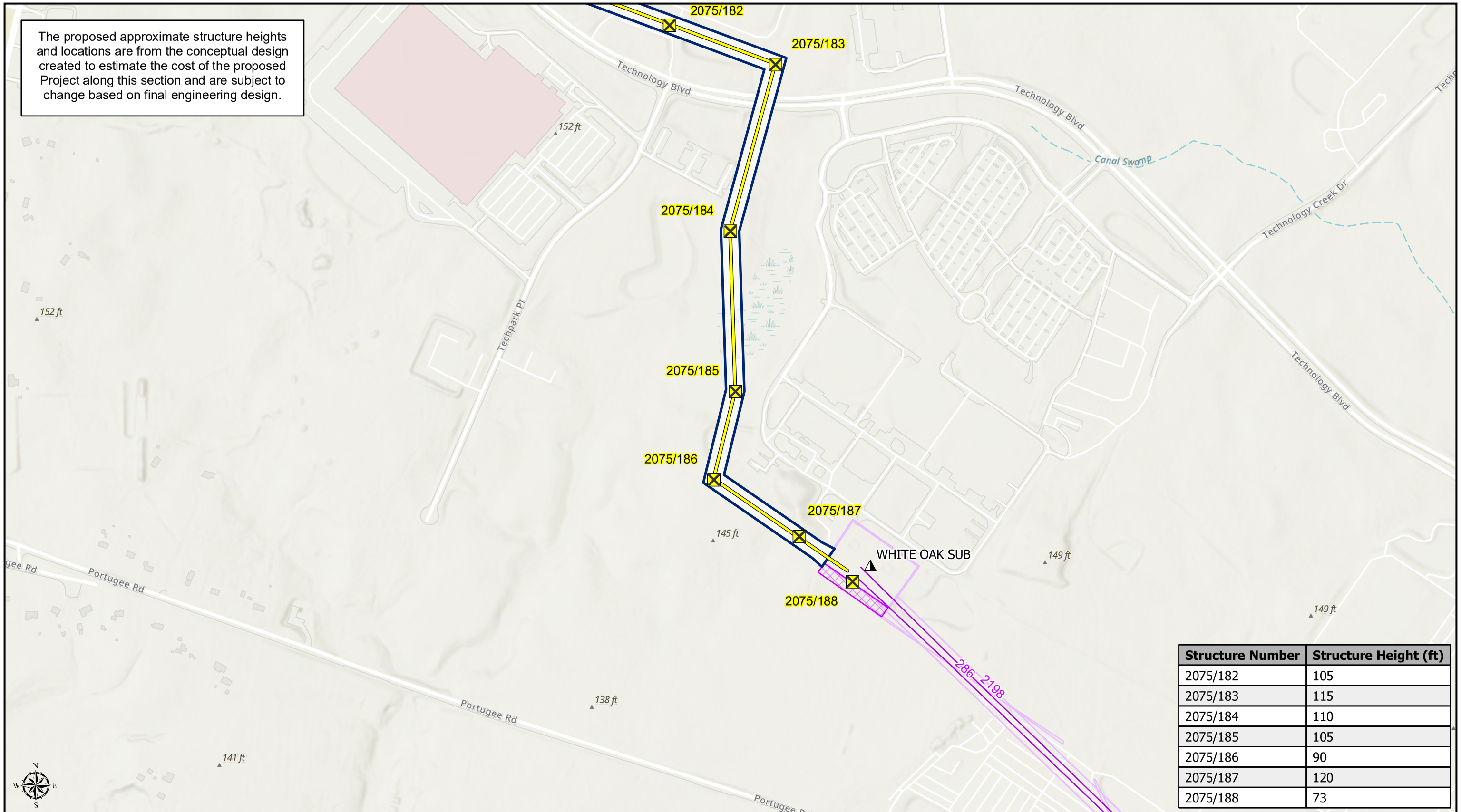
ERM

Dominion Energy

MPLS M:\US\Projects\D-F\Dominion\White_Oak_ArcGIS\SCC_Appendix_DOM_WTOK_SCC_Appendix_Update.aprx\Attachment II.B.3.e | REVISED: 05/18/2023 | SCALE: 1:6,000 when printed at 11x17

DRAWN BY: Nicole.Dunn

The proposed approximate structure heights and locations are from the conceptual design created to estimate the cost of the proposed Project along this section and are subject to change based on final engineering design.



Structure Number	Structure Height (ft)
2075/182	105
2075/183	115
2075/184	110
2075/185	105
2075/186	90
2075/187	120
2075/188	73

0 250 500
Feet
1:6,000

- Proposed Substation Expansion
- Existing Dominion Transmission Line
- Existing Dominion Right-of-Way

White Oak Substation
- Proposed White Oak Substation Expansion
- Existing White Oak Substation

White Oak Lines
- Route 3 (Proposed Route)
- Proposed Structure

Right-of-Way Type
- Proposed Right-of-Way

Attachment II.B.3.e
Structure Locations Along the Proposed Route
White Oak Electric Transmission Project
Dominion Energy Virginia
Henrico County, Virginia

ERM

Dominion Energy

MPLS M:\US\Projects\D-F\Dominion\White_Oak_ArcGIS\SCC_Appendix_DOM_WTOK_SCC_Appendix_Update.aprx\Attachment II.B.3.e | REVISED: 05/18/2023 | SCALE: 1:6,000 when printed at 11x17

DRAWN BY: Nicole.Dunn

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: The approximate structure heights along the Proposed and Alternative Routes are provided in the table below, based on preliminary conceptual design, not including foundation reveal and subject to change based on final engineering design.

Route	Minimum (ft.)	Maximum (ft.)	Average* (ft.)
Proposed Route (Route 3)	55	130	111
Alternative Route 1	50	125	105
Alternative Route 2	55	125	109

* In order not to create a downward bias as to the overall average structure heights for each of the three route alternatives, the heights of the significantly shorter structures crossing under the existing 500 kV Line #557 near the cut-in locations have been excluded from the overall average structure height for each route.

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] See Attachment II.B.6.a for a representative photograph of Structure #2075/150, which is being removed at the cut-in location of the Proposed Route.

[b] See Attachment II.B.6.b for representative photographs of the proposed structures.

[c] Visual simulations showing the appearance of the proposed transmission structures at identified historic locations within 1.0 mile of the proposed Project centerline of the Proposed Route are provided. See Attachment II.B.6.c for a map of the simulation locations, the existing views at the historic locations, and simulated proposed views. These simulations were created using GIS modeling to depict whether the proposed structures will be visible from the identified historic location. The historic locations evaluated are described below. See also the Stage I Pre-Application Analysis Report contained in Appendix G of the Environmental Routing Study.

Historic Location	Viewpoint	Comments
Second Cold Harbor Battlefield (VDHR ID# 042-5017)	40	The Proposed Route would have no impact on 042-5017.
	35	Alternative Route 1 would have a minimal impact on 042-5017.
	Google Earth Rendering Figure 3	Alternative Route 2 would have a minimal impact on 042-5017.
Cedar Knoll House (VDHR ID# 043-0078)	41	The Proposed Route would have a moderate impact on 043-0078.
Savage Station Farm and Cemetery (VDHR ID# 043-0288)	42	The Proposed Route would have no impact on 043-0288.
Savage Station Battlefield (VDHR ID# 043-0308)	12, 15, Google Earth Rendering Figure 5	The Proposed Route would have a moderate impact on 043-0308.
	12 and 36	Alternative Route 1 would have a minimal impact on 043-0308.
	12 and 37	Alternative Route 2 would have a minimal impact on 043-0308.

Glendale Battlefield (VDHR ID# 043-5077)	4	The Proposed Route would have no impact on 043-5077.
	36	Alternative Route 1 would have a minimal impact on 043-5077.
	37	Alternative Route 2 would have a minimal impact on 043-5077.
Second Deep Bottom Battlefield (VDHR ID# 043-5080)	14	The Proposed Route, Alternative Route 1, and Alternative Route 2 would have no impact on 043-5080.
Seven Pines Battlefield (VDHR ID# 043-5081)	41	The Proposed Route would have a minimal impact on 043-5081.
	38	Alternative Route 1 would have no impact on 043-5081.
	1a, Google Earth Rendering Figure 3	Alternative Route 2 would have a minimal impact on 043-5081.

See Attachment III.B.8 for visual simulations of key locations evaluated.

Structure #2075/150 to be Removed at Cut-in Location of Proposed Route





Double Dead End Angle Structure, Weathered Steel



Double Dead End Structure, Weathered Steel



Tangent Structure, Weathered Steel



Three Pole, Weathered Steel



230 kV H-Frame, Weathered Steel



500 kV H-Frame, Weathered Steel

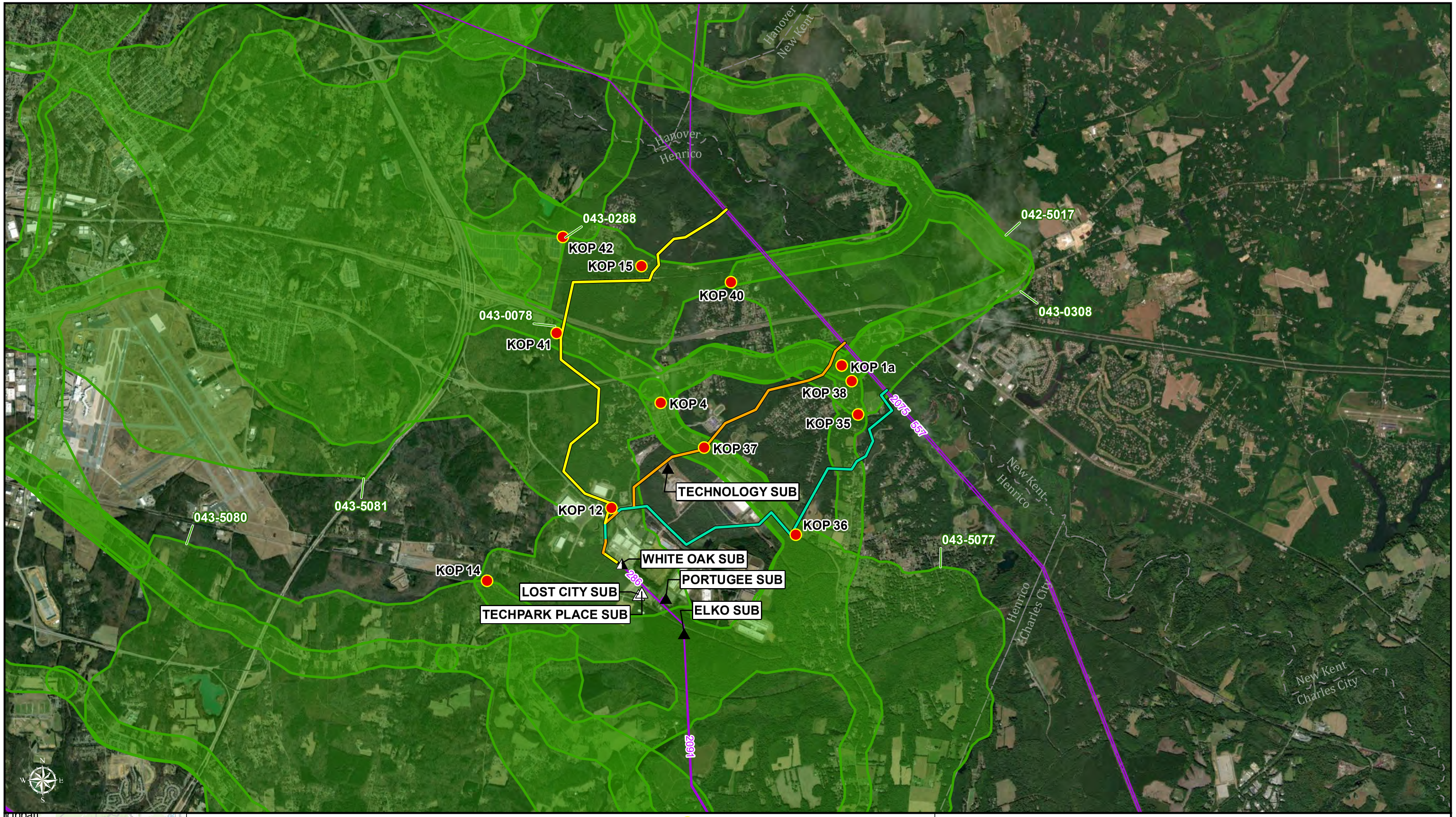

Hanover
New Kent
Hanover
Henrico
043-0288
KOP 42
KOP 15
KOP 40
043-0078
KOP 41
042-5017
043-0308
KOP 1a
KOP 38
KOP 4
KOP 35
KOP 37
2076
557
TECHNOLOGY SUB
New Kent
Henrico
043-5081
043-5080
KOP 12
KOP 36
043-5077
WHITE OAK SUB
KOP 14
PORTUGEE SUB
LOST CITY SUB
236
ELKO SUB
TECHPARK PLACE SUB
Henrico
Charles City
New Kent
Charles City
2091
N
W
E
S
Project Location
Virginia
Existing Substation
Future Substation
Proposed Substation Expansion
Existing Dominion Transmission Line
White Oak Route Alternatives
Alternative Route 1
Alternative Route 2
Proposed Route (Route 3)
Key Observation Point (KOP)
Historic Resource
0 0.25 0.5
Miles
1:50,000
ERM
Attachment II.B.6.c
Overview Map of Routes Showing Visual Simulation Locations and Associated Aboveground Historic Resources
White Oak Electric Transmission Project
Dominion Energy Virginia
Henrico County, Virginia
Dominion Energy
MPLS M:\US\Projects\D-F\Dominion\White_Oak_ArcGIS\SCC_Appendix_DOM_WTOK_SCC_Appendix_Update.aprx\Attachment II.B.6.c | REVISED: 06/13/2023 | SCALE: 1:50,000 when printed at 11x17
DRAWN BY: NAD

PHOTO SIMULATIONS FOR WHITE OAK LINES

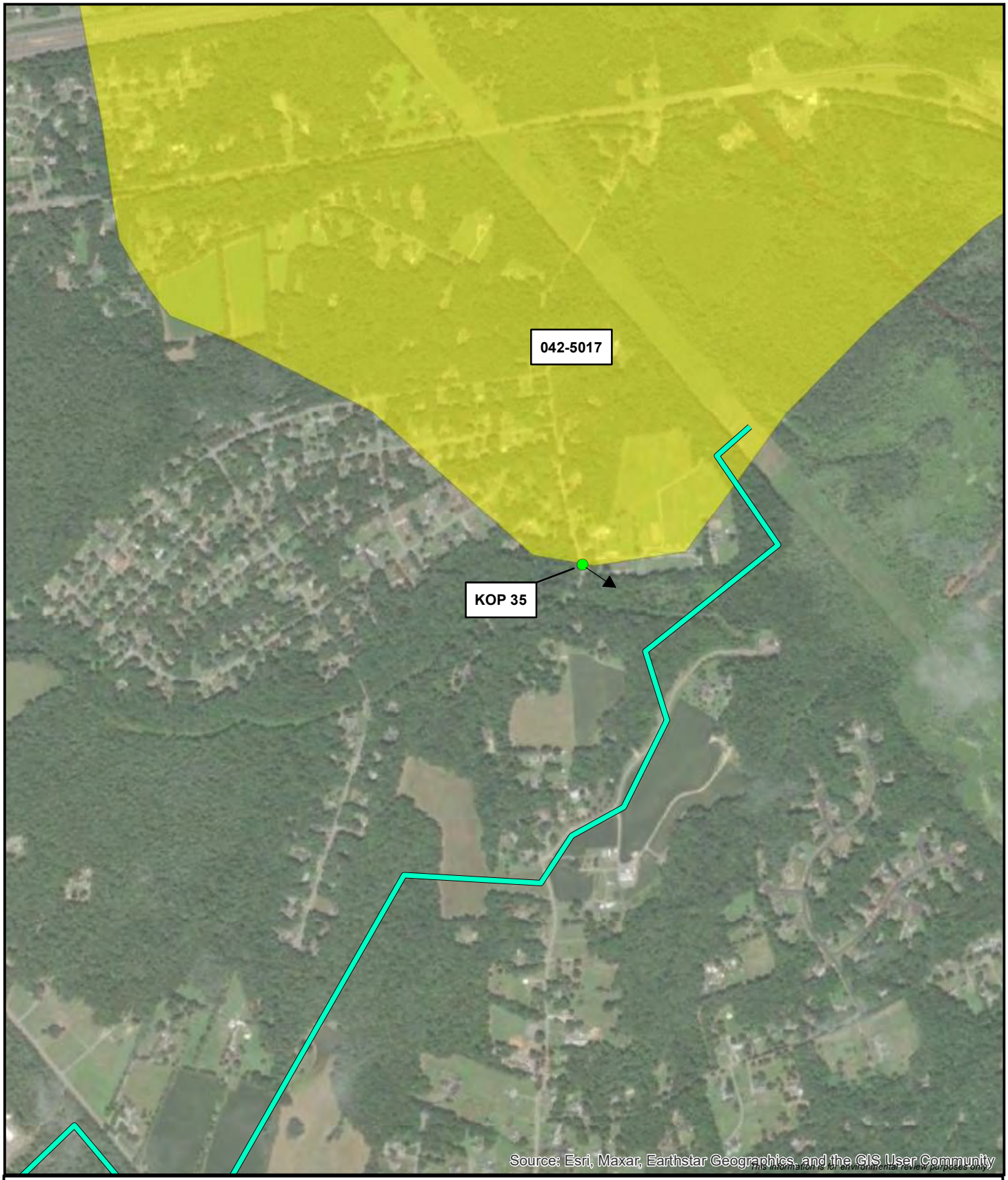


Figure 1. Aerial photograph depicting land use and photo view for 042-5017.



Existing View

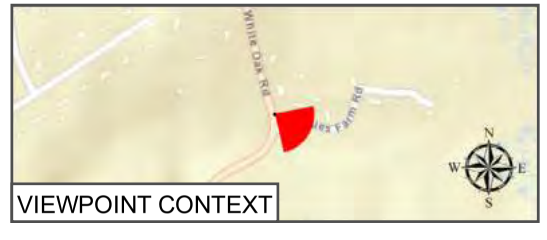


Proposed View - Hidden

Dominion Energy™ ERM

Viewpoint Location UTM Zone 18S:	304699E 4153123N
View Direction:	122 degrees
Viewpoint Elevation:	74 feet
Distance to Development:	1024 feet
Horizontal Field of View:	89 degrees

Date of Photography:	24th February 2023 13.33
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	56 inches



VIEWPOINT CONTEXT

Figure 2
Viewpoint KOP 35 - Route 1
White Oak Rd N of Cables Farm Rd
042-5017

Pre-Application Analysis
White Oak

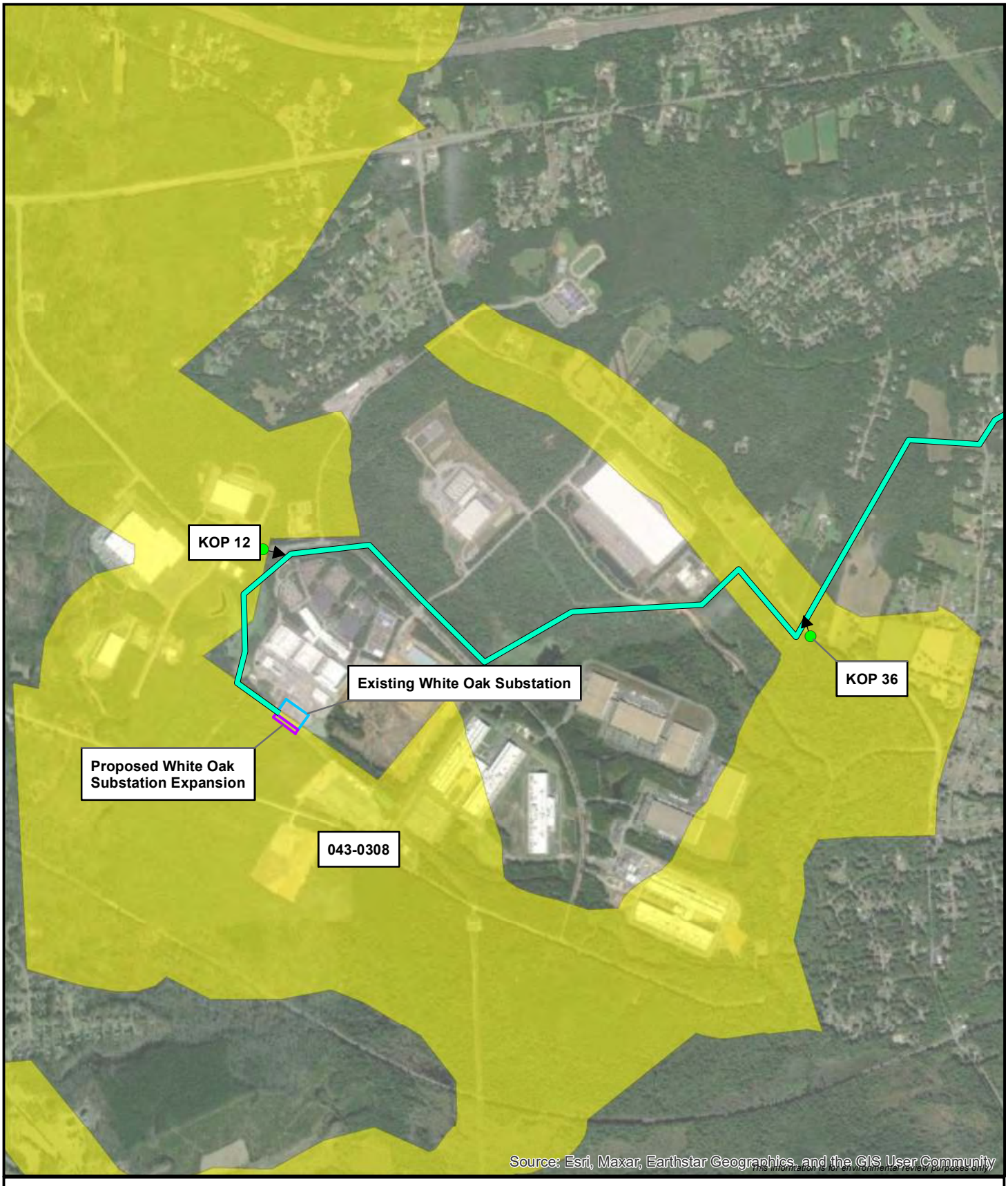
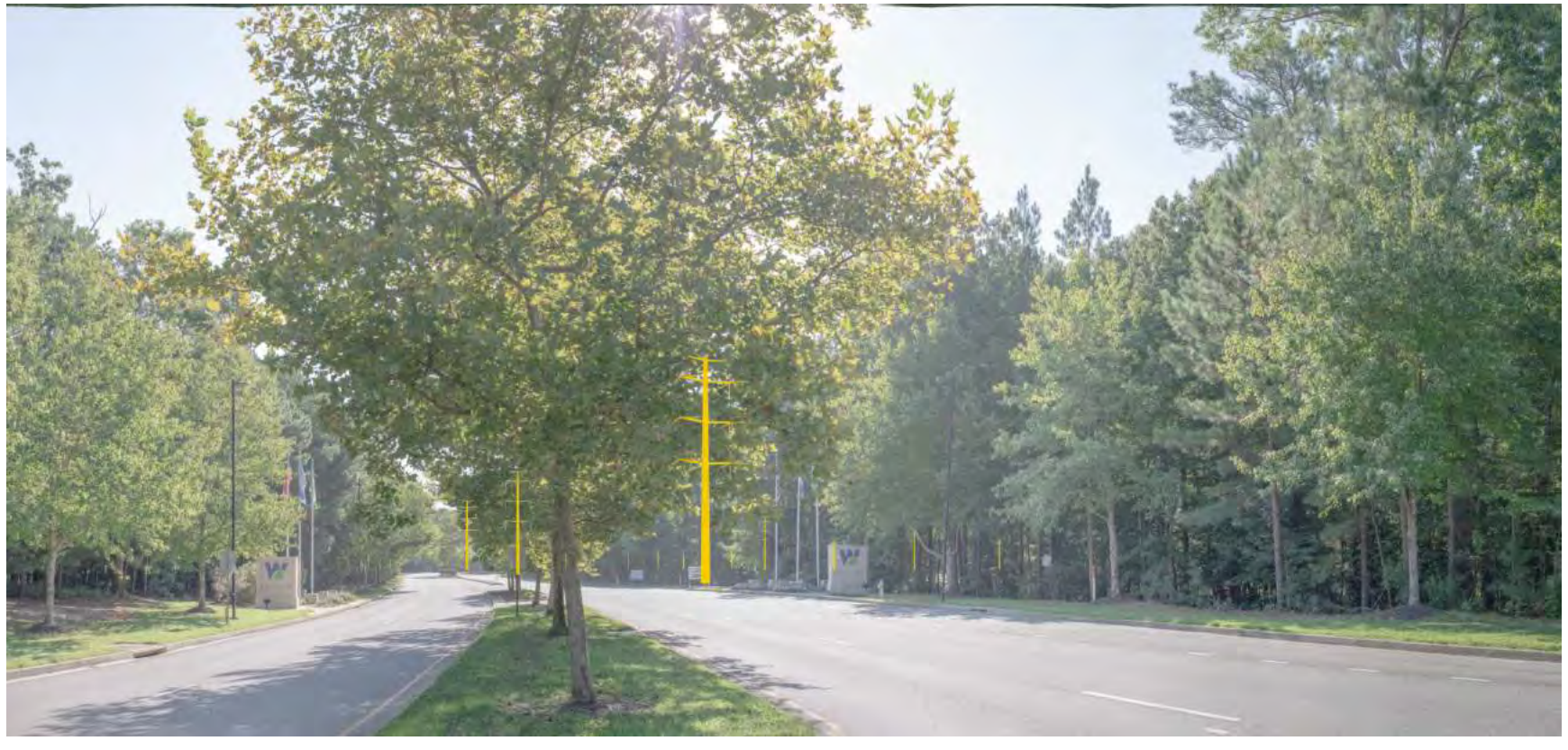


Figure 3. Aerial photograph depicting land use and photo view for 043-0308.



