



**Dominion
Energy[®]**

**Application, Appendix,
DEQ Supplement, Direct
Testimony and Exhibits of
Virginia Electric and
Power Company**

**Before the State Corporation
Commission of Virginia**

**500 kV Doubs-Goose Creek
Line #514 Rebuild, 500 kV
Aspen-Doubs Line #5015, 500
kV Goose Creek-Woodside Line
#5004, Corridor Optimization
and Related Projects**

Application No. 361

Case No. PUR-2026-00076

Filed: May 21, 2026

Volume 2 of 2

COMMONWEALTH OF VIRGINIA
BEFORE THE
STATE CORPORATION COMMISSION

APPLICATION OF
VIRGINIA ELECTRIC AND POWER COMPANY
FOR APPROVAL AND CERTIFICATION
OF ELECTRIC TRANSMISSION FACILITIES

500 kV Doubs-Goose Creek Line #514 Rebuild,
500 kV Aspen-Doubs Line #5015, 500 kV Goose Creek-
Woodside Line #5004, Optimized Corridor and Related Projects

Application No. 361

DEQ Supplement

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Based on consultations with the Virginia Department of Environmental Quality (“DEQ”), Virginia Electric and Power Company (“Dominion Energy Virginia” or the “Company”) has developed this DEQ Supplement to facilitate review and analysis of the proposed Project by DEQ and other relevant agencies.

1. Project Description

In order to relieve violations of mandatory North American Electric Reliability Corporation (“NERC”) Reliability Standards identified by PJM Interconnection, L.L.C. (“PJM”) during the 2022 Regional Transmission Expansion Plan (“RTEP”) Open Window 3, to address aging infrastructure that is nearing the end of its service life, to optimize the existing transmission line right-of-way corridor from Aspen Station¹ to the Virginia-Maryland border² consistent with Virginia law and Virginia State Corporation Commission (“Commission”) guidance,³ and to maintain the structural integrity and reliability of the transmission system while also providing for future load growth, Dominion Energy Virginia proposes in Loudoun County, Virginia, to:

- (1) Wreck and rebuild the entire existing overhead single circuit 500 kV Doubs-Goose Creek Line #514 in Virginia, which extends approximately 3.1 miles entirely within the existing primarily 250-foot-wide⁴ DEV Corridor from the Company’s Goose Creek Station to the POI at the Virginia-Maryland border (the “Line #514 Rebuild”).⁵ The Company’s proposed Line #514 Rebuild will replace the existing primarily single circuit weathering steel lattice towers supporting Line #514 with primarily single circuit dulled galvanized steel monopole structures for approximately 2.1 miles and with primarily 500/230 kV (“5/2-configured”⁶) double circuit dulled galvanized steel monopole structures for approximately 1.0 mile where collocated with rebuilt Line #2098.⁷ The

¹ Due to the numerous existing and future substations, switching stations, and delivery points (“DPs”) discussed herein, all such facilities will be referred to individually as “Station” or collectively as “Stations” for purposes of this Application filing to avoid confusion or error.

² For purposes of the Project as proposed herein, the existing primarily 250-foot-wide transmission line right-of-way corridor begins at the Company’s Aspen Station and extends approximately 3.1 miles north to the point of interconnection (“POI”) at the Virginia-Maryland border (the “Dominion Energy Virginia Corridor” or “DEV Corridor”) and contains at various points the existing 500 kV Doubs-Goose Creek Line #514, 500 kV Goose Creek-Pleasant View Line #595, 230 kV Dickerson-Pleasant View Line #203, and 230 kV Hamilton-Pleasant View Line #2098. For purposes of this filing, the POI at the Virginia-Maryland border is where Dominion Energy Virginia’s transmission line ownership ends. See Appendix Attachment I.A.1.

³ This optimization approach (as further described herein) generally minimizes impacts on the natural and human environments, and is consistent with guidance provided in Attachment 1 of the Commission Staff’s *Guidelines for Transmission Line Applications Filed Under Title 56 of the Code of Virginia* (“Guidelines”). Specifically, this approach is consistent with Guideline #1, which states that existing rights-of-way should be given priority when adding new transmission facilities, and §§ 56-46.1 and 56-259 of the Code of Virginia, which promote the use of existing rights-of-way for new transmission facilities.

⁴ Note that the majority of the 3.1-mile existing right-of-way corridor is 250 feet wide, with one span that widens to a maximum width of 474 feet north of Pleasant View Station where the existing lines exit the station into the corridor.

⁵ Unless otherwise noted, all references in this filing to the proposed Line #514 Rebuild are as to rebuild of the Company’s approximately 3.1-mile segment of Line #514 located within the DEV Corridor.

⁶ A “5/2” configuration means that the supporting structures will be aligned such that one position of the structure will have a 500 kV circuit and one position will have a 230 kV circuit. See, e.g., Appendix Attachment II.B.3.a.

⁷ The partial rebuild of Line #2098 is proposed as part of the Corridor Optimization, as described and proposed herein.

500 kV line will be rebuilt to current 500 kV standards utilizing three-phase triple-bundled 1351.5 ACSS/TW type conductor with a summer transfer capability⁸ of 4,357 megavolt amperes (“MVA”).

- (2) Construct approximately 3.1 miles of the new overhead single circuit 500 kV Aspen-Doubs Line #5015 entirely within the existing primarily 250-foot-wide DEV Corridor from the Company’s Aspen Station to the POI at the Virginia-Maryland border. The Company’s proposed Line #5015⁹ will be supported primarily by 5/2-configured double circuit dilled galvanized steel monopole structures collocated with rebuilt Line #203.¹⁰ The new 500 kV line will be built to current 500 kV standards utilizing three-phase triple-bundled 1351.5 ACSS/TW type conductor with a summer transfer capability of 4,357 MVA.
- (3) Construct approximately 3.1 miles of the new overhead single circuit 500 kV Goose Creek-Woodside Line #5004 almost entirely¹¹ within the existing primarily 250-foot-wide DEV Corridor from the Company’s Goose Creek Station to the POI at the Virginia-Maryland border. The Company’s proposed Line #5004¹² will be supported primarily by single circuit dilled galvanized steel monopole structures and will utilize three-phase triple-bundled 1351.5 ACSS/TW type conductor with a summer transfer capability of 4,357 MVA.
- (4) Optimize the existing DEV Corridor between Aspen Station and the POI at the Virginia-Maryland border in order to accommodate the rebuild of existing Line #514 and installation of proposed Line #5015 entirely within the existing primarily 250-foot-wide right-of-way, and the installation of proposed Line #5004 primarily within the existing

⁸ Note that all discussion in this Appendix of “summer transfer capability” of lines proposed for build or rebuild in the DEV Corridor is as to the actual capability of the proposed conductor.

⁹ Unless otherwise noted, all references in this filing to the proposed Line #5015 are as to construction of the Company’s approximately 3.1-mile segment of new Line #5015 located within the DEV Corridor.

¹⁰ The rebuild of Line #203 is proposed as part of the Corridor Optimization, as described and proposed herein. Note that prior to completion of the Corridor Optimization, the existing Dickerson-Pleasant View Line #203 will be cut in order to construct the Apollo-Twin Creeks Project, ultimately resulting in Pleasant View-Sycolin Line #2320 and Dickerson-Twin Creeks Line #203. The “Apollo-Twin Creeks Project” refers to the new double circuit 230 kV transmission line and five new 230-34.5 kV stations in Loudoun County, Virginia, approved by the Commission by Final Order dated February 5, 2025. See *Application of Virginia Electric and Power Company For approval and certification of electric transmission facilities: 230 kV Apollo-Twin Creeks Lines and Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo Substations*, Case No. PUR-2024-00044, Final Order (Feb. 5, 2025). See also *Lansdowne Conservancy et al. v. State Corp. Comm’n*, 925 S.E.2d 714, 727 (Va. 2026) (affirming the judgment of the Commission). For ease of reference, the Company will refer to Dickerson-Pleasant View Line #203 as the line being rebuilt as part of the instant Application, unless otherwise noted.

¹¹ In order to accommodate termination of proposed Line #5004 into the Company’s existing Goose Creek Station, the Company will need to acquire approximately 0.03 mile of new variable width right-of-way with a maximum expansion width of 107 feet (a total of approximately 0.5 acre) where Line #5004 traverses around the Pleasant View 500 kV Station. See Appendix Attachment II.A.6.

¹² Unless otherwise noted, all references in this filing to the proposed Line #5004 are as to construction of the Company’s approximately 3.1-mile segment of new Line #5004 located within the DEV Corridor.

primarily 250-foot-wide right-of-way through the partial wreck and rebuild of Hamilton-Pleasant View Line #2098 in Virginia and the full wreck and rebuild of Dickerson-Pleasant View Line #203 in Virginia, and related work at various existing stations (the “Corridor Optimization”) consistent with Virginia law and Virginia Commission guidance.

The rebuild of Line #514, the construction of proposed Line #5015 and proposed Line #5004, and the Corridor Optimization are collectively referred to as the “Line #514 Corridor Optimization Project” or the “Project.”

As part of PJM’s 2020 Open Window 2, the Company submitted a Line #514 partial rebuild proposal to the PJM RTEP process as a baseline project needed to address aging infrastructure nearing the end of service life (“Partial Rebuild”)¹³ consistent with the Company’s mandatory electric transmission planning criteria (“Planning Criteria”¹⁴). The Company’s Partial Rebuild proposal was approved by PJM at its December 2020 Board Meeting and assigned a baseline number as a supplemental project not subject to competitive bidding under PJM rules.¹⁵ The Commission approved the Partial Rebuild on July 26, 2022, subject to certain findings and conditions, and issued a certificate of public convenience and necessity (“CPCN”).¹⁶

During the 2022 RTEP Open Window 3, PJM identified and selected a baseline reliability project needed to address new and additional NERC reliability violations that would require construction of a new 500 kV line between the Aspen Station in Virginia and the Doubs Station in Maryland (i.e., Line #5015),¹⁷ in part, by optimization of the existing lines within the DEV Corridor, including a reconfiguration of the Partial Rebuild as proposed herein. On December 11, 2023, the PJM Board of Managers (“PJM Board”) approved the 2023 RTEP, which included this new baseline reliability project and effectively canceled the Partial Rebuild. By motion filed on February 13, 2024, the Company alerted the Commission that an alternative baseline reliability project to the Partial Rebuild had been selected by PJM to address violations identified in the 2022 RTEP Open Window 3 and requested cancellation of the Commission’s approval and certification of the Partial Rebuild, which the Commission did by Order dated

¹³ The Partial Rebuild proposed rebuilding approximately 2.8 miles of the Company’s 3.1-mile Line #514 in Virginia between Structure #514/1854 and Structure #514/1841 on single circuit lattice towers utilizing three-phase triple-bundled 1351.5 Aluminum Conductor Steel Reinforced (“ACSR”) conductors.

¹⁴ The Company’s Planning Criteria can be found in Attachment 1 of the Company’s Facility Interconnection Requirements (“FIR”) document (effective April 1, 2026) pursuant to Facility Connection (“FAC”) Standard FAC-001 (R1, R3) available online at <https://www.dominionenergy.com/-/media/content/large-business-services/pdfs/virginia/facility-interconnection-requirements.pdf>.

¹⁵ See Section I.J of the Appendix, generally, and Appendix Attachment I.J.1, specifically.

¹⁶ See *Application of Virginia Electric and Power Company For approval and certification of electric transmission facilities: 500 kV Line #514 Partial Rebuild Project*, Case No. PUR-2021-00276, Final Order (July 26, 2022) (“Partial Rebuild Proceeding”).

¹⁷ See Appendix Attachment I.A.2.

March 12, 2024.¹⁸ For purposes of this Application filing, the construction of new Line #5015, the reconfigured full rebuild of Line #514 in Virginia, and optimization of the DEV Corridor through the rebuild of Lines #2098 and #203 and related station work comprise this baseline reliability project (also referred to collectively herein as the “Line #514/#5015 Component” of the Project) included in the 2023 RTEP that canceled and replaced the Partial Rebuild.

Also during the 2022 RTEP Window 3, PJM separately identified and selected a baseline reliability project needed to address severe and widespread reliability violations projected to occur across West Virginia, Maryland, and Virginia by the 2027-2028 timeframe. Specifically, PJM identified extensive thermal overloads, voltage collapse conditions, and non-convergence issues driven by increasing west-to-east power transfers. After evaluating 72 proposals to resolve the identified reliability violations, PJM concluded that only a new high-voltage backbone could resolve the violations. PJM thereafter selected NextEra Energy Transmission MidAtlantic Holdings, LLC’s proposal to construct a new approximately 107.5-mile 500 kV transmission line traversing portions of Pennsylvania, West Virginia, Maryland, and Virginia, known as the MidAtlantic Resiliency Link (“MARL”) project. The new Line #5004 proposed as part of this Project (also referred to collectively herein as the “Line #5004 Component” of the Project) interconnects with the PJM-approved MARL project.¹⁹

In summary, the Project will maximize the use of existing right-of-way by wrecking and rebuilding Lines #2098 and #203 (*i.e.*, the Corridor Optimization) so as to install two new 500 kV tie lines (*i.e.*, Line #5015 and Line #5004) and also rebuild a 500 kV line that is nearing its end of service life (*i.e.*, Line #514), which, collectively represent the most comprehensive and robust solution to address the NERC reliability violations identified by PJM during the 2022 RTEP cycle.

The length of the route for the Project within the DEV Corridor is approximately 3.1 miles. The majority of the route will be within existing right-of-way or within the Company’s existing property rights, which are adequate for the proposed Project. Given the availability of existing right-of-way for the majority of the route, and the statutory preference given to use of existing rights-of-way, and because additional costs and environmental impacts would be associated with the acquisition and construction of new right-of-way, the Company did not consider any alternative routes requiring new right-of-way for this Project.²⁰

¹⁸ See *Motion to Cancel Approval and Certification of Electric Transmission Facilities: 500 kV Line #514 Partial Rebuild Project* filed by the Company in the Partial Rebuild Proceeding (Feb. 13, 2024) and Order entered by the Commission (Mar. 12, 2024).

¹⁹ See Appendix Attachment I.A.2 and Section I.J of the Appendix. Note that while the Corridor Optimization allows for installation of Line #5004 almost entirely within existing right-of-way (*i.e.*, the Line #5004 Component), installation of Line #5015 and rebuild of Line #514 drive the need to wreck and rebuild Lines #203 and #2098 (*i.e.*, the Line #514/#5015 Component).

²⁰ The optimization approach proposed herein is consistent with the approach taken in the Company’s recent Morrisville-Wishing Star 500-230 kV Electric Transmission Project, where lines within an existing transmission line right-of-way corridor are proposed for wreck and rebuild in order to accommodate needed

2. Environmental Analysis

The Company has conducted an environmental analysis on the proposed Project. Please see the following subsections of this DEQ Supplement for pertinent details about the proposed Project.

A. Air Quality

For the Project, the Company will control fugitive dust during construction in accordance with DEQ regulations. During construction, if the weather is dry for an extended period, there will be airborne particles from the use of vehicles and equipment within the right-of-way. However, minimal earth disturbance will take place and vehicle speed, which is often a factor in airborne particulate, will be kept to a minimum. Erosion and sedimentation control is addressed in Section 2.H of this Supplement. Equipment and vehicles that are powered by gasoline or diesel motors will be used during the construction of the line so there will be exhaust from those motors. Exhaust from those motors will result in minimal air pollution.

The existing transmission right-of-way corridor currently is maintained for transmission facility operations. The Project may require some trimming of tree limbs along the right-of-way edges to support construction activities, including trees located outside of the transmission line corridor that are tall enough to potentially impact the transmission facilities, commonly referred to as “danger trees,” which also may 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. Additionally, the Company anticipates that tree clearing within the Company’s existing property rights will be required as part of this Project. The Company does not expect to burn cleared material, but, if necessary, the Company will coordinate with the responsible locality to obtain the appropriate permits and will comply with any conditions set forth by the locality or take actions in accordance with the Company’s property rights. The Company’s tree clearing methods are described in Section 2.L.

B. Water Source

No water source is required for transmission lines. This discussion focuses on waterbodies that will be crossed by the proposed transmission lines.

On behalf of the Company, Stantec Consulting Services Inc. (“Stantec”) identified and mapped waterbodies in the vicinity of the routes using publicly available geographic information system (“GIS”) databases, U.S. Geological Survey (“USGS”) National Hydrography Dataset Plus High Resolution (“NHD”), the United States Fish and Wildlife Service (“USFWS”) National Wetland Inventory (“NWI”), and recent (2025) and historic digital aerial photography (VGIN Most Recent Imagery and Google Earth). The proposed Project crosses six waterbodies, all of

infrastructure within existing right-of-way to the maximum extent practicable, consistent with Virginia law and Commission guidance. *See Application of Virginia Electric and Power Company for approval and certification of electric transmission facilities: 500 kV Morrisville-Wishing Star Line #5008, 230 kV Anderson Branch-Morrisville Line #2464, Expanded Corridor Optimization and Related Projects*, Case No. PUR-2026-00021 (Feb. 27, 2026).

which are NHD mapped, including two perennial waterbodies (Cattail Branch and Tuscarora Creek) and four unnamed, intermittent streams.

During detailed engineering, the Company will design structures to span waterbodies. The distance between transmission line structures proposed by the Company will be adequate to span the waterbodies identified along the Project. If required, any clearing in the vicinity of streams will be performed in a manner to avoid land disturbance within wetland areas and within 100 feet of streams as applicable, and vegetation less than three inches in diameter will be left undisturbed.

According to U.S. Army Corps of Engineers (“Corps”) documentation, no waters considered navigable under Section 10 of the Rivers and Harbors Act are crossed by the Project. Waterbodies in the vicinity of the Project area are shown on Appendix A of the Wetland and Waterbody Desktop Summaries for the Project, which is included in Attachment 2.D.1. For waterbody acreages crossed (riverine and open water features), as identified in the Desktop Wetland and Surface Water Review, see Section D below.

During construction, and if necessary, proper drainage of waterbodies will be maintained using culverts and/or other crossing devices, as needed, according to the Company’s standard policies. Where clearing of trees and/or woody shrubs is required, clearing within 100 feet of a stream will be conducted by hand. Vegetation will be cut at or slightly above ground level, and stumps will not be grubbed. To protect waterways from soil erosion and sedimentation during construction, the Company will use sediment barriers along waterways and steep slopes. If a section of line cannot be accessed from existing roads, the Company may need to install a culvert or temporary bridge to cross small streams. In such cases, temporary fill material may be required that would be placed on erosion control fabric and removed when work is completed, returning the surface to original contours.

A Utility Line Encroachments General Permit is expected to be required from the Virginia Marine Resources Commission (“VMRC”) for the crossing of Tuscarora Creek, which has a drainage area greater than five square miles at the crossing location. A Joint Permit Application (“JPA”) will be submitted for review by the VMRC, DEQ, and the Corps to authorize the jurisdictional crossing and for any impacts to jurisdictional features.

C. Discharge of Cooling Waters

No discharge of cooling waters is associated with the Project.

D. Tidal and Non-tidal Wetlands

No tidal wetlands were identified within the Project area. Non-tidal wetlands are summarized below.

On behalf of the Company, Stantec conducted a review of wetland review to identify potential wetlands, streams and other waters of the United States (“WOUS”) within areas of the Project (Desktop Wetland Review, Attachment 2.D.1). This review included areas with previously

delineated wetlands and other WOUS and areas where a desktop evaluation of probable wetlands was required.

Stantec field delineated wetlands and other WOUS using the *Routine Determination Method*, as outlined in the *1987 Corps of Engineers Wetland Delineation Manual* and methods described in the *2012 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region* (Version 2.0) in July 2021 for approximately 3.1 miles of existing transmission line right-of-way from the existing Goose Creek Station to the Potomac River (the Virginia/Maryland border). The Company submitted the results of this delineation to the Corps in October 2021, and a Preliminary Jurisdictional Determination was received from the Corps on December 23, 2021 (NAO-2021-02802-rdb). This determination is valid until December 23, 2026.

In addition to the delineation above, Dewberry Engineers Inc. field delineated wetlands and other surface waters in March 2022 and December 2023 for the portion of the Project area for the future Aspen Station. It should be noted that the future Aspen Station is being permitted and constructed under separate cover; however, this Project involves the installation of termination facilities at the future Aspen Station once constructed. As such, the outline of the future Aspen Station is included within the Project limits. The results of this delineation were confirmed through the verification of a Nationwide Permit #57, NAO-2024-03018-RDR (VMRC #25-0761).

The areas not previously delineated include the proposed right-of-way expansion and Company-owned property surrounding the Goose Creek Station, Pleasant View Station, and future Aspen Station, approximately encompassing 27.7 acres of Project limits. Stantec utilized a stepwise process to identify probable wetland and waterbody areas along the areas of the Project not previously delineated as follows:

1. The potential location and extent of wetlands and other surface waters were identified by combining natural color and infrared aerial imagery with USGS and DEM topography. Boundaries were assigned to the areas that appeared to exhibit wetland signatures based on this review and a cover type was determined based on aerial photo interpretation. These areas are referred to as Interpreted Wetlands.
2. To further determine the probability of a wetland or other surface water features occurring within a given location, the Interpreted Wetlands were digitally layered with NWI mapping and SSURGO soils data.
3. A probability of wetland occurrence ranking was then assigned based on the number of overlapping data layers (*i.e.*, indicators of potential wetland presence) that occurred in a particular area (Table D-1).

Table D-1	
Line #514 Corridor Optimization Project Wetland Probability Criteria	
Probability Class	Criteria
High	Areas where layers of hydric Soils, Interpreted Wetlands, and NWI data overlap
Medium/High	Areas where NWI data overlaps hydric soils; or NWI data overlaps Interpreted Wetlands with or without partially hydric soils; or hydric soils overlaps Interpreted Wetlands
Medium	Interpreted Wetlands with or without overlap by partially hydric soils
Medium/Low	Hydric soils only; or NWI data with or without overlap by partially hydric soils
Low	Partially hydric soils only
Very Low	Non-hydric soils only

Using the above criteria, wetland and waterbody occurrence probabilities ranging from very low to high were identified for areas of the Project not previously delineated, with areas of affected wetlands calculated by probability class and Cowardin classification. The probability of wetland and waterbody occurrence increases as multiple indicators overlap toward the “high” end of the probability scale as shown in Table D-1. The medium to high probability categories were selected as the most reliable representation of field conditions due to overlapping data sets. Results for the wetland probability analysis are summarized below.

Wetlands within the Project area are predominantly palustrine emergent (“PEM”) wetlands, palustrine scrub-shrub (“PSS”) wetlands, and palustrine forested (“PFO”) wetlands and are associated with various waterbodies crossed by the Project, including Tuscarora Creek, Cattail Branch, as well as numerous unnamed tributaries and other open water features. The Cowardin Classification of the majority of the wetlands within the existing cleared right-of-way have been combined into PSS / PEM as the majority of the study area is within an existing, cleared, and maintained right-of-way, and it is difficult to differentiate between PSS and PEM wetlands even with the highest resolution aerials. The portion of the Project area outside of the existing, cleared, and maintained right-of-way also contains PFO wetlands. The results of the desktop wetland review are tabulated in the Desktop Wetland Review.

Wetlands and waterbodies of medium or higher probability were combined with the previously delineated wetlands within the Project to provide a total as summarized below in Table D-2. Wetlands delineated as PEM and PSS Cowardin types have been combined for inclusion with the totals from the desktop review.

Table D-2 Total Previously Delineated and Potential Wetlands and Surface Waters ^a Line #514 Corridor Optimization Project		
Wetland and Other Surface Water Types	Area (Acres)	Length (Linear Feet)
PFO Wetlands	1.48	N/A
PEM/PSS Wetlands	1.75	N/A
Stream Channels	0.73	2,304
Open Water (PUB)	0.71	N/A
Total	4.68	2,304

^a Totals include the medium to high probability resources identified in the desktop analysis and resources from the field delineations

^b Numbers in this table have been rounded for presentation purposes; as a result, the totals may not reflect the sum of the addends.

All wetlands will require protective matting to be installed to support construction vehicles, equipment, and materials during construction. While most wetlands are anticipated to be spanned, with impacts limited to temporary construction impacts, permanent impacts would include any necessary structure placement within wetlands and clearing and conversion of PFO/PSS-type wetlands to PEM wetland types after construction is complete. This conversion would reduce riparian buffer benefits such as stream bank stabilization and erosion control, nutrient and sediment filtration, floodwater storage and peak flow reduction, and water temperature changes due to loss of shading. Construction impacts from the transmission lines on PEM and riverine wetlands would be temporary and would be restored to pre-construction conditions when construction is complete. Within PFO and PSS wetlands, vegetation will be allowed to return to maintained right-of-way heights, consistent with open meadow and/or shrub-scrub habitat, after construction is completed, which would provide some filtration and stabilization to protect waterbodies from runoff.

Prior to construction, the Company will delineate wetlands and other WOUS within portions of the Project area not covered under valid PJD. The Company will obtain any necessary permits to impact jurisdictional resources. The Company has sited structures to avoid wetlands and streams to the greatest extent practicable. Temporary impacts will be restored to pre-existing conditions, and permanent impacts will be mitigated for in accordance with all applicable federal and state regulations and laws. The Project is expected to require a Nationwide Permit 57 for impacts to wetlands and other WOUS and a VMRC VGP-5 for crossings of state-owned bottom. A JPA will be submitted for further evaluation and final permit need will be determined by VMRC and the Corps.

E. Floodplains

As depicted on the Federal Emergency Management Agency's ("FEMA") online Flood Insurance Rate Map #51107C0235E (effective date 2/17/2017), the Project area contains flood zone hazard area Zone A, the 100-year floodzone, and Zone AE, around Tuscarora Creek and its tributaries. The Company will coordinate with the local floodplain coordinators as required.

F. Solid and Hazardous Waste

Stantec conducted a review of available U.S. Environmental Protection Agency ("EPA"), Corps, and DEQ GIS databases to identify facilities within the Project area that currently or have historically used, stored and/or generated hazardous substances, and properties that may be associated with releases of hazardous chemicals to the environment.

The goal of this review was to identify locations associated with historic contamination, remedial investigations, corrective actions or emergency response events related to releases of hazardous substances that may be impacted by, or cause impact to, the Project. Properties with such designations may be associated with environmental conditions which could pose a current or future risk to human health and the environment, and the property or portions of the property may be subject to restrictive covenants. If construction activities or permanent structures were proposed within or in close proximity to an impacted property, the Company may be required to follow rules set forth in property use restrictions, and if any soil, sediment or groundwater is encountered during construction that is suspected of contamination, or if any hazardous waste is generated or disturbed due to project activities, that material must be tested and disposed of in accordance with applicable Federal, State, and local laws and regulations.

The review included a search of the EPA Federal Registry Service database to identify Resource Conservation and Recovery Act ("RCRA") and Toxic Release Inventory ("TRI") regulated facilities; a search of the EPA Cleanups In My Community ("CIMC") database to identify Superfund, Brownfields, RCRA Corrective Action, and Emergency Response properties; a search of the Corps Formerly Used Defense Sites ("FUDS") database to identify FUDS properties with and without remediation projects; and a search of the DEQ Environmental Data Mapper ("EDM") to identify Registered Petroleum Tank, Solid Waste Permit, and Virginia Pollution Discharge Elimination System ("VPDES") outfall facilities, as well as Petroleum Release, Voluntary Remediation Program ("VRP") and Pollution Response Program ("PREP") cases.

Database point counts for all regulated facilities (*i.e.*, facilities that are regulated but not necessarily associated with contamination cases) mapped within 0.25-mile of the Project right-of-way and/or the Company's existing property rights are provided in Table F-1. Database point counts for all contamination, remediation and response cases (collectively, referred to as "contamination cases") mapped within 0.25-mile of the Project right-of-way and/or the Company's existing property rights are provided in Table F-2. The locations of the database points are depicted in Attachment 2.F.1.

TABLE F-1 Line #514 Corridor Optimization Project Active and Inactive EPA and DEQ Regulated Solid and Hazardous Waste Facilities within 0.25 Mile ¹	
Facility Type	Project
EPA	
RCRA LQG Facilities	0
RCRA Other Facilities ²	7
TRI Facilities	1
CORPS	
FUDS Total ³	0
DEQ	
Registered Petroleum Tank Facilities	4
Solid Waste Facilities	0
VPDES Industrial Outfalls ⁴	9
EPA = Environmental Protection Agency; Corps= United States Army Corp of Engineers; DEQ = Virginia Department of Environmental Quality; RCRA = Resource Conservation and Recovery Act, LQG = Large Quantity Generator under RCRA; FUDS = Formerly Used Defense Sites; TRI = Toxic Release Inventory; NPDES = National Pollutant Discharge Elimination System; VPDES = Virginia Pollutant Discharge Elimination System. Notes ¹ Site counts are based only on the location of points mapped in agency databases within 0.25-mile of the Project right-of-way and/or the Company's existing property rights. Database point placement accuracy may vary, and the true boundaries of a site may be within or outside of the 0.25-mile buffer zone. Data accuracy and true site boundaries have not been accounted for in this table. ² Includes RCRA Small Quantity Generators, Very Small Quantity Generators, Transporters and/or Treatment, Storage and Disposal Facilities. ³ FUDS may include facilities with or without projects. Site counts in this table represent all FUDS properties within the specified distance. ⁴ VPDES Industrial Outfalls represent permitted offsite discharge locations from industrial facilities. Several outfalls may be associated with a single facility.	

TABLE F-2 Line #514 Corridor Optimization Project Active and Historic Contamination, Investigation, Cleanup and Corrective Action Cases within 0.25 Mile¹	
Case Type	Project
EPA	
Brownfields	0
Emergency Response	0
RCRA Corrective Action	0
Superfund ²	0
CORPS	
FUDS Projects ³	0
DEQ	
Petroleum Releases	0

TABLE F-2 Line #514 Corridor Optimization Project Active and Historic Contamination, Investigation, Cleanup and Corrective Action Cases within 0.25 Mile¹	
Case Type	Project
PREP	8
VRP	0
<p>EPA = Environmental Protection Agency; Corps= United States Army Corp of Engineers; DEQ = Virginia Department of Environmental Quality; RCRA = Resource Conservation and Recovery Act; FUDS = Formerly Used Defense Sites; VRP = Voluntary Remediation Program; PREP = Pollution Response Program.</p> <p>Notes</p> <p>¹ Site counts are based only on the location of points mapped in agency databases within 0.25-mile of the Project right-of-way and/or the Company's existing property rights. Database point placement accuracy may vary, and the true boundaries of a site may be within or outside of the 0.25-mile buffer zone. Data accuracy and true site boundaries have not been accounted for in this table.</p> <p>² Includes both National Priority List and/or Non-National Priority List (Non-NPL) Superfund sites within 0.25-mile. Superfund sites located within 1.0-mile of the project may be reviewed in Table F-3 and in the 'EPA Contamination Cases' section below.</p> <p>³ FUDS Project sites may include contaminated and non-contaminated facilities.</p>	

Contamination cases that are mapped on properties with parcel boundaries within 200-feet of the Project right-of-way and/or the Company's existing property rights are considered to be within "close proximity" to the Project and are summarized below in Table F-3 below.

TABLE F-3 Line #514 Corridor Optimization Project Historic Contamination, Investigation, Cleanup and Corrective Action Cases Mapped on Parcels in Close Proximity ¹ to the Project					
Program ID Number	Case Name	Site Address ²	Distance from Project ³	Gradient from Project ⁴	Agency Status ⁵
EPA Superfund, Brownfield, RCRA Corrective Action and/or Emergency Response Cases ⁵					
-	-	-	-	-	-
DEQ Petroleum Release Cases					
-	-	-	-	-	-
DEQ Pollution Response Program (PREP) Cases					
PRP 299198	Petroleum Sheen – Residential SWMP	1802 Blue Marble Terrace, Leesburg, VA 20175	34 feet from right-of-way	Down Gradient	Closed (2021)
PRP 311683	Discolored Water (Milky) - Luck Stone Quarry	Cochran Mill Road, Leesburg, VA 20175	73 feet from right-of-way	Down Gradient	Closed (2023)
PRP 311689	Discolored Water (Milky) - Luck Stone, Goose Creek Plant	42748 Cochran Mill Road, Leesburg, VA 20175	73 feet from right-of-way	Down Gradient	Closed (2024)

TABLE F-3 Line #514 Corridor Optimization Project Historic Contamination, Investigation, Cleanup and Corrective Action Cases Mapped on Parcels in Close Proximity ¹ to the Project					
Program ID Number	Case Name	Site Address ²	Distance from Project ³	Gradient from Project ⁴	Agency Status ⁵
PRP 319923	Muriatic Acid Spill - Leesburg	1500 Balch Dr SE, Leesburg, VA 20175	143 feet from right-of-way	Side Gradient	Closed (2025)
PRP 308162	Sediment/Litter Concern – The Truck Shop	19431 Samuels Mill Court, Leesburg, VA 20175	24 feet from right-of-way	Side Gradient	Closed (2023)
PRP 307209	DTA – Loudoun Co	4247 Cochran Mill Road, Leesburg, VA 20175	115 feet from right-of-way	Side Gradient	Closed (2022)
ID = Identification Number, PC = Pollution Complaint Number (DEQ Petroleum Release Program), IR = Incident Report Number (DEQ Pollution Response Program [PREP]); VRP = Voluntary Remediation Program (VRP) Number Notes: ¹ “Close Proximity” is defined, at a minimum, as cases that are mapped on or associated with properties whose address parcel boundaries are within 200 feet of any portion of the Project right-of-way and/or the Company’s existing property rights. Cases may be included in this table that are mapped outside of these parameters in agency databases if offsite impacts have been reported within close proximity to Project right-of-way and or the Company’s existing property rights, or if inaccurate mapping is suspected during case file review. ² Site address was obtained from DEQ database records. The true location of a release may deviate from reference points and addresses. Refer to case summaries for descriptions of verified release locations. ³ Distances from Project are reported from the nearest point along the nearest existing cleared corridor to the nearest impacted parcel boundary. ⁴ Estimated surface gradients based on available elevation data. Groundwater gradients may vary. ⁵ Active cases should be assumed ongoing, and dates provided represent the year the case was opened; dates provided for closed cases represent closure year. ⁶ Superfund sites within 1.0-mile of the Project have been assessed due to the potential off-site impacts.					

Identification of EPA, Corps or DEQ environmental permits or cases mapped on a property does not necessarily indicate that the property is a past, present or future hazard, and datapoint mapping errors may be present in agency databases. As such, additional review of case files is required to determine the actual location, extent and nature of contamination associated with database points on a property. Casefile review summaries are provided below for each datapoint identified above in Table F-3.

EPA Contamination Cases

Based on a review of the EPA’s CIMC database, no properties with Superfund, Brownfield, RCRA Corrective Action or Emergency Response cases are mapped within 0.25-mile or are mapped on properties within 200 feet of the Project.

DEQ Contamination Cases

Based on a review of the DEQ Petroleum Release, PREP and VRP databases, no Petroleum Release or VRP cases were mapped within 0.25-mile of the Project right-of-way and/or the

Company's existing property rights. There is one petroleum release site located outside the 0.25-mile buffer; however, the site is located on a large parcel, and the parcel is within 200 feet of the Project area. Since the location of the petroleum release is outside of the 0.25-mile buffer it is not included in Table F-3, and the site is not anticipated to be impacted by the Project. Eight PREP cases were mapped within 0.25-mile of the Project right-of-way and the Company's existing property rights. Of these, six PREP cases were mapped on properties within 200 feet of the Project right-of-way and/or the Company's existing property rights (summarized in Table F-3, and properties shown as "Affected Parcel Boundary" on Attachment 2.F.1). Stantec obtained DEQ case files via the EDM database for the six PREP cases within 0.25-mile and on properties within 200 feet of the Project, listed in Table F-3 above and are summarized below.

PRP 299198 – Petroleum Sheen – Residential SWMP

A report was submitted to DEQ concerning a petroleum sheen detected on the stormwater retention pond at 1802 Blue Marble Terrace, Leesburg, Virginia in April of 2021. The local fire department hazmat team responded, preventing oil from leaving the pond. The oil was determined to have come from nearby paving equipment. Appropriate compliance actions were completed and verified by DEQ, and the site was closed in April of 2021. Given this information, the site is not anticipated to have impacted soil and/or groundwater within the Project right-of-way or the Company's existing property rights.

PRP 311683 – Discolored Water (Milky) - Luck Stone Quarry

A report was submitted to DEQ concerning discolored "milky" water within Tuscarora Creek near the intersection of Russel Branch Parkway and Golf Club Road in November of 2023. DEQ conducted a site visit, which determined the discolored water was caused by airborne dust from the nearby Luck Stone Quarry. DEQ determined no hazard was present and that no formal corrective action was required. The site was closed in December of 2023. Given this information, the site is not anticipated to have impacted soil and/or groundwater within the Project right-of-way or the Company's existing property rights.

PRP 311689 – Discolored Water (Milky) - Luck Stone, Goose Creek Plant

A report was submitted to DEQ concerning discolored "milky" water within Tuscarora Creek near the intersection of Russel Branch Parkway and Golf Club Road in November of 2023. DEQ conducted a site visit, which determined the discolored water was caused by airborne dust from the nearby Luck Stone Quarry. DEQ determined no hazard was present and that no formal corrective action was required. The site was closed in January of 2024. Given this information, the site is not anticipated to have impacted soil and/or groundwater within the Project right-of-way or the Company's existing property rights.

PRP 319923 – Muriatic Acid Spill - Leesburg

A report was submitted to DEQ concerning a muriatic acid spill at 1500 Balch Drive, Leesburg, Virginia in July of 2025. A worker knocked over a container of muriatic acid at a pool-cleaning job site. No waterways were impacted, and appropriate compliance actions were completed and verified by DEQ. The site was closed in July of 2025. Given this information, the site is

not anticipated to have impacted soil and/or groundwater within the Project right-of-way or the Company's existing property rights.

PRP 308162 – Sediment/Litter Concern – The Truck Shop

A report was submitted to DEQ in January of 2023 concerning the build-up of sediment and litter within gutters and storm water outlets located at Cochran Mill Road between Kittery Place and Samuels Mill Court. DEQ conducted a site visit and notified the Virginia Department of Transportation ("VDOT"). The site was closed in February of 2023. Given this information, the site is not anticipated to have impacted soil and/or groundwater within the Project right-of-way or the Company's existing property rights.

PRP 307209 – DTA – Loudoun County

An incident occurred in which a dump truck veered off the roadway and spilled approximately 20 gallons of fuel onto the ground in the area of 4247 Cochran Mill Road, Leesburg, Virginia in November of 2022. Appropriate compliance actions were completed and verified by DEQ. The site was closed in November of 2022. Given this information, the site is not anticipated to have impacted soil and/or groundwater within the Project right-of-way or the Company's existing property rights.

DEQ Cases mapped within 0.25-mile and greater than 200-feet from the Project right-of-way:

Based on DEQ's EDM database, cases that are mapped within 0.25-mile of the Project but are located on properties whose parcel boundaries are greater than 200-feet from the Project are provided in Attachment 2.F.1. Due to the distance, these cases are not anticipated to impact, or be impacted by, the Project.

Summary

Based on the Company's desktop review of DEQ databases and case files, the Company has determined that all of the PREP cases identified on property parcels within 200-feet of the Project are unlikely to have impacted soil and/or groundwater within the right-of-way. In addition, none of the EPA, Corps or DEQ facility sites identified in Table F-1, or other potential release cases identified in Table F-2 that are located within 0.25-mile of the Project, are anticipated to have impacted soil and/or groundwater in the Project area, and no impacts to those sites and cases should be anticipated as a result of the transmission lines construction.

Although the Project is constructing overhead lines, minor subsurface work is required during installation. This disturbance occurs at discrete locations along the route, with temporary spoils contained as they are generated. Should contaminated media be encountered in any location during construction, the Company will implement its standard response and reporting procedures to properly manage and dispose of any suspected hazardous materials in accordance with required safety standards and all applicable federal, state, and local regulations.

Lastly, care will be taken to operate and maintain construction equipment to prevent any fuel or oil spills. Any waste created by construction crews will be disposed of in a proper manner and recycled where appropriate. Waste management procedures will be further detailed in the

Company's stormwater pollution prevention plan, a component of the Virginia Stormwater Management Program, which falls under the purview of the DEQ.

G. Natural Heritage, Threatened and Endangered Species

Threatened and Endangered Species

On behalf of the Company, Stantec conducted online database searches for threatened and endangered ("T&E") species in the vicinity of the Project, including the USFWS Information for Planning and Consultation ("IPaC") system, the Virginia Department of Wildlife Resources' ("DWR") Virginia Fish and Wildlife Information Service ("VAFWIS"), the DWR Northern long-eared bat ("NLEB"), Tricolored bat ("TCB") and Little brown bat ("LBB") Consultation Tool, and the Center for Conservation Biology's ("CCB") Bald Eagle Nest Locator. Stantec also received the Virginia Department of Conservation and Recreation's ("DCR") Project Review on December 3, 2025, which conducted a search of the DCR's Biotics Data System for occurrences of natural heritage resources within the Project. Results of these queries are provided in Attachment 2.G.1.

The review accounted for regulatory changes and requirements associated with the USFWS uplisting of the NLEB (*Myotis septentrionalis*) from federally threatened to federally endangered. On October 15, 2024, USFWS issued the NLEB Final Guidance for development projects. The USFWS Interim Guidance for the NLEB expired on November 30, 2024, and the Final Guidance for NLEB took effect.

The review accounted for regulatory changes and requirements associated with TCB (*Perimyotis subflavus*) and Monarch butterfly (*Danaus plexippus*) and the proposed USFWS listing of these species as federally endangered and federally threatened, respectively. The Company is anticipating the TCB and Monarch butterfly will be listed; therefore, it assumes any regulatory changes associated with the potential listing of the TCB and Monarch butterfly will affect this Project. On September 14, 2022, the TCB was proposed to be listed as Endangered by the USFWS. USFWS extended its Final Rule issuance target from September 2023 to the end of 2024, but as of the date of this filing, the TCB listing decision has not been issued. On December 12, 2024, the Monarch butterfly was proposed to be listed as Threatened by the USFWS, and the 90-day public comment period was extended and closed on May 19, 2025. The Company is actively tracking these rulings and evaluating the effects of potential outcomes on Company projects' permitting, construction, and in-service dates, including electric transmission projects.

In October 2024, USFWS issued a final NLEB and TCB Range-wide Determination Key ("DKey") to allow project proponents to assess project impacts, practicable avoidance and minimization measures, and consultation requirements under the final NLEB guidance and the eventual TCB listing ahead of the final decision. The Company will utilize the DKey to further assess project impacts and determine appropriate avoidance and minimization measures to ensure compliance with state and federal regulations when the Project begins permitting.

Based on the CCB Virginia Eagle Nest Locator mapping portal, the Project is not located within an Eagle Concentration Area and does not intersect any Primary or Secondary Buffers of currently documented bald eagle nests or osprey nests as identified in The Bald Eagle Protection Guidelines for Virginia (2012).

Six federal and/or state-listed or proposed T&E species have the potential to occur within the Project area (Table G-1).

TABLE G-1				
Potential Federal-and State-Listed Species in the Project Area				
Species	Status	Database	Habitat	Results
Northern long-eared bat (<i>Myotis septentrionalis</i>)	FE, SE	USFWS - IPaC	Generally associated with old-growth or late successional interior forests. Use partially dead or decaying trees for breeding, summer day roosting, and foraging. Hibernation occurs primarily in caves, mines, and tunnels.	Identified as potentially occurring near the Project area by USFWS IPaC database. No known hibernacula or maternity roost trees occur within the Project area. Additionally, the USFWS DKey issued a Not Likely to Adversely Affect Determination.
Tricolored bat (<i>Perimyotis subflavus</i>)	FPE, SE	USFWS- IPaC	Typically roost in trees near forest edges during summer. Hibernates deep in caves or mines in mountainous areas with warm, stable temperatures during winter.	Identified as potentially occurring near the Project area by USFWS IPaC database. No known hibernacula or maternity roost trees occur within the Project area. Additionally, the USFWS DKey issued a Not Likely to Adversely Affect Determination.
Monarch butterfly (<i>Danaus plexippus</i>)	FPT	USFWS- IPaC	Habitat generalists that rely on flowering plants. Require milkweed to lay eggs and for reproduction and the caterpillar stage.	Identified as potentially occurring near the Project area by USFWS IPaC database. Suitable habitat may exist in open space areas along the Project.
Green floater (<i>Lasmigona subviridis</i>)	FPT, ST	USFWS- IPaC, DWR- VAFWIS	Prefers the pools and eddies with gravel and sand bottoms of smaller rivers and creeks, smaller channels of large rivers or small to medium-sized streams.	Species confirmed as present within a 2.0-mile radius of the Project area. There are no designated T&E species waters for this species within the Project right-of-way. Furthermore, no in-stream work is proposed for the Project and erosion and sediment controls will be used to prevent runoff.

TABLE G-1				
Potential Federal-and State-Listed Species in the Project Area				
Species	Status	Database	Habitat	Results
Brook floater (<i>Alasmidonta varicosa</i>)	SE	DWR- VAFWIS	Prefers small streams to large rivers with low to moderate gradient and coarse sand and gravel substrates.	Species confirmed as present within a 2.0-mile radius of the Project area. There are no designated T&E species waters for this species within the Project right-of-way. Furthermore, no in-stream work is proposed for the Project and erosion and sediment controls will be used to prevent runoff.
Torrey's mountain mint (<i>Pycnanthemum torreyi</i>)	ST	DCR Project Review	Prefers dry, rocky, deciduous woods, along roadsides, and in thickets near streams. Known to be supported by diabase soils.	The DCR project review identified potential diabase glades within the Project area which may support Torrey's mountain mint.
Federal/State Status: FE Federally listed as endangered SE State listed as endangered FT Federally listed as threatened ST State listed as threatened FPE Federally proposed as endangered FPT Federally proposed as threatened				

Within the Project area and/or within a 2.0-mile radius of the Project area, database queries identified four federal-listed or federal-proposed species under the Endangered Species Act ("ESA") that could potentially occur in the Project area: NLEB, TCB, Monarch butterfly, and Green floater. The Monarch butterfly was the only species identified that was not also state-listed. The federal listing of the TCB and the Monarch butterfly has been proposed but they have not been officially listed at this time. One state-listed species under the ESA, the Brook floater, was also identified as potentially occurring within the Project area.

All four of the federal-listed species were identified by the USFWS IPaC system as having potential occurrence within the Project area, but none of the identified species were confirmed as present. The Brook floater was identified by DWR VAFWIS as occurring within a 2.0-mile radius of the Project area. The Torrey's mountain mint was identified by the DCR project review with the potential to exist within diabase glades identified as potentially present within the Project area.

During the permitting phase, the Company will coordinate with state and federal agencies as needed to determine if surveys, construction time-of-year restrictions, or other mitigation required to mitigate potential impacts on T&E species. If any T&E species are encountered during Project construction, the Company will work with the DWR and other appropriate jurisdictional agencies to minimize any impacts on the species.

Natural Heritage Resources

On behalf of the Company, Stantec submitted the Project to DCR-DNH for review. As mentioned above, DCR-DNH conducted an official review dated December 3, 2025 (see Attachment 2.G.1). DCR-DNH concluded that the Project does not cross any ecological cores or State Natural Area Preserves under DCR's jurisdiction. One conservation site, one stream conservation site ("SCS"), and diabase are located within the Project area, and they are discussed below.

Conservation Sites

Conservation sites are polygons built around one or more rare plant, animal, or natural community designed to include the element and, where possible, its associated habitat, and buffer or other adjacent land thought necessary for the element's conservation. The Red Rock Overlook Conservation Site has been identified within the Project area and has been given a biodiversity significance ranking of B4, a site of moderate significance. No federally or listed species were identified as supported by this conservation site. The easternmost edge of the conservation site overlaps the existing, cleared, and maintained transmission line right-of-way. No right-of-way expansion is proposed along this portion of the Project, and all work will occur within the existing, cleared, and maintained transmission line right-of-way and/or on the Company's existing property rights. The Company will work with the appropriate agencies to minimize any impacts to the conservation site during implementation of the Project.

Stream Conservation Sites

SCS sites encompass stream/river reaches, waterbodies, and terrestrial contributing areas containing or associated with aquatic or semi-aquatic resources, including upstream and downstream reaches and tributaries up to 3-km stream distance from the aquatic resource. The Potomac River – Goose Creek Stream Conservation Site has been identified within the Project area and has been given a biodiversity significance ranking of B3, a site of high significance. The natural heritage resource of concern associated with this site is the proposed federally threatened and state threatened Green floater (*Lasmigona subviridis*). No in-stream work is proposed, and erosion and sediment controls will be utilized throughout the Project in order to prevent runoff. The Company will work with the appropriate agencies to minimize any impacts to the conservation site during implementation of the Project.

Diabase

Diabase glades are characterized by historically fire-dominated grassland vegetation on relatively nutrient-rich soils underlain by Triassic bedrock. Several areas of potential diabase glades have been identified within the Project area. The natural heritage resource of concern associated with diabase glades is the state threatened Torrey's mountain mint (*Pycnanthemum torreyi*). The Company will work with the appropriate agencies to ensure compliance with Virginia's Endangered Plant and Insect Species Act.

Construction and maintenance of the new transmission line facilities could have minor effects on wildlife; however, impacts on most species will be short-term in nature, and limited to the period of construction.

For impacts on wildlife habitat (forested, agricultural, open space, and open water/waterbodies), see Section K. No other natural heritage resources (habitat of rare, threatened, or endangered species, unique or exemplary natural communities, or significant geological formations) were identified within the Project area by DCR.

H. Erosion and Sediment Control

The DEQ approved the Company's *Standards & Specification (S&S) for Erosion & Stormwater Management (ESM)*. The S&S Agreement is deemed approved for ESM pursuant to the Virginia Erosion and Stormwater Management Act (§ 62.1-44.15:24 *et seq.*) and associated regulation (9 VAC 25-875-10 *et seq.*). These specifications are given to the Company's contractors and require erosion and sediment control measures to be in place before construction of the line begins and specifies the requirements for rehabilitation of the right-of-way. A copy of the current DEQ approval letter dated July 22, 2025, is provided as Attachment 2.H.1.

I. Archaeological, Historic, Scenic, Cultural or Architectural Resources

The Company retained Stantec to conduct a Stage I Pre-Application Analysis ("Stage I Analysis") of potential impacts on cultural resources for the Project in accordance with the Virginia Department of Historic Resource's ("VDHR") *Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia* (VDHR 2008). A copy of the Stage I Analysis, which was provided to VDHR on May 20, 2026, is included as Attachment 2.I.1. The analysis identified and considered previously recorded resources within the following study tiers as specified in the Guidelines:

- National Historic Landmark ("NHL") properties within a 1.5-mile radius of the Project.
- National Register of Historic Places ("NRHP")-listed properties, NHLs, battlefields, and historic landscapes within a 1.0-mile radius of the Project.
- NRHP-eligible and -listed properties, NHLs, battlefields, and historic landscapes within a 0.5-mile radius of the Project.
- Qualifying architectural resources and archaeological sites within the right-of-way of the Project.

Information on cultural resources within each of these study tiers was obtained from the Virginia Cultural Resources Information System ("VCRIS"). Following identification and field inspection of historic properties, Stantec assessed each architectural resource for potential impacts from the Project. Assessment of impacts was conducted through a combination of field inspection, digital photography, review of topography and aerial photography, and photo simulation. Photo simulations were prepared to depict the new transmission infrastructure from vantage points within or near each resource. The photo simulations used digital photography, facing from the resources towards the Project, which was then loaded into a computer with location and ground-elevation data. The transmission line structures to be built as part of the Project were computer modeled to represent their location, height, and configuration within the viewshed of a resource. The models were then overlaid onto the digital photography so that the existing (unaltered) view can be compared with the simulated view illustrating the proposed structures, as they would appear on the landscape. Archaeological assessment was limited to

desktop review of project improvements in relation to previously delineated site boundaries, however, existing conditions of sites remain unknown at this level of investigation.

A summary of the considered resources identified in the vicinity of the Project and recommendations concerning the Project effects are provided in the following discussion. The information presented here derives from existing records and does not purport to encompass the entire suite of historic and archaeological resources that may ultimately be affected by the undertaking.