Existing View



Proposed View - Hidden

Viewpoint Location UTM Zone 18S:	301209E 4151948N
View Direction:	105 degrees
Viewpoint Elevation:	146 feet
Distance to Development:	356 feet
Horizontal Field of View:	90 degrees

Date of Photography:	17th August 2022 9:05
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	58 inches



VIEWPOINT CONTEXT

Figure 4
Viewpoint KOP 12 - Route 1
Technology Blvd E of Techpark Pl
043-0308

Pre-Application Analysis
White Oak



Existing View



Proposed View - Visible

Dominion Energy

ERM

Viewpoint Location UTM Zone 18S:	303767E 4151478N
View Direction:	343 degrees
Viewpoint Elevation:	139 feet
Distance to Development:	356 feet
Horizontal Field of View:	100 degrees

Date of Photography:	24th February 2023 10:05
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	59 inches



VIEWPOINT CONTEXT

Figure 5
Viewpoint KOP 36 - Route 1
Elko Rd NW of White Oak Rd
043-0308

Pre-Application Analysis
White Oak

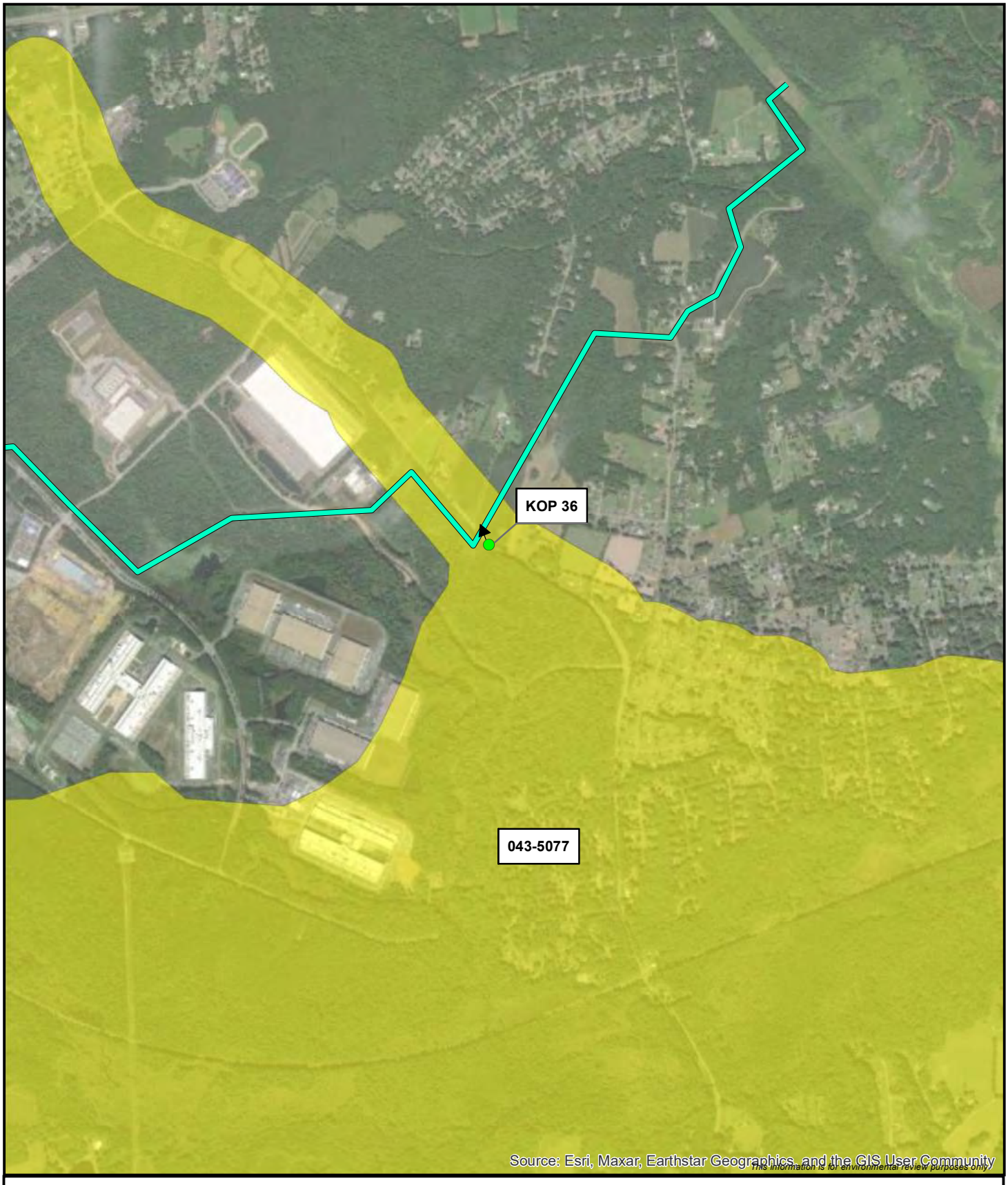


Figure 6. Aerial photograph depicting land use and photo view for 043-5077.



Existing View



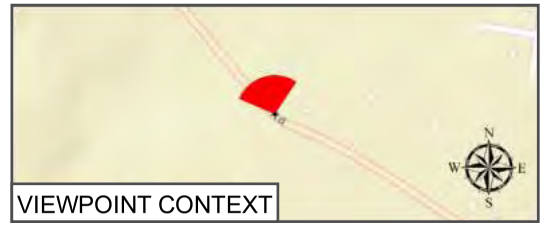
Proposed View - Visible

Dominion Energy

ERM

Viewpoint Location UTM Zone 18S:	303767E 4151478N
View Direction:	343 degrees
Viewpoint Elevation:	139 feet
Distance to Development:	356 feet
Horizontal Field of View:	100 degrees

Date of Photography:	24th February 2023 10:05
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	59 inches



VIEWPOINT CONTEXT

Figure 7
Viewpoint KOP 36 - Route 1
Elko Rd NW of White Oak Rd
043-5077

Pre-Application Analysis
White Oak

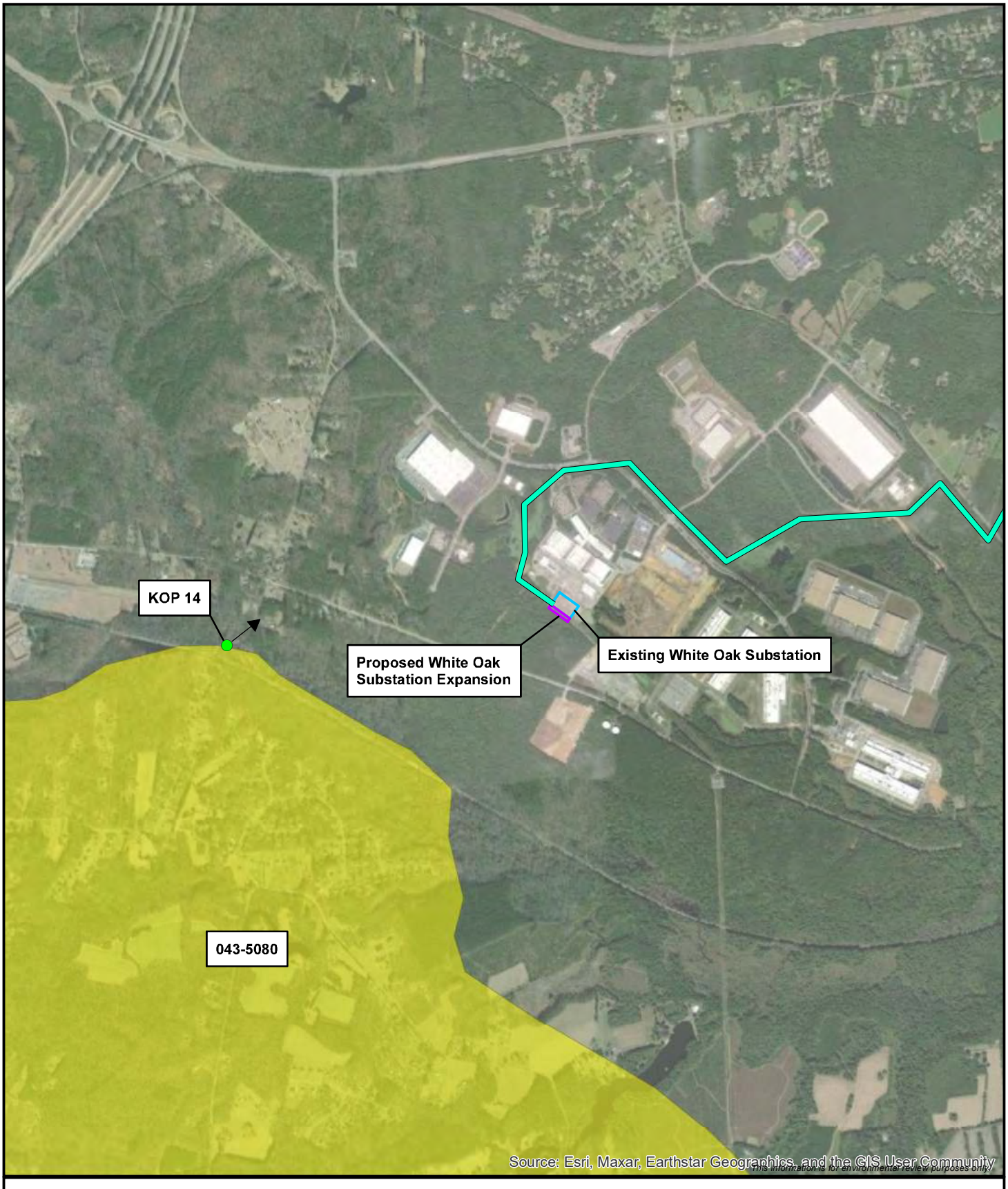


Figure 8. Aerial photograph depicting land use and photo view for 043-5080.



Existing View



Proposed View - Hidden

Dominion Energy

ERM

Viewpoint Location UTM Zone 18S:	299436E 4150996N
View Direction:	50 degrees
Viewpoint Elevation:	129 feet
Distance to Development:	6950 feet
Horizontal Field of View:	90 degrees

Date of Photography:	17th August 2022 09:32
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	57.25 inches



Figure 9
Viewpoint KOP 14 - Route 1
Poplar Spring Rd S of Portugee Rd
043-5080

Pre-Application Analysis
White Oak

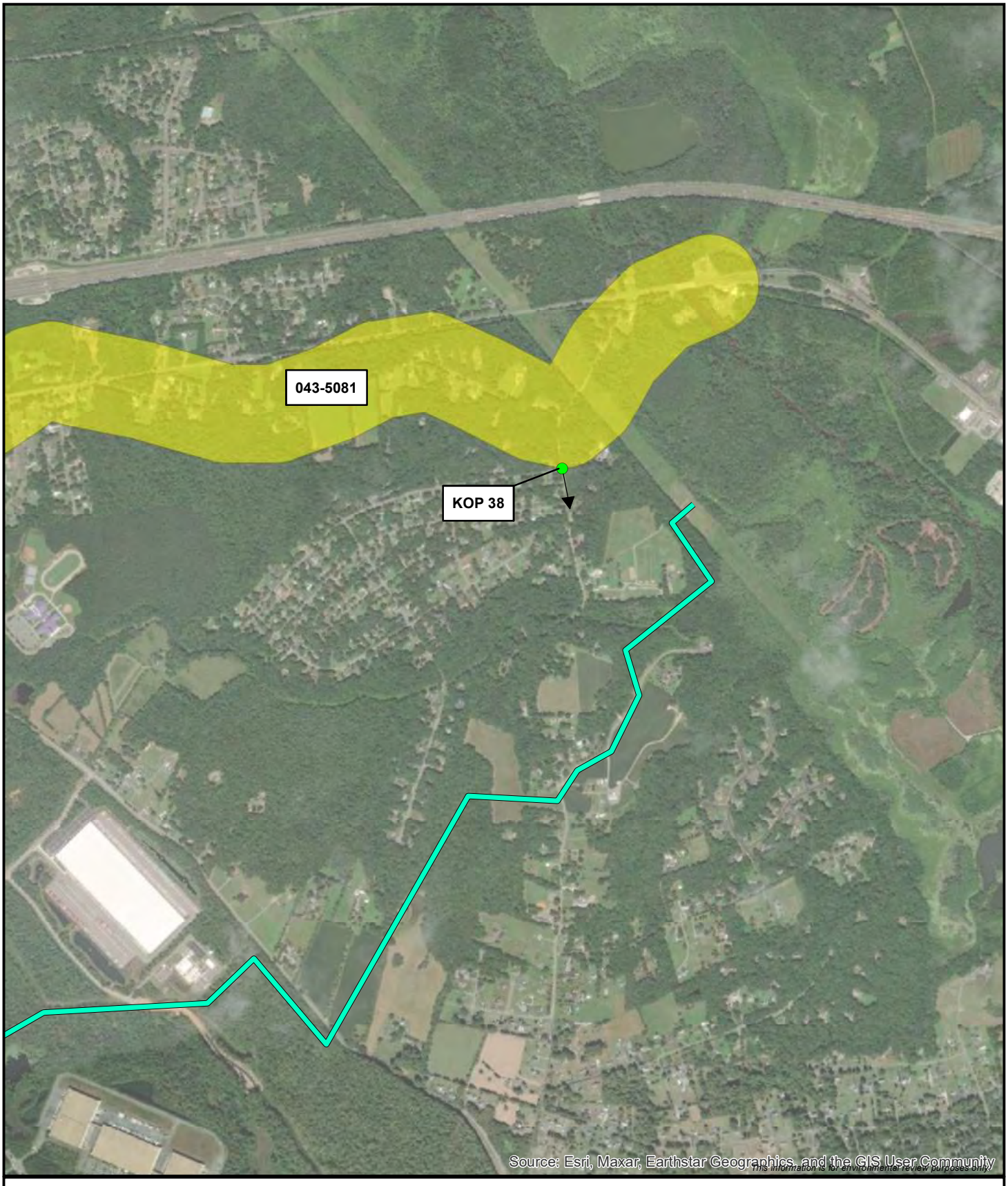


Figure 10. Aerial photograph depicting land use and photo view for 043-5081.



Existing View



Proposed View - Hidden

Dominion Energy

ERM

Viewpoint Location UTM Zone 18S:	304627E 4153592N
View Direction:	167 degrees
Viewpoint Elevation:	76 feet
Distance to Development:	1743 feet
Horizontal Field of View:	89 degrees

Date of Photography:	24th February 2023 13:04
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	57.5 inches



VIEWPOINT CONTEXT

Figure 11
Viewpoint KOP 38 - Route 1
Eberlys Pl E of White Oak Rd
043-5081

Pre-Application Analysis
White Oak

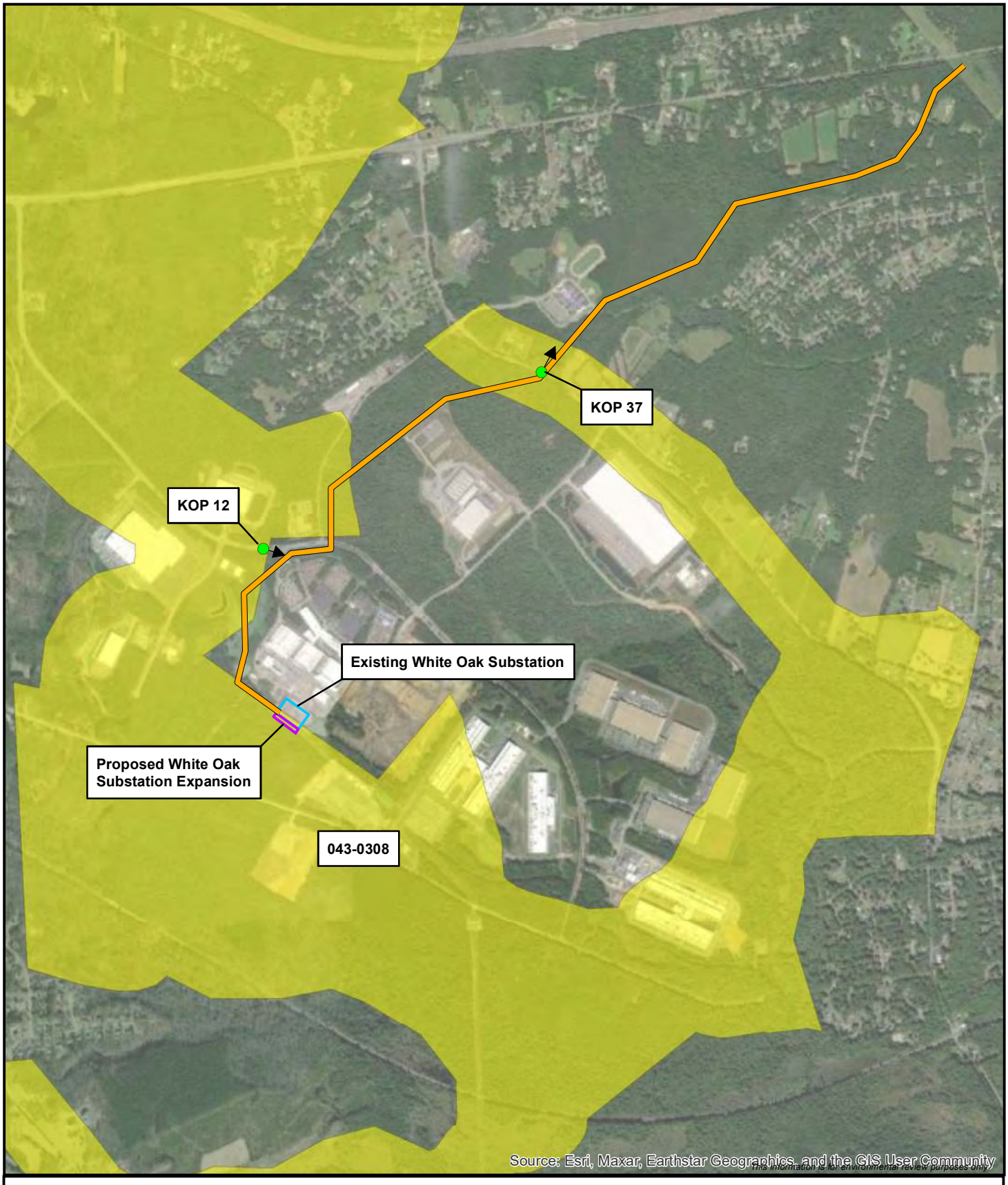
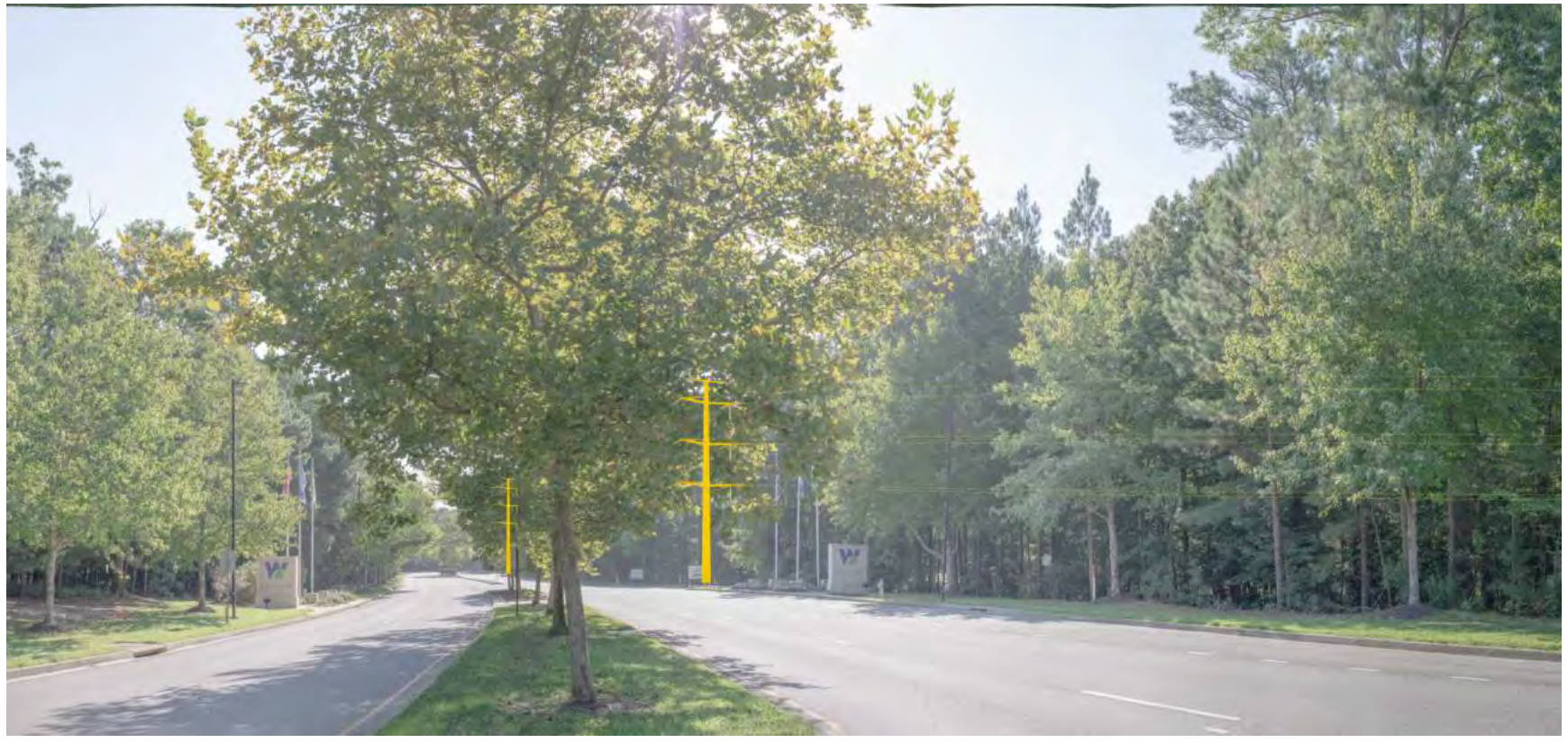


Figure 12. Aerial photograph depicting land use and photo view for 043-0308.