The resources located within the Project route right-of-way may be subject to both direct impacts from placement of the transmission line across the property as well as visual impacts from changes to the viewshed introduced by the new transmission infrastructure. Resources in the 0.0 to 0.5-mile study tier would not be directly impacted but would likely be visually impacted unless topography or vegetation obscures the view from the resource to the transmission line. At a distance over 0.5 mile, it becomes less likely that a resource would be within line-of-sight of the new transmission facilities. Beyond 1.0 mile, it becomes even less likely that a given resource would be within line-of-sight of the Project. However, a full architectural survey is necessary to determine which resources would be visually impacted and to survey for additional unrecorded resources.

The nature of the impacts will depend on the final Project design in which the exact placement and height of transmission line structures is confirmed. As part of the forthcoming full architectural survey, Project impacts on these and any newly identified resources would be assessed. The study area for the survey would be defined based on the height of the transmission line structures, topography, tree cover, and other factors impacting line-of-sight from resources to the route.

Archaeological Resources

One previously recorded archaeological resource was identified within the Project right-of-way during the background research. The resource, Site 44LD1341, comprises a prehistoric temporary camp. The site is determined potentially eligible by VDHR. The Company will assess potential impacts to this resource during the next stage of investigations. The resource is provided in Table I-1 below.

Table I-1 Line #514 Corridor Optimization Project Previously Recorded Archaeological Sited Located within the Project Corridor				
VDHR #	Resource Name	Evaluation Status	Distance to Right-of-Way (Feet)	Stantec Impact Recommendation
44LD1341	Prehistoric Temporary Camp	Potentially eligible	0 feet	Investigate During Archaeological Survey

Architectural Resources

Two NHL architectural resources are located within a 1.5-mile radius of the Project centerline. One NRHP-listed resource and one potentially eligible battlefield are located within 1.0-mile and two NRHP-eligible resources are located within 0.5-mile of the centerline. The two battlefield resources (VDHR #053-5058 and 253-5182) are also crossed by the transmission line right-of-way corridor. These resources are provided in Table I-2 below.

Table I-2 Line #514 Corridor Optimization Project Architectural Resources Considered in the Stage I				
VDHR #	Resource Name	Evaluation Status	Distance to Centerline (feet)	Stantec Impact Recommendation
053-0276	Alexandria, Loudoun and Hampshire Railroad	Eligible	0	Minimal
053-5058	Balls' Bluff Battlefield	Potentially Eligible	0	Minimal
253-5021/ 253-5182	Ball's Bluff Battlefield and National Cemetery/ Ball's Bluff Battlefield Historic District Boundary Expansion ²¹	NHL, NRHP Listed, Virginia Landmarks Register (VLR) Listed	0	Minimal

²¹ The NHL-listed Ball's Bluff Battlefield Historic District (DHR #253-5021) includes the Ball's Bluff Battlefield and National Cemetery Historic District Boundary Expansion (DHR #253-5182). The original NHL (DHR #253-5021) is over 1.5 miles away from the Project and included 76 acres encompassing the National Cemetery and the then-defined core area of the battlefield. The National Cemetery will have no visibility of the Project. The NHL boundary was expanded in 2016 to the current boundaries of 3,301 acres to include portions of American Battlefield Protection Program defined Core and Potential National Register areas of the battlefield extending southeast from the National Cemetery and along the banks of the Potomac River. The Project crosses through approximately 5.3 acres of the NHL where it is intersected by the Project right-of-way as it approaches the Potomac River. The existing right-of-way that is currently within the boundary of and also adjacent to the NHL boundary is characterized by existing energy infrastructure and has been previously disturbed. No contributing elements, such as earthworks, are located within the portion of the Project crossing the NHL boundary.

Table I-2 Line #514 Corridor Optimization Project Architectural Resources Considered in the Stage I				
VDHR #	Resource Name	Evaluation Status	Distance to Centerline (feet)	Stantec Impact Recommendation
053-5783	Murray Hill, 42910 Edwards Ferry Road NE	NRHP Listed VLR Listed	1,783	Minimal
053-6078	Edwards Ferry Road	Eligible	1,340	Minimal

J. Chesapeake Bay Preservation Areas

Construction, installation, operation, and maintenance of electric transmission lines are conditionally exempt from the Chesapeake Bay Act as stated in the exemption for public utilities, railroads, public roads, and facilities in 9 VAC 25-830-150. Additionally, Loudoun County is not a locality that is subject to the Chesapeake Bay Preservation Act.

K. Wildlife Resources

Relevant agency databases were reviewed to determine if the Project has the potential to affect any threatened or endangered species, and a request for Project review was submitted to DCR as described in Section 2.G and included as Attachment 2.G.1. As discussed in Section 2.G, certain federal and state-listed species were identified as confirmed and potentially occurring in the vicinity of the Project. The Project will primarily take place within an existing transmission line corridor which crosses land largely characterized as suburban, urban, and industrial. Minimal clearing is expected to be required for new easements. Clearing will be needed, mostly on Company-owned property between the existing Goose Creek Station and Structure #5004/4 to provide for adequate conductor clearance. Areas of tree clearing would be converted to maintained transmission line right-of-way vegetation, which would eliminate forest habitat and cover but may provide edge habitat or open space for some species. The Company will coordinate with the USFWS, DWR, and DCR as appropriate to determine whether surveys are necessary and to minimize impacts to wildlife resources.

L. Recreation, Agricultural, and Forest Resources

The general character of the area crossed by the Project is characterized as suburban, urban, and industrial. The Project is expected to have minimal impacts on recreational, agricultural, and forest resources as the majority of the Project is located within an existing, cleared, and maintained transmission line right-of-way or within the Company's existing property rights.

The Company reviewed publicly available data sets and maps, county and city websites, and recent aerial photography to identify recreation areas within 0.5-mile of the Project. Six recreational areas were identified as shown in Table L-1 below. Given the distance between these recreational areas and the Project, and that the Project is primarily located within an

existing, cleared, and maintained transmission line right-of-way, no new impacts to the majority of these recreational areas are anticipated.

Four recreational facilities are crossed by the Project, and two additional recreational facilities are directly adjacent to the Project. The intersecting sites are the Red Rock Wilderness Overlook, Harper Park, Washington & Old Dominion Trail, and Philip A. Bolen Memorial Park. The adjacent sites are Good Times Park and Keep Loudoun Beautiful Park.

Table L-1 Recreational Areas Within 0.5 Mile of the Project			
Name	Facilities Summary	Distance/Direction from Project (Miles)	County
Red Rock Wilderness Overlook	67-acre park that includes forested trails and other amenities	0.0 west	Loudoun
Good Times Park	Three-field Little League complex operated by Central Loudoun Little League.	0.04 west	Loudoun
Harper Park	1.25-acre local park	0.0 northwest	Loudoun
Keep Loudoun Beautiful Park	3.4-acre park along Goose Creek with various amenities	0.18 southeast	Loudoun
Washington & Old Dominion Trail	Trail	0.0 north	Loudoun
Philip A. Bolen Memorial Park	405-acre park that includes forested areas as well as a sports complex	0.0 southwest	Loudoun

Of the four recreational facilities crossed by to the Project, one is a linear facility, the Washington & Old Dominion Trail. Approximately 107 feet of new right-of-way extending approximately 174 feet (a total of approximately 0.8 acre of new right-of-way) will be required as the trail is located between portions of the Company's existing property rights. The Washington & Old Dominion Trail includes a 45-mile paved trail between Shirlington and Purcellville, Virginia. The trail was created by converting the historic Washington and Old Dominion Railroad into a regional park. The trail was completed in 1988 and designated as a National Recreation Trail by the U.S. Department of the Interior in 1987. The Company will coordinate with the Northern Virginia Regional Park Authority regarding the need for new right-of-way and submit for a Construction Permit for the aerial crossings of the trail. Visual impacts are anticipated to be minimal as recreational users are likely accustomed to the existing transmission line crossings of the trail. Minimal tree removal of trees that would interfere with conductor clearance will be required; however, the Company intends to leave shrub species in place to help screen the Goose Creek and Pleasant View Stations from trail view. Short-term temporary impacts may occur during construction of the Project including temporary trail

closures or detours and increased traffic from construction vehicles and/or vessels. The remaining recreational facilities that are crossed by the Project are the Red Rock Wilderness Overlook, Harper Park, and the Philip A. Bolen Memorial Park. The Red Rock Wilderness Overlook encompasses 67 acres of forest adjacent to the Potomac River and is under the jurisdiction of the Northern Virginia Regional Park Authority. The Project crosses the furthest east edge of the park and is contained within the existing right-of-way. The Red Rock Wilderness Overlook's White Trail is located within the forested section of the park and approximately parallels the existing right-of-way from Edwards Ferry Road to existing Structure #514/1841. The White Trail is not crossed by the Project, and no other trails or Red Rock Wilderness Overlook park infrastructure are directly adjacent to the Project area. Harper Park is a 1.25-acre local park under the jurisdiction of the Loudoun County Board of Supervisors. The Project is adjacent to the west boundary of Harper Park. The Philip A. Bolen Memorial Park encompasses 405 acres including a sports complex and is under the jurisdiction of Loudoun County. The Project is adjacent to the memorial park's east boundary.

The Virginia Agricultural and Forestal Districts Act provides for the creation of conservation districts designed to conserve, protect, and encourage the development and improvement of a locality's agricultural and forested lands. Loudoun County has designated Agricultural and Forestal Districts ("AFDs"), however, none are crossed by the Project.

The Virginia Scenic Rivers Act ("VSRA") seeks to identify, designate, and protect rivers and streams that possess outstanding scenic, recreational, historic, and natural characteristics of statewide significance for future generations. No qualified or designated scenic rivers as established by the VSRA will be crossed by the Project. Goose Creek, a designated scenic river, is located within 0.5-mile of the Project area.

Under the Virginia Open-Space Land Act, any public body can acquire title or rights to real property to provide means of preservation of open-space land. Most easements created under the Act are held by the Virginia Outdoors Foundation ("VOF"), but any state agency is authorized to create and hold an open-space easement. Such conservation easements are designed to preserve and protect open space and other resources and must be held for no less than five years in duration and can be held in perpetuity. According to the DCR's Managed Conservation Lands Database, no easements held by the VOF, AFDs, or Virginia Natural Area Preserves are crossed by the Project.

Any tree outside of the right-of-way that is tall enough to endanger the conductors if it were to break at the stump or uproot and fall directly toward the conductors and exhibits signs or symptoms of disease or structural defect that make it an elevated risk for falling will be designated as a "danger tree" and may be removed. The Company's arborist will contact the property owner if possible before any danger trees are cut, except in emergency situations. The Company's Forestry Coordinator will field-inspect the rights-of-way and designate any danger trees present. Qualified contractors working in accordance with the Company's Electric Transmission specifications will perform all danger tree cutting.

In addition to danger tree removal, the Company expects minimal clearing to be required for new easements. Clearing will be needed, mostly on Company-owned property between the

existing Goose Creek Station and Structure #5004/4 to provide for adequate conductor clearance. The trees proposed for clearing are not located within any ecological cores and are within an area of continued development. As such, the Project is expected to have minimal impacts on forest resources.

M. Use of Pesticides and Herbicides

Of the techniques available, selective foliar is the preferred method of herbicide application. The Company typically maintains transmission line right-of-way by means of selective, low volume applications of EPA-approved, non-restricted use herbicides. The goal of this method is to exclude tall growing brush species from right-of-way by establishing early successional plant communities of native grasses, forbs, and low growing woody vegetation. “Selective” application means the Company sprays only the undesirable plant species (as opposed to broadcast applications). “Low volume” application means the Company uses only the volume of herbicide necessary to remove the selected plant species. The mixture of herbicides used varies from one cycle to the next to avoid the development of resistance by the targeted plants. There are four means of dispersal available to the Company, including by-hand application, backpack, fixed nozzle-radiarc, and aerial. Very little right-of-way maintenance incorporates aerial equipment. The Company uses licensed contractors to perform this work that are either certified applicators or registered technicians in the Commonwealth of Virginia.

DEQ has previously requested that only herbicides approved for aquatic use by the EPA or the USFWS be used in or around any surface water. The Company intends to comply with this request.

Additionally, as recommended by the Chief Hearing Examiner in Case No. PUR-2021-00272, the Company met with DCR-DNH representatives on August 23, 2022.²² Based on that discussion, the Company has been reviewing its Integrated Vegetation Management Plan (“IVMP”) for application to both woody and herbaceous species, based on the species list available on the DCR website. The Company continues to coordinate with DNH on an addendum to the IVMP to further explain how the Company’s operations and maintenance forestry program addresses invasive species. In November 2023, the Company submitted the addendum draft to DCR for review and continued discussions. DCR provided an initial response to the addendum in January 2024. The Company met with DCR staff in November 2024 to discuss the agency’s concerns.

²² See *Application of Virginia Electric and Power Company, For approval and certification of electric transmission facilities: 230 kV Line #293 and 115 kV Line #83 Rebuild Project*, Case No. PUR-2021-00272, Final Order at 10-11 (Aug. 31, 2022) (The Commission agreed with the Chief Hearing Examiner and declined to adopt DCR DNH’s recommendation regarding an invasive species management plan (“ISMP”), but directed the Company to meet with DCR DNH and to report on the status of the meetings in the Company’s next transmission CPCN filing); see also Report of Alexander F. Skirpan, Jr., Chief Hearing Examiner (June 22, 2022) at 22 (agreeing with the Company that, with its IVMP, the Company should not be required to undergo the additional cost of DCR DNH’s ISMP; however, recommending that the Company meet with DCR DNH regarding its IVMP and report the results of the meeting in the next transmission CPCN filing).

Subsequently, the Company met with DCR staff on August 13, 2025, to continue to discuss ways to improve how the Company is addressing DCR’s recommendations throughout the CPCN process, with the goal to incorporate language adjustments in future applications and rebuttal testimonies, as applicable, and potentially address the agency’s concerns and further collaborate outside of the Commission process. Recently, the Company has not only engaged with DCR, but also DWR and DEQ Office of Environmental Impact Review on September 15, 2025, to expand collaboration and to advance the discussion on how to best coordinate throughout the process.

N. Geology and Mineral Resources

The Project is located within the Piedmont physiographic province, which lies between the mountainous Blue Ridge province to the west and the terraced slopes of the Coastal Plain province to the east. The Piedmont province is characterized by rolling topography, thick soils, and heavily weathered bedrock primarily caused by the region’s humid climate. The Piedmont province consists of several complex geologic terranes where faults separate the rock units with variable igneous and metamorphic histories. Based on review of the Geologic Map of Virginia, the Project is located approximately within the Newark Supergroup consisting of sandstone, siltstone, and shale, and the Jurassic Diabase group.

A search of the Virginia Department of Mines, Minerals, and Energy database indicates no active or abandoned mines within the Project right-of-way. One active mine and two abandoned mines are located within a 1.0-mile radius of the Project. Coordinates of these mines are provided in Table N-1. The Company does not anticipate that the construction and operation of the Project’s transmission infrastructure will have negative impacts to mineral resources.

Table N-1				
Mines Within 1.0-Mile of the Project				
Mine ID	Mineral	Status	Latitude	Longitude
05769AC	Sand	Active	39.0800063	-77.519966
DMM03758	Copper	Abandoned	39.087458	-77.511231
DMM03759	Copper	Abandoned	39.093534	-77.506257

O. Transportation Infrastructure

Road and Railroad Crossings

The road network in the Project area includes a variety of functional classifications identified by VDOT, including controlled-access freeway (State Route 7), freeway ramps (State Route 7 Ramps 40A and 40B and River Creek Parkway Ramp 0A), collector roads (Edwards Ferry Road, River Creek Parkway, Riverside Parkway, and Russel Branch Parkway), and local roads including privately maintained roads in residential areas. VDOT owns and maintains most public road rights-of-way within the Project area. There are no railroads located within the Project area.

Stantec reviewed the Loudoun County 2019 General Plan, Loudoun County 2019 Countywide Transportation Plan, and the Northern Virginia VDOT District projects website for upcoming projects within the study area to determine potential impacts on future road projects. As of February 2026, there are currently no planned roadway projects within 0.25 mile of the Project. The Tuscarora Crossing Apartment Development Project is a residential subdivision development adjacent to the Goose Creek Station. Based on recent aerial imagery the development has begun the construction of roads, however, it is unclear if these roads will remain private or become part of the VDOT road system. No portion of this development is crossed by the Project area. Furthermore, the Project will primarily occur within an existing transmission line corridor. The Company does not anticipate negative impacts to future roadway projects as a result of the Project.

Airports

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

The design of the Project must prevent interference with pilots’ safe ingress and egress at airports in the vicinity of the Project. Such hazards or impediments include interference with navigation and communication equipment and glare from materials and external lights.

Stantec, on behalf of the Company, reviewed the FAA website²³ to identify public use airports, airports operated by a federal agency or the U.S. Department of Defense, airports, or heliports with at least one FAA-approved instrument approach procedure, and public use or military airports under construction within 10.0 nautical miles of the Project. Based on this review, the following airports, which include public airports with FAA-restricted airspace, and private facilities without restricted airspace, are located within 10.0 nautical miles of the Project.

Table O-1		
Airports And Heliports Located Within 10.0 Nautical Miles (nm) of the Project		
Airport/Heliport Name and FAA Identifier	Use Designation	Approximate distance and direction from the Project
Washington Dulles International Airport (IAD)	Public	8.32 nm southeast of Goose Creek Station
Leesburg Executive Airport	Public	1.26 nm west of Goose Creek Station
Goose Hunt Farm Airport (3VA5)	Private	5.18 nm southwest of Goose Creek Station
Inova Loudoun Hospital Heliport (34VA)	Private	2.00 nm east of Goose Creek Station
Egypt Farms Heliport (4VA0)	Private	8.46 nm southwest of Goose Creek Station
Longview Heliport (6VG8)	Private	3.37 nm north of the Project right-of-way

²³ <https://oeaaa.faa.gov/oeaaa/oe3a/main/#/home> and <https://adip.faa.gov/agis/public/#/public>.

Table O-1		
Airports And Heliports Located Within 10.0 Nautical Miles (nm) of the Project		
Airport/Heliport Name and FAA Identifier	Use Designation	Approximate distance and direction from the Project
Stonesprings Heliport (6VG4)	Private	8.07 nm south of Goose Creek Station
Glascok Heliport (98VA)	Public	7.83 nm south of Goose Creek Station

Two public airports were identified: Washington Dulles International Airport and Leesburg Executive Airport. Based on the review of the FAA defined Civil Airport Imaginary Surfaces and Loudoun County 2019 General Plan, it was determined that the Project is located within the Washington Dulles International Airport Transitional Surface Area, and the Leesburg Executive Airport Horizontal and Conical Surface Areas of the airport overlay districts, depicted on Attachment 2.O.1. Since the FAA manages air traffic in the United States, it will evaluate any physical objects that may affect the safety of aeronautical operations through an obstruction evaluation. If required during the permitting process, the Company will submit an FAA Form 7460-1 Notice pursuant to the Code of Federal Regulations, Title 14, Part 77 for any structure locations that meet the review criteria.

The regulations that govern objects that may affect navigable airspace are codified in 14 CFR Part 77. In these regulations, it states that restrictions to structure heights only apply to public used airports and do not apply to privately owned airports. The privately owned airports and heliports identified within 10.0 nm are included above in Table O-1. The nearest heliport is the Inova Loudoun Hospital Heliport (34VA) located 2.00 nm southeast of the Goose Creek Station. Even though private airports are not granted the same height restrictions from the surrounding area (as opposed to a public use airport), the Project should not have any impact on the navigable airspace of these airports and FAA Form 7460-I Notice will be submitted as appropriate.

P. Drinking Water Wells

The Company has coordinated with the Department of Health (“VDH”), Office of Drinking Water (“ODW”) on the Company’s analysis of drinking water sources in proximity to the Company’s construction project components. VDH-ODW has requested the Company identify known drinking water wells within the project area on the Company’s Erosion and Sediment Control Plans. Water wells within 1,000 feet of the Project, however, may be outside of the transmission line corridor. The Company does not have the ability or right to field-mark wells located on private property. The Company has agreed to a method of well protection, including plotting and calling out the wells on the Project’s Erosion and Sediment Control Plan, to which VDH-ODW indicated that the Company’s proposed method is reasonable. A copy of that correspondence is included as Attachment 2.P.1. The Company intends to follow this same approach as a standard practice with transmission line projects and will coordinate with VDH-ODW, as needed.

Q. Pollution Prevention

Generally, as to pollution prevention, as part of the Company’s commitment to environmental

compliance, the Company has a comprehensive Environmental Management System Manual in place that ensures it is complying with environmental laws and regulations, reducing risk, minimizing adverse environmental impacts, setting environmental goals, and achieving improvements in its environmental performance, consistent with the Company's core values. Accordingly, any recommendation by the DEQ to consider development of an effective environmental management system has already been satisfied.

ATTACHMENTS

Desktop Wetland and Surface Water Review

500 kV Doubs-Goose Creek Line #514 Rebuild, 500 kV Aspen-Doubs Line #5015, 500 kV Goose Creek-Woodside Line #5004, Corridor Optimization and Related Projects, Loudoun County, Virginia



Prepared for:
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Date:
March 16, 2026

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Project/File:
203402622

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1 Introduction

Stantec Consulting Services Inc. (Stantec), on behalf of Virginia Electric and Power Company (Dominion Energy Virginia, Dominion, or the Company), conducted a desktop wetland and surface water review of publicly available information for the Line #514 Corridor Optimization Project (Project) located in Loudoun County, Virginia. The majority of the Project area was previously field delineated utilizing the *1987 Army Corps of Engineers Wetland Delineation Manual* or the *2012 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region* (Version 2.0). For areas of the Project not previously delineated, this assessment was done using desktop resources and methodology. The Project limits, field delineated resources, and limits of potential wetlands and other surface waters identified in this desktop review are depicted on Figure 1.

Dominion Energy Virginia is filing an application with the State Corporation Commission (SCC) to:

- Wreck approximately 3.1 miles of existing overhead single circuit 500 kV Doubs-Goose Creek Line #514 and approximately 1.0 mile of existing overhead single circuit 230 kV Hamilton-Pleasant View Line #2098 entirely within the existing 250-foot-wide transmission right-of-way corridor. For approximately 2.1 miles within the Optimized Corridor, Line #514 will be rebuilt primarily with single circuit dilled galvanized steel monopole structures. For the remaining approximately 1.0 mile, double circuit dilled galvanized steel monopole structures arranged in a 500/230 kV vertical configuration will support the rebuilt Line #514 and Line #2098 on collocated structures.
- Install a new approximately 3.1 mile overhead single circuit 500 kV Aspen-Doubs Line #5015 and wreck approximately 3.0 miles of the existing overhead single circuit 230 kV Dickerson-Pleasant View Line #203 entirely within the existing 250-foot-wide Optimized Corridor.
- Install a new approximately 3.1-mile overhead single circuit 500 kV Goose Creek- Woodside Line #5004 almost entirely within the existing 250-foot-wide Optimized Corridor.
- Replace circuit breakers at Pleasant View and Goose Creek Stations, replace line switches at the Company's existing Edwards Ferry Station, and install termination facilities at the Company's future Aspen Station.

The proposed Project is needed to comply with mandatory North American Electric Reliability Corporation "NERC" Reliability standards and to maintain reliable service to accommodate overall growth in the area.

The purpose of this desktop analysis is to identify and evaluate potential impacts of the Project on aquatic resources (wetlands, streams, open water features, and other potentially jurisdictional resources) in the area. In accordance with Virginia Department of Environmental Quality (DEQ) and the SCC's Memorandum of Agreement, the evaluation was conducted using various desktop data sets that may indicate wetland location and type. The results of the two previously completed field delineations are included in this report. This report is being submitted along with the Company's SCC Appendix and DEQ Supplement as part of the DEQ Wetland Impacts Consultation.



2 Project Study Area and Proposed Route

The proposed Project will be built primarily within existing, cleared, and maintained transmission line right-of-way (ROW) or within the Company's existing property rights. In order to accommodate termination of proposed Line #5004 into the Company's existing Pleasant View Station, the Company will need to acquire approximately 0.03 mile of new variable width ROW with a maximum width of 107 feet (a total of approximately 0.5 acre) where Line #5004 traverses around the Pleasant View 500 kV Station. Therefore, the study area for this assessment includes the Company's existing ROW between the Goose Creek and Pleasant View Stations and Structure #514/1841, the proposed new ROW expansion, and Company-owned property surrounding the Goose Creek Station, Pleasant View Stations, and future Aspen Station (Figure 1). The study area encompasses approximately 143.94 acres in Loudoun County. The existing transmission line ROW begins at the Goose Creek Station located south of Crosstrail Boulevard (Route 896) and west of the Washington & Old Dominion Trail. From the Goose Creek Station, the existing ROW generally extends northeast toward the Company's Edward's Ferry Station and terminates at existing Structure #514/1841, just south of the Potomac River (Virginia and Maryland Border). The proposed new approximately 0.5-acre ROW is located adjacent and between the Pleasant View Station and Goose Creek Station, south of Crosstrail Boulevard (Route 896). The total previously delineated and potential wetlands and other surface waters within the Project study area includes 3.24 acres of wetlands, 0.73 acres (2,304 linear feet) of stream channels, and 0.71 acres of open water. Further details are provided below.

3 Field Delineation Results

On behalf of the Company, Stantec field delineated wetlands and other surface waters using the 1987 *Army Corps of Engineers Wetland Delineation Manual* and the 2012 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region* (Version 2.0) in July 2021 for 3.14 miles of existing transmission line ROW between the Goose Creek Station and the Potomac River. The results of this delineation were submitted to the U.S. Army Corps of Engineers (Corps) in October 2021, and a Preliminary Jurisdictional Determination (PJD) was received from the Corps on December 23, 2021 (NAO-2021-02802-rdb). This determination is valid until December 23, 2026. The results of this delineation are provided below in Table 1.

Table 1. Wetlands and WOUS Calculations NAO-2021-02802-rdb

PFO (Acres)	PEM (Acres)	Stream Channels R2 Acres (LF)	Stream Channels R3 Acres (LF)	Stream Channels R4 Acres (LF)
0.01	0.97	0.00004 (2)	0.44 (546)	0.02 (235)

In addition to the delineation above, Dewberry Engineers Inc. field delineated wetlands and other surface in March 2022 and December 2023 for the portion of the project area for the future Aspen Station (Figure 1). It should be noted that the future Aspen Station is being permitted and constructed under separate cover; however, this Project involves the installation of termination facilities at the future Aspen Station once constructed. As such, the outline of the future Aspen Station is included within the Project limits. The results



of this delineation were confirmed through the verification of a Nationwide Permit #57, NAO-2024-03018-RDR (VMRC #25-0761). The results of this delineation are provided below in Table 2.

Table 2. *Wetlands and WOUS Calculations NAO-2021-03018*

PFO (Acres)	PSS (Acres)	PEM (Acres)	Stream Channels R4 Acres (LF)	Open Water (PUB) (Acres)
0.23	0.08	0.25	0.25 (1,215)	0.71

4 Desktop Evaluation Methodology

For this desktop evaluation, the study area consists of the 27.73 acres of Project limits not previously delineated and confirmed. The areas not previously delineated include the proposed new right-of-way expansion and Company-owned property surrounding the Goose Creek Station, Pleasant View Stations, and future Aspen Station. The following provides a list of resources used for this assessment and brief descriptions of each:

- Virginia Geographic Information Network (VGIN) aerial imagery dated 2025;
- VGIN infrared imagery dated 2025;
- Google Earth historic imagery ranging from 1994 to 2025;
- U.S. Geologic Survey (USGS) topographic maps;
- USGS Digital Elevation Model (DEM) 1-meter contour data;
- U.S. Department of Agriculture National Resources Conservation Service (USDA NRCS) hydric soil survey data;
- U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) wetland mapping; and
- The National Hydrography Dataset (NHD).

Natural Color and Infrared Aerial Photography

Recent (2025) natural color and infrared (2025) aerial photography was used to provide a visual overview of the Project area, to assist in evaluating current conditions, and to determine the approximate location and extent of areas that have the potential of containing jurisdictional wetlands and other surface waters. The potential presence of wetlands is determined based on signatures associated with spectral reflectance related to variations in vegetation and moisture conditions. For example, areas that are inundated or support moist soil conditions reflect less in the infrared spectrum and therefore appear dark (dark blues to black). These dark signatures can be used as a potential indicator of saturated or inundated soils that may be associated with wetlands.



Topographic Maps and Digital Elevation Model

USGS topographic maps show the topography of the area as well as other important landscape features such as forest cover, cleared land, development, buildings, streams, lakes, and wetlands. The USGS DEM further refines topography to a 1-meter contour level which is then converted into feet for further analysis. Contours are useful in evaluating landscape positions as well as predicting where water will be concentrated and therefore where wetlands and other potentially jurisdictional surface waters may be present within the study area.

USFWS National Wetland Inventory Mapping

NWI maps provide the boundaries and Cowardin classifications of potential wetlands and other surface waters, as mapped by the USFWS (USFWS 2024). NWI data is prepared from the analysis of high-altitude imagery in conjunction with collateral data sources and field work. A margin of error is inherent in the use of imagery. As such, NWI data may not predict resource boundaries or Cowardin classifications accurately. Therefore, for the purposes of this assessment, NWI data is a useful tool but is used in conjunction with other available resources to inform the potential location, extent, and existing cover types of potential resources within the Project area.

USDA-NRCS Soils Data

Soils in the study area were identified and assessed using the USDA-NRCS Soil Survey Geographic Database (SSURGO), which is a digital version of the original county soil surveys (USDA-NRCS 2025). SSURGO attribute data describes the characteristics and properties of soils for specific geographic areas including hydric rating for each soil map unit. These ratings are based on the percentage of hydric components within a soil map unit and fall into five categories: Hydric, Predominantly Hydric, Partially Hydric, Predominantly Nonhydric, and Nonhydric. For the purposes of this desktop analysis, the soils in the study area were grouped into three categories:

- Hydric – includes the USDA-NRCS categories of hydric and predominantly hydric
- Partially Hydric – includes the USDA-NRCS categories of partially hydric and predominantly nonhydric
- Nonhydric – includes the USDA-NRCS category of nonhydric.

USGS National Hydrography Dataset

The National Hydrography Dataset (NHD) dataset contains features such as lakes, ponds, streams, rivers, and canals (USGS 2025). The waterbodies mapped by the NHD appeared generally consistent with those visible on the USGS maps, aerial photography, and NWI.

5 Probability Analysis

Stantec used a stepwise process to identify probable wetland areas along the proposed Project, as follows:

- The potential location and extent of wetlands and other surface waters were identified by combining natural color and infrared aerial imagery with USGS and DEM topography. Boundaries were



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assigned to the areas that appeared to exhibit wetland signatures based on this review and a cover type was determined based on aerial photo interpretation. These areas are referred to as Interpreted Wetlands.

- To further determine the probability of a wetland or other surface water feature occurring within a given location, the Interpreted Wetlands were digitally layered with the NWI mapping and SSURGO soils data.
- A probability ranking was then assigned based on the number of overlapping data layers (i.e., indicators of potential presence) that occurred in a particular area.

The criteria assigned to each probability are outlined in Table 3.

Table 3. *Criteria Used to Rank the Probability of Wetland Occurrence*

Probability	Criteria
High	Areas where layers of hydric soils, Interpreted Wetlands, and NWI data overlap
Medium/High	NWI data overlaps hydric soils; or NWI data overlaps Interpreted Wetlands with or without partially hydric soils; or Hydric soils overlap Interpreted Wetlands
Medium	Interpreted Wetlands with or without overlap by partially hydric soils
Medium/Low	Hydric soils only; or NWI data with or without overlap by partially hydric soils
Low	Partially hydric soils only
Very Low	Non-hydric soils only

6 Wetland and Waterbody Crossings

This desktop study provides a probability of wetland and waterbody occurrence within the existing cleared ROW, proposed new ROW, and Company-owned property surrounding the Goose Creek Station, Pleasant View Stations, and future Aspen Station of the Project, with wetlands classified based on the Cowardin classification system as described below. Based upon the geographic location of the Project, lacustrine, marine, and estuarine systems are not expected to be present and are therefore not described.

- Palustrine System – Includes all nontidal wetlands dominated by trees, shrubs, persistent emergent, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean-derived salts is below 0.5 ppt.
 - o Palustrine Emergent (PEM) wetlands – characterized by erect, rooted, herbaceous hydrophytes (i.e., aquatic plants) and woody species less than 3 feet in height, excluding mosses and lichens.
 - o Palustrine Scrub-Shrub (PSS) wetlands – characterized by woody vegetation, excluding woody vines, approximately 3 to 20 feet in height.



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- o Palustrine Forested (PFO) wetlands – characterized by woody vegetation, excluding woody vines, approximately 20 feet or more in height and 3 in. or larger diameter at breast height (DBH).
- o Palustrine Unconsolidated Bottom (PUB) open waters – characterized by bottom substrate particles smaller than stones (less than 10 inches) covering greater than 25 percent of the area, with plants covering less than 30 percent of the area.
- Riverine System – Wetlands and deepwater habitats contained within a channel unless (1) wetlands dominated by trees, shrubs, persistent emergent, emergent mosses; or (2) habitats with water containing ocean-derived salts meeting tidal wetland requirements.
 - o Stream channels identified within the riverine system include both perennial and intermittent streams.

It should be noted that all wetland features present within the study limits would likely be classified as palustrine emergent (PEM) or palustrine scrub-shrub (PSS) due to regular maintenance within the ROW. However, the distinction between emergent wetlands and scrub-shrub wetlands is often very difficult to ascertain using even the highest resolution aerial images and have been combined for this analysis. In addition, the flow regimes of stream channels were not predicted as part of this review.

As stated above, detailed onsite delineations have not been performed for the desktop portion of the Project limits and would be required to verify the location and extent of wetland and other surface water boundaries. The probability of wetland occurrence included in this study range from very low to high and the probability of wetland occurrence increases as multiple indicators begin to overlap towards the “high” end of the spectrum. Areas mapped as medium, medium-high, and high probability categories represent locations most likely to support wetlands or other surface waters due to overlapping data sets. These categories are reported in the summary below. The limits of potential wetlands and other surface waters along with their assigned probability of occurrence are shown the Wetland and Surface Water Desktop Analysis Map (Figure 1).

7 Results

The results of the probability analysis are presented in Table 4, and the following presents a summary of the results.

Table 4. *Summary of the Probabilities of Wetland and Waterbody Occurrence along the Project*^{a,b}

Probability	Total in Study Area	Wetland and Other Surface Water Types (Acres)		
		PFO Wetlands	PEM/PSS Wetlands	Stream Channel
High	0.002	0.002	N/A	N/A
Medium/High	1.63	1.12	0.42	0.02
Medium	0.15	0.12	0.03	N/A
Medium/Low	8.21	N/A	N/A	N/A
Low	N/A	N/A	N/A	N/A



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Probability	Total in Study Area	Wetland and Other Surface Water Types (Acres)		
		PFO Wetlands	PEM/PSS Wetlands	Stream Channel
Very Low	17.74	N/A	N/A	N/A
Total	27.73	1.24	0.45	0.02
NA: Not applicable due to absence of wetland or waterbody type within the Project area ^a Numbers in this table have been rounded for presentation purposes; as a result, the totals may not reflect the sum of the addends. ^b Total acres may not total the sum of wetland and waterbody types because some of the lower probability rankings do not overlap with NWI or interpreted wetlands, and therefore do not have a wetland/waterbody type associated with them.				

The total previously delineated and potential wetlands and other surface waters within the total Project study area are summarized below in Table 5.

Table 5. Total Previously Delineated and Potential Wetlands and Surface Waters ^{a b}

Wetland and Other Surface Water Types	Area (Acres)	Length (Linear Feet)
PFO Wetlands	1.48	N/A
PEM/PSS Wetlands	1.75	N/A
Stream Channels	0.73	2,304
Open Water	0.71	N/A
Total	4.68	2,304
^a Totals include the medium to high probability resources identified in the desktop analysis and resources from the field delineations ^b Numbers in this table have been rounded for presentation purposes; as a result, the totals may not reflect the sum of the addends.		

Wetland Crossings

The length of the corridor for the Project is approximately 3.17 miles and encompasses a total of approximately 143.94 acres. Based on the methodology discussed above, the Project limits not previously delineated encompass approximately 6.4 percent (1.78 acres) of land with a medium or higher probability of containing wetlands and other surface waters. Of these 1.78 acres, 1.24 consist of PFO wetlands, 0.45 consist of PEM/PSS wetlands, and 0.02 acres consist of stream channels.

Waterbody Crossings

Waterbodies, including open water features and stream channels, were mapped in the study area using NWI, NHD, USGS topographic maps, and aerial photography. Waterbodies crossed by the Project include Tuscarora Creek and Cattail Branch, as well as numerous unnamed tributaries and other open water features.



8 Potential Project Impacts

A detailed onsite delineation of wetlands and other surface waters will need to be conducted within the areas subject to this desktop analysis to verify the location and extent of potentially jurisdictional resources and to determine the extent of potential impacts to the resources not previously delineated. However, the location of replacement structures will be designed to span or avoid wetlands and other surface waters to the greatest extent practicable. Additional measures will also be necessary during construction to minimize disturbance.

Where construction will occur within wetlands, protective matting will be installed to support construction vehicles, equipment, and materials. While many wetlands are anticipated to be spanned, permanent impacts may occur in association with structure placement within wetlands. If present, PFO and/or PSS wetlands may need to be cleared and converted to PEM wetlands. This conversion may reduce riparian buffer benefits such as stream bank stabilization and erosion control, nutrient and sediment filtration, floodwater storage and peak flow reduction, and water temperature changes due to loss of shading.

Temporary impacts associated with the Project on PEM, open water, and riverine systems would be restored to pre-construction conditions when construction is complete. Within PSS wetlands, vegetation will be allowed to return to maintained ROW heights, consistent with open meadow and/or shrub-scrub habitat, after construction is completed, which would provide some filtration and stabilization to protect waterbodies from runoff.

9 Summary

Stantec has prepared this Desktop Wetland and Surface Water Review in accordance with the Memorandum of Agreement between the DEQ and the SCC to determine the potential location, extent, and potential likelihood of occurrence of wetlands and other surface waters within the limits of the proposed Project. This report is being submitted along with the Company's SCC Appendix and DEQ Supplement as part of the DEQ Wetland Impacts Consultation. Prior to conducting any land disturbing activities, Stantec recommends a detailed delineation of wetlands and other surface waters followed by confirmation by the U.S. Army Corps of Engineers.

In addition, there is a Project website where the SCC application will be available after filing, as well as maps and discussions about the Project. It can be accessed by going to:

<https://www.dominionenergy.com/about/delivering-energy/electric-projects/power-line-projects/line-514>

10 References

Cowardin, L. et al. 1979. Classification of Wetlands and Deepwater Habitats of the United States. US Department of the Interior Fish and Wildlife Service Office of Biological Services Washington, D.C. December 1979. Available online at: <https://www.fws.gov/wetlands/Documents/Classification-of-Wetlands-and-DeepwaterHabitats-of-the-United-States.pdf>. Accessed January 2026.



Desktop Wetland Review

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Appendix A Project Graphics



Figure No.
1

Title
Wetland and Surface Water Desktop Analysis

Client/Project
Dominion Energy Virginia
Line #514 Corridor Optimization Project
203402622

Project Location
Loudoun County, Virginia
Prepared by MER on 2026-01-22
TR by BJW on 2026-01-28
IR by KHP on 2026-01-29

N

0

2,500

5,000

Feet

(At original document size of 11x17)

△

Future Station

▲

Existing Station

Existing Right-of-Way

New Right-of-Way

Existing Company Property Rights

Desktop Wetland and Surface Water

Study Area

Previously Delineated Project Limits

Page Index

Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Stantec, U.S. Census Bureau
3. Basemap: © ESRI

11203402622\03_data\figs\cadd\figs\02622_fig03.dwg
Revised: 2026-03-16 By: mroschlock
Revised: 2026-03-16 By: mroschlock

Disclaimer: This document has been prepared based on information provided by others as cited in the Notes section. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. Stantec assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.

Page 1 of 11

Figure No.

1

Title

Wetland and Surface Water Desktop Analysis

Client/Project

Dominion Energy Virginia
Line #514 Corridor Optimization Project

203402622

Project Location

Loudoun County, Virginia

Prepared by MER on 2026-01-22
TR by BJW on 2026-01-28
IR by KHP on 2026-01-29

Delineation Notes

1. The limits of potential wetlands and other surface waters have been identified using desktop analysis techniques and have not been confirmed or been field survey located and are for planning purposes only.
2. The limits of previously delineated wetlands and surface waters are included as indicated. Portions of these have been previously confirmed by the U.S. Army Corps of Engineers (Corps) under NAO-2021-02802-rdb.
3. Wetlands and surface waters under NAO-2024-03018-RDR have been digitized based on a wetland report created by others.
4. Areas shown outside the high, medium/high, medium, medium/low, and low probability areas are considered areas of very low probability.

Desktop Analysis Site Data				
Project Area: 143.94 Acres ±				
Project Length: 3.17 Miles ±				
Probability	Total in Study Area	Wetland and Other Surface Water Types (Acres)		
		PFO Wetlands	PEM/PSS Wetlands	Stream Channel
High	0.002	0.002	N/A	N/A
Medium/High	1.63	1.12	0.42	0.02
Medium	0.15	0.12	0.03	N/A
Medium/Low	8.21	N/A	N/A	N/A
Low	N/A	N/A	N/A	N/A
Very Low	17.74	N/A	N/A	N/A
Total	27.73	1.24	0.45	0.02
NA: Not applicable due to absence of wetland or waterbody type within the Project area				
^a Numbers in this table have been rounded for presentation purposes; as a result, the totals may not reflect the sum of the addends.				
^b Total acres may not total the sum of wetland and waterbody types because some of the lower probability rankings do not overlap with NWI or interpreted wetlands, and therefore do not have a wetland/waterbody type associated with them.				
Previously Delineated NAO-2021-02802-rdb				
Cowardin Classification	Area (Acres)	Length (Linear Feet)		
Palustrine Forested Wetland Limits (PFO)	0.01	N/A		
Palustrine Emergent Wetland (PEM)	0.97	N/A		
Lower Perennial Stream Channel (R2)	0.00004	2		
Upper Perennial Stream Channel (R3)	0.44	531		
Intermittent Stream Channel (R4)	0.02	235		
Total	1.44	783		
Previously Delineated NAO-2021-03018-RDR				
Cowardin Classification	Area (Acres)	Length (Linear Feet)		
Palustrine Forested Wetland Limits (PFO)	0.23	N/A		
Palustrine Scrub-Shrub (PSS)	0.08	N/A		
Palustrine Emergent Wetland (PEM)	0.25	N/A		
Intermittent Stream Channel (R4)	0.25	1,215		
Open Water (PUB)	0.71	N/A		
Total	1.52	1,215		
Total Previously Delineated and Potential Wetlands and Surface Waters				
Wetland and Other Surface Water Types	Area (Acres)	Length (Linear Feet)		
Wetlands	3.24	N/A		
Stream Channels	0.73	2,304		
Open Water	0.71	N/A		
Total	4.68	2,304		



Figure No.

1

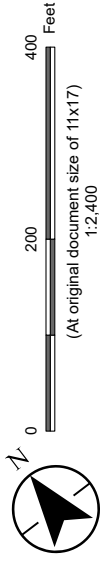
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Wetland and Surface Water Desktop Analysis

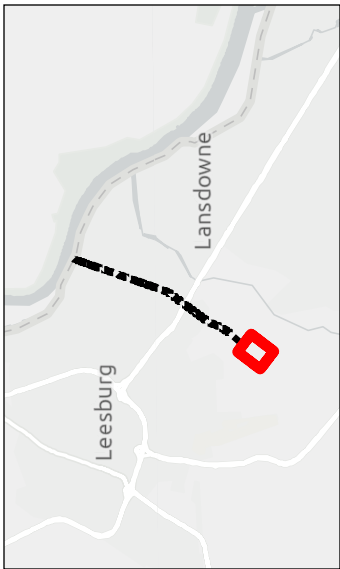
Client/Project 203402622

Dominion Energy Virginia
Line #514 Corridor Optimization Project

Project Location
Loudoun County, Virginia
Prepared by MER on 2026-01-21
TR by BJW on 2026-01-28
IR by KHP on 2026-01-29



- Future Station
- Existing Station
- Existing Company
- Property Rights
- 2-Foot Contour

Previously Delineated by Others NAO-2024-03018-RDRDesktop ProbabilityMedium/High, PFOMedium, PFOMedium/HighMedium/LowPFOSoilsHydric SoilsNWIPEM/PSSPUBStreamNHDNHD FlowlineApproximatePalustrine Forested (PFO)Wetland Limits (PFO)ApproximatePalustrine Scrub-Palustrine Wetland (PSS)Shrub Wetland (PSS)ApproximatePalustrine Emergent Wetland (PEM)ApproximateIntermittent StreamChannel (R4)Approximate Open Water (PUB)

Notes

1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, U.S. Census Bureau, VGIN, USGS National Hydrography Dataset (NHD), USFWS National Wetlands Inventory (NWI), USDA NRCS SSURGO Soil Survey
3. Orthom imagery © Virginia Geographic Information Network (VGIN)
4. See delineation notes on page 2.
5. Topography generated from digital elevation model derived from VGIN LIDAR. Two-foot contours do not meet National Map Accuracy Standards and are for planning purposes only.
6. Basemap © Esri



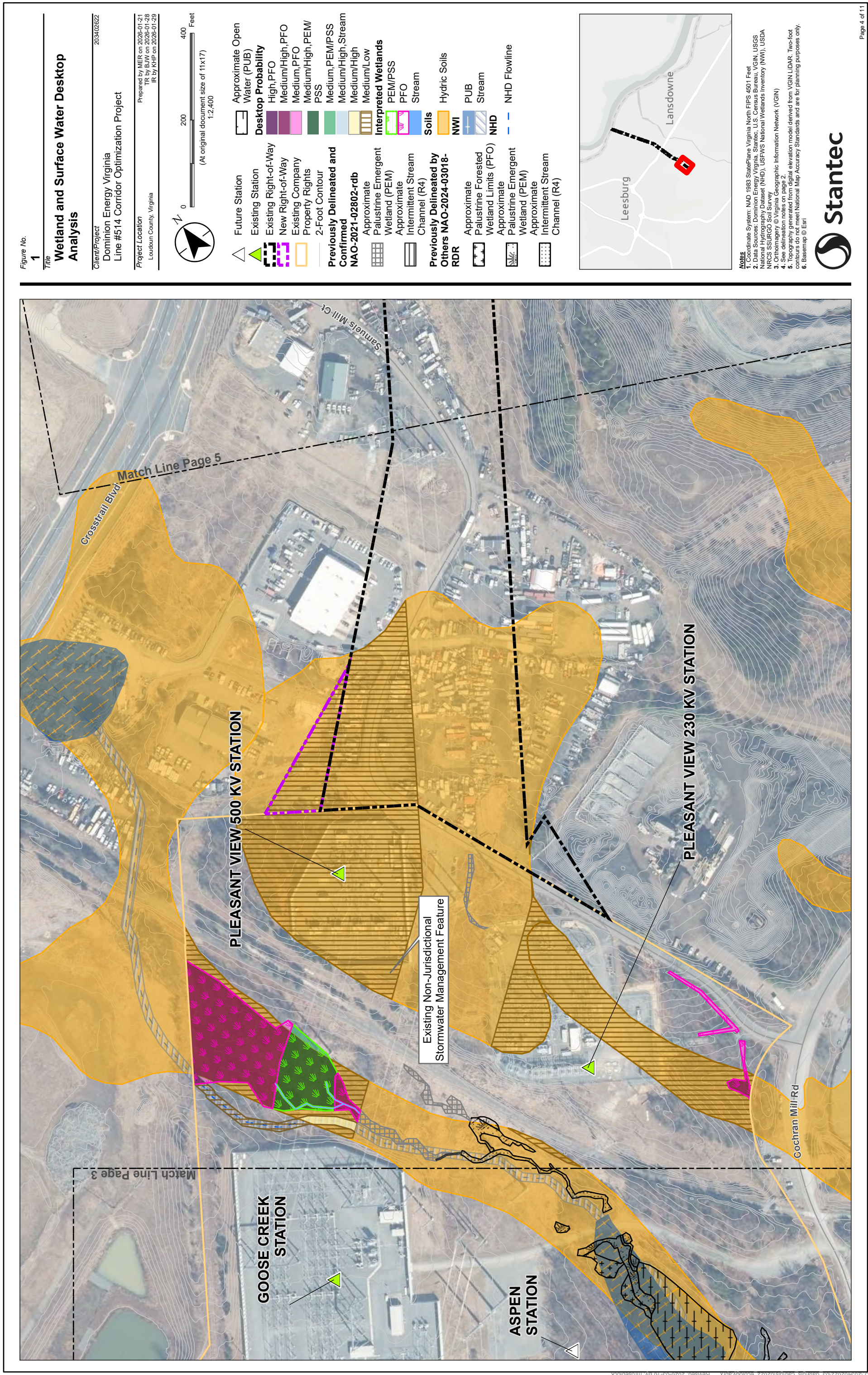


Figure No.

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Title

Wetland and Surface Water Desktop Analysis

Client/Project

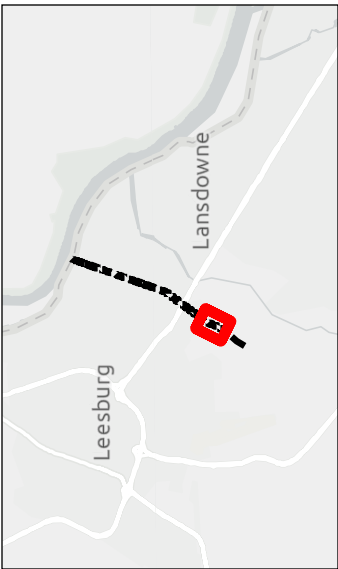
203402622
Dominion Energy Virginia
Line #514 Corridor Optimization Project

Project Location

Loudoun County, Virginia
Prepared by MER on 2026-01-21
TR by BJW on 2026-01-28
IR by KHP on 2026-01-29



- Existing Right-of-Way
- 2-Foot Contour
- Previously Delineated and Confirmed
- NAO-2021-02802-rdb
- Approximate Palustrine Emergent Wetland (PEM)
- Approximate Upper Perennial Stream
- Channel (R3)

SoilsHydric SoilsNWIPEM/PSS StreamNHDNHD Flowline

Notes

1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, U.S. Census Bureau, VGIN, USGS National Hydrography Dataset (NHD), USFWS National Wetlands Inventory (NWI), USDA NRCS SSURGO Soil Survey
3. Orthom imagery © Virginia Geographic Information Network (VGIN)
4. See delineation notes on page 2.
5. Topography generated from digital elevation model derived from VGIN LIDAR. Two-foot contours do not meet National Map Accuracy Standards and are for planning purposes only.
6. Base map © Esri



Figure No.

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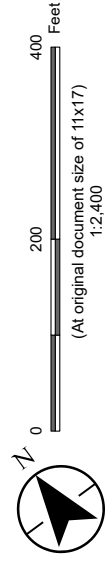
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Wetland and Surface Water Desktop Analysis

Client/Project 203402622

Dominion Energy Virginia
Line #514 Corridor Optimization Project

Project Location
Loudoun County, Virginia
Prepared by MER on 2026-01-21
TR by BJW on 2026-01-28
IR by KHP on 2026-01-29



- Existing Right-of-Way
- 2-Foot Contour
- Previously Delineated and Confirmed
- NAO-2021-02802-rdb
- Approximate Palustrine Emergent Wetland (PEM)
- Approximate Upper Perennial Stream
- Channel (R3)

SoilsHydric SoilsNWIPUB StreamNHDNHD Flowline

Notes

1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, U.S. Census Bureau, VGIN, USGS National Hydrography Dataset (NHD), USFWS National Wetlands Inventory (NWI), USDA NRCS SSURGO Soil Survey
3. Orthomagey © Virginia Geographic Information Network (VGIN)
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Figure No.