Existing View



Proposed View - Hidden

Dominion Energy

ERM

Viewpoint Location UTM Zone 18S:	301209E 4151948N
View Direction:	150 degrees
Viewpoint Elevation:	149 feet
Distance to Development:	1189 feet
Horizontal Field of View:	90 degrees

Date of Photography:	17th August 2022 09:05
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	58 inches



VIEWPOINT CONTEXT

Figure 13
Viewpoint KOP 12 - Route 2
Technology Blvd E of Techpark Pl
043-0308

Pre-Application Analysis
White Oak



Existing View



Proposed View - Visible

Dominion Energy

ERM

Viewpoint Location UTM Zone 18S:	302534E 4152741N
View Direction:	30 degrees
Viewpoint Elevation:	136 feet
Distance to Development:	0 feet
Horizontal Field of View:	89 degrees

Date of Photography:	24th February 2023 10:36
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	63 inches



VIEWPOINT CONTEXT

Figure 14
Viewpoint KOP 37 - Route 2
Elko Rd SE of Elko School Rd
043-0308

Pre-Application Analysis
White Oak



Figure 15. Aerial photograph depicting land use and photo view for 043-5077.



Existing View



Proposed View - Visible

Dominion Energy

ERM

Viewpoint Location UTM Zone 18S:	302534E 4152741N
View Direction:	30 degrees
Viewpoint Elevation:	136 feet
Distance to Development:	0 feet
Horizontal Field of View:	89 degrees

Date of Photography:	24th February 2023 10:36
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	63 inches



VIEWPOINT CONTEXT

Figure 16
Viewpoint KOP 37 - Route 2
Elko Rd SE of Elko School Rd
043-5077

Pre-Application Analysis
White Oak

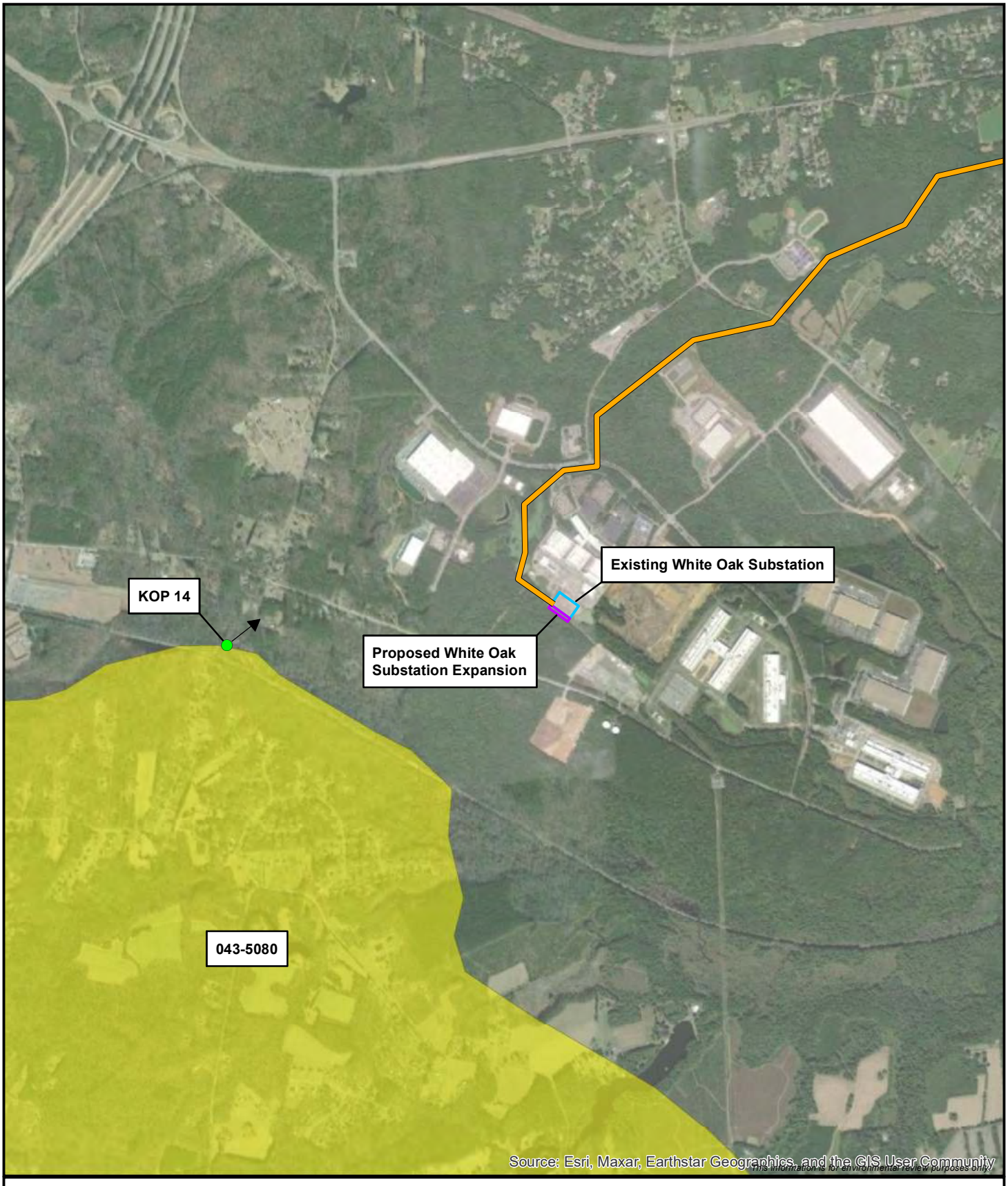


Figure 17. Aerial photograph depicting land use and photo view for 043-5080.



Existing View



Proposed View - Hidden

Viewpoint Location UTM Zone 18S:	299436E 4150996N
View Direction:	50 degrees
Viewpoint Elevation:	129 feet
Distance to Development:	6950 feet
Horizontal Field of View:	90 degrees

Date of Photography:	17th August 2022 09:32
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	57.25 inches



Figure 18
Viewpoint KOP 14 - Route 2
Poplar Spring Rd S of Portugee Rd
043-5080

Pre-Application Analysis
White Oak

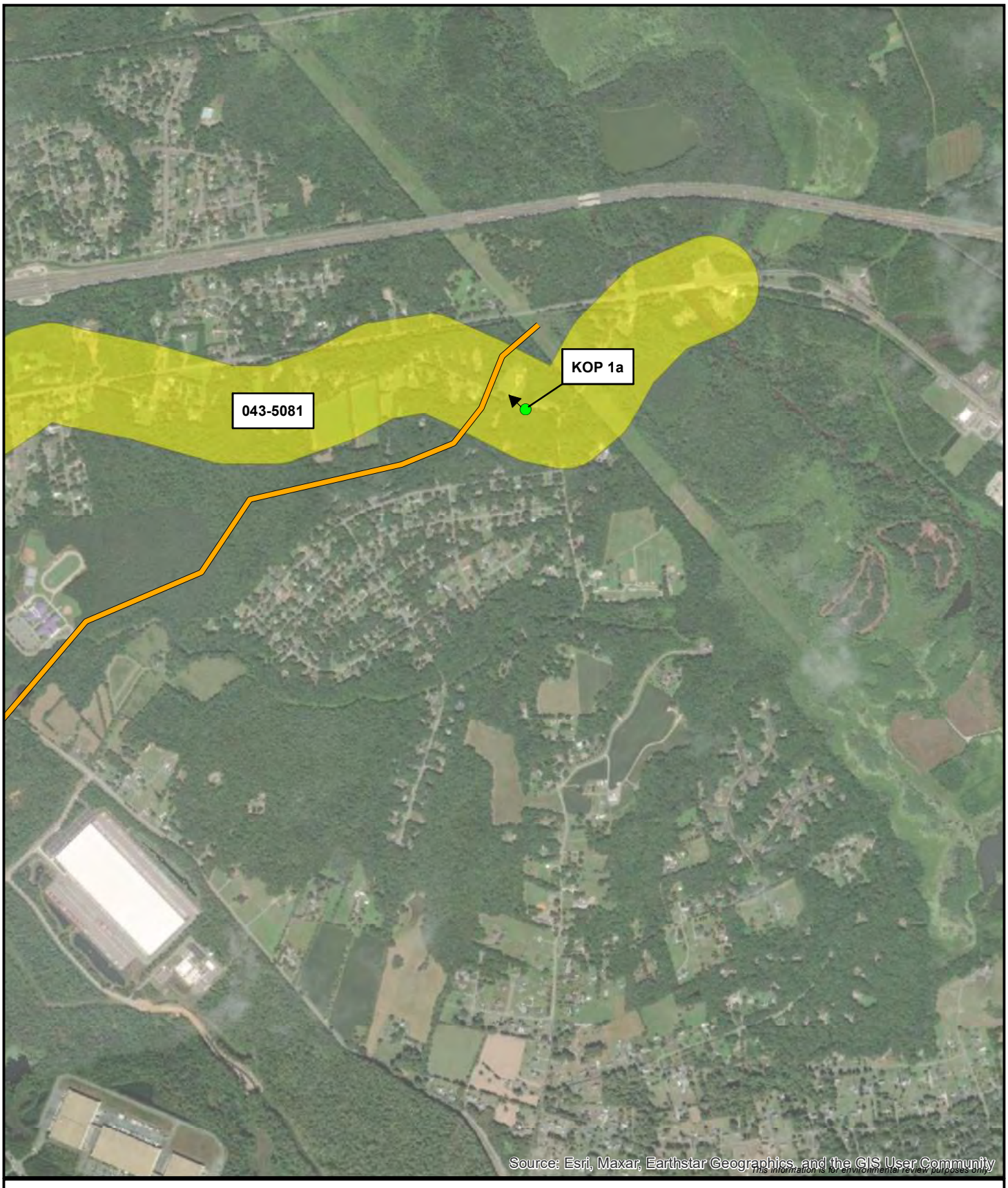


Figure 19. Aerial photograph depicting land use and photo view for 043-5081.



Existing View



Proposed View - Hidden

Viewpoint Location UTM Zone 18S:	304496E 4153815N
View Direction:	315 degrees
Viewpoint Elevation:	73 feet
Distance to Development:	575 feet
Horizontal Field of View:	90 degrees

Date of Photography:	16th August 2022 10:25
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	57.5 inches



VIEWPOINT CONTEXT

Figure 20
Viewpoint KOP 1a - Route 2
Old Williamsburg Rd W of White Oak Rd
043-0308

Pre-Application Analysis
White Oak

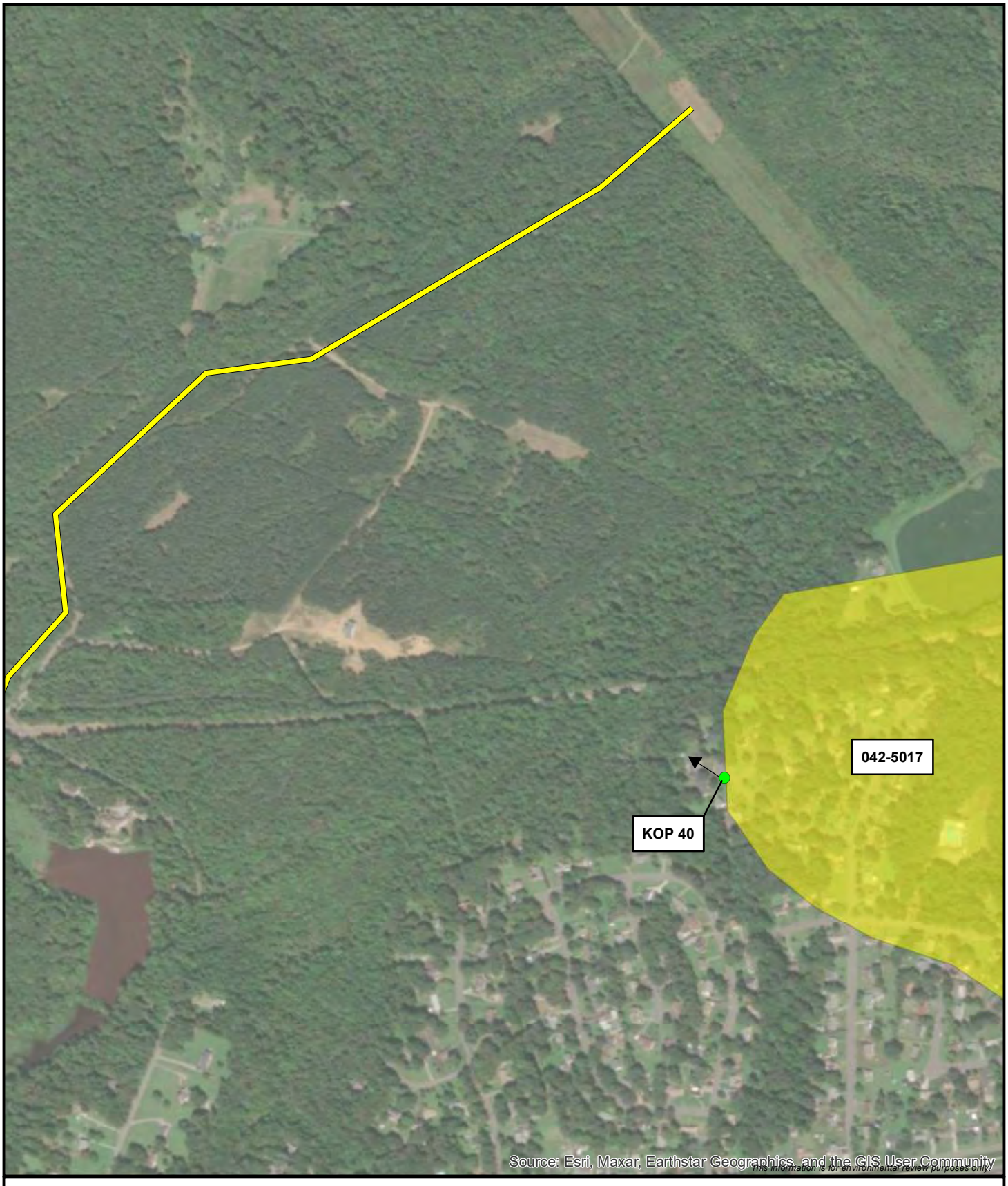


Figure 21. Aerial photograph depicting land use and photo view for 042-5017.



Existing View



Proposed View - Hidden

Dominion Energy

ERM

Viewpoint Location UTM Zone 18S:	302994E 4155035N
View Direction:	301 degrees
Viewpoint Elevation:	155 feet
Distance to Development:	3488 feet
Horizontal Field of View:	89 degrees

Date of Photography:	24th February 2023 11:07
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	61 inches



VIEWPOINT CONTEXT

Figure 22
Viewpoint KOP 40 - Route 3
Booth Dr N of Rollingview Dr
042-5017

Pre-Application Analysis
White Oak



Figure 23. Aerial photograph depicting land use and photo view for 043-0078.



Existing View



Proposed View - Visible

Dominion Energy

ERM

Viewpoint Location UTM Zone 18S:	300535E 4154416N
View Direction:	99 degrees
Viewpoint Elevation:	155 feet
Distance to Development:	213 feet
Horizontal Field of View:	89 degrees

Date of Photography:	24th February 2023 17:12
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	60.5 inches



VIEWPOINT CONTEXT

Figure 24
Viewpoint KOP 41 - Route 3
Old Williamsburg Rd W of Wendy Ln
043-0078

Pre-Application Analysis
White Oak

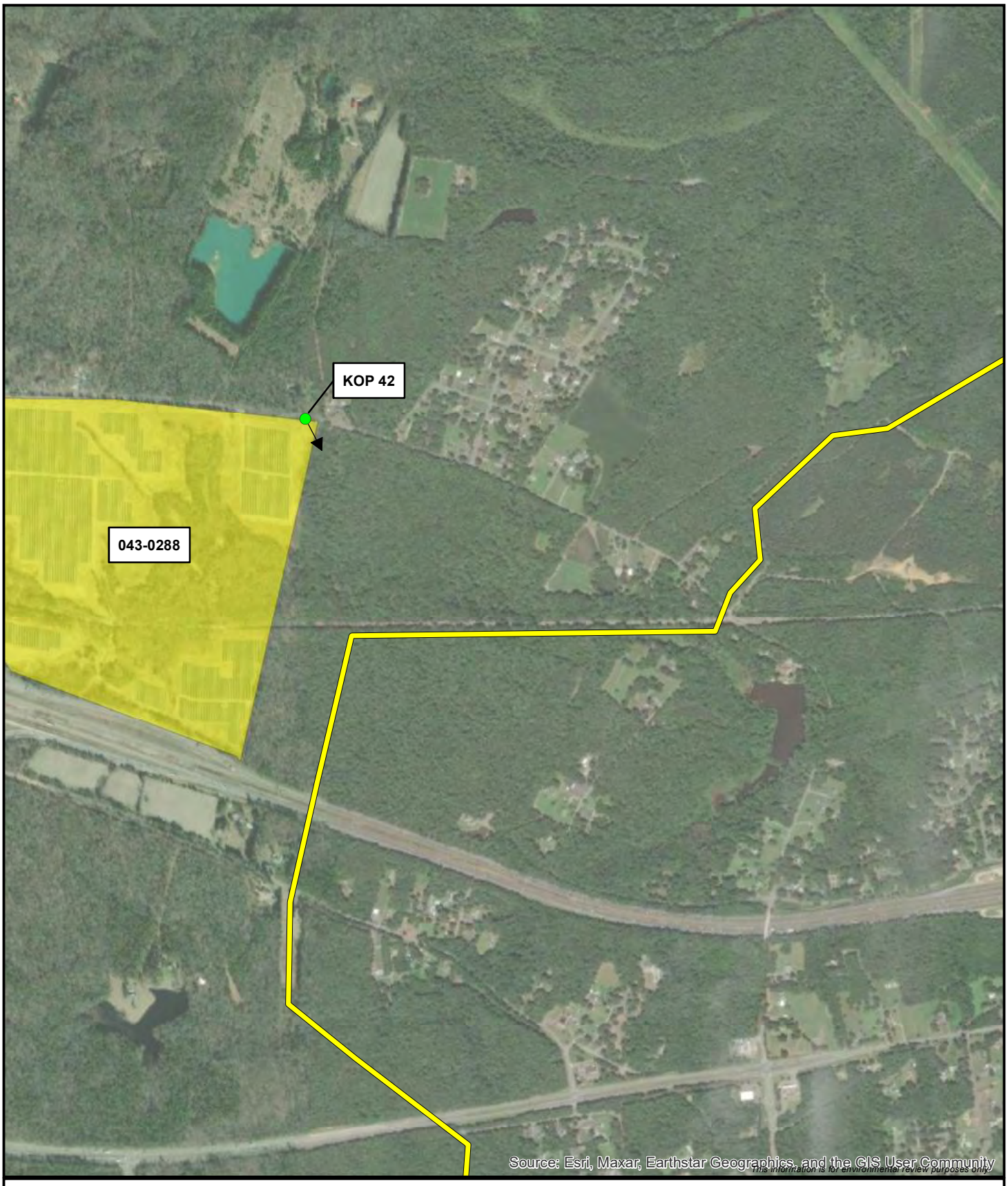
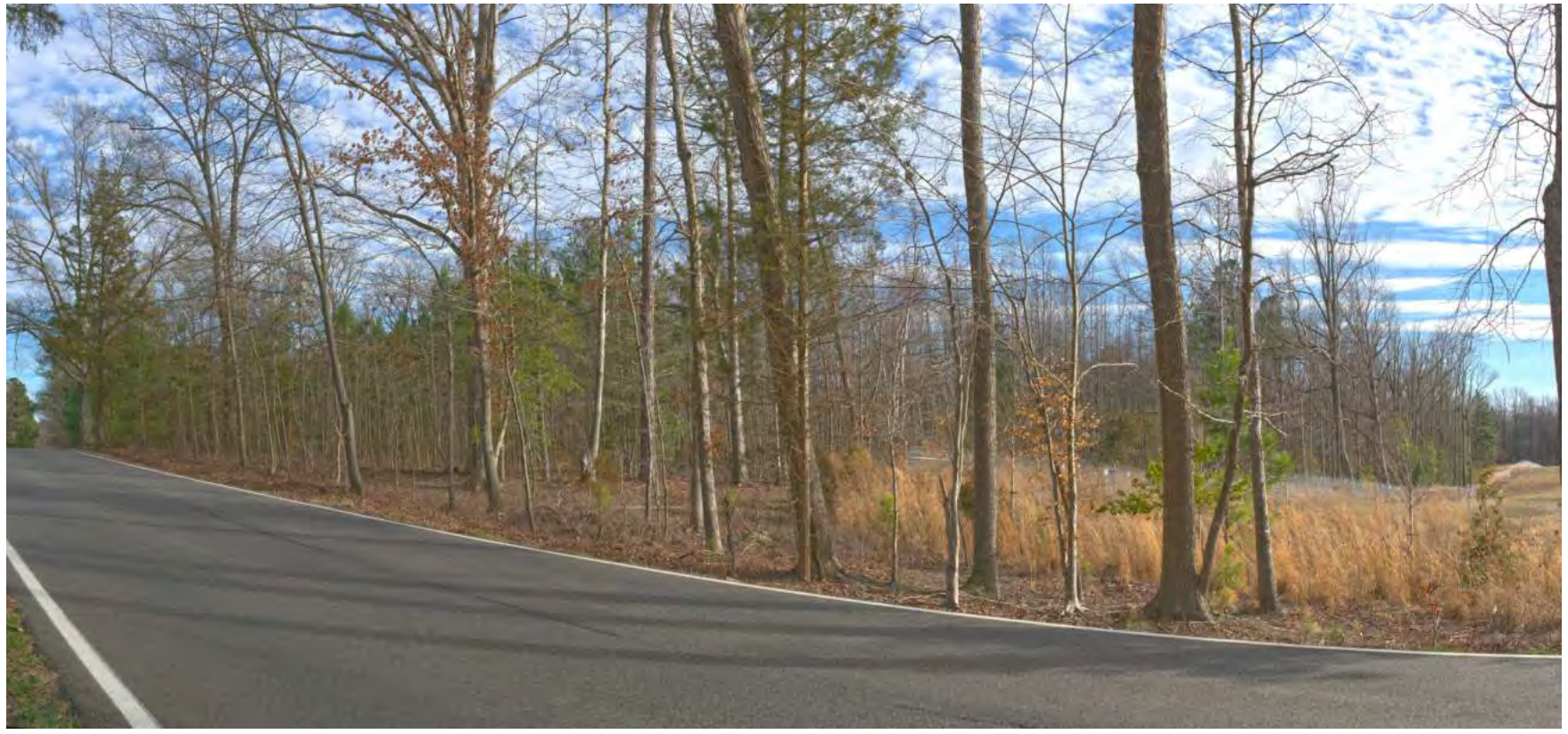
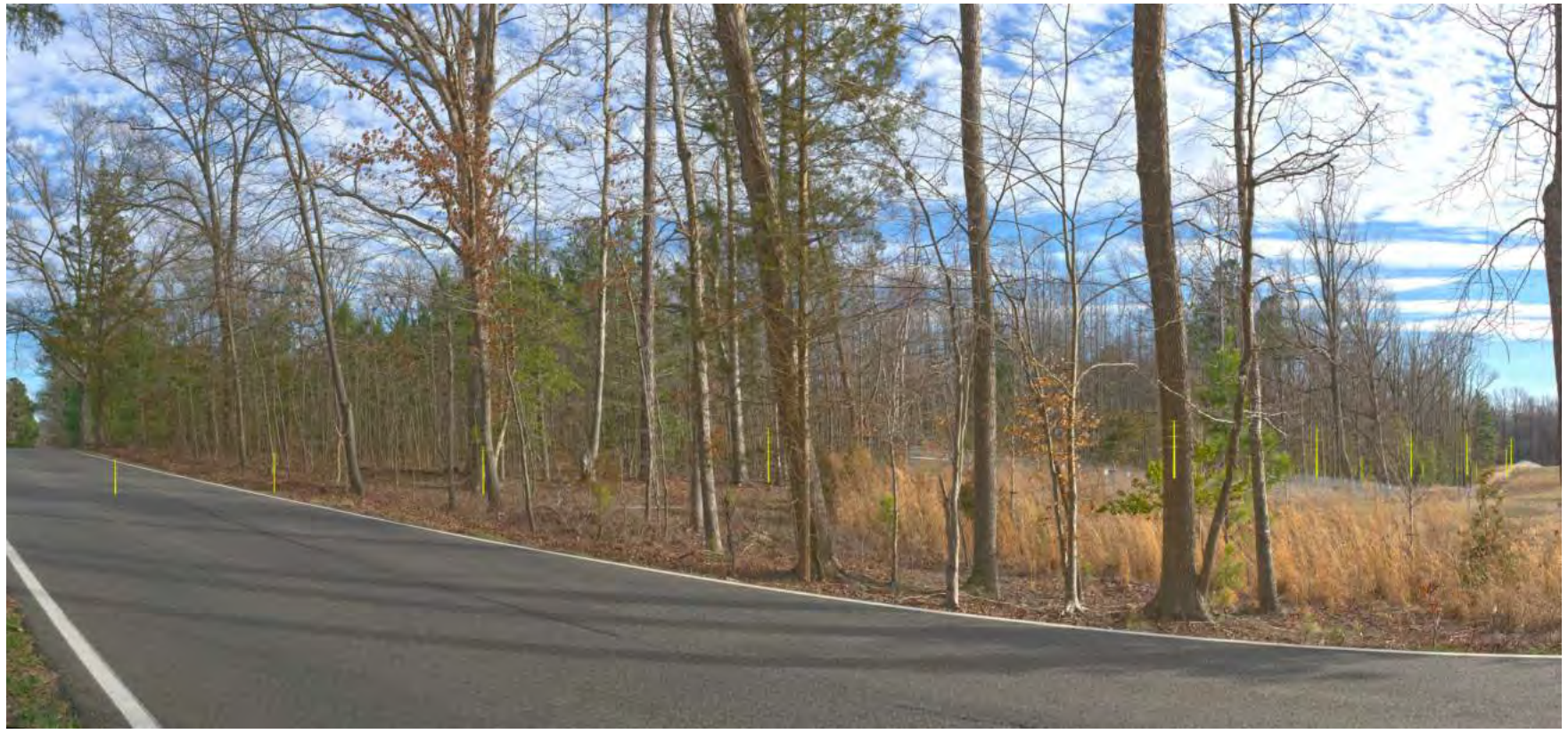


Figure 25. Aerial photograph depicting land use and photo view for 043-0288.