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Title

Wetland and Surface Water Desktop Analysis

Client/Project

203402622
Dominion Energy Virginia
Line #514 Corridor Optimization Project

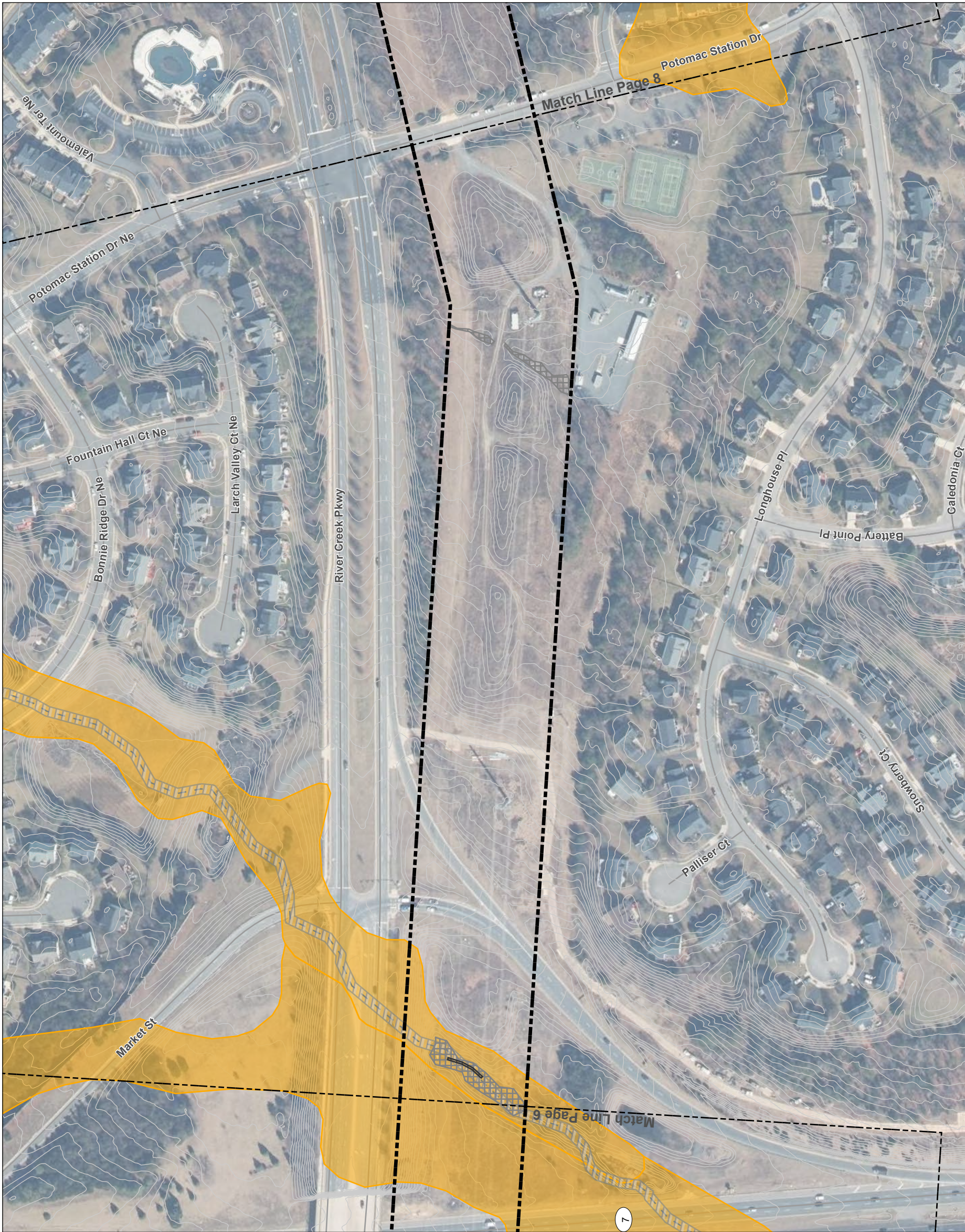
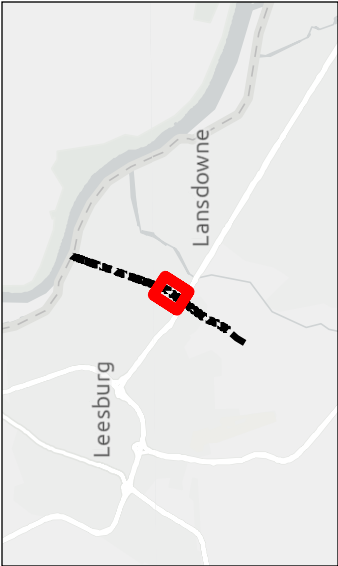
Project Location

Loudoun County, Virginia
Prepared by MER on 2026-01-21
TR by BJW on 2026-01-28
IR by KHP on 2026-01-29



- Existing Right-of-Way
- 2-Foot Contour
- Previously Delineated and Confirmed
- NAO-2021-02802-rdb
- Approximate Palustrine Emergent Wetland (PEM)
- Approximate Intermittent Stream
- Channel (R4)
- Soils
- Hydric Soils
- NWI
- NHD
- Stream
- NHD Flowline

7



- Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
 2. Data Sources: Dominion Energy Virginia, Stantec, U.S. Census Bureau, VGIN, USGS National Hydrography Dataset (NHD), USFWS National Wetlands Inventory (NWI), USDA NRCS SSURGO Soil Survey
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 5. Topography generated from digital elevation model derived from VGIN LIDAR. Two-foot contours do not meet National Map Accuracy Standards and are for planning purposes only.
 6. BaseMap © Esri



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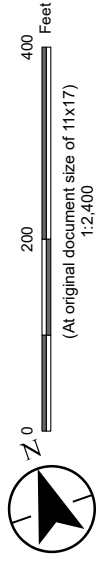
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Wetland and Surface Water Desktop Analysis

Client/Project 203402622

Dominion Energy Virginia
Line #514 Corridor Optimization Project

Project Location
Loudoun County, Virginia
Prepared by MER on 2026-01-21
TR by BJW on 2026-01-28
IR by KHP on 2026-01-29



- Existing Right-of-Way
- 2-Foot Contour
- Hydric Soils
- NWI
- Stream
- NHD
- NHD Flowline
- Approximate Palustrine Emergent Wetland (PEM)
- Approximate Intermittent Stream
- Channel (R4)

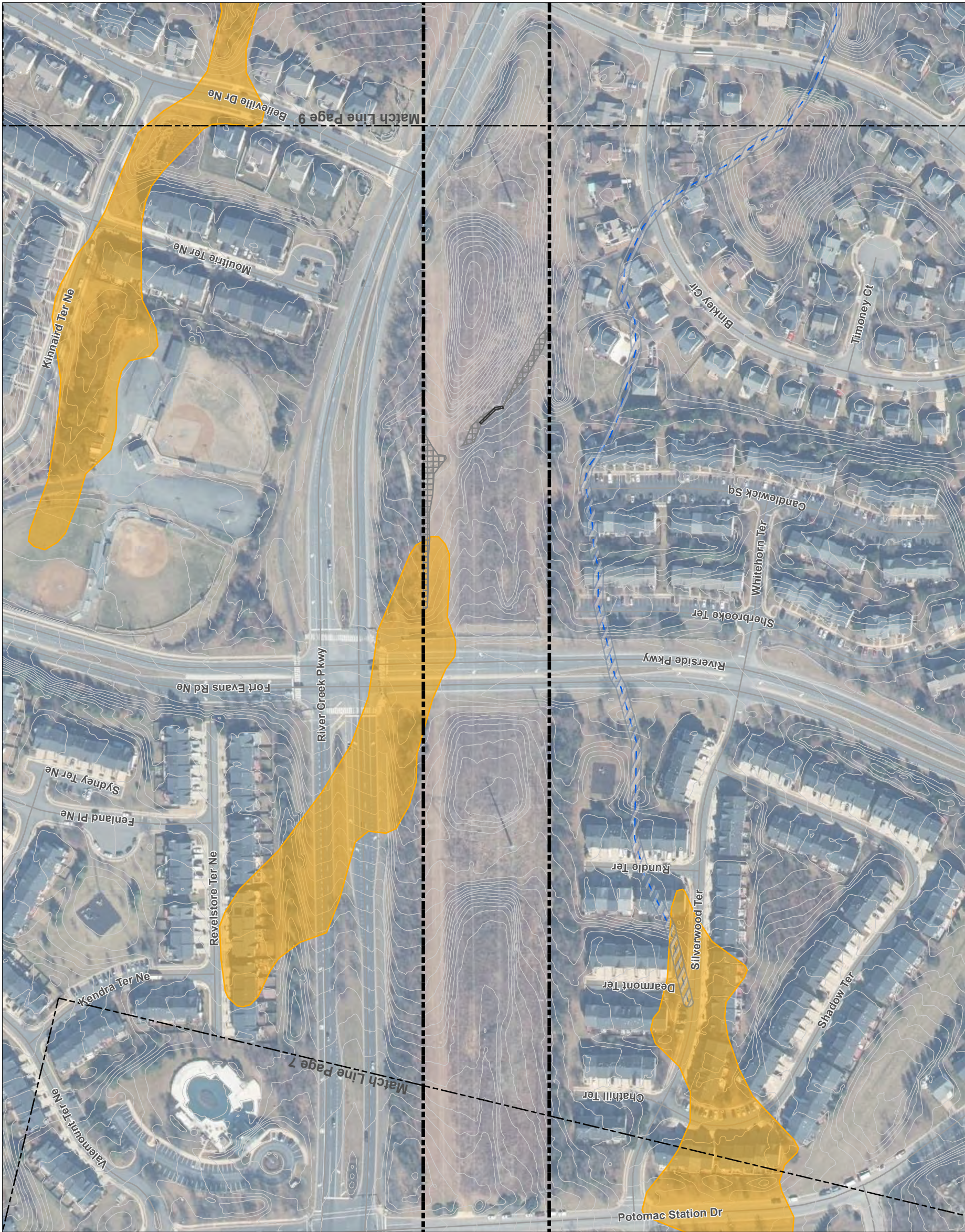
Previously Delineated and Confirmed

NAO-2021-02802-rdb

Approximate Palustrine Emergent Wetland (PEM)

Approximate Intermittent Stream

Channel (R4)



Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, U.S. Census Bureau, VGIN, USGS National Hydrography Dataset (NHD), USFWS National Wetlands Inventory (NWI), USDA NRCS SSURGO Soil Survey
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4. See delineation notes on page 2.
5. Topography generated from digital elevation model derived from VGIN LIDAR. Two-foot contours do not meet National Map Accuracy Standards and are for planning purposes only.
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Figure No.

1

Title

Wetland and Surface Water Desktop Analysis

Client/Project

Dominion Energy Virginia
Line #514 Corridor Optimization Project

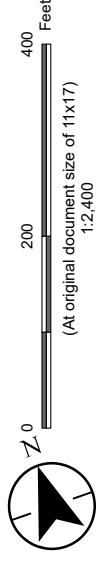
Project Location

Loudoun County, Virginia

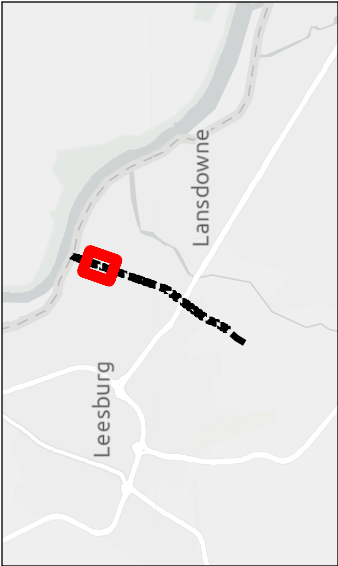
Prepared by MER on 2026-01-21

TR by BJW on 2026-01-28

IR by KHP on 2026-01-29



- Existing Right-of-Way
- Existing Company Property Rights
- 2-Foot Contour
- Previously Delineated and Confirmed
- NAO-2021-02802-rdb
- Approximate Palustrine Emergent Wetland (PEM)
- Approximate Upper Perennial Stream Channel (R3)
- NWI
- PEM/PSS
- PUB
- NHD
- NHD Flowline



Notes

1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, U.S. Census Bureau, VGIN, USGS National Hydrography Dataset (NHD), USFWS National Wetlands Inventory (NWI), USDA NRCS SSURGO Soil Survey
3. Orthomosaic: © Virginia Geographic Information Network (VGIN)
4. See delineation notes on page 2.
5. Topography generated from digital elevation model derived from VGIN LIDAR. Two-foot contours do not meet National Map Accuracy Standards and are for planning purposes only.
6. Baseemap: © Esri



Figure No.

1

Title

Wetland and Surface Water Desktop Analysis

Client/Project

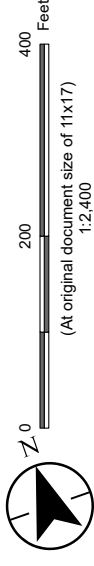
Dominion Energy Virginia
Line #514 Corridor Optimization Project

203402622

Project Location

Loudoun County, Virginia

Prepared by MER on 2026-01-21
TR by BJW on 2026-01-28
IR by KHP on 2026-01-29

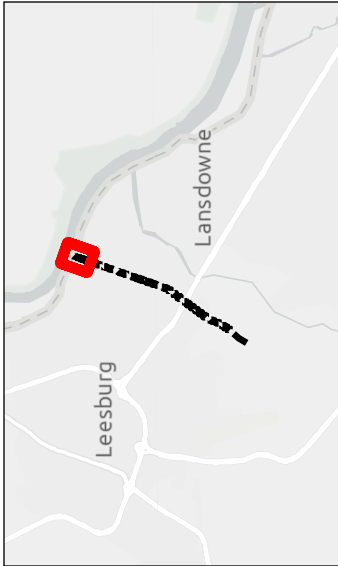


- Existing Station
- Existing Right-of-Way
- Existing Company Property Rights
- 2-Foot Contour
- NWI
- Stream

Previously Delineated and Confirmed

NAO-2021-02802-rdb

- Approximate Lower Perennial Stream Channel (R2)



Notes

1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, U.S. Census Bureau, VGIN, USGS National Hydrography Dataset (NHD), USFWS National Wetlands Inventory (NWI), USDA NRCS SSURGO Soil Survey
3. Orthomageary © Virginia Geographic Information Network (VGIN)
4. See delineation notes on page 2.
5. Topography generated from digital elevation model derived from VGIN LIDAR. Two-foot contours do not meet National Map Accuracy Standards and are for planning purposes only.
6. Basemap © Esri



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Stantec Consulting Services Inc.
5209 Center Street
Williamsburg VA 23188-2680
stantec.com

Figure No.
2.F.1

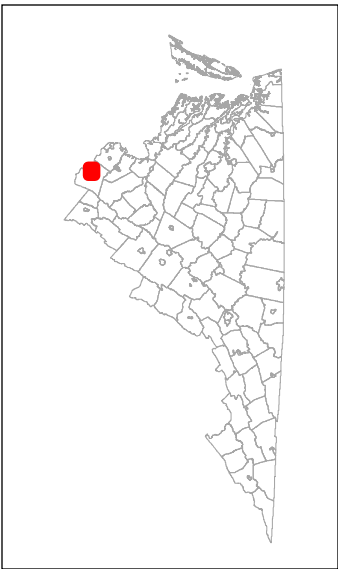
Solid and Hazardous Waste

Client/Project
Dominion Energy Virginia
Line #514 Corridor Optimization Project
203402622

Project Location
Loudoun County, Virginia
Prepared by MER on 2025-08-29
TR by BJW on 2025-12-17
IR by LRC on 2025-12-29



- Future Station
- Existing Station
- Page Index
- Existing Right-of-Way
- New Right-of-Way
- Existing Company Property Rights



Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, US Census Bureau
3. Background © ESRI



Figure No.
2.F.1

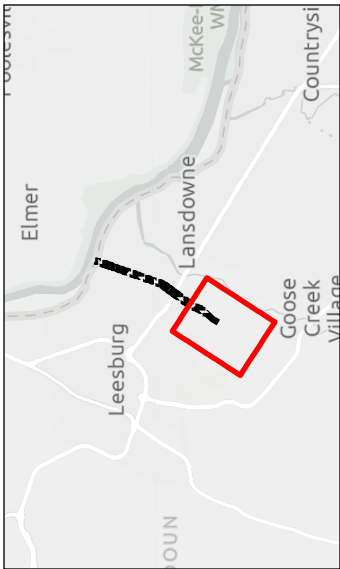
Client/Project
Dominion Energy Virginia
Line #514 Corridor Optimization Project

2024020622

Prepared by MER on 2025-08-29
TR by BJW on 2025-12-17
IR by LRC on 2025-12-29



- Registered Petroleum Tank Facilities (Daily)**
- Future Station: White triangle
 - Existing Station: Green triangle
 - Existing Right-of-Way: Black dashed line
 - New Right-of-Way: Purple dashed line
 - Existing Company Property Rights: Orange outline
 - 200-Foot Buffer: Pink dashed line
 - 1/4-Mile Buffer: Magenta dashed line
 - Affected Parcel Boundary: Yellow outline
 - NHD Flowline: Blue line
 - 10-Foot Contour: Grey line
- DEQ**
- VPDES Outfalls (Daily)**
- General Permits: Orange pentagon
 - Individual Permits: Yellow pentagon
- PRoP Reports (Daily)**
- Closed: Yellow circle with cross
- Petroleum Releases (Daily)**
- Closed: Orange triangle
- EPA**
- Active: Green square
 - Hazardous waste: Green square
 - Toxic releases: Blue square



Notes

1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, VA DEQ, EPA, Loudoun County, USGS National Hydrography Dataset (NHD), US Census Bureau, VGIN
3. Orthorectified imagery © Virginia Geographic Information Network (VGIN)
4. Background © ESRI
5. Topography generated from digital elevation model derived from VGIN LIDAR.

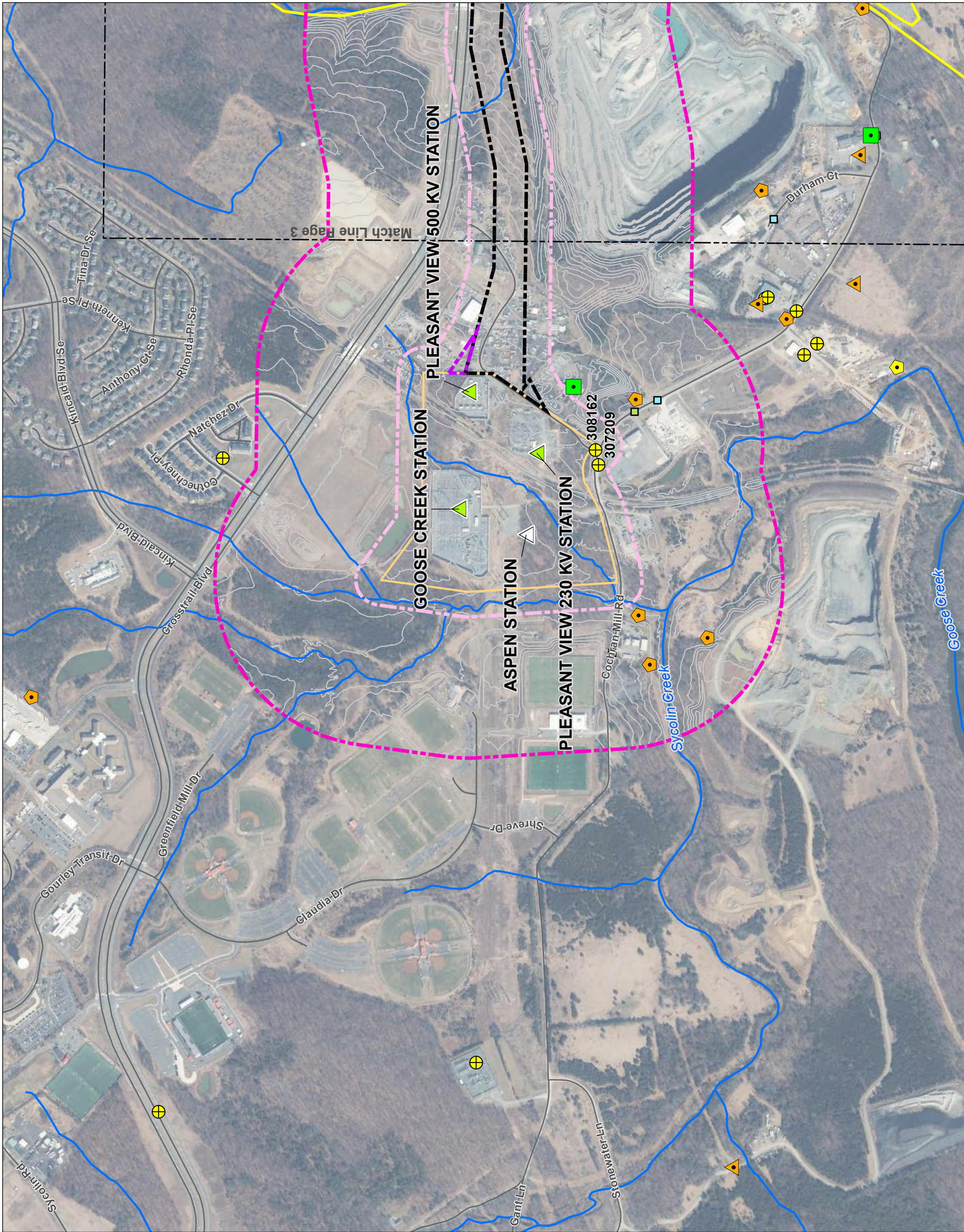


Figure No.
2.F.1

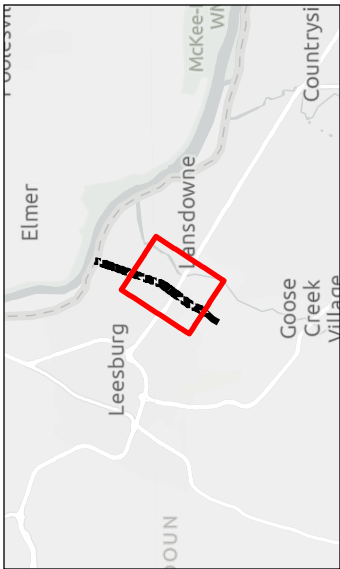
Client/Project
Dominion Energy Virginia
Line #514 Corridor Optimization Project

203402622

Prepared by MER on 2025-08-29
TR by BJW on 2025-12-17
IR by LRC on 2025-12-29



- Registered Petroleum Tank Facilities (Daily)**
- Existing Right-of-Way
 - 200-Foot Buffer
 - 1/4-Mile Buffer
 - Affected Parcel
 - Boundary
 - NHD Flowline
 - 10-Foot Contour
- EPA**
- Not Active
 - Active
 - Hazardous waste
 - Toxic releases
- DEQ**
- VPDES Outfalls (Daily)**
- General Permits
- PReP Reports (Daily)**
- Closed
- Petroleum Releases (Daily)**
- Closed



Notes

1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, VA DEQ, EPA, Loudoun County, USGS National Hydrography Dataset (NHD), US Census Bureau, VGIN
3. Orthimagery © Virginia Geographic Information Network (VGIN)
4. Background © ESRI
5. Topography generated from digital elevation model derived from VGIN LIDAR.



Figure No.

2.F.1

Title

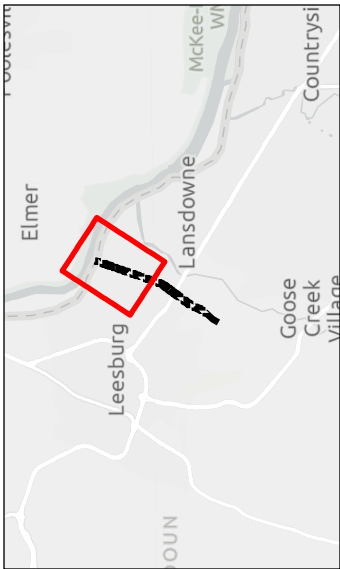
Solid and Hazardous Waste

Client/Project
Dominion Energy Virginia
Line #514 Corridor Optimization Project
203402622

Project Location
Loudoun County, Virginia
Prepared by MER on 2025-08-29
TR by BJW on 2025-12-17
IR by LRC on 2025-12-29



- Registered Petroleum Tank Facilities (Daily)**
- Existing Station: Green triangle
 - Existing Right-of-Way: Dashed black line
 - Existing Company Property Rights: Orange outline
 - 200-Foot Buffer: Pink dashed line
 - 1/4-Mile Buffer: Blue dashed line
 - NHD Flowline: Blue line
 - 10-Foot Contour: Grey line
 - DEQ: Blue line
 - VPDES Outfalls (Daily): Yellow pentagon
 - Individual Permits: Yellow pentagon
 - PReP Reports (Daily): Yellow pentagon
 - Closed: Yellow circle with red border
 - Under Investigation: Red circle with red border
- EPA**
- Active: Green square
 - Hazardous waste: Yellow square



Notes

1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, VA DEQ, EPA, Loudoun County, USGS National Hydrography Dataset (NHD), US Census Bureau, VGIN
3. Orthomagey © Virginia Geographic Information Network (VGIN)
4. Background © ESRI
5. Topography generated from digital elevation model derived from VGIN LIDAR.





United States Department of the Interior

FISH AND WILDLIFE SERVICE
Virginia Ecological Services Field Office
6669 Short Lane
Gloucester, VA 23061-4410
Phone: (804) 693-6694



In Reply Refer To:

11/03/2025 19:02:16 UTC

Project Code: 2025-0140713

Project Name: 500 kV Aspen-Doubs Line #5015, 500 kV Goose Creek-Woodside Line #5004,
Optimized Corridor Project

Subject: List of threatened and endangered species that may occur in your proposed project
location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf>

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see <https://www.fws.gov/program/migratory-bird-permit/what-we-do>.

It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see <https://www.fws.gov/library/collections/threats-birds>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/partner/council-conservation-migratory-birds>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Project Code in the header of this

letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Virginia Ecological Services Field Office

6669 Short Lane

Gloucester, VA 23061-4410

(804) 693-6694

PROJECT SUMMARY

Project Code: 2025-0140713
Project Name: 500 kV Aspen-Doubs Line #5015, 500 kV Goose Creek-Woodside Line #5004, Optimized Corridor Project
Project Type: Transmission Line - New Constr - Above Ground
Project Description: Dominion Energy Virginia proposes to wreck and rebuild the following lines: Line #203 from Pleasant View Substation to Dickerson Substation, Line #2098 from Pleasant View Substation to Hamilton Substation, Line #514 from Goose Creek Substation to Doubs Substation. The Project also includes the construction of a new 500 kV line from the Aspen Substation to the Doubs Substation. Work will take place within the existing, cleared, and maintained transmission line right-of-way. However, a small right-of-way expansion may be required near the Pleasant View Substation. The Project is approximately 3 miles in length. Dominion Energy's portion of this Project terminates just south of the Potomac River.

Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@39.0937463,-77.51407724714386,14z>



Counties: Loudoun County, Virginia

ENDANGERED SPECIES ACT SPECIES

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat <i>Perimyotis subflavus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

CLAMS

NAME	STATUS
Green Floater <i>Lasmigona subviridis</i> There is proposed critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7541	Proposed Threatened

INSECTS

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> There is proposed critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

BALD & GOLDEN EAGLES

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act ² and the Migratory Bird Treaty Act (MBTA) ¹. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

1. The [Bald and Golden Eagle Protection Act](#) of 1940.
2. The [Migratory Birds Treaty Act](#) of 1918.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

There are Bald Eagles and/or Golden Eagles in your [project](#) area.

Measures for Proactively Minimizing Eagle Impacts

For information on how to best avoid and minimize disturbance to nesting bald eagles, please review the [National Bald Eagle Management Guidelines](#). You may employ the timing and activity-specific distance recommendations in this document when designing your project/activity to avoid and minimize eagle impacts. For bald eagle information specific to Alaska, please refer to [Bald Eagle Nesting and Sensitivity to Human Activity](#).

The FWS does not currently have guidelines for avoiding and minimizing disturbance to nesting Golden Eagles. For site-specific recommendations regarding nesting Golden Eagles, please consult with the appropriate Regional [Migratory Bird Office](#) or [Ecological Services Field Office](#).

If disturbance or take of eagles cannot be avoided, an [incidental take permit](#) may be available to authorize any take that results from, but is not the purpose of, an otherwise lawful activity. For assistance making this determination for Bald Eagles, visit the [Do I Need A Permit Tool](#). For assistance making this determination for golden eagles, please consult with the appropriate Regional [Migratory Bird Office](#) or [Ecological Services Field Office](#).

Ensure Your Eagle List is Accurate and Complete

If your project area is in a poorly surveyed area in IPaC, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the [Supplemental Information on Migratory Birds and Eagles](#), to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to bald or golden eagles on your list, see the "Probability of Presence Summary" below to see when these bald or golden eagles are most likely to be present and breeding in your project area.

8 of 13

A horizontal number line with arrows at both ends. It is marked with major tick marks every 10 units, labeled from 0 to 100. The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90, and 100 are written in blue. The number 40 is enclosed in a green rectangular box. There are also minor tick marks between the major ones, representing increments of 1 unit.

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide avoidance and minimization measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

The Migratory Bird Treaty Act (MBTA) ¹ prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service).

- For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the "Probability of Presence Summary" below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31
Black-billed Cuckoo <i>Coccyzus erythrophthalmus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10

NAME	BREEDING SEASON
Cerulean Warbler <i>Setophaga cerulea</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/2974	Breeds Apr 28 to Jul 20
Chimney Swift <i>Chaetura pelagica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9406	Breeds Mar 15 to Aug 25
Golden Eagle <i>Aquila chrysaetos</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds elsewhere
Grasshopper Sparrow <i>Ammodramus savannarum perpallidus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8329	Breeds Jun 1 to Aug 20
Kentucky Warbler <i>Geothlypis formosa</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9443	Breeds Apr 20 to Aug 20
King Rail <i>Rallus elegans</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8936	Breeds May 1 to Sep 5
Prairie Warbler <i>Setophaga discolor</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9513	Breeds May 1 to Jul 31
Prothonotary Warbler <i>Protonotaria citrea</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9439	Breeds Apr 1 to Jul 31
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9398	Breeds May 10 to Sep 10
Rusty Blackbird <i>Euphagus carolinus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9478	Breeds elsewhere

NAME	BREEDING SEASON
Wood Thrush <i>Hylocichla mustelina</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9431	Breeds May 10 to Aug 31

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "[Supplemental Information on Migratory Birds and Eagles](#)", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)

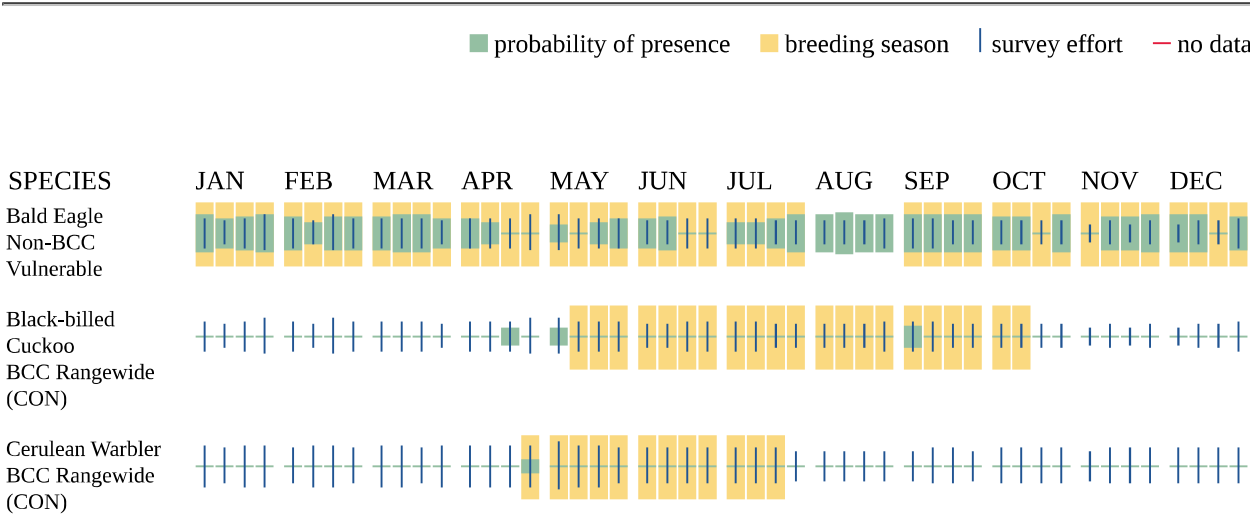
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)

Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (—)

A week is marked as having no data if there were no survey events for that week.





Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide avoidance and minimization measures for birds
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

IPAC USER CONTACT INFORMATION

Agency: Stantec Consulting Services Inc.

Name: Kevin Stover

Address: 5209 Center St

City: Williamsburg

State: VA

Zip: 23188

Email kevin.stover@stantec.com

Phone: 7579411634

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Army Corps of Engineers



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Virginia Ecological Services Field Office
6669 Short Lane
Gloucester, VA 23061-4410
Phone: (804) 693-6694



In Reply Refer To:

11/03/2025 19:07:32 UTC

Project code: 2025-0140713

Project Name: 500 kV Aspen-Doubs Line #5015, 500 kV Goose Creek-Woodside Line #5004, Optimized Corridor Project

Federal Nexus: no

Federal Action Agency (if applicable): Army Corps of Engineers

Subject: Technical assistance for '500 kV Aspen-Doubs Line #5015, 500 kV Goose Creek-Woodside Line #5004, Optimized Corridor Project'

Dear Kevin Stover:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on November 03, 2025, for '500 kV Aspen-Doubs Line #5015, 500 kV Goose Creek-Woodside Line #5004, Optimized Corridor Project' (here forward, Project). This project has been assigned Project Code 2025-0140713 and all future correspondence should clearly reference this number. **Please carefully review this letter. Your Endangered Species Act (Act) requirements may not be complete.**

Ensuring Accurate Determinations When Using IPaC

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into IPaC must accurately represent the full scope and details of the Project.

Failure to accurately represent or implement the Project as detailed in IPaC or the Northern Long-eared Bat and Tricolored Bat Range-wide Determination Key (Dkey), invalidates this letter. ***Answers to certain questions in the DKey commit the project proponent to implementation of conservation measures that must be followed for the ESA determination to remain valid. Note that conservation measures for northern long-eared bat and tricolored bat may differ. If both bat species are present in the action area and the key suggests more conservative measures for one of the species for your project, the Project may need to apply***

the most conservative measures in order to avoid adverse effects. If unsure which conservation measures should be applied, please contact the appropriate Ecological Services Field Office

Determination for the Northern Long-Eared Bat and Tricolored Bat

Based upon your IPaC submission and a standing analysis completed by the Service, your project has reached the following effect determination(s):

Species	Listing Status	Determination
Northern Long-eared Bat (<i>Myotis septentrionalis</i>)	Endangered	NLAA
Tricolored Bat (<i>Perimyotis subflavus</i>)	Proposed Endangered	NLAA

Federal agencies must consult with U.S. Fish and Wildlife Service under section 7(a)(2) of the Endangered Species Act (ESA) when an action *may affect* a listed species. Tricolored bat is proposed for listing as endangered under the ESA, but not yet listed. For actions that may affect a proposed species, agencies cannot consult, but they can *confer* under the authority of section 7(a)(4) of the ESA. Such conferences can follow the procedures for a consultation and be adopted as such if and when the proposed species is listed. Should the tricolored bat be listed, agencies must review projects that are not yet complete, or projects with ongoing effects within the tricolored bat range that previously received a NE or NLAA determination from the key to confirm that the determination is still accurate.

You have indicated that you must remove a hazard tree in order to prevent imminent loss of human life. Be advised that the Act's implementing regulations (50 CFR part 17) include a take exemption pursuant to the defense of human life (for endangered species, see 50 CFR 17.21(c)(2)): "any person may take endangered [or threatened] wildlife in defense of his own life or the lives of others."). The regulations at 50 CFR 17.21(c)(4) require that any person taking, including killing, listed wildlife in defense of human life under this exception must notify our headquarters Office of Law Enforcement, at the address provided at 50 CFR 2.1(b), in writing, within 5 days. In addition, section 11 of the Act enumerates the penalties and enforcement of the Act. In regard to civil penalties, section 11(a)(3) of the Act states, "Notwithstanding any other provision of this [Act], no civil penalty shall be imposed if it can be shown by a preponderance of the evidence that the defendant committed an act based on a good faith belief that he was acting to protect himself or herself, a member of his or her family, or any other individual from bodily harm, from any endangered or threatened species" (16 U.S.C. 1540(a)(3)). Section 11(b)(3) of the Act contains similar language in regard to criminal violations (see 16 U.S.C. 1540(b)(3)). If you think incidental take of listed bats was reasonably certain to have occurred as a result of your hazard tree removal, we advise you to contact the Office of Law Enforcement as outlined above. In the future, we recommend planning ahead so that tree removal of potentially hazardous trees does not become an emergency. If you determine an emergency exists, however, and human life is in imminent danger, do not delay action. Also do not delay action if removal of the hazard tree is part of a federal response to a situation involving an act of God, disaster, casualty, national defense or security emergency, etc. - coordinate with the local USFWS field office as soon as practicable after the emergency is under control.

Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination key for the northern long-eared bat and tricolored bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Green Floater *Lasmigona subviridis* Proposed Threatened
- Monarch Butterfly *Danaus plexippus* Proposed Threatened

You may coordinate with our Office to determine whether the Action may cause prohibited take of the animal species and/or critical habitat listed above. Note that if a new species is listed that may be affected by the identified action before it is complete, additional review is recommended to ensure compliance with the Endangered Species Act.

Next Steps

Coordination with the Service is complete. This letter serves as technical assistance. All conservation measures should be implemented as proposed. Thank you for considering federally listed species during your project planning.

If no changes occur with the Project or there are no updates on listed species, no further consultation/coordination for this project is required for the northern long-eared bat. However, the Service recommends that project proponents re-evaluate the Project in IPaC if: 1) the scope, timing, duration, or location of the Project changes (includes any project changes or amendments); 2) new information reveals the Project may impact (positively or negatively) federally listed species or designated critical habitat; or 3) a new species is listed, or critical habitat designated. If any of the above conditions occurs, additional coordination with the Service should take place before project implements any changes which are final or commits additional resources.

If you have any questions regarding this letter or need further assistance, please contact the Virginia Ecological Services Field Office and reference Project Code 2025-0140713 associated with this Project.

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

500 kV Aspen-Doubs Line #5015, 500 kV Goose Creek-Woodside Line #5004, Optimized Corridor Project

2. Description

The following description was provided for the project '500 kV Aspen-Doubs Line #5015, 500 kV Goose Creek-Woodside Line #5004, Optimized Corridor Project':

Dominion Energy Virginia proposes to wreck and rebuild the following lines: Line #203 from Pleasant View Substation to Dickerson Substation, Line #2098 from Pleasant View Substation to Hamilton Substation, Line #514 from Goose Creek Substation to Doubs Substation. The Project also includes the construction of a new 500 kV line from the Aspen Substation to the Doubs Substation. Work will take place within the existing, cleared, and maintained transmission line right-of-way. However, a small right-of-way expansion may be required near the Pleasant View Substation. The Project is approximately 3 miles in length. Dominion Energy's portion of this Project terminates just south of the Potomac River.

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@39.0937463,-77.51407724714386,14z>



DETERMINATION KEY RESULT

Based on the answers provided, the proposed Action is consistent with a determination of “may affect, but not likely to adversely affect” for a least one species covered by this determination key.

QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of listed bats or any other listed species?

Note: Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

No

2. Is the action area wholly within Zone 2 of the year-round active area for northern long-eared bat and/or tricolored bat?

Automatically answered

No

3. Does the action area intersect Zone 1 of the year-round active area for northern long-eared bat and/or tricolored bat?

Automatically answered

No

4. Does any component of the action involve leasing, construction or operation of wind turbines? Answer 'yes' if the activities considered are conducted with the intention of gathering survey information to inform the leasing, construction, or operation of wind turbines.

No

5. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

Note for projects in Pennsylvania: Projects requiring authorization under Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act would be considered as having a federal nexus. Since the U.S. Army Corps of Engineers (Corps) has issued the Pennsylvania State Programmatic General Permit (PASPGP), which may be verified by the PA Department of Environmental Protection or certain Conservation Districts, the need to receive a Corps authorization to perform the work under the PASPGP serves as a federal nexus. As such, if proposing to use the PASPGP, you would answer ‘yes’ to this question.

No

6. [Semantic] Is the action area located within 0.5 miles of a known bat hibernaculum or winter roost? Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your state wildlife agency.

Automatically answered

No

7. Does the action area contain any winter roosts or caves (or associated sinkholes, fissures, or other karst features), mines, rocky outcroppings, or tunnels that could provide habitat for hibernating bats?

No

8. Will the action cause effects to a bridge?

Note: Covered bridges should be considered as bridges in this question.

No

9. Will the action result in effects to a culvert or tunnel at any time of year?

No

10. Are trees present within 1000 feet of the action area?

Note: If there are trees within the action area that are of a sufficient size to be potential roosts for bats answer "Yes". If unsure, additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines>.

Yes

11. Does the action include the intentional exclusion of bats from a building or building-like structure? **Note:** Exclusion is conducted to deny bats' entry or reentry into a building. To be effective and to avoid harming bats, it should be done according to established standards. If your action includes bat exclusion and you are unsure whether northern long-eared bats or tricolored bats are present, answer "Yes." Answer "No" if there are no signs of bat use in the building/structure. If unsure, contact your local Ecological Services Field Office to help assess whether northern long-eared bats or tricolored bats may be present. Contact a Nuisance Wildlife Control Operator (NWCO) for help in how to exclude bats from a structure safely without causing harm to the bats (to find a NWCO certified in bat standards, search the Internet using the search term "National Wildlife Control Operators Association bats"). Also see the White-Nose Syndrome Response Team's guide for bat control in structures.

No

12. Does the action involve removal, modification, or maintenance of a human-made building-like structure (barn, house, or other building) **known or suspected to contain roosting bats?**

No

13. Will the action cause construction of one or more new roads open to the public?

For federal actions, answer 'yes' when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.).

No

14. Will the action include or cause any construction or other activity that is reasonably certain to increase average night-time traffic permanently or temporarily on one or more existing roads? **Note:** For federal actions, answer 'yes' when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.). .

No

15. Will the action include or cause any construction or other activity that is reasonably certain to increase the number of travel lanes on an existing thoroughfare?

For federal actions, answer 'yes' when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.).

No

16. Will the proposed Action involve the creation of a new water-borne contaminant source (e.g., leachate pond, pits containing chemicals that are not NSF/ANSI 60 compliant)?

Note: For information regarding NSF/ANSI 60 please visit <https://www.nsf.org/knowledge-library/nsf-ansi-standard-60-drinking-water-treatment-chemicals-health-effects>

No

17. Will the proposed action involve the creation of a new point source discharge from a facility other than a water treatment plant or storm water system?

No

18. Will the action include drilling or blasting?

No

19. Will the action involve military training (e.g., smoke operations, obscurant operations, exploding munitions, artillery fire, range use, helicopter or fixed wing aircraft use at night)?

No

20. Will the proposed action involve the use of herbicides or pesticides (e.g., fungicides, insecticides, or rodenticides)?

No

21. Will the action include or cause activities that are reasonably certain to cause chronic or intense nighttime noise (above current levels of ambient noise in the area) in suitable summer habitat for the northern long-eared bat or tricolored bat during the active season?

Chronic noise is noise that is continuous or occurs repeatedly again and again for a long time. Sources of chronic or intense noise that could cause adverse effects to bats may include, but are not limited to: road traffic; trains; aircraft; industrial activities; gas compressor stations; loud music; crowds; oil and gas extraction; construction; and mining.

Note: Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines>.

No

22. Does the action include, or is it reasonably certain to cause, the use of permanent or temporary artificial lighting within 1000 feet of suitable northern long-eared bat or tricolored bat roosting habitat?

Note: Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines>.

No

23. Will the action include tree cutting or other means of knocking down or bringing down trees, tree topping, or tree trimming?

Yes

24. Is the project related to the production of coal, including projects that support the mining of coal, as well as the production and/or distribution of energy produced from coal?

No

25. Will the proposed action occur exclusively in an already established and currently maintained utility right-of-way?

No

26. Does the action include emergency cutting or trimming of hazard trees in order to remove an imminent threat to human safety or property? See hazard tree note at the bottom of the key for text that will be added to response letters

Note: A "hazard tree" is a tree that is an immediate threat to lives, public health and safety, or improved property.

Yes

27. Does the project intersect with the 0- 9.9% forest density category?

Automatically answered

No

28. Does the project intersect with the 10.0- 19.9% forest density category map?

Automatically answered

No

29. Does the project intersect with the 20.0- 29.9% forest density category map?

Automatically answered

Yes

30. Does the project intersect with the 30.0- 100% forest density category map?

Automatically answered

Yes

31. Will the action cause trees to be cut, knocked down, or otherwise brought down across an area greater than 40 acres in total extent?

No

32. Will the proposed action result in the use of prescribed fire?

Note: If the prescribed fire action includes other activities than application of fire (e.g., tree cutting, fire line preparation) please consider impacts from those activities within the previous representative questions in the key. This set of questions only considers impacts from flame and smoke.

No

33. Does the action area intersect the northern long-eared bat species list area?

Automatically answered

Yes

34. [Semantic] Is the action area located within 0.5 miles of radius of an entrance/opening to any known NLEB hibernacula or winter roost? **Note:** The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

Automatically answered

No

35. [Semantic] Is the action area located within 0.25 miles of a culvert that is known to be occupied by northern long-eared or tricolored bats? **Note:** The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

Automatically answered

No

36. [Semantic] Is the action area located within 150 feet of a documented northern long-eared bat roost site?

Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency. Have you contacted the appropriate agency to determine if your action is within 150 feet of any documented northern long-eared bat roosts?

Note: A document with links to Natural Heritage Inventory databases and other state-specific sources of information on the locations of northern long-eared bat roosts is available here. Location information for northern long-eared bat roosts is generally kept in state natural heritage inventory databases – the availability of this data varies by state. Many states provide online access to their data, either directly by providing maps or by providing the opportunity to make a data request. In some cases, to protect those resources, access to the information may be limited.

Automatically answered

No

37. Is suitable summer habitat for the northern long-eared bat present within 1000 feet of project activities?

If unsure, answer "Yes."

Note: Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines>.

Yes

38. Has a presence/probable absence summer bat survey targeting the northern long-eared bat following the Service's [Range-wide Indiana Bat and Northern Long-Eared Bat Survey Guidelines](#) been conducted within the project area?

No

39. Are any of the trees proposed for cutting or other means of knocking down, bringing down, topping, or trimming suitable for northern long-eared bat roosting (i.e., live trees and/or snags ≥ 3 inches dbh that have exfoliating bark, cracks, crevices, and/or cavities)?

Note: Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines>.

No

40. Does the action area intersect the tricolored bat species list area?

Automatically answered

Yes

41. Is the action area located within 0.5-mile of radius of an entrance/opening to any known tricolored bat hibernacula or winter roost?

Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your state wildlife agency.

Automatically answered

No

42. [Semantic] Is the action area located within 0.25 miles of a culvert that is known to be occupied by northern long-eared or tricolored bats? **Note:** The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

Automatically answered

No

43. Is suitable summer habitat for the tricolored bat present within 1000 feet of project activities?

(If unsure, answer ""Yes."")

Note: If there are trees within the action area that may provide potential roosts for tricolored bats (e.g., clusters of leaves in live and dead deciduous trees, Spanish moss (*Tillandsia usneoides*), clusters of dead pine needles of large live pines) answer ""Yes."" For a complete definition of suitable summer habitat for the tricolored bat, please see Appendix A in the [Service's Range-wide Indiana Bat and Northern long-eared Bat Survey Guidelines](#).

Yes

44. Do any of the trees proposed for cutting or other means of knocking down, bringing down, topping, or trimming provide potential roosts for tricolored bats (e.g., clusters of leaves in live and dead deciduous trees, Spanish moss (*Tillandsia usneoides*), clusters of dead pine needles of large live pine trees)?

Note: Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: <https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines>.

No

45. Do you have any documents that you want to include with this submission?

No

PROJECT QUESTIONNAIRE

Enter the extent of the action area (in acres) from which trees will be removed - round up to the nearest tenth of an acre. For this question, include the entire area where tree removal will take place, even if some live or dead trees will be left standing.

1.73

IPAC USER CONTACT INFORMATION

Agency: Stantec Consulting Services Inc.

Name: Kevin Stover

Address: 5209 Center St

City: Williamsburg

State: VA

Zip: 23188

Email: kevin.stover@stantec.com

Phone: 7579411634

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Army Corps of Engineers



Virginia Department of Wildlife Resources

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Fish and Wildlife Information Service

Options

Species Information

[By Name](#)[By Land Management](#)[References](#)

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VaFWIS Initial Project Assessment Report Compiled on 8/26/2025, 10:28:48 AM

Known or likely to occur within a 2 mile buffer around polygon; center 39,06,55.1 -77,30,16.2
in 107 Loudoun County, VA[View Map of
Site Location](#)493 Known or Likely Species ordered by Status Concern for Conservation
(displaying first 27) (27 species with Status* or Tier I** or Tier II**)

BOVA Code	Status*	Tier**	Common Name	Scientific Name	Confirmed	Database(s)
050022	FESE	Ia	Bat, Northern Long-eared	Myotis septentrionalis		BOVA
060003	FESE	Ia	Dwarf Wedgemussel	Prolasmidonta heterodon		BOVA
060029	FTST	Ila	Lance, yellow	Elliptio lanceolata		BOVA
050020	SE	Ia	Bat, little brown	Myotis lucifugus		BOVA
050027	FPSE	Ia	Bat, Tricolored	Perimyotis subflavus		BOVA
060006	SE	Ib	Floater, brook	Alasmidonta varicosa	Yes	BOVA, SppObs
030062	ST	Ia	Turtle, wood	Glyptemys insculpta		BOVA, Habitat
040096	ST	Ia	Falcon, peregrine	Falco peregrinus		BOVA
040293	ST	Ia	Shrike, loggerhead	Lanius ludovicianus		BOVA
040379	ST	Ia	Sparrow, Henslow's	Centronyx henslowii		BOVA
060081	FPST	Ila	Green Floater	Platynaia subviridis	Yes	BOVA, TEWaters, Habitat, SppObs
040292	ST		Shrike, migrant loggerhead	Lanius ludovicianus migrans		BOVA
100248	FP	Ia	Fritillary, Regal	Speyeria idalia idalia		BOVA
100079	FP	IIla	Butterfly, Monarch	Danaus plexippus		BOVA
030063	CC	IIla	Turtle, spotted	Clemmys guttata		BOVA
030012	CC	IVa	Rattlesnake, timber	Crotalus horridus		BOVA
040092		Ia	Eagle, golden	Aquila chrysaetos		BOVA
040306		Ia	Warbler, golden-winged	Vermivora chrysoptera		BOVA
040213		Ic	Owl, northern saw-whet	Aegolius acadicus		BOVA
040052		Ila	Duck, American black	Anas rubripes		BOVA
040036		Ila	Night-heron, yellow-crowned	Nyctanassa violacea violacea		BOVA
040320		Ila	Warbler, cerulean	Setophaga cerulea		BOVA
040140		Ila	Woodcock, American	Scolopax minor		BOVA
060071		Ila	Lampmussel, yellow	Lampsilis cariosa	Yes	BOVA, SppObs
040203		IIb	Cuckoo, black-billed	Coccyzus erythrophthalmus		BOVA
040105		IIb	Rail, king	Rallus elegans		BOVA
100166		IIc	Skipper, Dotted	Hesperia attalus slossonae		BOVA

To view **All 493 species** [View 493](#)

*FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FP=Federal Proposed; FC=Federal Candidate; CC=Collection Concern

**I=VA Wildlife Action Plan - Tier I - Critical Conservation Need; II=VA Wildlife Action Plan - Tier II - Very High Conservation Need; III=VA Wildlife Action Plan - Tier III - High Conservation Need; IV=VA Wildlife Action Plan - Tier IV - Low Conservation Need; V=VA Wildlife Action Plan - Tier V - No Conservation Need
 Virginia Wildlife Action Plan Conservation Opportunity Ranking:
 a - On the ground management strategies/actions exist and can be feasibly implemented.; b - On the ground actions or research needs have been identified but cannot feasibly be implemented at this time.; c - No on the ground management strategies/actions exist and cannot be feasibly implemented.