Existing View



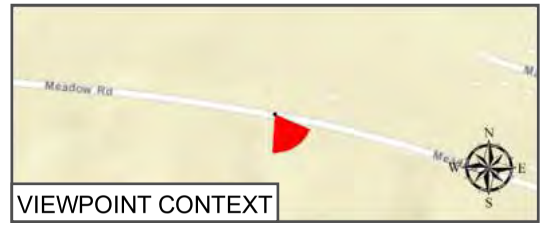
Proposed View - Hidden

Dominion Energy

ERM

Viewpoint Location UTM Zone 18S:	300671E 4155753N
View Direction:	148 degrees
Viewpoint Elevation:	133 feet
Distance to Development:	2591 feet
Horizontal Field of View:	70 degrees

Date of Photography:	24th February 2023 15:48
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	58 inches



VIEWPOINT CONTEXT

Figure 26
Viewpoint KOP 42 - Route 3
Meadow Rd W of Candlewood Ln
043-0288

Pre-Application Analysis
White Oak

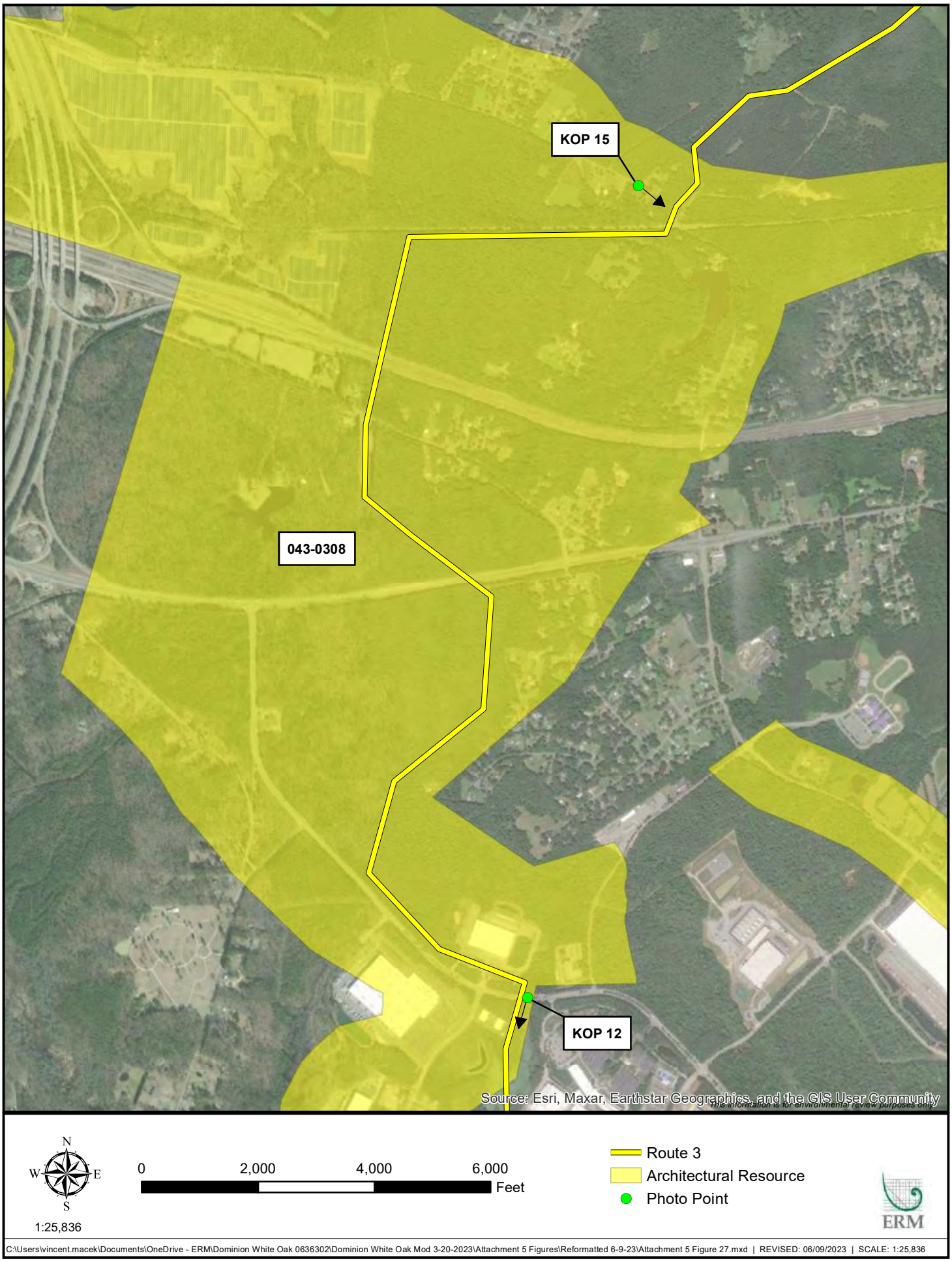


Figure 27. Aerial photograph depicting land use and photo view for 043-0308.



Existing View



Proposed View - Hidden

Dominion Energy

ERM

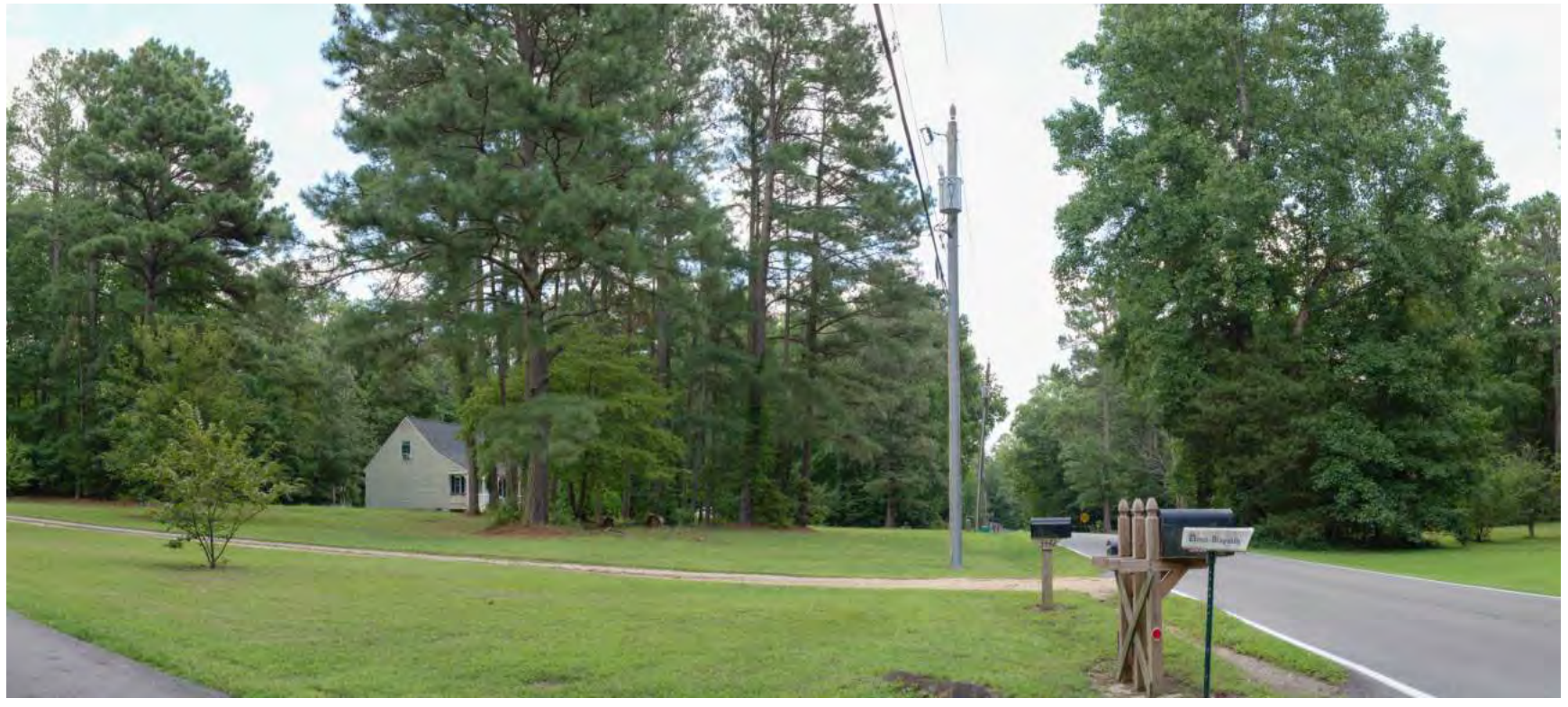
Viewpoint Location UTM Zone 18S:	301209E 4151948N
View Direction:	150 degrees
Viewpoint Elevation:	146 feet
Distance to Development:	97 feet
Horizontal Field of View:	90 degrees

Date of Photography:	17th August 2022 09:05
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	58 inches

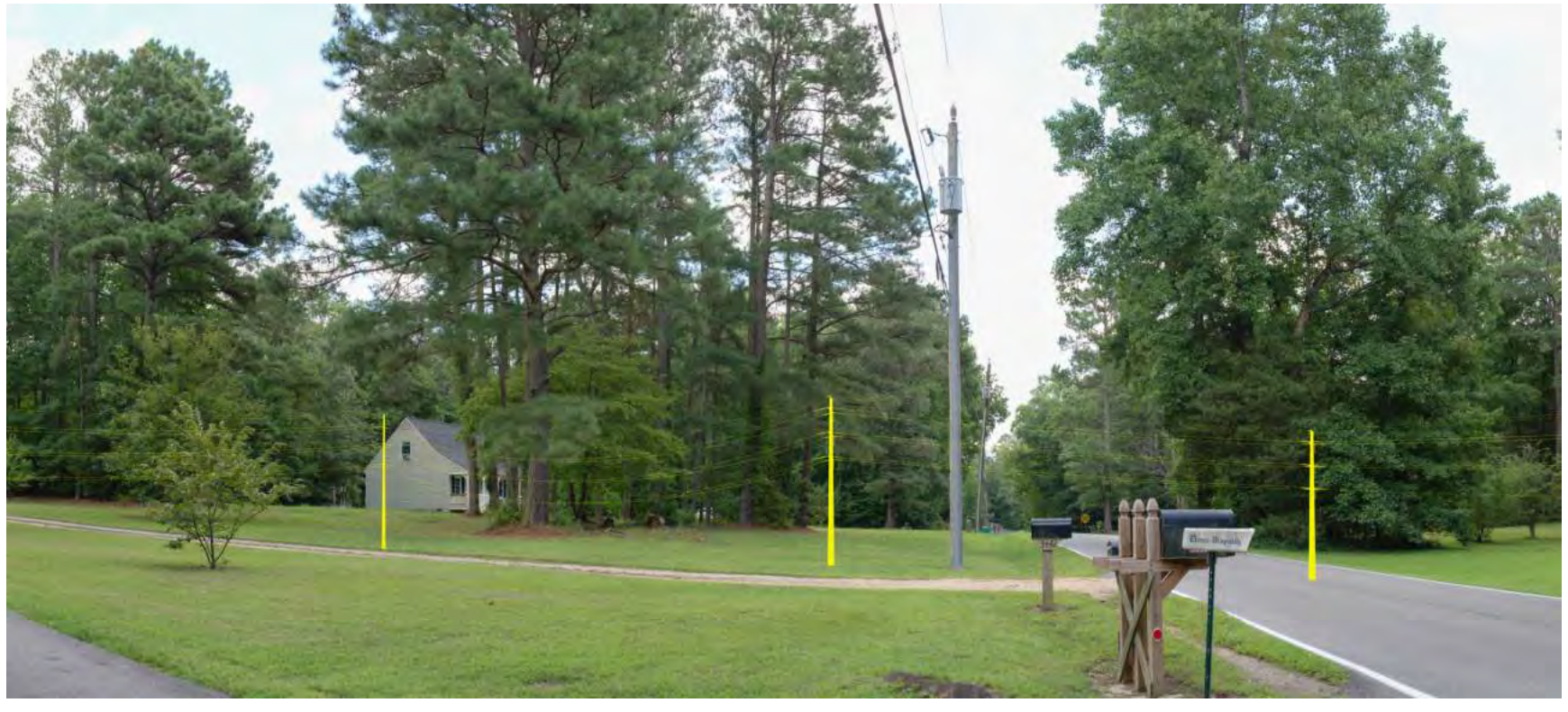


Figure 28
Viewpoint KOP 12 - Route 3
Technology Blvd E of Techpark Pl
043-0308

Pre-Application Analysis
White Oak



Existing View



Proposed View - Hidden

Viewpoint Location UTM Zone 18S:	301753E 4155305N
View Direction:	200 degrees
Viewpoint Elevation:	128 feet
Distance to Development:	668 feet
Horizontal Field of View:	90 degrees

Date of Photography:	17th August 2022 11:38
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	60.25 inches



VIEWPOINT CONTEXT

Figure 29
Viewpoint KOP 15 - Route 3
Meadow Rd at Crib Ln
043-0308

Pre-Application Analysis
White Oak

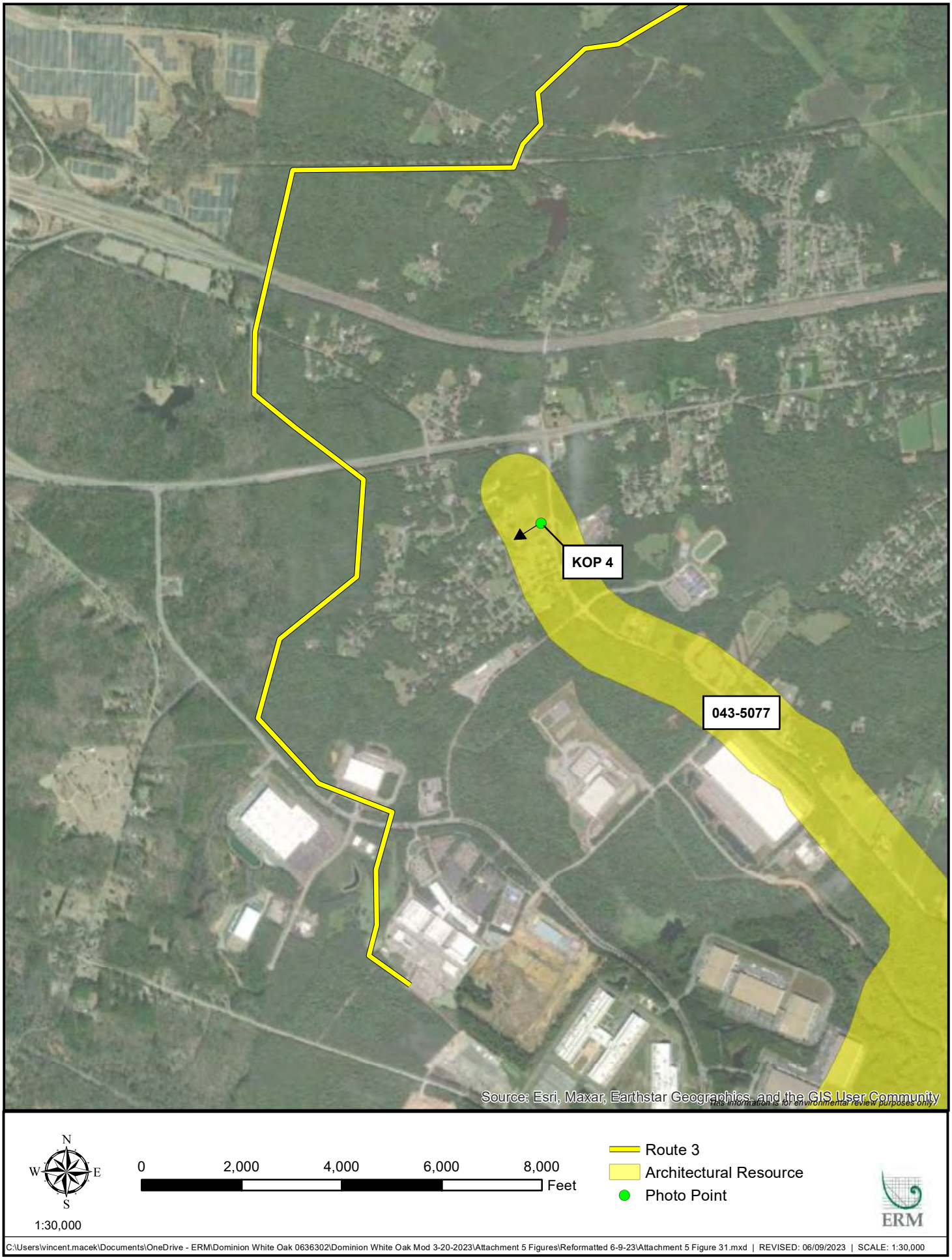


Figure 30. Aerial photograph depicting land use and photo view for 043-5077.



Existing View



Proposed View - Hidden

Viewpoint Location UTM Zone 18S:	301951E 4153388N
View Direction:	0 degrees
Viewpoint Elevation:	159 feet
Distance to Development:	3511 feet
Horizontal Field of View:	90 degrees

Date of Photography:	17th August 2022 12:05
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	59 inches



VIEWPOINT CONTEXT

Figure 31
Viewpoint KOP 4 - Route 3
Old Elko Rd N of Ruritan Ln
043-5077

Pre-Application Analysis
White Oak

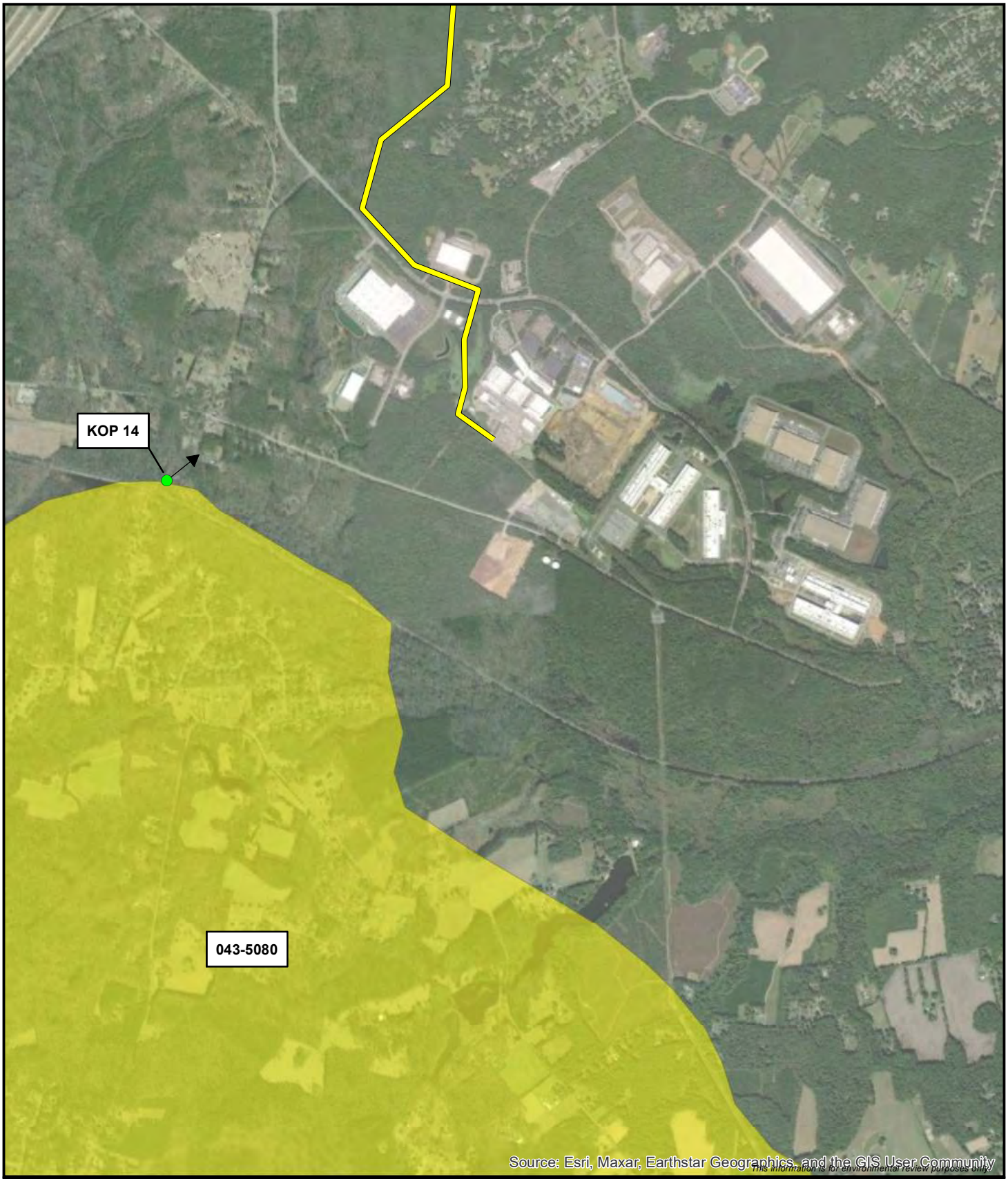


Figure 32. Aerial photograph depicting land use and photo view for 043-5080.