Bat Colonies or Hibernacula: **Not Known**

Anadromous Fish Use Streams

N/A

Colonial Water Bird Survey

N/A

Threatened and Endangered Waters (16 Reaches)

[View Map of All](#)

[Threatened and Endangered Waters](#)

Stream Name	T&E Waters Species						View Map
	Highest TE *	BOVA Code, Status *, Tier **, Common & Scientific Name					
Goose Creek (018820)	FPST	060081	FPST	Ila	Green Floater	Platynaias subviridis	Yes
Goose Creek (023151)	FPST	060081	FPST	Ila	Green Floater	Platynaias subviridis	Yes
Goose Creek (023631)	FPST	060081	FPST	Ila	Green Floater	Platynaias subviridis	Yes
Goose Creek (025464)	FPST	060081	FPST	Ila	Green Floater	Platynaias subviridis	Yes
Goose Creek (026509)	FPST	060081	FPST	Ila	Green Floater	Platynaias subviridis	Yes
Goose Creek (026550)	FPST	060081	FPST	Ila	Green Floater	Platynaias subviridis	Yes
Goose Creek (028649)	FPST	060081	FPST	Ila	Green Floater	Platynaias subviridis	Yes
Goose Creek (028926)	FPST	060081	FPST	Ila	Green Floater	Platynaias subviridis	Yes
Goose Creek (031573)	FPST	060081	FPST	Ila	Green Floater	Platynaias subviridis	Yes
Goose Creek (032031)	FPST	060081	FPST	Ila	Green Floater	Platynaias subviridis	Yes
Goose Creek (032084)	FPST	060081	FPST	Ila	Green Floater	Platynaias subviridis	Yes
Goose Creek (032856)	FPST	060081	FPST	Ila	Green Floater	Platynaias subviridis	Yes
Goose Creek (034352)	FPST	060081	FPST	Ila	Green Floater	Platynaias subviridis	Yes
Goose Creek (035653)	FPST	060081	FPST	Ila	Green Floater	Platynaias subviridis	Yes
Goose Creek (036348)	FPST	060081	FPST	Ila	Green Floater	Platynaias subviridis	Yes
Goose Creek (040279)	FPST	060081	FPST	Ila	Green Floater	Platynaias subviridis	Yes

Managed Trout Streams

N/A

Bald Eagle Concentration Areas and Roosts

N/A

Bald Eagle Nests

N/A

Habitat Predicted for Aquatic WAP Tier I & II Species (5 Reaches)

[View Map Combined Reaches from Below of Habitat Predicted for WAP Tier I & II Aquatic Species](#)

Stream Name	Tier Species						View Map
	Highest TE *	BOVA Code, Status *, Tier **, Common & Scientific Name					
Cattail Branch (20700081)	ST	030062	ST	Ia	Turtle, wood	Glyptemys insculpta	Yes
Goose Creek (20700081)	FPST	060081	FPST	Ila	Green Floater	Platynaias subviridis	Yes
Sycolin Creek (20700081)	ST	030062	ST	Ia	Turtle, wood	Glyptemys insculpta	Yes
tributary (20700081)	ST	030062	ST	Ia	Turtle, wood	Glyptemys insculpta	Yes
Tuscarora Creek (20700081)	ST	030062	ST	Ia	Turtle, wood	Glyptemys insculpta	Yes

Tuscarora Creek (20700081)	ST	030062	ST	la	Turtle_wood	Glyptemys insculpta	Yes
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Habitat Predicted for Terrestrial WAP Tier I & II Species

N/A

Public Holdings:

N/A

Compiled on 8/26/2025, 10:28:49 AM - I4023790.0 - report=IPA - searchType=P - dist= 3218 poi= 39,06,55,1 - 77,30,16,2 siteDD= 39,1153361 - 77,5045221; 39,1150916 - 77,5037360; 39,1106333 - 77,5058637; 39,1056194 - 77,5080554; 39,1044638 - 77,5086360; 39,1005861 - 77,5104860; 39,0946027 - 77,5131415; 39,0931888 - 77,5138721; 39,0878750 - 77,518974 - 77,5308776; 39,0763327 - 77,5315471; 39,0774666 - 77,5301721; 39,0791555 - 77,5269915; 39,0811611 - 77,5258415; 39,0833944 - 77,5243110; 39,0853250 - 77,5196221; 39,0858217 - 77,5146665; 39,1008138 - 77,5112537; 39,1050444 - 77,5092971; 39,1108000 - 77,5065804; 39,1153361 - 77,5045221; PixelSize=64; Anadromous=0.032533; BECAR=0.030235; Bats=0.033896; Buffer=0.280892; County=0.121213; Impediments=0.032231; Init=0.4047; PublicLands=0.034542; SppObs=0.574748; TEWaters=0.049687; TierReaches=0.081009; TierTerrestrial=0.057057; Total=1.913073; Tracking_BOVA=0.421304; Trout=0.03501
--

Site Location

39,06,55.1 -77,30,16.2
is the Search Point

Show Position Rings

☒ Yes ☐ No
1 mile and 1/4 mile at the
Search Point

Show Search Area

☒ Yes ☐ No
2 Search distance miles
buffer

Display Search Point is not
at center at map center

Base Map [Choices](#)

Topography v

Map Overlay [Choices](#)

Current List: Position, Search,
BECAR, BAEANests,
TEWaters, TierII, Habitat,
Trout, Anadromous

Map Overlay Legend

T & E Waters

Federal

State

Predicted Habitat
WAP Tier I & II

Aquatic

Terrestrial

Trout Waters

Class I - IV

Class V - VI

Anadromous Fish Reach

Confirmed

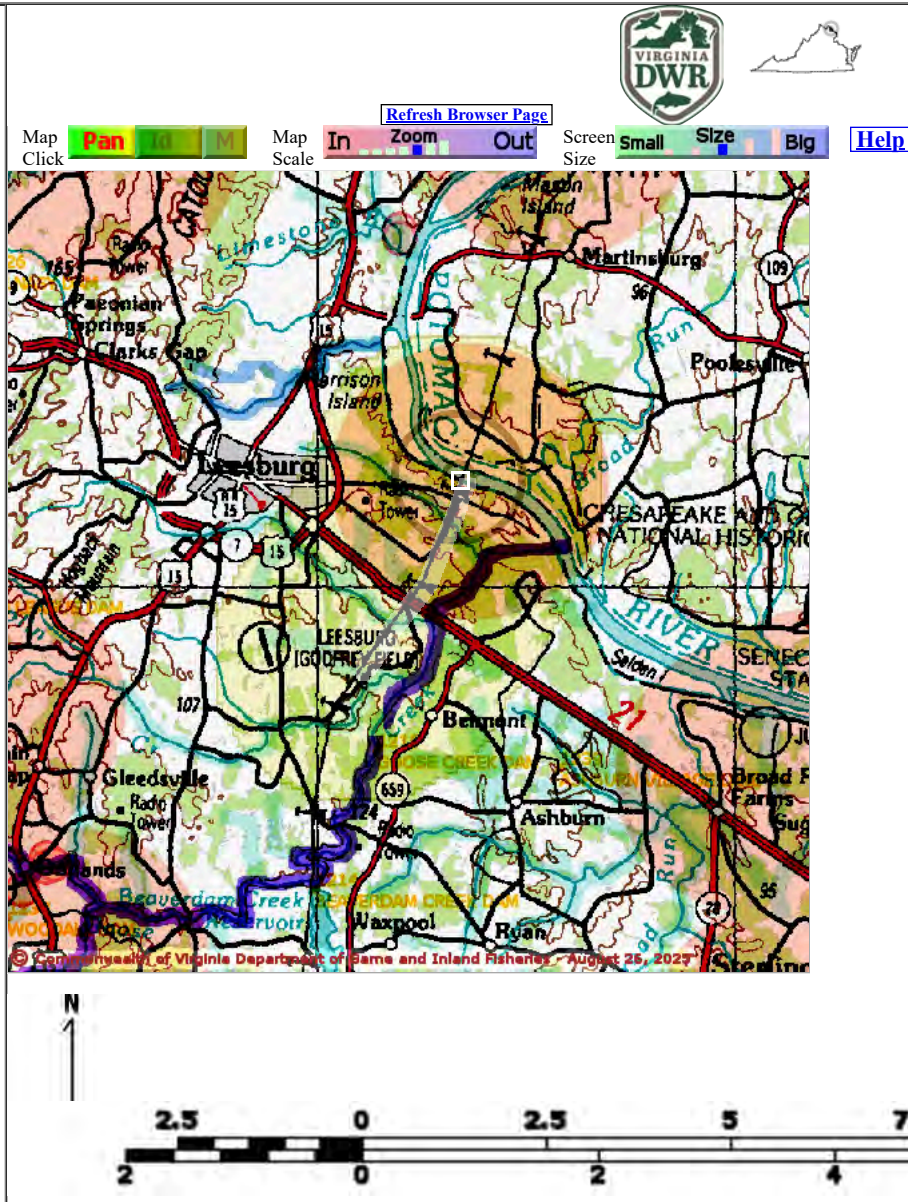
Potential

 Impediment

 Position Rings
1 mile and 1/4
mile at the
Search Point

 2 mile radius
Search Area

 Bald Eagle
Concentration Areas
and Roosts



Point of Search 39,06,55.1 -77,30,16.2

Map Location 39,05,41.0 -77,31,03.6

Select Coordinate System: ☒ Degrees, Minutes, Seconds Latitude - Longitude

☐ Decimal Degrees Latitude - Longitude

☐ Meters UTM NAD83 East North Zone

☐ Meters UTM NAD27 East North Zone

Base Map source: USGS 1:250,000 topographic maps (see [Microsoft terraserver-usa.com](http://Microsoft.terraserver-usa.com) for details)

Map projection is UTM Zone 18 NAD 1983 with left 272668 and top 4339907. Pixel size is 18. .
Coordinates displayed are Degrees, Minutes, Seconds North and West. Map is currently displayed
as 600 columns by 600 rows for a total of 360000 pixels. The map display represents 19200 meters
east to west by 19200 meters north to south for a total of 368.6 square kilometers. The map display
represents 63002 feet east to west by 63002 feet north to south for a total of 142.3 square miles.

Topographic maps and Black and white aerial photography for year 1990+-
are from the United States Department of the Interior, United States Geological Survey.
Color aerial photography aquired 2002 is from Virginia Base Mapping Program, Virginia
Geographic Information Network.
Shaded topographic maps are from TOPO! ©2006 National Geographic
<http://www.national.geographic.com/topo>
All other map products are from the Commonwealth of Virginia Department of Wildlife Resources.

map assembled 2025-08-26 10:29:15 (qa/qc March 21, 2016 12:20 - tn=4023790.0 dist=3218
I)
\$poi=39.1153056 -77.5045000

Threatened and Endangered Waters where Green Floater (060081) observed

39,06,55.1 -77,30,16.2
is the Search Point

Show Position Rings

☒ Yes ☐ No
1 mile and 1/4 mile at the Search Point

Show Search Area

☒ Yes ☐ No
2 Search distance miles
buffer

Display Search Point is not
at center at map center

Base Map Choices

Topography

Map Overlay Choices

Current List: Position, Search, TEWaters

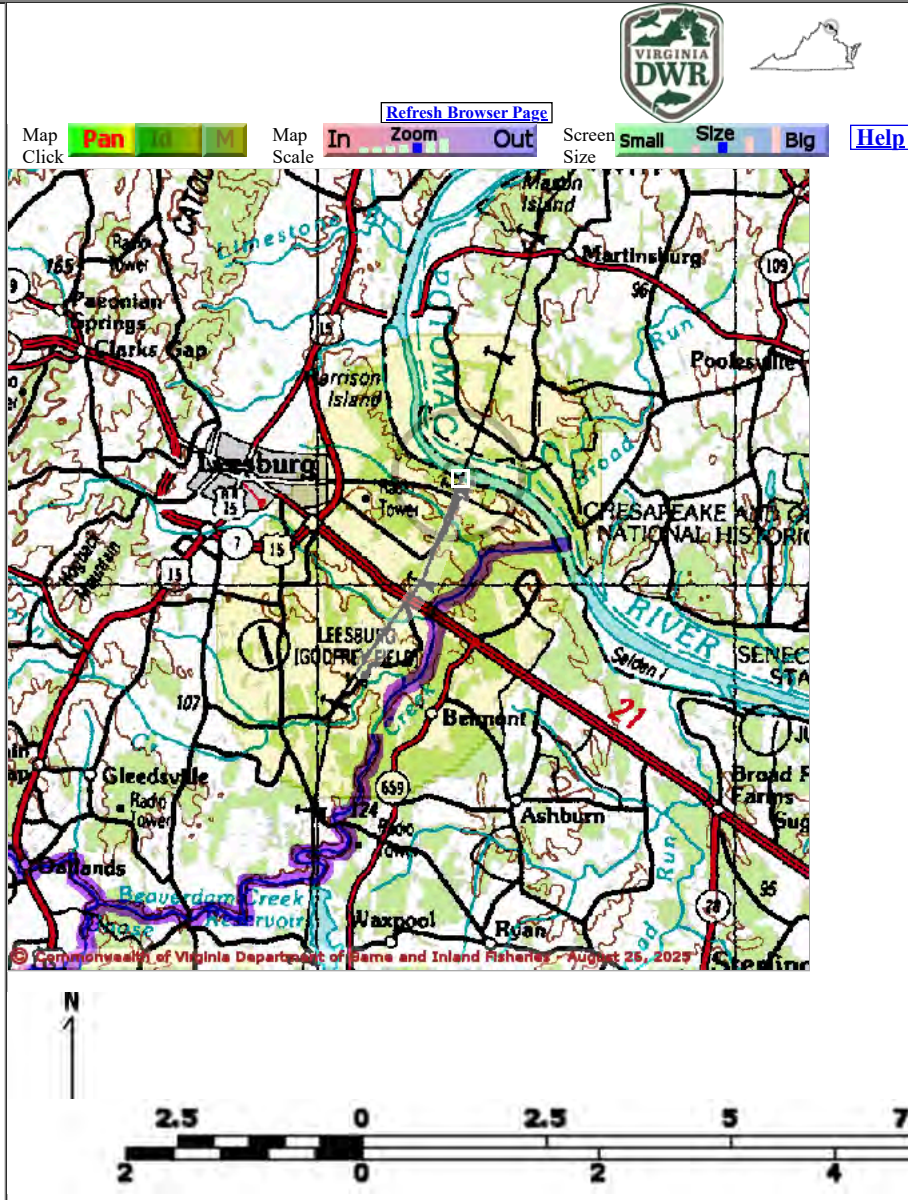
Map Overlay Legend

T & E Waters

Federal
State

Position Rings
1 mile and 1/4
mile at the
Search Point

2 mile radius
Search Area



Point of Search 39,06,55.1 -77,30,16.2

Map Location 39,05,41.0 -77,31,03.6

Select **Coordinate System:** ☒ Degrees, Minutes, Seconds Latitude - Longitude

☐ Decimal Degrees Latitude - Longitude

☐ Meters UTM NAD83 East North Zone

☐ Meters UTM NAD27 East North Zone

Base Map source: USGS 1:250,000 topographic maps (see Microsoft.terraserver-usa.com for details)

Map projection is UTM Zone 18 NAD 1983 with left 272668 and top 4339907. Pixel size is 18. . Coordinates displayed are Degrees, Minutes, Seconds North and West. Map is currently displayed as 600 columns by 600 rows for a total of 360000 pixels. The map display represents 19200 meters east to west by 19200 meters north to south for a total of 368.6 square kilometers. The map display represents 63002 feet east to west by 63002 feet north to south for a total of 142.3 square miles.

Topographic maps and Black and white aerial photography for year 1990+- are from the United States Department of the Interior, United States Geological Survey. Color aerial photography aquired 2002 is from Virginia Base Mapping Program, Virginia Geographic Information Network. Shaded topographic maps are from TOPO! ©2006 National Geographic <http://www.national.geographic.com/topo> All other map products are from the Commonwealth of Virginia Department of Wildlife Resources.

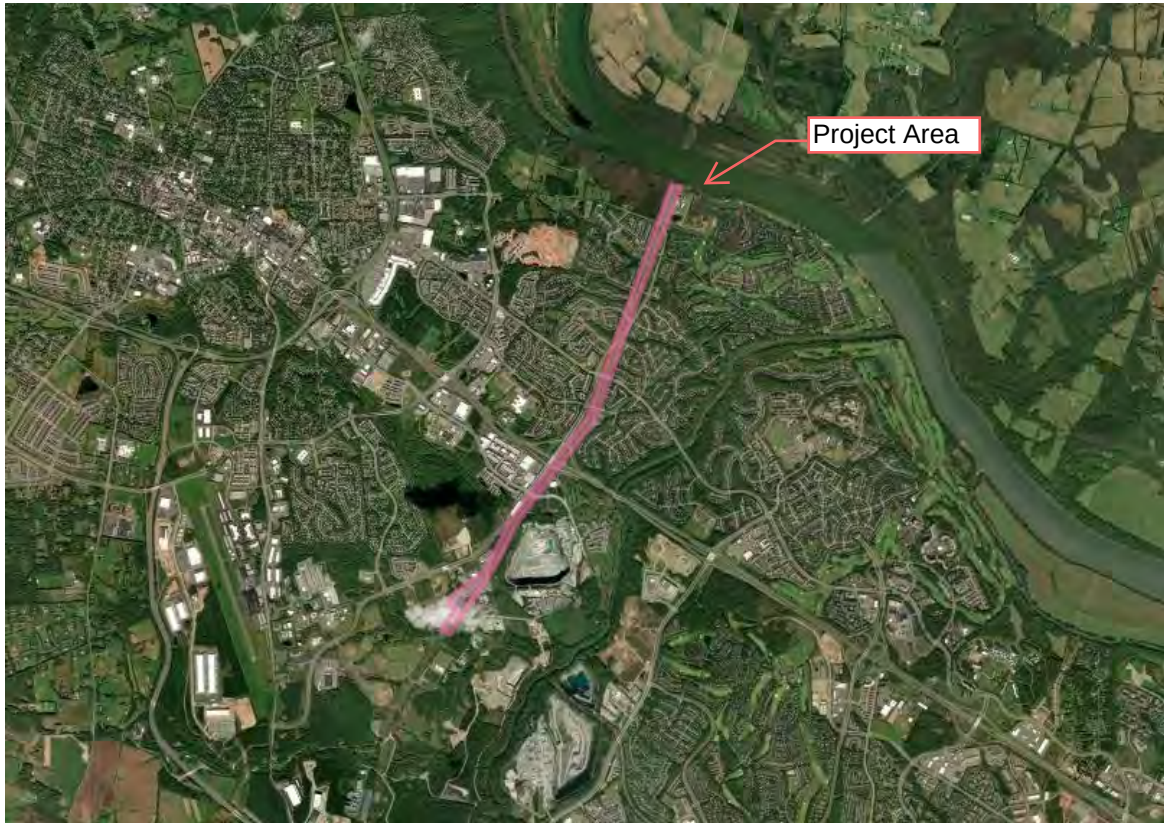
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Spoi=39.1153056 -77.5045000

https://services.dwr.virginia.gov/maps/zMapFormJava.asp?autoscale=14&coord=LL&display_only=1&dist=3218&dp=&gap=&ln=stantec1&opoi=&overl... 1/2



The CENTER for
CONSERVATION
BIOLOGY

CCB Mapping Portal



Layers: VA Eagle Nest Locator

Map Center [longitude, latitude]: [-77.49378204345703, 39.11767523836006]

Map Link:

<https://ccbbirds.org/maps/#layer=VA+Eagle+Nest+Locator&zoom=12&lat=39.11767523836006&lng=-77.49378204345703&base=World+Imagery+%28ESRI%29>

Report Generated On: 08/26/2025

The Center for Conservation Biology (CCB) provides certain data online as a free service to the public and the regulatory sector. CCB encourages the use of its data sets in wildlife conservation and management applications. These data are protected by intellectual property laws. All users are reminded to view the [Data Use Agreement](#) to ensure compliance with our data use policies. For additional data access questions, view our [Data Distribution Policy](#), or contact our Data Manager, Marie Pitts, at mlpitts@wm.edu or 757-221-7503.

Report generated by [The Center for Conservation Biology Mapping Portal](#).

To learn more about CCB visit ccbbirds.org or contact us at info@ccbbirds.org

Threatened and Endangered Bats - DWR



8/26/2025, 10:45:31 AM

	NLEB Consultation Range	Low Resolution 15m Imagery	Citations
	TCB Consultation Range	High Resolution 60cm Imagery	9.6m Resolution Metadata
World Imagery		High Resolution 30cm Imagery	

1:36,890



Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community, Maxar



COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

December 3, 2025

Corey Gray
Stantec Consulting Services
5209 Center Street
Williamsburg, VA 23188

Re: 203402622, 500KV Aspen-Doubs Line 5015, 500 KV Goose Creek-Woodside Line 5004, Opt Cor

Dear Mr. Gray:

The Department of Conservation and Recreation's Division of Natural Heritage (DCR) has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

According to the information currently in our files, the Red Rock Overlook Conservation Site is located within the project site including a 100 foot buffer. Conservation sites are tools for representing key areas of the landscape that warrant further review for possible conservation action because of the natural heritage resources and habitat they support. Conservation sites are polygons built around one or more rare plant, animal, or natural community designed to include the element and, where possible, its associated habitat, and buffer or other adjacent land thought necessary for the element's conservation. Conservation sites are given a biodiversity significance ranking based on the rarity, quality, and number of element occurrences they contain; on a scale of 1-5, 1 being most significant. Red Rock Overlook Conservation Site has been given a biodiversity significance ranking of B4, which represents a site of moderate significance. The natural heritage resources of concern at this site are:

<i>Rorippa sessiliflora</i>	Stalkless yellow-cress	G5/S2/NL/NL
<i>Cerastium velutinum</i> var. <i>velutinum</i>	Field Chickweed	T4/S1/NL/NL
	Piedmont / Central Appalachian Mafic/ Calcareous Cliff	G3/S1?/NL/NL

Stalkless yellow-cress is a state rare biennial herb that inhabits wet areas such as gravel and sand bars of rivers, muddy banks of streams, floodplain forests, bottomland clearings and fields, wet exposed or marshy shores of ponds and lakes. This plant blooms from April to July (Weakley, in prep; Radford et al., 1968). In Virginia, stalkless yellow-cress has been documented at nine locations, three of which are historic, in the piedmont and coastal plain.

Field Chickweed occurs on the flood- sourced outcrops along the Potomac River and its tributaries. Field Chickweed is able to tolerate the range of rock types and chemistries found in these tributaries. It is a disjunct to the sandy and calcareous banks of the tidal Pamunkey River.

The Piedmont / Central Appalachian Mafic / Calcareous community is currently known only from the Potomac River drainage in the Piedmont Triassic Basin of Virginia and Maryland and the adjacent Blue Ridge of Virginia. It occupies cliff-faces weathered from siltstone, shale, calcareous sandstone, and metabasalt. Sites subtend rivers

and large streams, where progressive stream incision through resistant strata has formed escarpments of exposed bedrock. All of the documented cliffs have northerly aspects and are partly to heavily shaded by overhanging trees or trees growing in the cliff-base floodplains. Microhabitat conditions are characterized by vertical to very steep faces, with much exposed bedrock, numerous fissures and shelves, and considerable local deposition of organic-rich, colluvial soil material. Vegetation cover ranges from sparse or somewhat sparse (5 to 20% vascular cover) on the most massive cliffs, to moderately dense (20 to 50% vascular cover) on other examples. Saplings and stunted trees of *Fraxinus americana*, *Ostrya virginiana*, *Tsuga canadensis*, *Ulmus rubra*, *Ulmus americana*, *Acer saccharum*, *Acer nigrum*, *Tilia americana*, *Juniperus virginiana* var. *virginiana*, *Carpinus caroliniana*, *Quercus rubra*, and *Quercus prinus* may occur on the cliff-faces. *Hydrangea arborescens* is a characteristic and sometimes abundant shrub, while *Toxicodendron radicans* and *Parthenocissus quinquefolia* are constant vines. Less constant shrubs include *Physocarpus opulifolius*, *Ptelea trifoliata*, *Hamamelis virginiana*, and *Viburnum acerifolium*. Characteristic herbaceous species include *Polypodium virginianum* (locally abundant), *Sedum ternatum* (locally abundant), *Symphyotrichum cordifolium* (= *Aster cordifolius*) (locally abundant), *Dryopteris marginalis*, *Pilea pumila*, *Asplenium trichomanes*, *Woodsia obtusa* ssp. *obtusa*, *Aquilegia canadensis*, *Saxifraga virginensis*, *Eurybia divaricata* (= *Aster divaricatus*), *Asplenium rhizophyllum*, *Ageratina altissima*, *Carex communis*, *Carex platyphylla*, *Heuchera americana*, *Arabis laevigata* var. *laevigata*, *Polymnia canadensis*, *Polystichum acrostichoides*, and *Solidago caesia*. Exotic weeds, including *Stellaria media*, *Lonicera japonica*, *Alliaria petiolata*, and *Microstegium vimineum*, are problematic invaders at most sites (Fleming et al 2021).

DCR recommends avoidance of the conservation site and associated natural heritage resources.

In addition, according to the diabase screening layer and a review by a DCR biologist, several rare plants which are typically associated with prairie vegetation and inhabit semi-open diabase glades in Virginia, may occur at this location if suitable habitat is present. Diabase glades are characterized by historically fire-dominated grassland vegetation on relatively nutrient-rich soils underlain by Triassic bedrock. Diabase flatrock, a hard, dark-colored volcanic rock, is found primarily in northern Virginia counties and is located within the geologic formation known as the Triassic Basin. Where the bedrock is exposed, a distinctive community type of drought-tolerant plants occurs. Diabase flatrocks are extremely rare natural communities that are threatened by activities such as quarrying and road construction (Rawinski, 1995).