Existing View



Proposed View - Hidden

Viewpoint Location UTM Zone 18S:	299436E 4150996N
View Direction:	50 degrees
Viewpoint Elevation:	129 feet
Distance to Development:	6950 feet
Horizontal Field of View:	90 degrees

Date of Photography:	17th August 2022 09:32
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	57.25 inches



Figure 33
Viewpoint KOP 14 - Route 3
Poplar Spring Rd S of Portugee Rd
043-5080

Pre-Application Analysis
White Oak

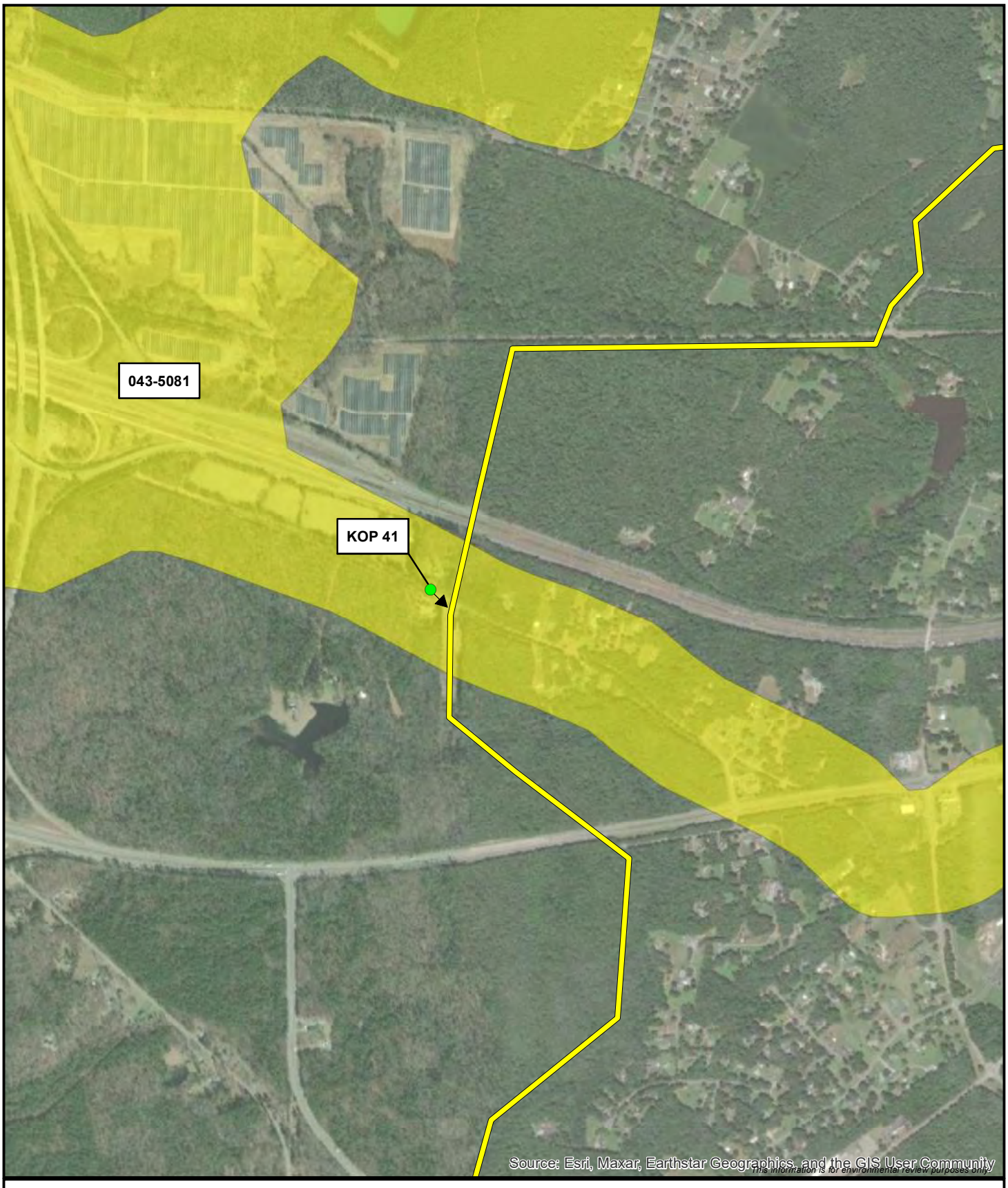


Figure 34. Aerial photograph depicting land use and photo view for 043-5081.



Existing View



Proposed View - Visible

Viewpoint Location UTM Zone 18S:	300535E 4154416N
View Direction:	99 degrees
Viewpoint Elevation:	155 feet
Distance to Development:	213 feet
Horizontal Field of View:	89 degrees

Date of Photography:	24th February 2023 17:12
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	60.5 inches



VIEWPOINT CONTEXT

Figure 35
Viewpoint KOP 41 - Route 3
Old Williamsburg Rd W of Wendy Ln
043-0078

Pre-Application Analysis
White Oak

GOOGLE EARTH RENDERINGS FOR WHITE OAK LINES

Route 2

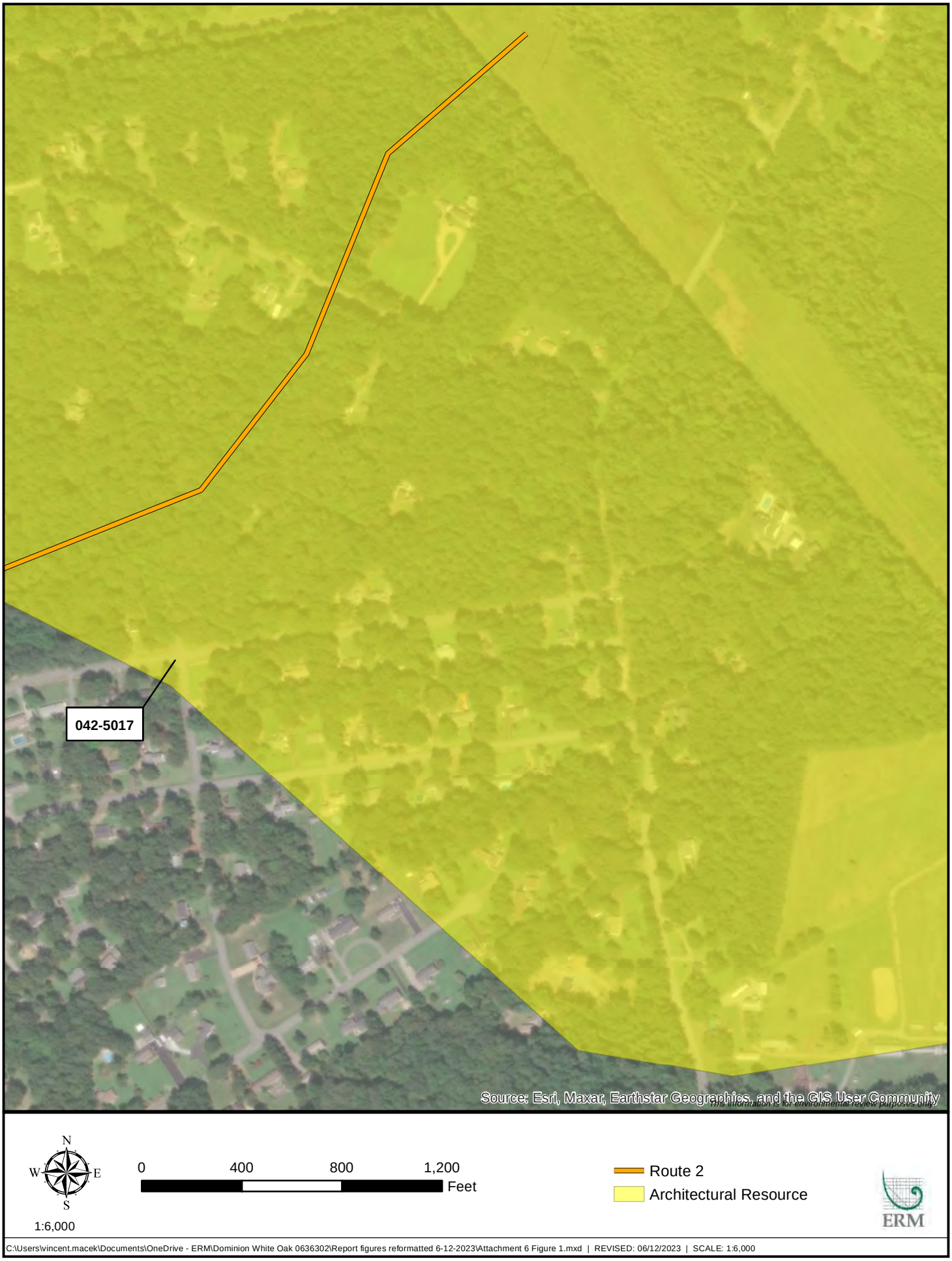


Figure 1. Aerial photograph depicting land use for 042-5017.



Figure 2. Aerial photograph depicting land use for 043-5081.



Existing View



Proposed View

Figure 3. GoogleEarth rendering showing the relationship between Route 2 and 042-5017/043-5081.

GOOGLE EARTH RENDERINGS FOR WHITE OAK LINE

Route 3

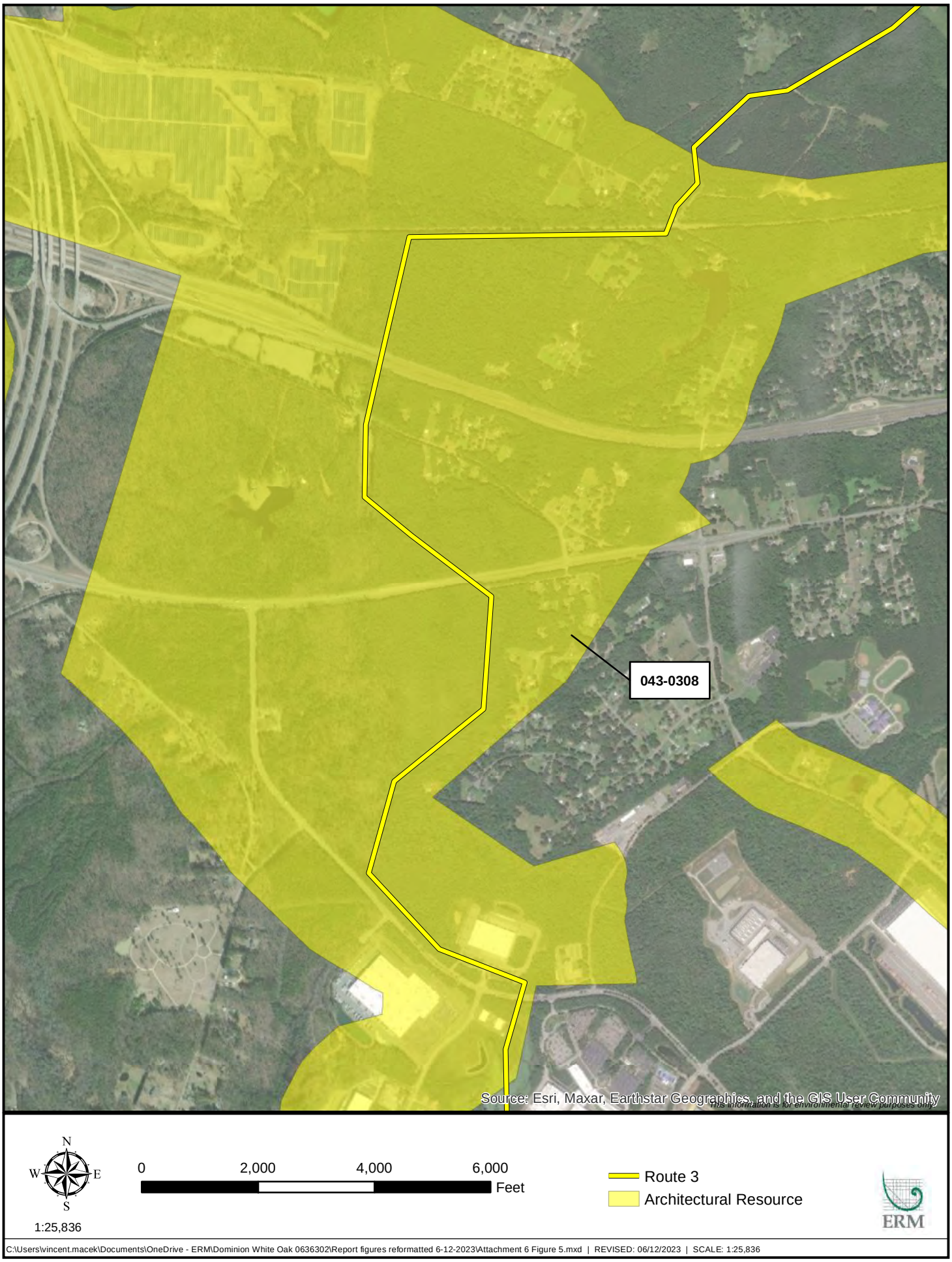


Figure 4. Aerial photograph depicting land use for 043-0308.



Existing View



Proposed View

Figure 5. GoogleEarth rendering showing the relationship between Route 3 and 043-0308.

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.

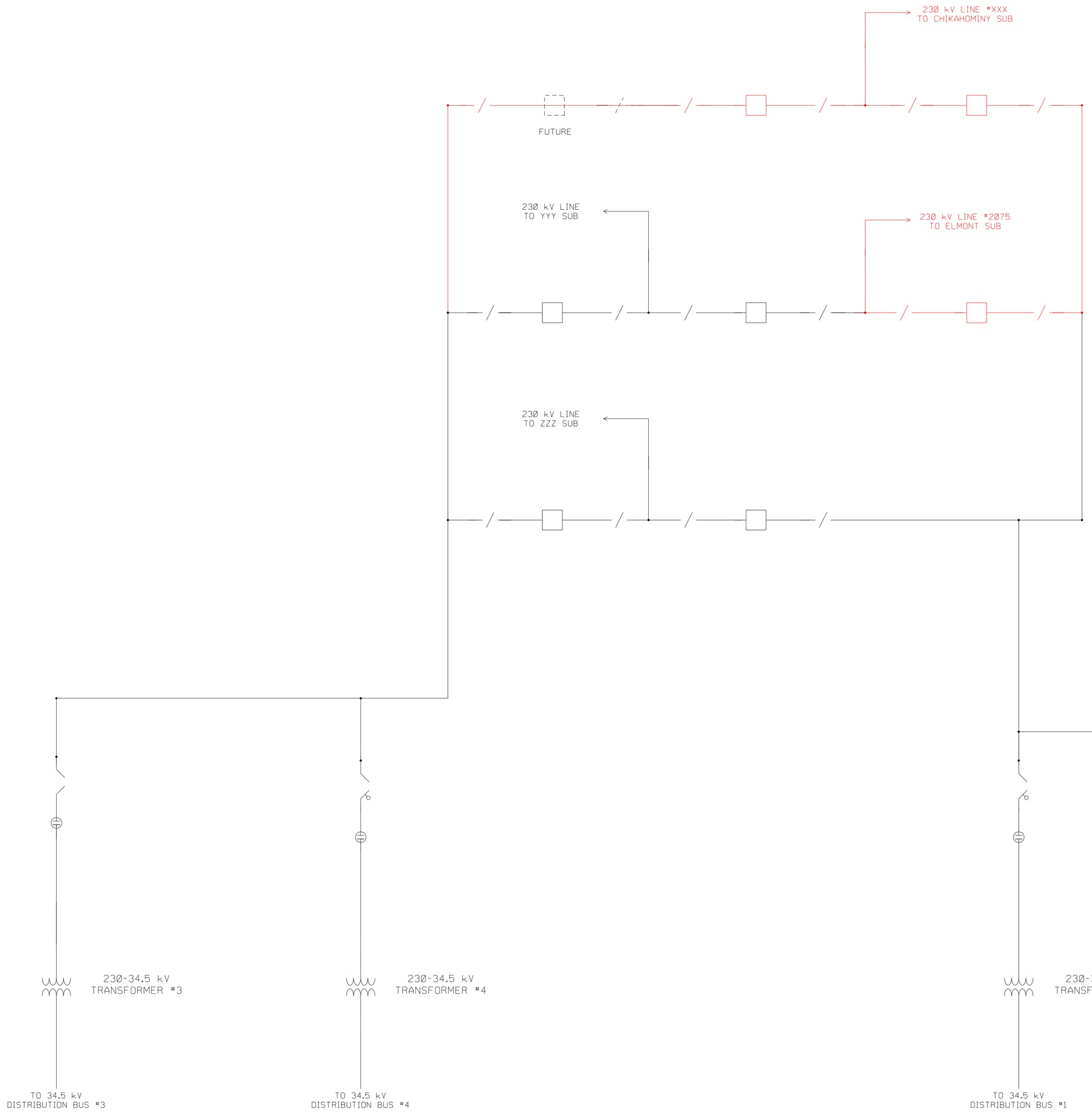
Response: The proposed Project requires expanding the Company's existing White Oak Substation in order to accommodate termination of the proposed White Oak Lines.

Specifically, the proposed White Oak Substation Expansion will include installation of three 230 kV 4000 A breakers to create an 8-breaker hybrid breaker-and-a-half arrangement.[33] The expanded White Oak Substation will be designed to accommodate future load growth in the area. The Company will acquire 0.7 acre to accommodate the expansion, resulting in a total of 3.45 acres for the White Oak Substation once expanded.

The one-line diagram and general arrangement for the proposed White Oak Substation Expansion are provided as Attachment II.C.1 and Attachment II.C.2, respectively.

Additionally, as part of the Project, the Company will perform line protection resets at the Company's existing Chickahominy and Elmont Substations.

[33] A typical breaker-and-a-half arrangement requires nine breakers. The expanded White Oak Substation only has space for eight breakers. Accordingly, the configuration is referred to as an 8-breaker ***hybrid*** breaker-and-a-half arrangement.



LEGEND

- CIRCUIT BREAKER
- POWER TREANSFOREMR
- DISCONNECT SWITCH
- DISCONNECT SWITCH WITH MOTOR OPERATOR
- CIRCUIT SWITCHER

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

Attachment II.C.1

178

Bgt	Approval
Date:	
Project No.	
BM No.	
Description	

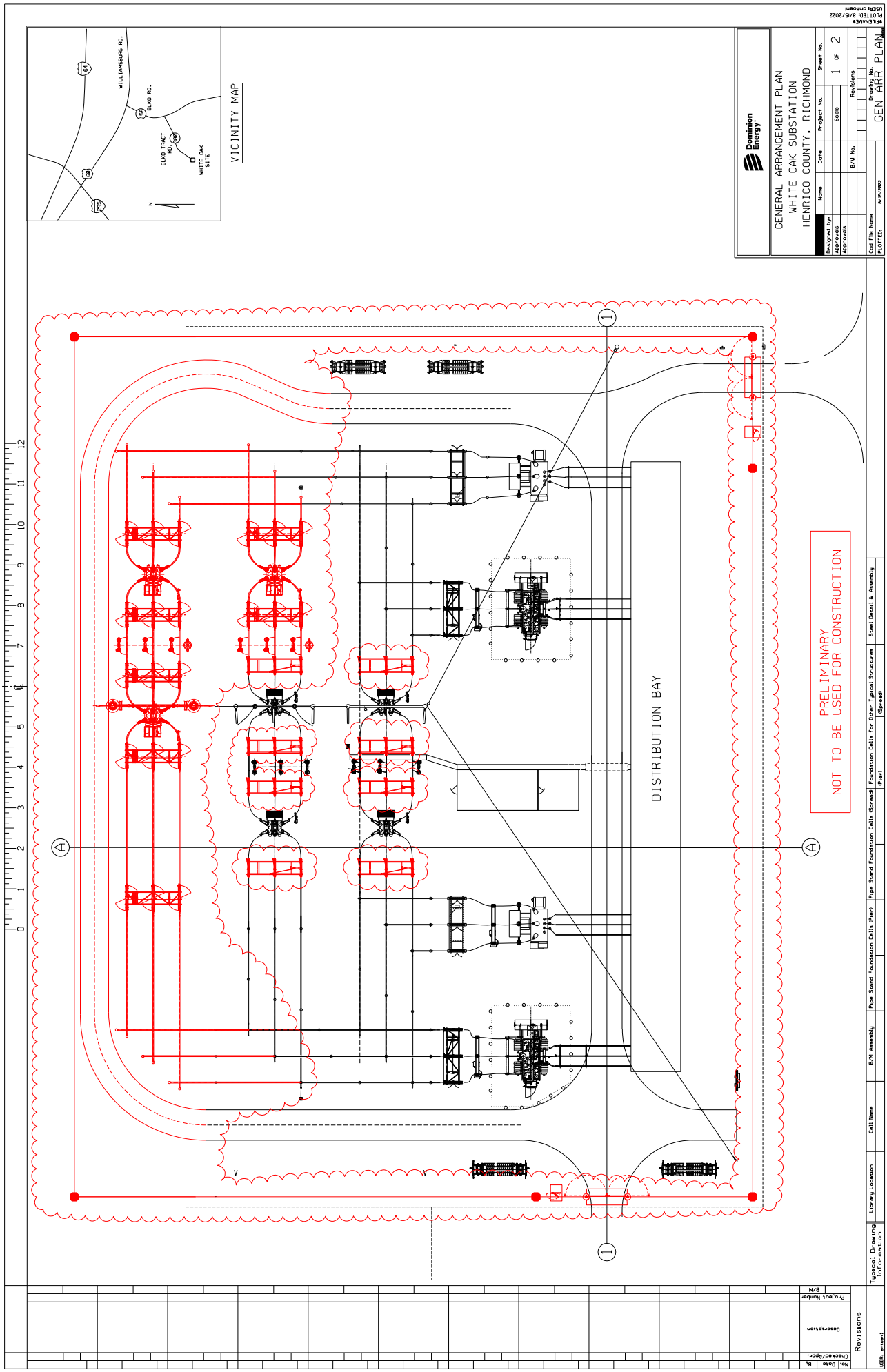
Revisions

USER: antoenl

Dominion Energy

One Line Diagram

Drawn By:	Date 7/21/22	Substation	WHITE OAK SUB
Approval	Date	Drawing No.	II.C.1


VICINITY MAP
WILLIAMSBURG RD.
ELKO RD.
ELKO TRACT RD.
WHITE OAK SITE
GENERAL ARRANGEMENT PLAN
WHITE OAK SUBSTATION
HENRICO COUNTY, RICHMOND
GEN ARR PLAN
DISTRIBUTION BAY
PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

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: **Proposed Route (Route 3)**

The Proposed Route is approximately 4.69 miles in length and is located entirely within Henrico County, extending southwest from a proposed cut-in location on Line #2075 to the expanded White Oak Substation. The Proposed Route crosses mostly undeveloped forested land and a few areas of industrial development near the White Oak Substation. The route crosses low-density residential areas near the I-64 crossing and along the Norfolk Southern Railroad corridor.

According to County parcel data, zoning data, and aerial photo analysis, there are 15 dwellings located within 500 feet of the proposed centerline and one dwelling located within 250 feet of the proposed centerline of the Proposed Route. There are 22 non-residential buildings (*e.g.*, sheds and outbuildings) located within 500 feet of the proposed centerline of the Proposed Route.

See Attachment III.A.1 and Section 2.L of the DEQ Supplement for the estimated amount of farmland and forestland 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 (Section 2.K), wetlands (Section 2.D), forests (Section 2.L), agricultural lands (Section 2.L), historic resources (Section 2.I), and wildlife (Section 2.G).

Alternative Route 1

Alternative Route 1 is approximately 4.19 miles in length and is located entirely within Henrico County, extending southwest from a proposed cut-in location at Line #2075 to the expanded White Oak Substation. Alternative Route 1 crosses primarily industrial, residential, and County-owned lands. Alternative Route 1 crosses areas of some open land, agricultural and pasture lands, forested land, and low-density residential neighborhoods.

According to County parcel data, zoning data, and aerial photo analysis, there are 25 dwellings located within 500 feet of the proposed centerline, five dwellings located within 250 feet of the proposed centerline, and no dwellings located within 100 feet of the proposed centerline or within the right-of-way of Alternative Route 1. There are 45 non-residential buildings (e.g., sheds and outbuildings, commercial building) located within 500 feet of the proposed centerline of Alternative Route 1.

See Attachment III.A.1 and Section 2.L of the DEQ Supplement for the estimated amount of farmland and forestland within the right-of-way that Alternative Route 1 would impact.

For additional description of the character of the area that will be traversed by Alternative Route 1 and the related impacts, see the DEQ Supplement, specifically as to land use (Section 2.K), wetlands (Section 2.D), forests (Section 2.L), agricultural lands (Section 2.L), historic resources (Section 2.I), and wildlife (Section 2.G).

Alternative Route 2

Alternative Route 2 is approximately 3.24 miles in length and is located entirely within Henrico County, extending southwest from a proposed cut-in location on Line #2075 to the expanded White Oak Substation. Alternative Route 2 crosses industrial, residential, forested, and County-owned lands.

According to County parcel data, zoning data, and aerial photo analysis, there are 20 dwellings located within 500 feet of the proposed centerline, four dwellings located within 250 feet of the proposed centerline, and no dwellings located within 100 feet of the proposed centerline or within the right-of-way of Alternative Route 2. There are 16 non-residential buildings (e.g., sheds and outbuildings, commercial building, school) located within 500 feet of the proposed centerline of the route.

See Attachment III.A.1 and Section 2.L of the DEQ Supplement for the estimated amount of farmland and forestland within the right-of-way that Alternative Route 2 would impact.

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

White Oak Substation Expansion

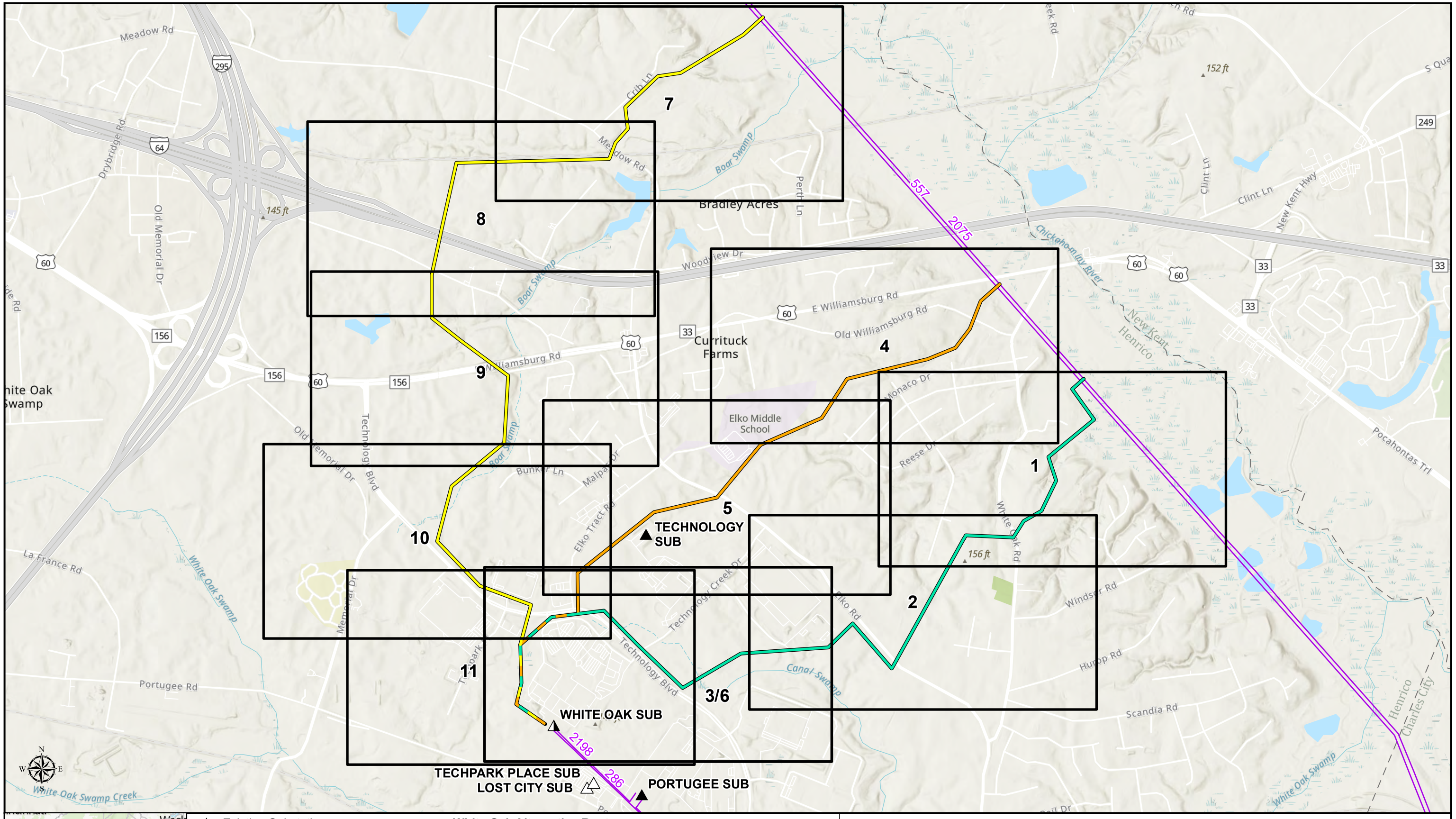
The White Oak Substation Expansion will require an additional approximately 0.7 acre and is located entirely within Henrico County within developed land.

No dwellings or non-residential buildings are located within 500, 250, or 100 feet of the proposed footprint.

See Attachment III.A.1 and Section 2.L of the DEQ Supplement for the estimated amount of farmland and forestland affected by the White Oak Substation Expansion.

For additional description of the character of the area that will be affected by the White Oak Substation Expansion and the related impacts, see the DEQ Supplement,

specifically as to land use (Section 2.K), wetlands (Section 2.D), forests (Section 2.L), agricultural lands (Section 2.L), historic resources (Section 2.I), and wildlife (Section 2.G).

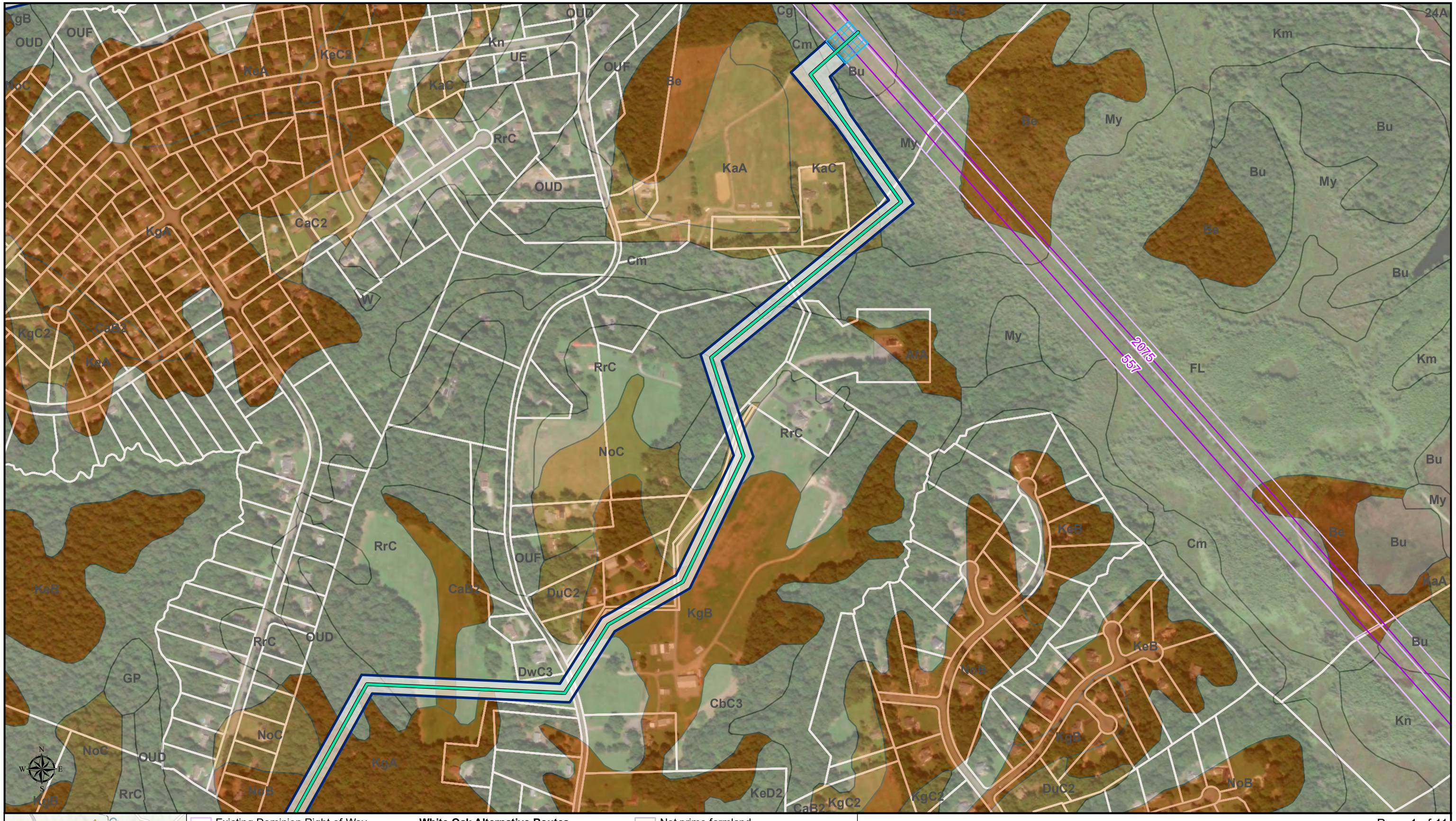


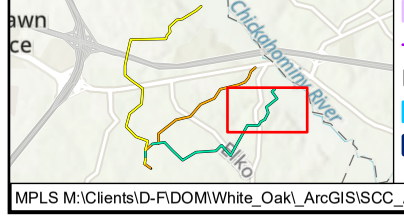
ERM

Attachment III.A.1 Index
Prime Farmland and Farmland of Statewide Importance
White Oak Electric Transmission Project
Dominion Energy Virginia
Henrico County, Virginia

Dominion Energy

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Existing Dominion Right-of-Way
Existing Dominion Transmission Line

Right-of-Way Type
Existing Right-of-Way
Proposed Right-of-Way

White Oak Alternative Routes
Alternative Route 1

SSURGO Soils Farmland Class
All areas are prime farmland
Farmland of statewide importance
Not prime farmland
Parcel Boundary

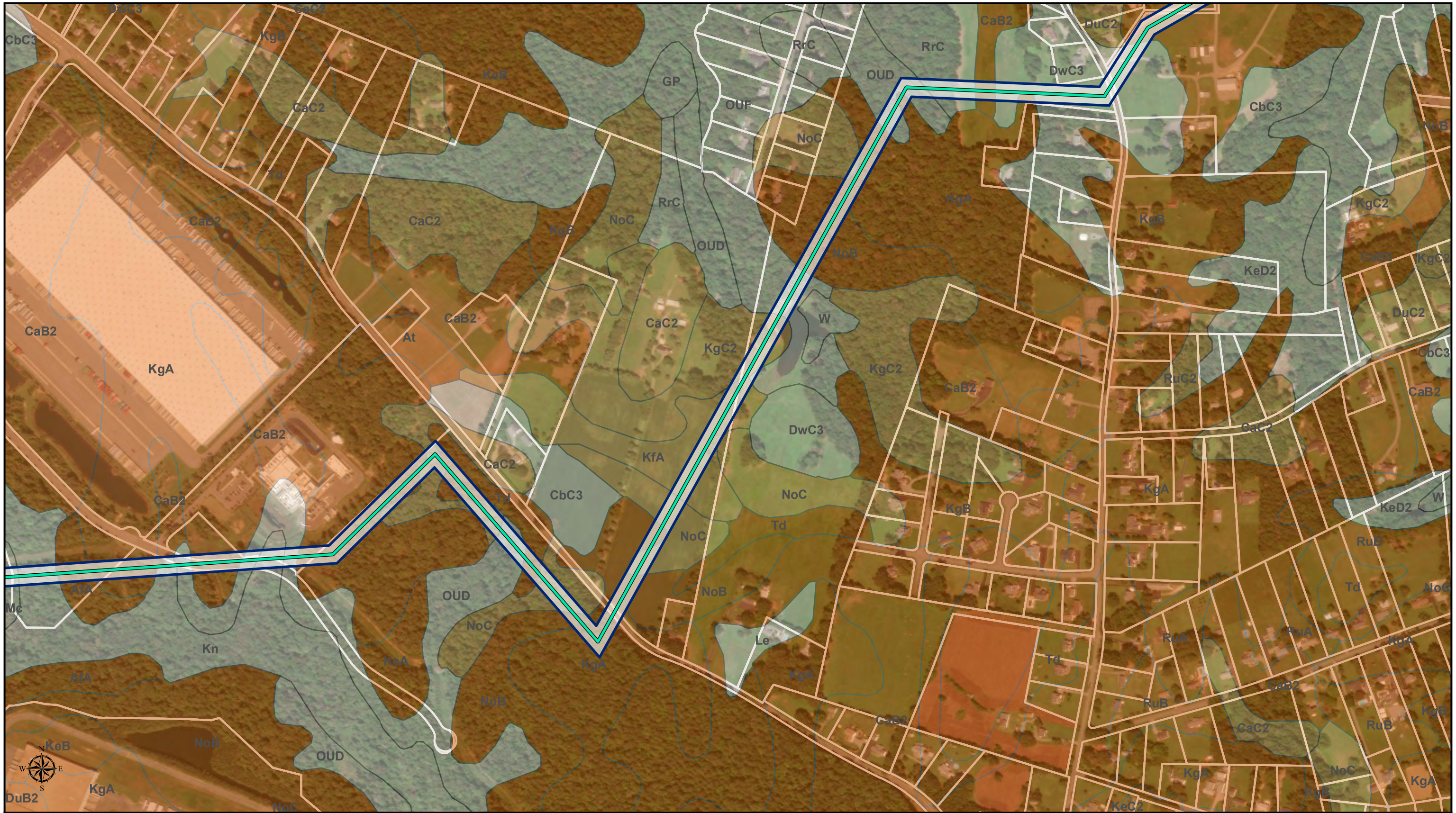
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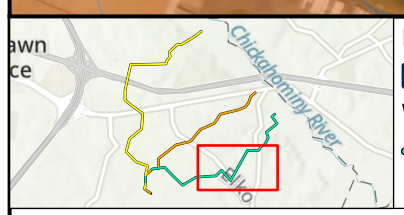
Attachment III.A.1
Prime Farmland and Farmland of Statewide Importance
White Oak Electric Transmission Project
Dominion Energy Virginia
Henrico County, Virginia

ERM

Dominion Energy

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Right-of-Way Type
- Proposed Right-of-Way

White Oak Alternative Routes
- Alternative Route 1

SSURGO Soils Farmland Class
- All areas are prime farmland
- Farmland of statewide importance
- Not prime farmland
- Parcel Boundary

0 250 500
Feet
1:6,000

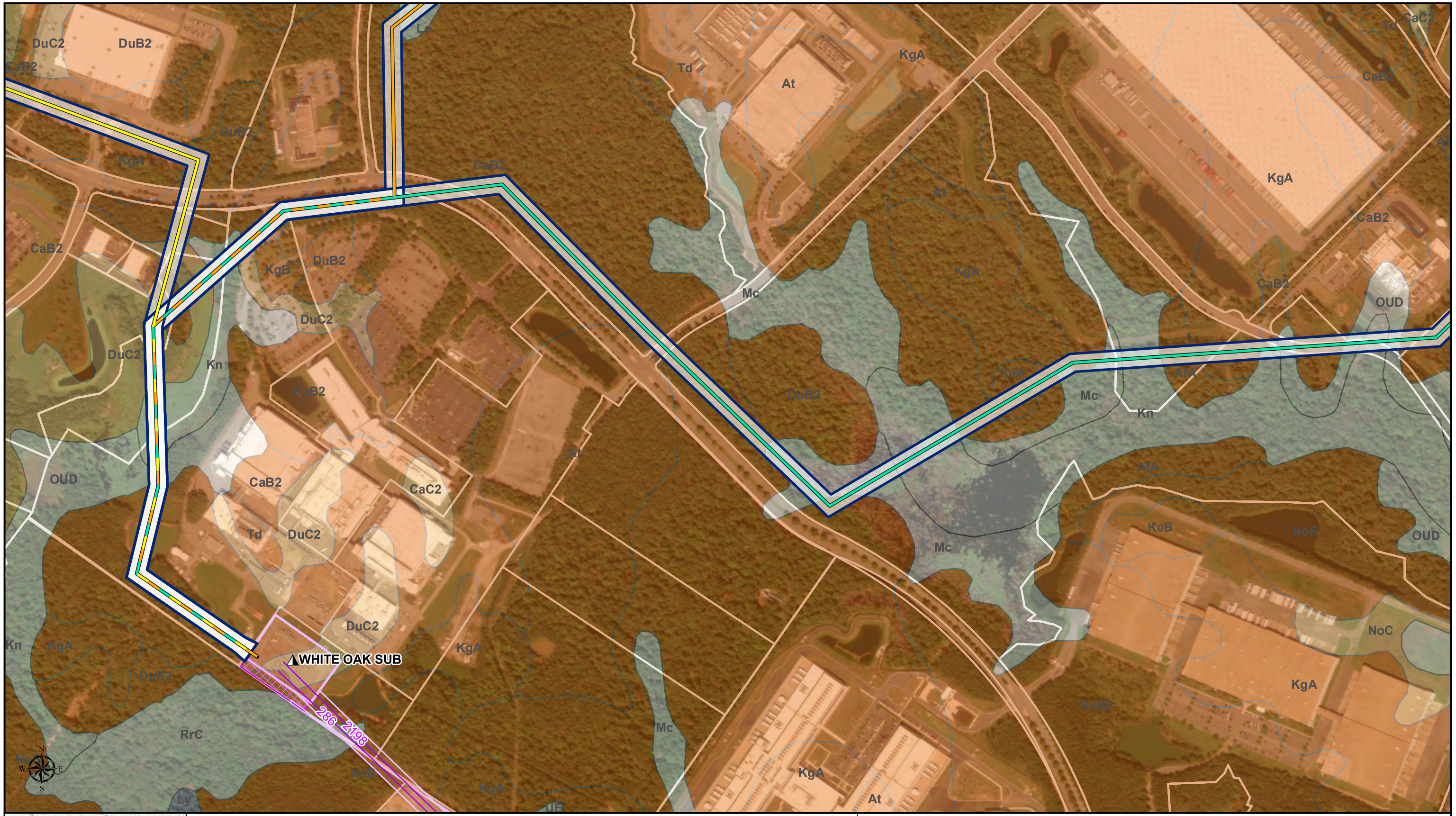
Attachment III.A.1
Prime Farmland and Farmland of Statewide Importance
White Oak Electric Transmission Project
Dominion Energy Virginia
Henrico County, Virginia

ERM

Dominion Energy

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Proposed Substation Expansion
Existing Dominion Right-of-Way
Existing Dominion Transmission Line

White Oak Substation
Proposed White Oak Substation Expansion
Existing White Oak Substation

Right-of-Way Type
Proposed Right-of-Way

White Oak Alternative Routes
Alternative Route 1
Alternative Route 2
Proposed Route (Route 3)

SSURGO Soils Farmland Class
All areas are prime farmland
Prime farmland if drained
Farmland of statewide importance
Not prime farmland
Parcel Boundary

0 250 500
Feet
1:6,000

Attachment III.A.1
Prime Farmland and Farmland of Statewide Importance
White Oak Electric Transmission Project
Dominion Energy Virginia
Henrico County, Virginia

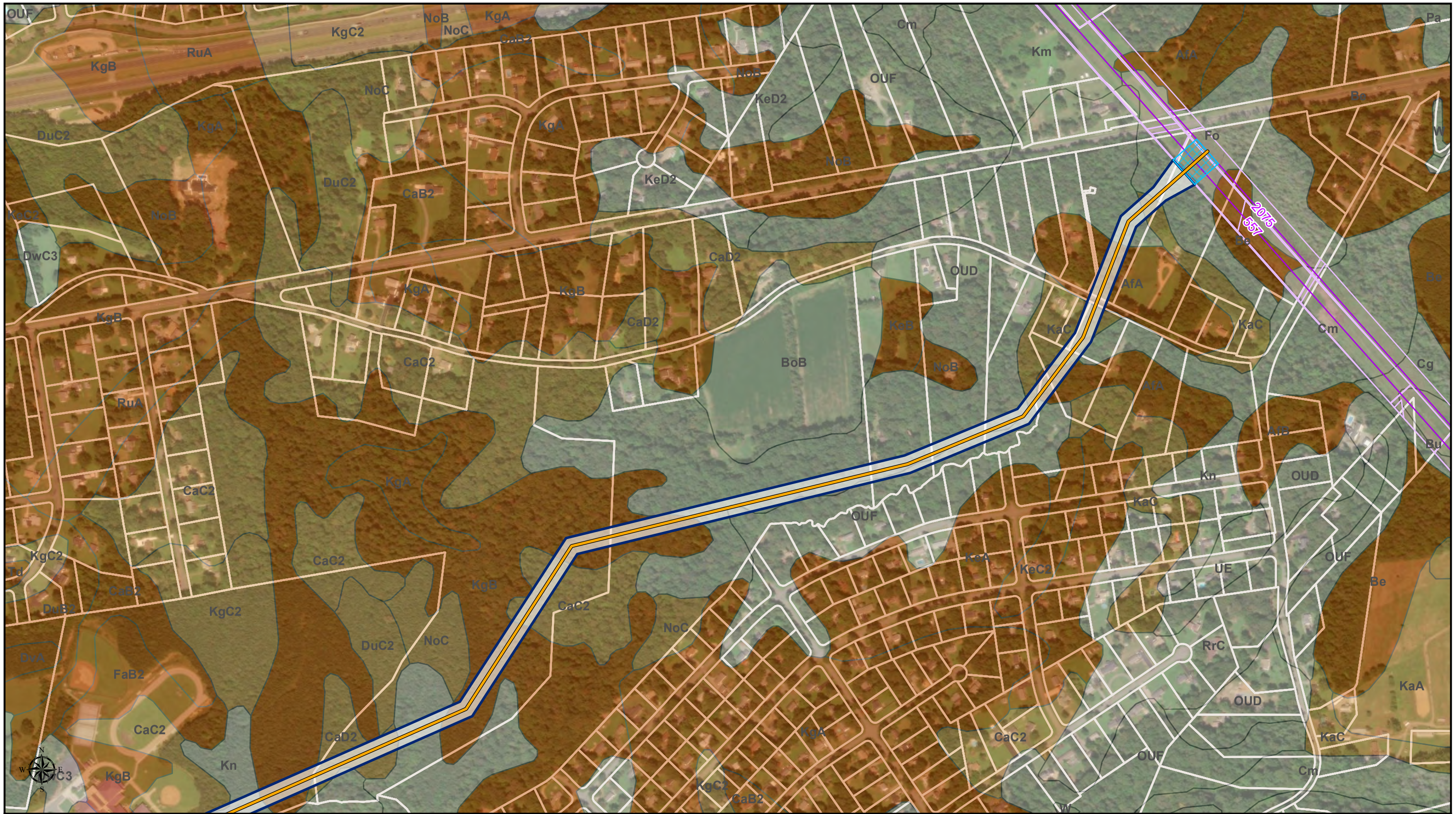
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Dominion Energy

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Existing Dominion Right-of-Way
Existing Dominion Transmission Line

Right-of-Way Type
Existing Right-of-Way
Proposed Right-of-Way

White Oak Alternative Routes
Alternative Route 2

SSURGO Soils Farmland Class
All areas are prime farmland
Farmland of statewide importance
Not prime farmland
Parcel Boundary

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Feet
1:6,000

Attachment III.A.1
Prime Farmland and Farmland of Statewide Importance
White Oak Electric Transmission Project
Dominion Energy Virginia
Henrico County, Virginia

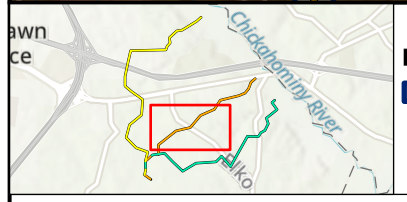
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Dominion Energy

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▲ Existing Substation

Right-of-Way Type

Proposed Right-of-Way

White Oak Alternative Routes

Alternative Route 2

SSURGO Soils Farmland Class

All areas are prime farmland

Prime farmland if drained

Farmland of statewide importance

Not prime farmland

Parcel Boundary

0 250 500

Feet

1:6,000

Attachment III.A.1

Prime Farmland and Farmland of Statewide Importance

White Oak Electric Transmission Project

Dominion Energy Virginia

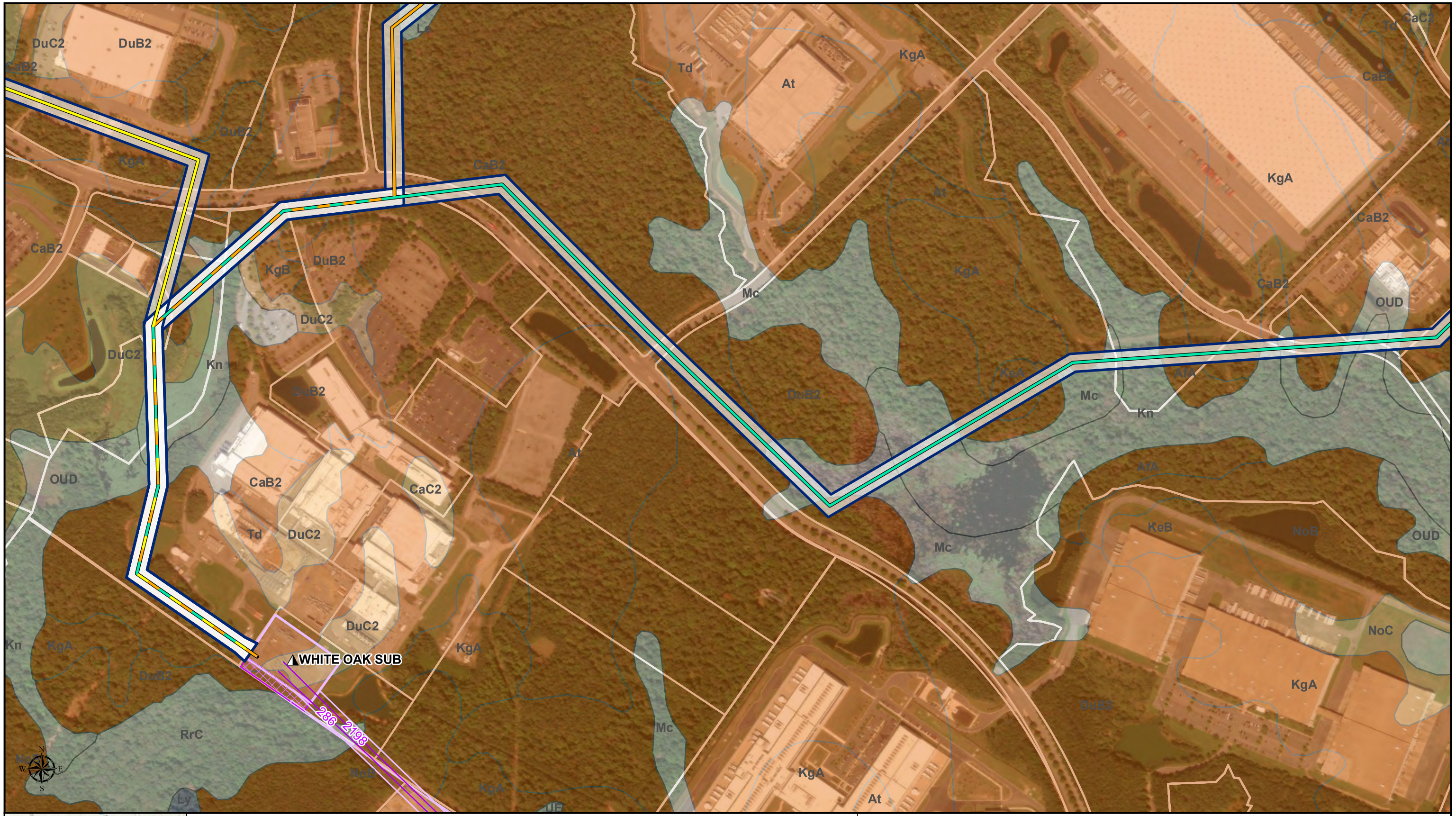
Henrico County, Virginia

ERM

Dominion Energy

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Proposed Substation Expansion
Existing Dominion Right-of-Way
Existing Dominion Transmission Line

White Oak Substation
Proposed White Oak Substation Expansion
Existing White Oak Substation

Right-of-Way Type
Proposed Right-of-Way

White Oak Alternative Routes
Alternative Route 1
Alternative Route 2
Proposed Route (Route 3)

SSURGO Soils Farmland Class
All areas are prime farmland
Prime farmland if drained
Farmland of statewide importance
Not prime farmland
Parcel Boundary

0 250 500
Feet
1:6,000

Attachment III.A.1
Prime Farmland and Farmland of Statewide Importance
White Oak Electric Transmission Project
Dominion Energy Virginia
Henrico County, Virginia

ERM

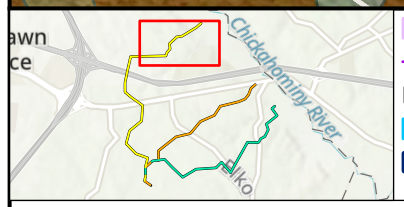
Dominion Energy

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190





Existing Dominion Right-of-Way
Existing Dominion Transmission Line

Right-of-Way Type
Existing Right-of-Way
Proposed Right-of-Way

White Oak Alternative Routes
Proposed Route (Route 3)

SSURGO Soils Farmland Class
All areas are prime farmland
Farmland of statewide importance
Not prime farmland
Parcel Boundary

0 250 500
Feet
1:6,000

Attachment III.A.1
Prime Farmland and Farmland of Statewide Importance
White Oak Electric Transmission Project
Dominion Energy Virginia
Henrico County, Virginia

ERM

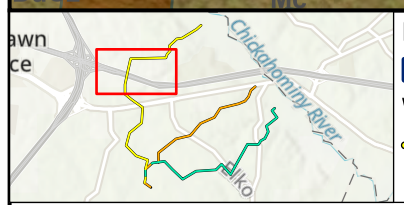
Dominion Energy

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191





Right-of-Way Type
- Proposed Right-of-Way

White Oak Alternative Routes
- Proposed Route (Route 3)

SSURGO Soils Farmland Class
- All areas are prime farmland
- Farmland of statewide importance
- Not prime farmland
- Parcel Boundary

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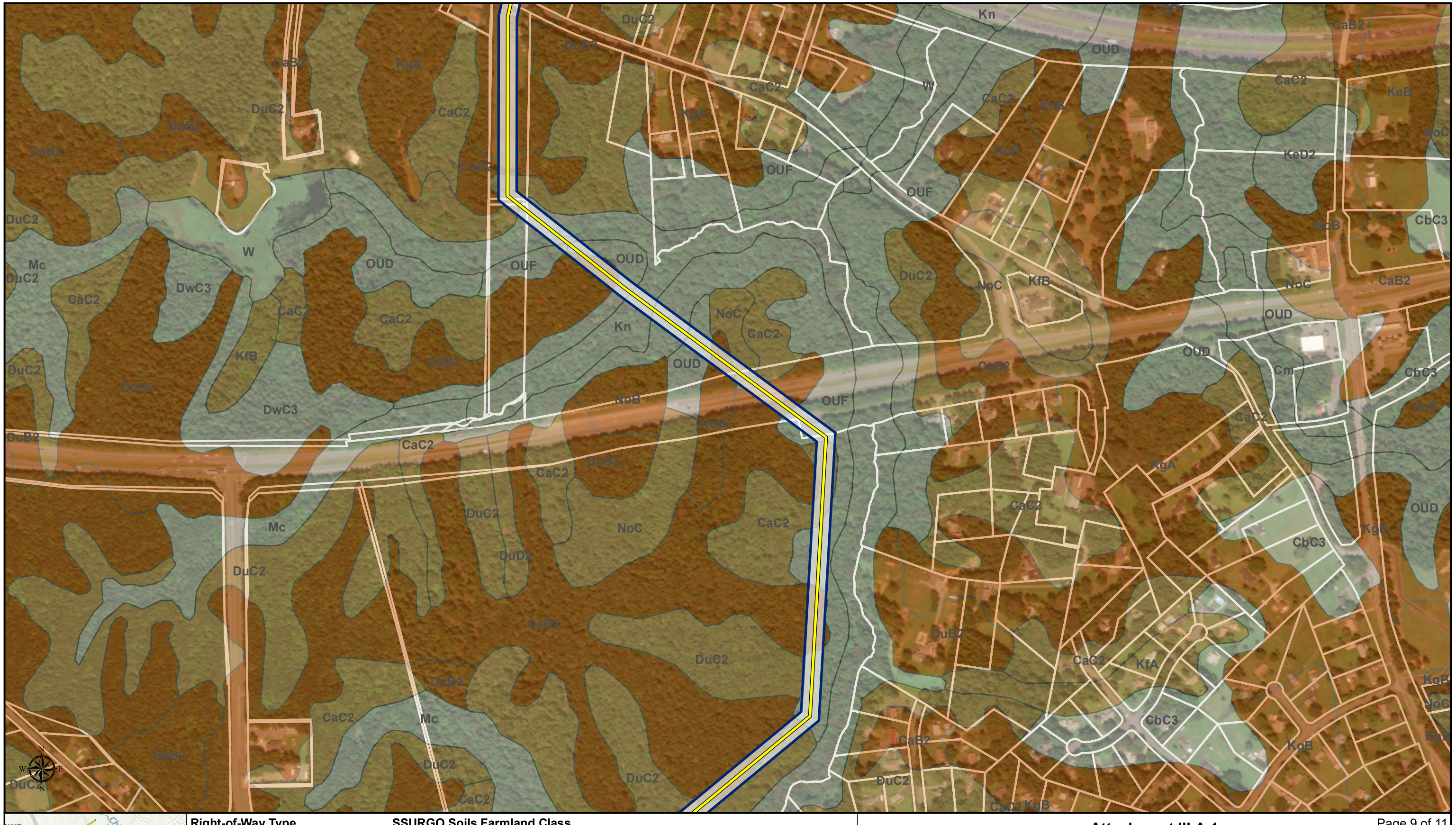
Attachment III.A.1
Prime Farmland and Farmland of Statewide Importance
White Oak Electric Transmission Project
Dominion Energy Virginia
Henrico County, Virginia

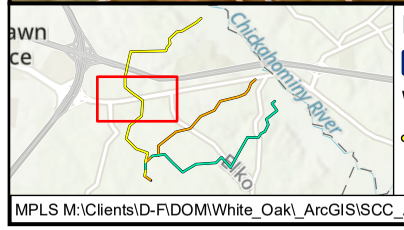
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192





Right-of-Way Type
- Proposed Right-of-Way

White Oak Alternative Routes
- Proposed Route (Route 3)

SSURGO Soils Farmland Class
- All areas are prime farmland
- Farmland of statewide importance
- Not prime farmland
- Parcel Boundary

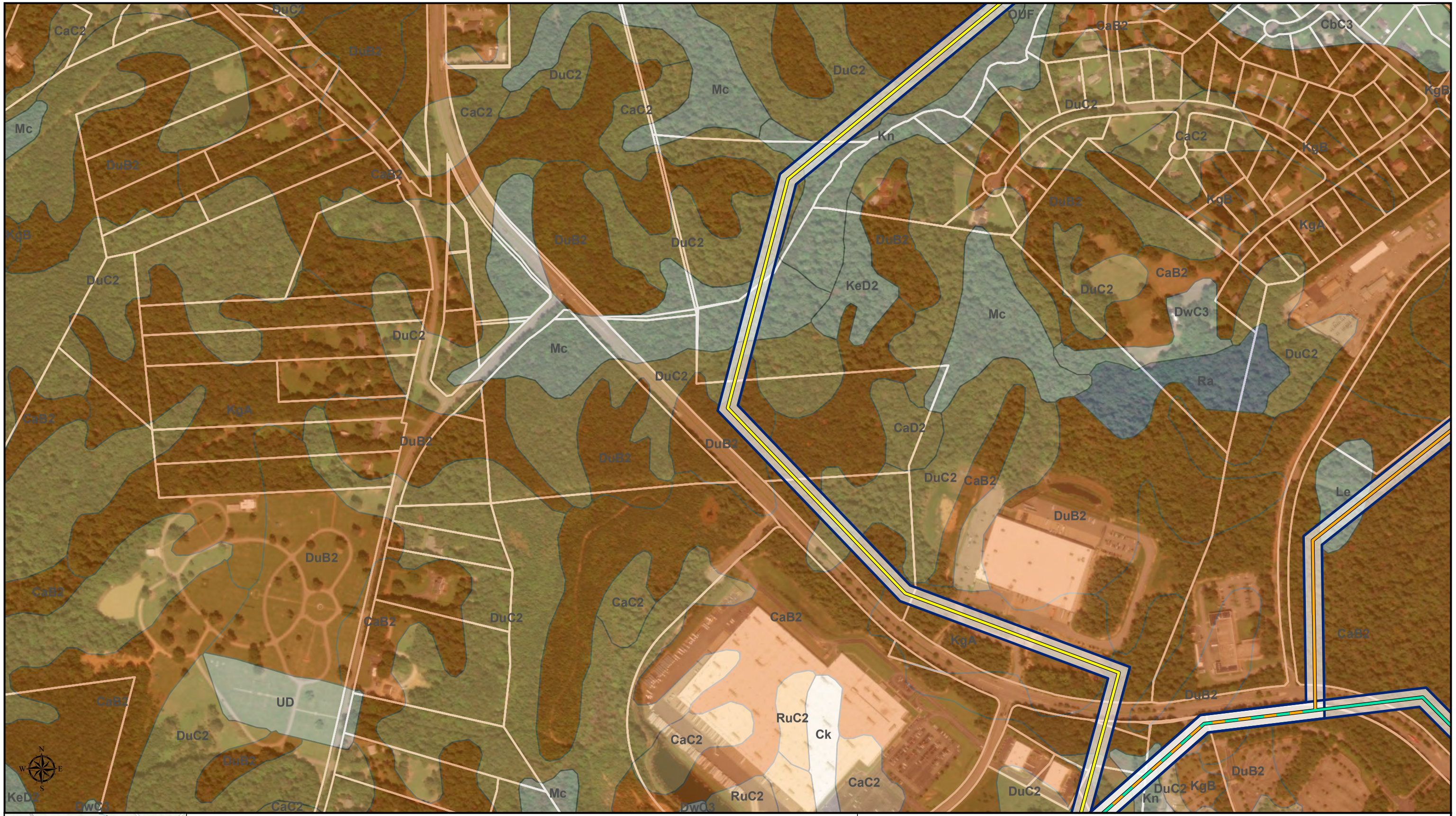
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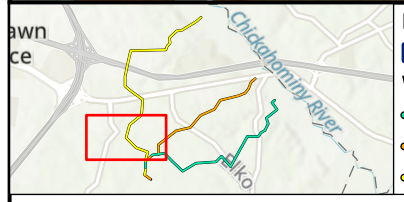
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Attachment III.A.1
Prime Farmland and Farmland of Statewide Importance
White Oak Electric Transmission Project
Dominion Energy Virginia
Henrico County, Virginia

Dominion Energy

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Right-of-Way Type
- Proposed Right-of-Way

White Oak Alternative Routes
- Alternative Route 1
- Alternative Route 2
- Proposed Route (Route 3)

SSURGO Soils Farmland Class
- All areas are prime farmland
- Prime farmland if drained
- Farmland of statewide importance
- Not prime farmland
- Parcel Boundary

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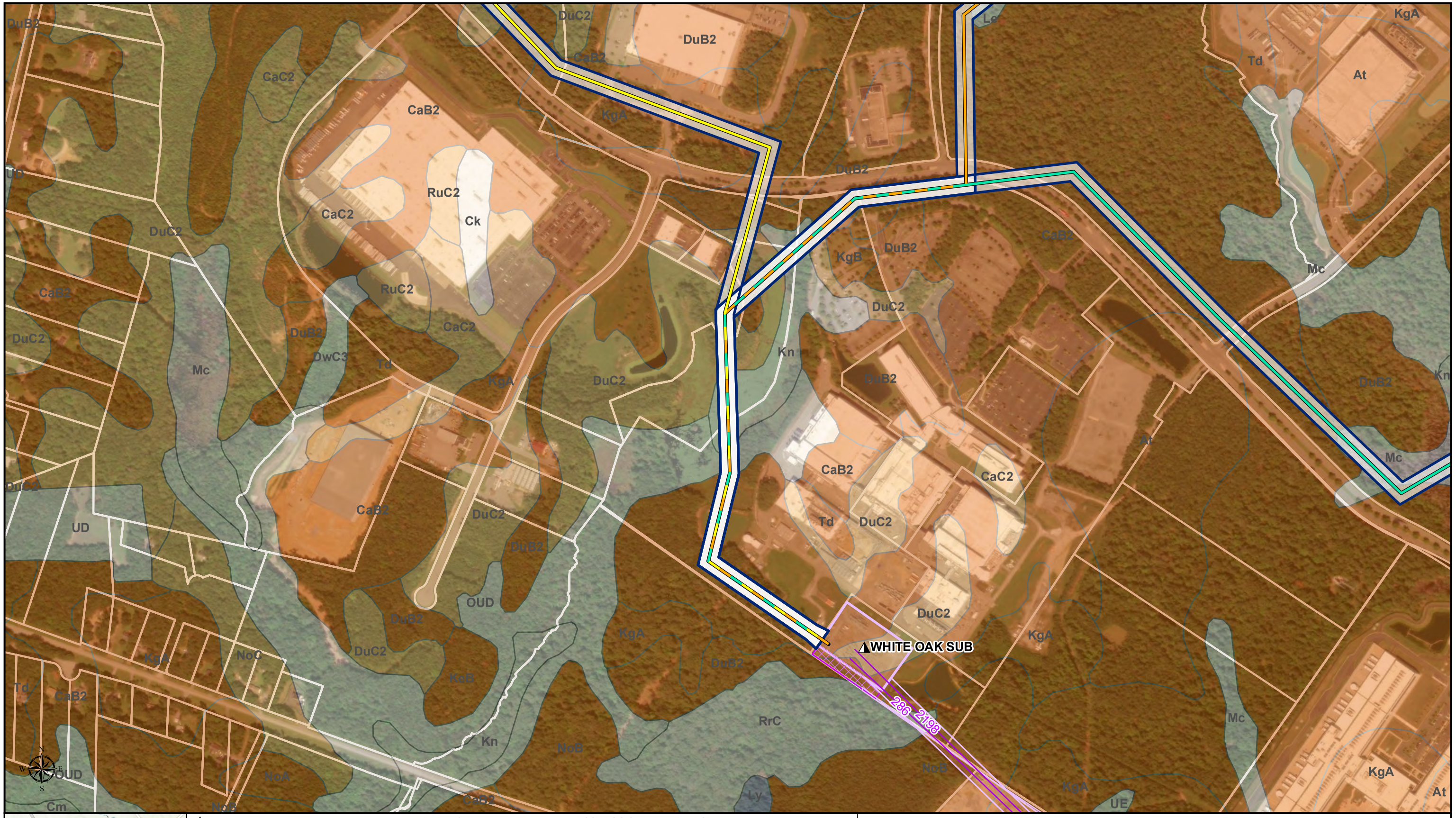
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Prime Farmland and Farmland of Statewide Importance
White Oak Electric Transmission Project
Dominion Energy Virginia
Henrico County, Virginia

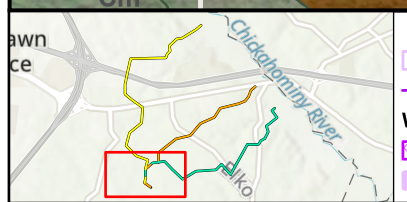
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Dominion Energy

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- Proposed Substation Expansion
- Existing Dominion Right-of-Way
- Existing Dominion Transmission Line

White Oak Substation

- Proposed White Oak Substation Expansion
- Existing White Oak Substation

Right-of-Way Type

- Proposed Right-of-Way

White Oak Alternative Routes

- Alternative Route 1
- Alternative Route 2
- Proposed Route (Route 3)

SSURGO Soils Farmland Class

- All areas are prime farmland
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Attachment III.A.1
Prime Farmland and Farmland of Statewide Importance
White Oak Electric Transmission Project
Dominion Energy Virginia
Henrico County, Virginia

Dominion Energy

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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: In August 2022, the Company announced the proposed Project to the public with a letter and launched an internet website dedicated to the proposed Project: www.dominionenergy.com/whiteoak. The website includes a description and benefits of the proposed Project, an explanation of need, route map, copies of letters mailed to the community, and information on the Commission review process.

The August 9, 2022 project announcement letter was sent to approximately 700 property owners and residents within 1,500 feet of the centerline of each route alternative for the Project. Each letter included information about the need for the Project and a map of the proposed corridors under consideration. In addition, the communication indicated that detailed materials would be posted to the dedicated Project website, an in-person community meeting would be held on September 15, 2022, quick facts about the Project, and an overview page of the electric grid. Lastly, the letter explained how to contact the Project team to provide any feedback or questions. A copy of the August 2022 letter and map are included as Attachment III.B.1.

A postcard was mailed in late August 2022 to provide more details about the September 15, 2022 community meeting. The postcard also announced the launch of GeoVoice on the Project website. GeoVoice is an online interactive mapping tool that allows property owners to zoom in on the proposed routes, measure distances and leave comments for the Company's Project team. A copy of the August 2022 postcard is included as Attachment III.B.2.

Newspaper print advertisements regarding the Project and virtual open house were placed in The Richmond Times Dispatch (circulation 56,070) on September 11, 2022 and November 13, 2022, and in the Richmond Free Press (circulation- 20,000) on September 8, 2022 and November 10, 2022. An example of the advertisement placed in the papers is included as Attachment III.B.3.

Additionally, from September 8, 2022 to September 15, 2022, the Company used paid digital and social media campaigns to drive awareness and educate the public regarding the Company's Project, GeoVoice, and the community meeting. A copy of those digital advertisements is included as Attachment III.B.4. The event campaigns ran within NextDoor, Facebook and Twitter. All phases urged local residents to visit the www.dominionenergy.com/whiteoak website to learn more about the meeting and to participate in the planning process. Campaign results include 737,896 Impressions Delivered, 3.54% Click Thru Rate, 26,127 Link Clicks and 67,251 ad engagements, including reactions, likes, comments, shares and saves.

A community meeting was held on September 15, 2022, from 6:00 p.m. to 8:00 p.m. at Elko Middle School, and there were 84 community members in attendance. The Company began the community meeting with a presentation about the Project and then answered questions from the community. Once the question and answer session concluded, the meeting transitioned to an open house-style meeting where community members could speak with Project team members individually. Traditional open house materials have been posted on the website for the proposed Project, including a copy of the presentation and a recording of the presentation and Q&A session.

On October 14, 2022, a letter was mailed to approximately 150 residents within 1,500 feet of a new routing option, Route 4, informing them of the Project and why a new route was introduced. The letter included information about how to review the Project details on GeoVoice, the Project website, and how to contact the team with questions about the Project. Lastly, the letter included information about a second community meeting scheduled for November 17, 2022. A copy of the October 2022 letter is included as Attachment III.B.5.[34]

On October 18, 2022, a postcard was mailed to the entire mailing list, approximately 920 residents, inviting neighbors to attend the November 17, 2022 community meeting at Elko Middle School for an update on the Project. A copy of the October 2022 postcard is included as Attachment III.B.6.

Additionally, from November 14, 2022 to November 17, 2022, the Company used paid digital and social media campaigns in the same manner used to promote the first community meeting to drive awareness and educate the public regarding the Company's Project, GeoVoice, and the community meeting. A copy of those digital advertisements is included as Attachment III.B.7. The event campaigns ran within NextDoor, Facebook and Twitter. All phases urged local residents to visit the www.dominionenergy.com/whiteoak website to learn more about the meeting and to participate in the planning process. Campaign results include 233,784 Impressions Delivered, .67% Click Thru Rate, 318 Link Clicks and 3,736 ad engagements, including reactions, likes, comments, shares and saves.

A second community meeting was held on November 17, 2022, from 6:00 p.m. to 8:00 p.m. at Elko Middle School. There were 61 community members in attendance. During the meeting, the Company began with a presentation to review updates and changes to the Project since the September 15, 2022 community meeting. Then, the meeting transitioned to an open house-style meeting until 8:00 p.m. where community members could speak with Project team members individually. Simulations of key locations for the proposed Project were available for viewing and have been posted to the Project website, along with a copy of the presentation. The key location simulations are included as Attachment III.B.8 and

[34] As noted herein, Attachment III.B.5 includes information regarding an additional route option, referred to as Route 4. While the Company initially considered Route 4, it was subsequently rejected from further consideration. See Sections 5 and 6 of the Environmental Routing Study for additional information on the route analysis and conclusions pertaining to Route 4.

available on the Project website.[35] A copy of the presentation from the November 17, 2022 community meeting is available on the Project website.

As routes changed based on additional analysis and feedback during the routing process, the Project team updated GeoVoice with revised simulations for impacted routes. Note some of these simulations may be different from the simulations presented during the open houses, as the ones available on GeoVoice are the most recent. The Project website includes the date that GeoVoice was last updated. On March 21, 2023, the Company sent a letter to the entire mailing list announcing updates to GeoVoice, an interactive mapping tool. See Attachment III.B.9.[36]

Input from the stakeholder groups regarding community considerations about regional development and land use, vulnerable populations, and environmental and cultural resources were considered during project design.

The Company received feedback in April 2023 that indicated the Proposed Route is in proximity to a historic freedmen's community between Meadow Road and the WOTP along Boar Swamp. The desktop review of historic maps and documents identified an African American settlement (i.e., Boar Swamp neighborhood), churches, and one-room schoolhouses east of Boar Swamp, dating to the late-nineteenth and early-twentieth centuries south of East Williamsburg Road and west of Elko Road (see Environmental Routing Study Section 3.2.1, Cultural Context). The Proposed Route, west of Boar Swamp, avoids this historic area. Suburban development has evolved when the historic community had been mapped. Additionally, this desktop review did not identify the Boar Swamp area as an Environmental Justice ("EJ") community ("EJ Community") because the Census Block Group ("CBG") in which it is located did not meet the EJ criteria (see Environmental Routing Study, Section 3.2.2.3).

As part of preparing for the Project, and in recognition of the feedback discussed above, the Company researched the demographics of the surrounding communities using the U.S. Environmental Protection Agency's EJ mapping and screening tool, EJScreen 2.1, and census data from the U.S. Census Bureau 2016–2020 American Community Survey.

This information revealed that 11 CBGs are within the Project study area and are within one mile of the routing options. A review of demographic data released by the U.S. Census Bureau identified populations within the Project study area that meet the Virginia Environmental Justice Act threshold to be defined as EJ

[35] Attachment III.B.8 includes information regarding an additional route option, referred to as Route 4. While the Company initially considered Route 4, it was subsequently rejected from further consideration. See Sections 5 and 6 of the Environmental Routing Study for the route analysis and conclusions pertaining to Route 4. Note that the order of the slides in Attachment III.B.8 is different from the order of the slides on the Project website; however, they contain the same slides.

[36] Attachment III.B.9 includes information regarding an additional route option, referred to as Route 4. While the Company initially considered Route 4, it was subsequently rejected from further consideration. See Sections 5 and 6 of the Environmental Routing Study for the route analysis and conclusions pertaining to Route 4.

Communities. Three of the 11 CBGs within the study area appear to be communities of color. None of the CBGs within the study area appear to be low-income populations or limited English speaking populations.

Pursuant to Va. Code §§ 56.46.1 C and 56-259 C and Attachment 1 to these Guidelines, there is a strong preference for the use/paralleling of existing utility rights-of-way whenever feasible. While the Project creates new rights-of-way, the Project uses weathering steel structures to better blend in with surrounding forested areas, and generally limits impacts on the surrounding areas. Based on the analysis of the Project, the Company does not anticipate disproportionately high or adverse impacts to the surrounding community and the EJ Communities located within the study area.

In addition to its evaluation of impacts, the Company has and will continue to engage communities affected by the Project, including EJ communities, in a manner that allows them to meaningfully participate in the project development and approval process so that their views and input can be taken into consideration. See Attachment III.B.10 for a copy of the Company's Environmental Justice Policy.

As described above and in Sections III.J and III.K of the Appendix, the Company has engaged the community in a manner that allows access to the Project team and significant opportunity to provide input. Actions included two public meetings, with presentations recorded and posted to the Project website, using an online routing and commenting tool called GeoVoice, digital advertisements, and targeted outreach to individual property owners. In addition, the Company engaged with all residential landowners who have property crossed by the Proposed Route to ensure they are aware of the Project generally and the Proposed Route specifically. This included four individual property owners located north of Interstate 64, near Twin Pine Road and Meadow Road, who as of January 2023 had not yet engaged with the Company following the announcement of the Project and other outreach efforts in summer and fall of 2022. The Company contacted and offered meetings with these property owners between February and June 2023.

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

Aug. 9, 2022

Proposed White Oak Electric Transmission Project

Dear Neighbor,

At Dominion Energy, we are dedicated to maintaining safe, reliable, affordable, and secure electric service to the communities we serve. You are receiving this letter because we are currently planning for a new electric transmission line in your area.

The Sandston/Elko area of Henrico County is experiencing growing energy demands as the White Oak Technology Park has brought new business growth to this area. To address this recent development, new electric infrastructure is needed to meet the new power needs, maintain federal reliability rules, and keep the grid operating efficiently.

As such, a new double-circuit 230 kilovolt (kV) electric transmission line into our existing White Oak Substation is required. We are currently in the planning stages of the project; our team is reviewing all electrical and construction options. No routes have been finalized, but three route study areas are under consideration.

Enclosed, you will find an overview map with the preliminary corridors under consideration. While multiple routes will be evaluated, one proposed route with alternatives will be submitted to the Virginia State Corporation Commission (SCC) for final evaluation and approval.

Public engagement is a key part of the project planning process. We want to ensure our team listens to community feedback to ensure the routing options incorporate community perspective prior to filing an application with the SCC. We plan to hold public meetings in the coming weeks to review the project need, routing details, the current status, gather feedback and answer your questions. Please join us at **Elko Middle School** for our first community meeting **Sept. 15, 2022.**

More information will be sent in the coming weeks. In the meantime, you can view more information about the project on our website, DominionEnergy.com/whiteoak. You can also contact our project team by email at powerline@dominionenergy.com or by phone at 888-291-0190.

Thank you for your understanding while we plan for long-term reliability investments in your community.

Sincerely,

The Electric Transmission Project Team

Enclosures: Project quick facts, project map

White Oak Electric Transmission Project
Quick Facts

Project Need

Due to recent growth and future development on the horizon in Henrico County, there is a need for new electric transmission infrastructure investments to maintain grid reliability. The proposed White Oak Electric Transmission Line will allow us to meet the growing energy needs, continue reliable electric service, and maintain compliance with federal reliability standards.

Dominion Energy has an obligation to serve and maintain reliability for all customers. Entities such as PJM – which operates the electric grid in 13 states – and NERC, North American Electric Reliability Corporation, enforce standards to ensure reliability and the prudency of investments by utility companies like Dominion Energy.

Determining the Routes

Dominion Energy is currently in the initial stages of the siting and routing process. All route options will need to connect our White Oak Substation, located within the White Oak Technology Park, to an existing transmission line located approximately three miles east of the technology park.

Planning and determining an electric transmission route are one of the most challenging things we do at Dominion Energy. We recognize the impact a new transmission line has on the community. Multiple factors are considered when deciding where to build a new line including, but not limited to, land use, historic and cultural resources, environmental impacts, wetlands, environmental justice, and tribal property. We consider these factors to avoid or limit community impact.

Ultimately, the SCC reviews the routing options and chooses the route the company must build.

Project Next Steps

We will continue public engagement throughout summer and fall 2022 to ensure all interested community members are aware of the project and have an opportunity to share feedback with our team. We plan to file an application with the SCC in late 2022.

We hope to see you at future public meetings so we can hear what matters most to you.

Project Oversight and Approval

The SCC is the regulatory body with jurisdiction over transmission lines at or above 138 kilovolts (kV). Since this project is proposing a new 230 kV transmission line, it meets the criteria to be reviewed by the SCC. Dominion Energy will file an application with the SCC to review whether

the project is needed, and which route reasonably minimizes impacts while remaining financially prudent for our ratepayers.

Although the SCC is the primary agency reviewing and ultimately approving the project, there may be additional permits needed from various agencies, such as the Army Corps of Engineers.

Reviewing the Routes in Detail

In the coming weeks, we will launch an interactive mapping tool on our website called GeoVoice, which will allow you to participate in the routing process firsthand. You can search for your address or other places of interest to see proximity to the routes being studied. You can also measure, print, or leave a comment for the project team.

Your Feedback Matters

We want to hear your input on our proposed routes, as the routes have not been finalized. The purpose of our public engagement is to share, listen and learn in order to make appropriate project changes. The SCC also considers public input in its review process. There are multiple ways to share your feedback with our team:

- Contact us by email at powerline@dominionenergy.com or by phone at 888-291-0190.
- Leave your comments in GeoVoice (more information about GeoVoice coming soon)
- Attend our public meetings (invitations coming soon)
- Invite us to your community or property

Dominion Energy®

Meadow Rd
Crib Ln
Drybridge Rd
Meadow Rd
Bradley Acres
Perth Ln
Clint Ln
Clint Ln
New Kent Hwy
S Qual
249
295
64
64
64
64
64
Woodview Dr
60
33
E Williamsburg Rd
Old Williamsburg Rd
156
33
E Williamsburg Rd
60
156
New Kent
Henrico
TL# 2075
TL# 557
Monaco Dr
Stockholm Dr
Elko Middle School
Reese Dr
Pocahontas Trl
Old Memorial Dr
Malpas Dr
Elko Rd
Elko Tract Rd
TECHNOLOGY SUB
White Oak Rd
Technology Creek Dr
Windsor Rd
Memorial Dr
Techpark Pl
Technology Blvd
Hurop Rd
Portugee Rd
Scandia Rd
Elko Rd
WHITE OAK SUB
Henrico
Charles City
TL# 2198
TL# 236
PORTUGEE SUB

This information is for environmental review purposes only

▲ Existing Substation
Existing Dominion Transmission Line
Route Alternative 1
Route Alternative 2
Route Alternative 3

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White Oak 230 kV Delivery Point Project

Dominion Energy Virginia
Henrico County, Virginia

Dominion Energy

ERM

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Electric Transmission
P.O. Box 26666
Richmond, VA 23261

Dominion Energy®

Actions Speak Louder

YOU'RE INVITED
TO A COMMUNITY MEETING!
DETAILS ENCLOSED

Investing in Our Communities



Local Power Line Project Information Enclosed

Dominion Energy image. Not project specific.

Dominion Energy®

White Oak Project Postcard FOLDED, Aug 2022.indd 1 8/23/22 9:01 AM

IMPORTANT

White Oak Electric Transmission Project

Use your iPhone camera or the QR reader app on other smartphones to visit the project page on our website.

Community Meeting

AT DOMINION ENERGY, we are committed to providing safe, reliable, and secure electric service to the communities we serve.

We recently announced the need for a new electric transmission line into the White Oak Technology Park in eastern Henrico County. As a member of the community, we value your input and invite you to attend an upcoming in-person community meeting.

Our project team with begin the meeting with a presentation explaining the project need, routing options under consideration, impacts, and project timeline. The presentation will begin at 6 p.m. and last approximately 20 to 30 minutes. Then, we want to hear from you. Our team will remain on-site until 8 p.m. in an open house-style meeting to answer any questions.

Unable to attend? No problem. Here are other ways to engage with our team.

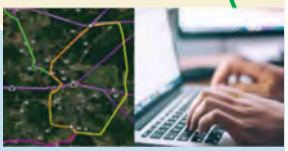
- **We will host another meeting later this fall, once public input is received.**
- **Contact us and request a presentation be given to a smaller group in your community**
- **Meeting content will be available to view at your convenience on our project website**
- **Contact us by email or phone to discuss the project**
- **Review the project and leave comments in GeoVoice, which is now live on the project website.**

We look forward to sharing more about the project and listening to your feedback as we move forward with project planning.

CONTACT US — Visit our website at DominionEnergy.com/whiteoak for project updates. Or contact us by calling 888-291-0190 or sending an email to powerline@dominionenergy.com.



REVIEW THE PROPOSED ROUTING OPTIONS with GeoVoice, now available on our project website. With GeoVoice, you can search by address, zoom in on areas of interest, measure distances, leave comments for our team, and more.



COMMUNITY MEETING

Thursday, Sept. 15, 2022

6–8 p.m.

Presentation begins at 6 p.m.

Elko Middle School
5901 Elko Rd. Sandston, VA 23150

Meeting will be held in the cafeteria.

WHAT:

The proposed project will construct a new double-circuit 230 kilovolt electric transmission line.

WHY:

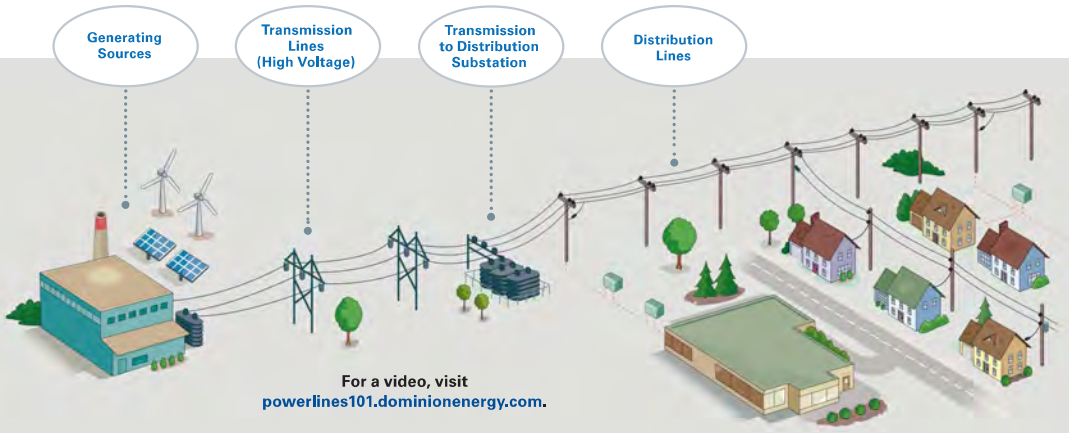
Due to recent growth and future development on the horizon in Henrico County, there is a growing need for new electric transmission infrastructure to maintain grid efficiency. The proposed White Oak Electric Transmission Line will allow us to maintain reliable electric service, meet growing energy needs and be in compliance with federal reliability standards.

WHERE:

The proposed line is located in the Sandston/Elko area of Henrico County. The line will connect our existing White Oak Substation in the White Oak Technology Park to an existing 230 kV electric transmission line approximately 3 miles east.

Delivering Clean, Safe, Affordable and Sustainable Energy

Transmission lines are the tall, high-voltage lines that carry electricity over long distances from power generation facilities to substations.



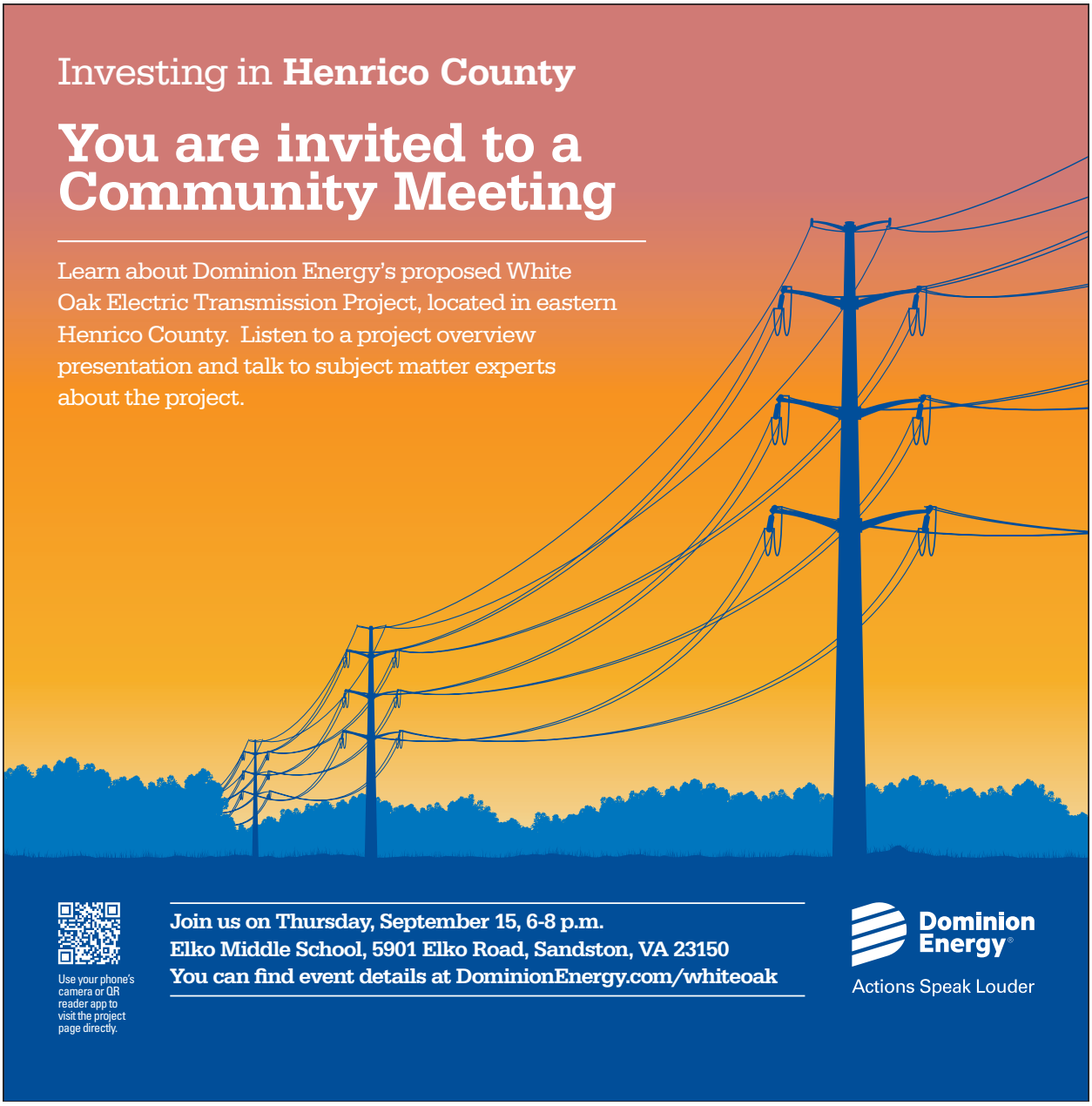
For a video, visit powerlines101.dominionenergy.com.

White Oak Project Postcard FOLDED, Aug 2022.indd 2 8/23/22 9:01 AM

charles ryan associates

Dominion Energy
Electric Transmission

White Oak
Pre Event Newspaper

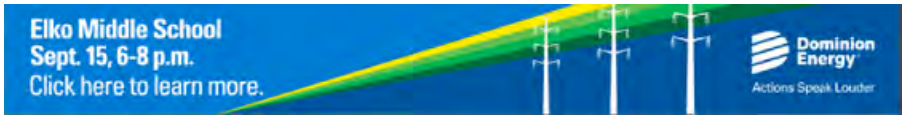


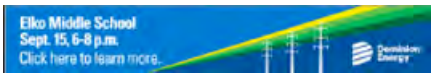
charles ryan associates

Dominion Energy Electric Transmission Contact:
Ann Gordon Mickel, ann.gordon.mickel@dominionenergy.com

Dominion Energy
Electric Transmission

White Oak
Awareness Display

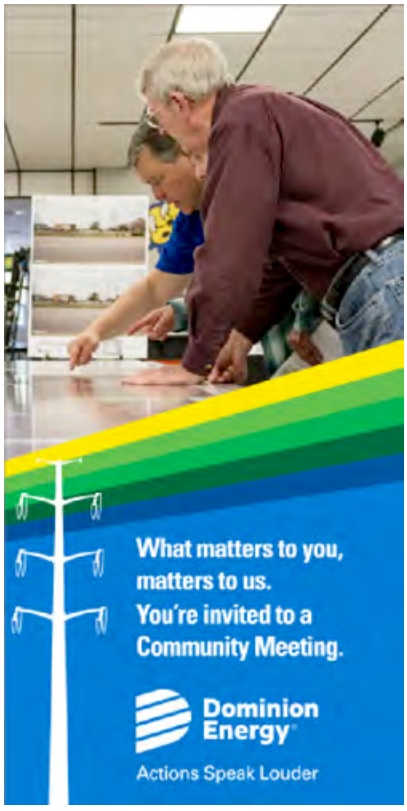


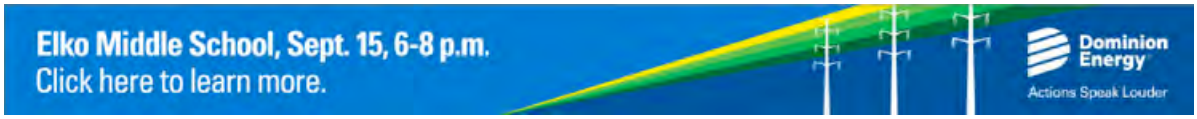












Dominion Energy
Electric Transmission

White Oak
Nextdoor Imagery

Event Image:



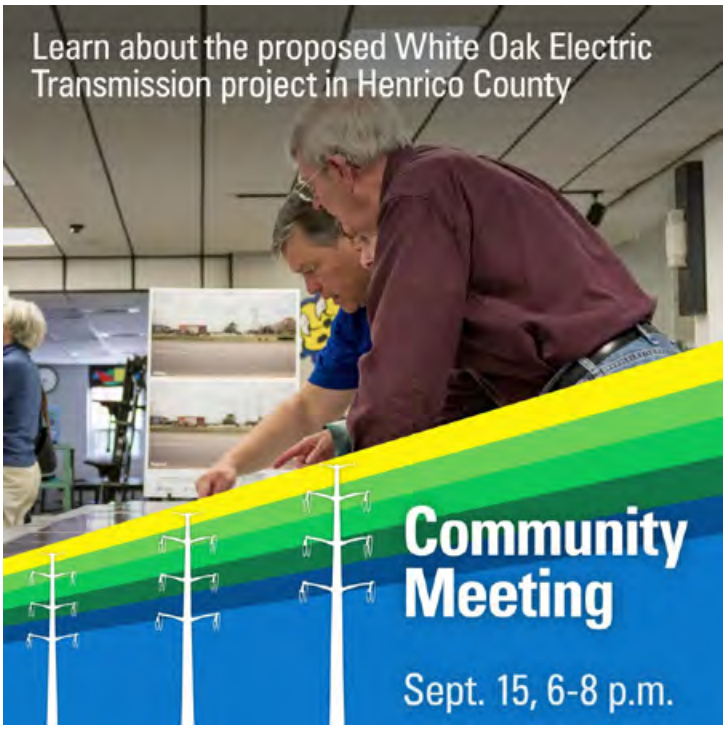
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Social Videos

Pre-Event Video (Click to play)



GeoVoice Video (Click to play)



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Community Meeting

Learn more about electric transmission infrastructure projects in your area.



September 15, 6 p.m.

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