In Northern Virginia, diabase supports occurrences of several global and state rare plant species: Earleaf False foxglove (*Agalinis auriculata*, G3/S1/NL/NL), American bluehearts (*Buchnera americana*, G5?/S1S2/NL/NL), Downy phlox (*Phlox pilosa*, G5/S1/NL/NL), Torrey's Mountain-mint (*Pycnanthemum torreyi*, G2/S2/SOC/LT), Stiff goldenrod (*Solidago rigida* var. *rigida*, G5T5/S2/NL/NL), and Hairy hedgenettle (*Stachys arenicola*, G4?/S1/NL/NL).

Please note that Torrey's Mountain-mint is listed as threatened by the Virginia Department of Agriculture and Consumer Services (VDACS). Torrey's Mountain-mint is also listed as a Species of Concern (SOC) by United States Fish and Wildlife Service (USFWS); however, this is not a legal designation.

Due to the potential for this site to support populations of natural heritage resources, DCR recommends an inventory for rare plants associated with diabase soils in the study area. With the survey results we can more accurately evaluate potential impacts to natural heritage resources and offer specific protection recommendations for minimizing impacts to the documented resources.

DCR-Division of Natural Heritage biologists are qualified to conduct inventories for rare, threatened, and endangered species. Please contact Anne Chazal, Natural Heritage Chief Biologist, at anne.chazal@dcr.virginia.gov or 804-786-9014 to discuss availability and rates for field work.

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the DCR, DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. Survey results should be coordinated with DCR-DNH. Upon review of the results, if it is determined the species is present, and there is a likelihood of a negative impact on the species, DCR-DNH will recommend coordination with VDACS to ensure compliance with Virginia's Endangered Plant and Insect Species Act.

Furthermore, according to the information in our files, the Potomac River - Goose Creek Stream Conservation Site (SCS) is located within the project area. SCSs encompass stream/river reaches, waterbodies, and terrestrial contributing areas containing or associated with aquatic or semi-aquatic resources, including upstream and downstream reaches and tributaries up to 3-km stream distance from the aquatic resources. The size and dimensions of a SCS are based on the hydrology of the waterway and surrounding landscape, taking into consideration dam locations and whether the waterway is tidal. SCSs are given a biodiversity significance ranking (B-rank) based on the rarity, quality, and number of element occurrences they contain. The Potomac River - Goose Creek SCS has been given a B-rank of B3, which represents a site of high significance. The natural heritage resources associated with this SCS are:

<i>Lampsilis cariosa</i>	Yellow Lampmussel	G3G4/S2/NL/NL
<i>Lasmigona subviridis</i>	Green Floater	G2G3/S2/PT/LT

The yellow lampmussel ranges from Nova Scotia to Georgia in Atlantic slope drainages (NatureServe, 2009). In Virginia, it is recorded from the Roanoke, Chowan, James, York, and Potomac drainages. It is found in larger streams and rivers where good currents exist over sand and gravel substrates and in small creeks and ponds (Johnson, 1970).

The green floater a rare freshwater mussel, ranges from New York to North Carolina in the Atlantic Slope drainages, as well as the New and Kanawha River systems in Virginia and West Virginia (NatureServe, 2009). In Virginia, there are records from the New, Roanoke, Chowan, James, York, Rappahannock, and Potomac River drainages. Throughout its range, the green floater appears to prefer the pools and eddies with gravel and sand bottoms of smaller rivers and creeks, smaller channels of large rivers (Ortman, 1919) or small to medium-sized streams (Riddick, 1973). Please note that this species has been listed as state threatened by the Virginia Department of Wildlife Resources (VDWR) and potentially threatened by the US Fish and Wildlife Service.

Considered good indicators of the health of aquatic ecosystems, freshwater mussels are dependent on good water quality, good physical habitat conditions, and an environment that will support populations of host fish species (Williams et al., 1993). Because mussels are sedentary organisms, they are sensitive to water quality degradation related to increased sedimentation and pollution. They are also sensitive to habitat destruction through dam construction, channelization, and dredging, and the invasion of exotic mollusk species.

Due to the legal status of the green floater, DCR recommends coordination with the US Fish and Wildlife Service (USFWS) and the VDWR, Virginia's regulatory authority for the management and protection of this species to ensure compliance with protected species legislation.

DCR recommends the development and implementation of an invasive species plan to be included as part of the maintenance practices for the right-of-way (ROW). The invasive species plan should include an invasive species inventory for the project area based on the current DCR Invasive Species List (<https://www.dcr.virginia.gov/natural-heritage/document/nh-invasive-plant-list-2024.pdf>) and methods for treating the invasives. DCR also recommends the ROW restoration and maintenance practices planned include

appropriate revegetation using native species in a mix of grasses and forbs, robust monitoring and an adaptive management plan to provide guidance if initial revegetation efforts are unsuccessful or if invasive species outbreaks occur.

There are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

New and updated information is continually added to Biotics. Please re-submit a completed order form and project map for an update on this natural heritage information if the scope of the project changes and/or six months has passed before it is utilized.

A fee of \$250.00 has been assessed for the service of providing this information. Please find attached an invoice for that amount. Please return one copy of the invoice along with your remittance made payable to the Treasurer of Virginia, DCR Finance, 600 East Main Street, 24th Floor, Richmond, VA 23219. Payment is due within thirty days of the invoice date. Please note late payment may result in the suspension of project review service for future projects.

The U.S. Fish and Wildlife Service (USFWS) utilizes an online project review process (<https://www.fws.gov/office/virginia-ecological-services/virginia-field-office-online-review-process>) to facilitate compliance with the Endangered Species Act (16 U.S.C. 1531-1544, 87 Stat. 884) (ESA), as amended. The process enables users to 1) follow step-by-step guidance; 2) access information that will allow them to identify threatened and endangered species, designated critical habitat, and other Federal trust resources that may be affected by their project; and 3) accurately reach determinations regarding the potential effects of their project on these resources as required under the ESA. If you have questions regarding the online review process, please contact virginiafieldoffice@fws.gov.

The Virginia Department of Wildlife Resources (VDWR) maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters that may contain information not documented in this letter. Their database may be accessed at <https://services.dwr.virginia.gov/fwis/> or contact Susan Watson at Susan.Watson@dwr.virginia.gov.

Should you have any questions or concerns, feel free to contact me at 804-625-3979. Thank you for the opportunity to comment on this project.

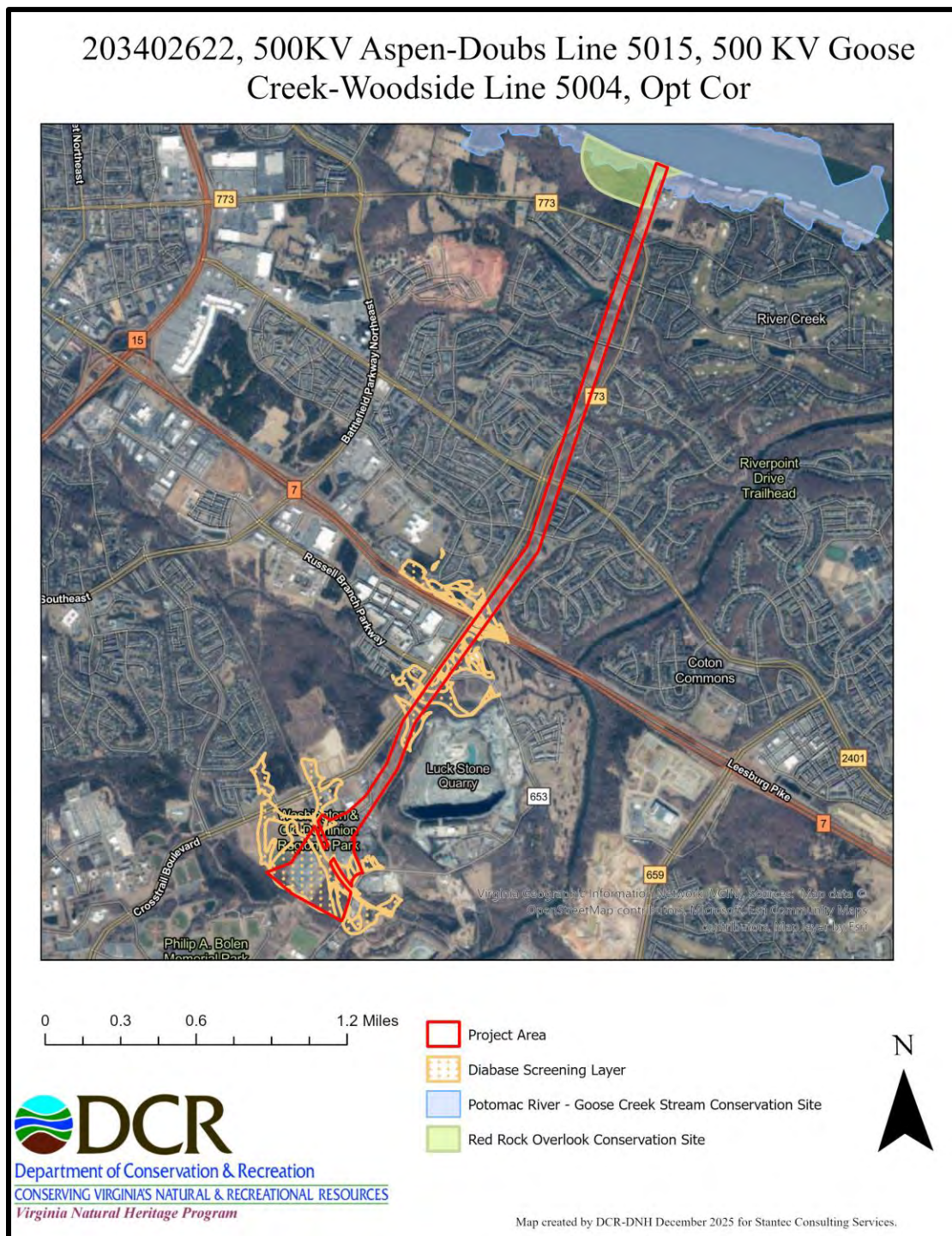
Sincerely,

A handwritten signature in black ink, appearing to read "Nicki Gustafson". The signature is fluid and cursive, with the first name "Nicki" written in a larger, more prominent script than the last name "Gustafson".

Nicki Gustafson
Natural Heritage Project Review Assistant

Cc: Hannah Schul, VDWR

Figure 1. Project Area with Natural Heritage Resources



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Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

www.deq.virginia.gov

Stefanie K. Taillon
Secretary of Natural and Historic Resources

Michael S. Rolband, PE, PWD, PWS Emeritus
Director

July 22, 2025

Elizabeth Gayne
Manager
Virginia Electric and Power Co. d/b/a Dominion Energy Virginia
120 Tredegar St.
Richmond, VA 23219

Re: Dominion Energy Virginia Electric Transmission 2025 Standards and Specifications for Erosion & Sediment Control and Stormwater Management
S&S Agreement No. SS013

Transmitted electronically: elizabeth.h.gayne@dominionenergy.com

Dear Ms. Gayne,

The Virginia Department of Environmental Quality (DEQ) has reviewed the Dominion Energy Virginia Electric Transmission (Dominion ET) Standards and Specifications (S&S) for Erosion and Stormwater Management (ESM), certified on June 26, 2025, and received by the DEQ Office of Stormwater Management on June 26, 2025. The S&S Agreement is deemed approved for ESM pursuant to the Virginia Erosion and Stormwater Management Act (§ 62.1-44.15:24 et seq.) and associated regulation (9VAC25-875-10 et seq) unless otherwise specified by DEQ or where there are changes requiring DEQ review and approval.

As an owner/operator with approved S&S, Dominion ET is responsible for administering, implementing, and complying with the S&S Agreement and following the design criteria in the Virginia Stormwater Management Handbook (VSMH, GM24-2001). In accordance with Part VI of the Virginia Erosion and Stormwater Management Regulation (9VAC25-875-820 & 830), Dominion ET will periodically update the S&S Agreement. Approval of the S&S Agreement by DEQ does not relieve the owner/operator of the duty to comply with other applicable local, state, or federal ordinances or regulations.

The approved S&S Agreement is subject to the following requirements:

1. Approval of this S&S is set to expire 60 days after the publication of VSMH, Version 1.3.
2. Upon issuance of VSMH Version 1.3, Dominion ET shall submit new S&S to DEQ-OSWM for review within 30 days using Appendix J with no variations.
3. Dominion will work diligently with DEQ Handbook staff (POC: [Kay Alexander](#)) to propose changes that incorporate specific items related to Dominion's specialized work that will allow similar industries building such facilities to use the same standard (as more solar projects are building their own substations and transmission lines, AEP, Electric Co-Ops, Data centers that self-perform electrical

July 22, 2025

Dominion ET S&S for ESC and SWM

- work, other power line or power plant developers, etc.) that will be incorporated into VSMH Version 1.3.
4. ESC plans and SWM plans must be reviewed by DEQ-Certified Plan Reviewers. Dominion ET, as the S&S holder, retains the authority to approve plans and must do so in writing. Should Dominion ET, as an S&S holder, contract with a third-party to fulfill the plan review function, the certified third-party Plan Reviewer may recommend approval of the plan, but final approval must come from Dominion ET, as the S&S holder.
 5. Variance, waiver, and exception requests not covered under the VSMH must be submitted to DEQ separately from the S&S Agreement. DEQ may require project-specific plans associated with requests to be submitted for review and approval.
 6. Any ESM plan submitted and deemed complete (9VAC25-875-110) by Dominion ET before July 1, 2025, may use the previously approved S&S program. After July 1, 2025, when modifications are submitted to approved plans that were developed using the previously approved S&S program, if the land-use assumptions upon which the existing stormwater management facility was designed and implemented changes (e.g., increase in impervious cover), then the areas which result in an increase in nutrient loading must comply with this approved S&S Agreement, the VSMH, and the Virginia Runoff Reduction Method, Version 4.1 (VRRM 4.1).

To ensure compliance with the approved S&S Agreement, and the Virginia Erosion and Stormwater Management Act and associated regulation, DEQ staff will conduct program reviews, random site inspections, respond to complaints, and provide on-site technical assistance with specific ESC and SWM measures and plan implementation.

As provided by Rule 2A:2 of the Rules of the Supreme Court of Virginia, you have thirty (30) days from the date of receipt within which to appeal this decision by filing a notice of appeal in accordance with the Rules of the Supreme Court of Virginia with the Director, Virginia Department of Environmental Quality.

To ensure an efficient exchange and response to inquiries, DEQ Central Office is your primary point of contact. Central Office staff will coordinate with our Regional Office staff as appropriate. Please contact Tony Angueira at (804) 584-6265 or antony.angueira@deq.virginia.gov if you have any questions about this letter.

Sincerely,



April Rhodes
Program Manager, Office of Stormwater Management
Virginia Department of Environmental Quality
1111 East Main Street, Suite 1400
Richmond, Virginia 23219
(804) 698-4000

cc: DEQ-OSWM
Ginny Gills, Dominion Electric Transmission

Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia 500 kV Doubs-Goose Creek Line #514 Rebuild, 500 kV Aspen- Doubs Line #5015, 500 kV Goose Creek-Woodside Line #5004, Optimized Corridor and Related Projects, Loudoun County, Virginia

Stantec Consulting Services Inc.



Prepared for:
Dominion Energy Virginia

Date:
May 20, 2026

Prepared by:
Stantec Consulting Services Inc.

Project/File:
203402622

Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

Disclaimer

The conclusions in the Report titled Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia are Stantec's professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

Stantec has assumed all information received from Dominion Energy Virginia (the "Client") and third parties in the preparation of the Report to be correct. While Stantec has exercised a customary level of judgment or due diligence in the use of such information, Stantec assumes no responsibility for the consequences of any error or omission contained therein.

This Report is intended solely for use by the Client in accordance with Stantec's contract with the Client. While the Report may be provided by the Client to applicable authorities having jurisdiction and to other third parties in connection with the project, Stantec disclaims any legal duty based upon warranty, reliance or any other theory to any third party, and will not be liable to such third party for any damages or losses of any kind that may result.

Prepared by:



Signature

Sonja Lengel, Architectural Historian

Printed Name

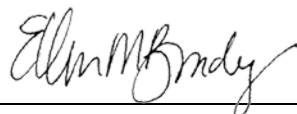
Prepared by:



Signature

Sandra DeChard, MA, Senior Architectural Historian

Reviewed by:



Signature

Ellen Brady, MA, Technical Discipline Leader, Cultural and Social Sciences

Printed Name

Approved by:



Signature

Corey Gray, Project Manager

Printed Name

Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

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Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

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- Appendix A Structure Tables and Structure Details**
- Appendix B Architectural Resource Maps**
- Appendix C Viewshed Map and Photo Simulations**
- Appendix D Archaeological Resources**



Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

Executive Summary

Executive Summary

Stantec Consulting Services Inc. (Stantec) was retained by Dominion Energy Virginia (Dominion Energy) to conduct a Stage I Pre-Application Analysis for the Virginia portion of the proposed rebuilding of the 500 kV Doubs-Goose Creek Line #514 Rebuild, 500kV Aspen-Doubs Line #5015, 500 kV Goose Creek-Woodside Line #5004, Corridor Optimization and Related Projects ("Line #514 Corridor Optimization Project" or the "Project") in Loudoun County, Virginia. The project proposed by Dominion Energy is necessary in order to maintain the structural integrity and reliability of its transmission system and to comply with mandatory North American Electric Reliability Corporation (NERC) Reliability Standards. The project will be constructed mostly within existing right-of-way or within the Company's existing property rights and consists of approximately 3.1-miles of existing 500kV transmission line in Virginia and 15.3 miles in Maryland. As part of the current project, Stantec only evaluated potential visual effects for Line #514 Corridor Optimization Project from Goose Creek Station to the Virginia-Maryland state line.

All proposed structure heights and locations provided in this report are based upon preliminary engineering and are subject to final design.

Background research for the Stage I Pre-Application Analysis was conducted in June 2025 by Stantec staff. The preliminary background research and the field study was conducted pursuant to the *Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia* (DHR 2008) for proposed transmission line improvements.

As detailed by DHR guidance, consideration was given to National Historic Landmarks (NHLs) located within a 1.5-mile radius of the project centerline; National Register of Historic Places (NRHP)-listed properties, battlefields, and historic landscapes located within a 1.0-mile radius of the project centerline; NRHP-eligible sites located within a 0.5-mile radius of the project centerline; and archaeological sites located within the project right-of-way. Five previously recorded architectural resources were identified for inclusion in the Stage I analysis. One previously recorded archaeological resource within the existing right-of-way was also identified during this phase of the project.

Recommendations

Architectural Resources

Five historic architectural resources were identified for consideration pursuant to the tiered review study areas. The Ball's Bluff Battlefield Historic District is mapped as two resources in V-CRIS and recorded under two DHR numbers (DHR# 253-5021/253-5182) and the American Battlefield Protection Program (ABPP)-defined Ball's Bluff Battlefield is recorded as DHR# 053-5058. The battlefield resources are located within all three study tiers and are also intersected by the Project. In addition one NRHP-listed resource is located within the 1.0-mile radius and two NRHP-eligible resources are within 0.5 mile of the centerline..

Based on the fieldwork, review of photo simulations, viewshed modeling, and an analysis of the proposed structures, it is recommended that the Project would have a Minimal Visual Impact on all five architectural resources.



Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

Executive Summary

Summary of Architectural Recommendations

DHR #	Resource Name	NRHP Status	Distance to Closest Proposed Structure (Feet)	Stantec Impact Recommendation
053-0276	Washington & Old Dominion Railroad Historic District/Alexandria, Loudoun and Hampshire Railroad	NRHP-Eligible	40	Minimal
053-5058	Ball's Bluff Battlefield	Potentially Eligible	0	Minimal
053-5783	Murray Hill, 42910 Edwards Ferry Road NE	NRHP-Listed	1,753	Minimal
053-6078	Edwards Ferry Road	NRHP-Eligible	1,360	Minimal
253-5021/ 253-5182	Ball's Bluff Battlefield Historic District/ Ball's Bluff Battlefield and National Cemetery Historic District Boundary Expansion	NHL, NRHP Listed VLR Listed	7,871/0 ¹	Minimal

Archaeological Resources

One previously recorded archaeological resource was identified within the Project right-of-way during background research. The resource, Site 44LD1341 comprises a prehistoric temporary camp. The site was determined potentially eligible by DHR. In addition, 14 previously conducted cultural resources surveys cross the Project right-of-way. Surveys range in date from 1988 to 2024. ***It is recommended that archaeological sites located within the right-of-way be investigated and evaluated as appropriate during future investigations*** (Appendix E; Table 7). It is further recommended that a detailed review of the previous survey coverage and methodology be undertaken prior to and as part of any future Stage II investigations.

Summary of Archaeological Site Recommendations

DHR #	Resource Name	DHR/NRHP Status	Distance to Right-of-Way (Feet)	Stantec Impact Recommendation
44LD1341	Prehistoric Temporary Camp	Potentially Eligible	0	Investigate During Archaeological Survey

¹ Ball's Bluff Battlefield Historic District and National Cemetery Historic District Boundary Expansion NHL (253-5182) boundary is crossed by the Project right-of-way. The Ball's Bluff Battlefield Historic District, comprising the National Cemetery only, is not intersected by the Project.



Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

Acronyms / Abbreviations

Acronyms / Abbreviations

Acronym / Abbreviation	Full Name
ABPP	American Battlefield Protection Program
DEM	Digital Elevation Model
DHR	Virginia Department of Historic Resources
DSM	Digital Surface Model
Dominion Energy	Dominion Energy Virginia
kV	Kilovolt
NERC	North America Electric Reliability Corporation
NHL	National Historic Landmark
NHPA	National Historic Preservation Act
NPS	National Park Service
NRHP	National Register of Historic Places
SCC	State Corporation Commission
Stantec	Stantec Consulting Services Inc.
USDI	United States Department of Interior
V-CRIS	Virginia Cultural Resources Information System
VLR	Virginia Landmarks Register



Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

Introduction

1 Introduction

1.1 Overview

Stantec Consulting Services Inc. (Stantec) was retained by Dominion Energy Virginia (Dominion Energy) to conduct a Stage I Pre-Application Analysis of the Virginia portion of the proposed rebuilding of the 500 kV Doubs-Goose Creek Line #514 Rebuild, 500kV Aspen-Doubs Line #5015, 500 kV Goose Creek-Woodside Line #5004, Corridor Optimization and Related Projects ("Line #514 Corridor Optimization Project" or the "Project") in Loudoun County, Virginia. The project proposed by Dominion Energy is necessary in order to maintain the structural integrity and reliability of its transmission system and to comply with mandatory North American Electric Reliability Corporation (NERC) Reliability Standards. The project will be constructed mostly within existing right-of-way or within the Company's existing property rights and consists of approximately 3.1-miles of existing 500kV transmission line in Virginia and 15.3 miles in Maryland. As part of the current project, Stantec only evaluated potential visual effects for Line #514 Corridor Optimization Project from Goose Creek Station to the Virginia-Maryland state line.

The rebuild of Line #514 and Line #2098 will require the tear-down and replacement of primarily single circuit 500kV steel lattice structures with galvanized steel lattice structures and single circuit 230kV steel lattice structures. Existing Structure #514/1854 will remain. These lattice structures will be replaced primarily with single circuit dilled galvanized steel monopole structures. Where Line #514 is collocated in the Optimized Corridor with Line #2098, the existing structures will be replaced primarily with double circuit dilled galvanized steel monopole structures arranged in a 500/230 kV vertical configuration that will support rebuilt Line #514 and Line #2098 on collocated structures. New 500 kV Line #5015 and the rebuild of Line #203 will wreck the 230 kV existing primarily double circuit galvanized steel monopole structures will be replaced primarily with double circuit dilled galvanized steel monopole structures which will support the rebuilt Line #5015 and Line #203 on collocated structures. The new Line #5004 will be built on primarily single circuit dilled galvanized steel monopole structures.

The total length of the existing right-of-way easements and Company-owned property to be used for the Project is approximately 3.1 miles. An additional approximately 0.5 acre of new right-of-way is necessary to accommodate the installation of Line #5004 into Goose Creek Station. Minimal tree clearing will be needed, mostly on Company property, between Goose Creek Station and Structure #5004/4 to provide for adequate conductor clearance.

All proposed structure heights and locations provided in this report are based upon preliminary engineering and are subject to final design

1.2 Stage I Pre-Application Analysis

The *Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia* (Virginia Department of Historic Resources [DHR] 2008) were developed by the DHR to assist the State Corporation Commission (SCC) and their



Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

Introduction

applicants to address and minimize potential impacts to historic resources associated with the construction of large-scale transmission lines and associated facilities. In consideration of the general project design, as described above, and other elements associated with the proposed undertaking, including current right-of-way conditions within the proposed project area, Stantec designed the present study to identify all previously recorded architectural and archaeological resources requiring inclusion in a formal Stage I Pre-Application Analysis, as defined by the 2008 *Guidelines*.

As detailed by DHR guidance, consideration was given to National Historic Landmarks (NHL) properties located within a 1.5-mile radius of the project centerline; National Register of Historic Places (NRHP)-listed properties, battlefields, and historic landscapes located within a 1.0-mile radius of the project centerline; NRHP-eligible sites located within a 0.5-mile radius of the project centerline; and archaeological sites located within the project right-of-way. This document includes a viewshed analysis to address potential visual impacts to five resources considered during the Stage I study.

This Stage I Pre-Application Analysis was directed by Senior Resource Team Leader, Cultural Resources, Ellen Brady and the report co-authored by Senior Architectural Historian Sandra DeChard and Architectural Historian Sonja Lengel. The visual effects survey was conducted by Assistant Architectural Historian Olivia McCarty under the supervision of Ms. Lengel. Visual modeling was prepared by GIS Coordinator, Melissa Sanderson and GIS Technician Grant Stevens. Support graphics were prepared by GIS Technician, Grant Stevens.



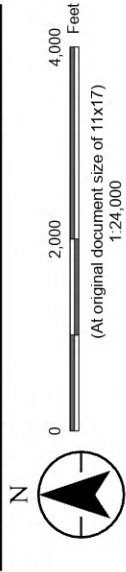
Figure No.

1

Title

Project Location Map

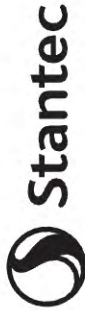
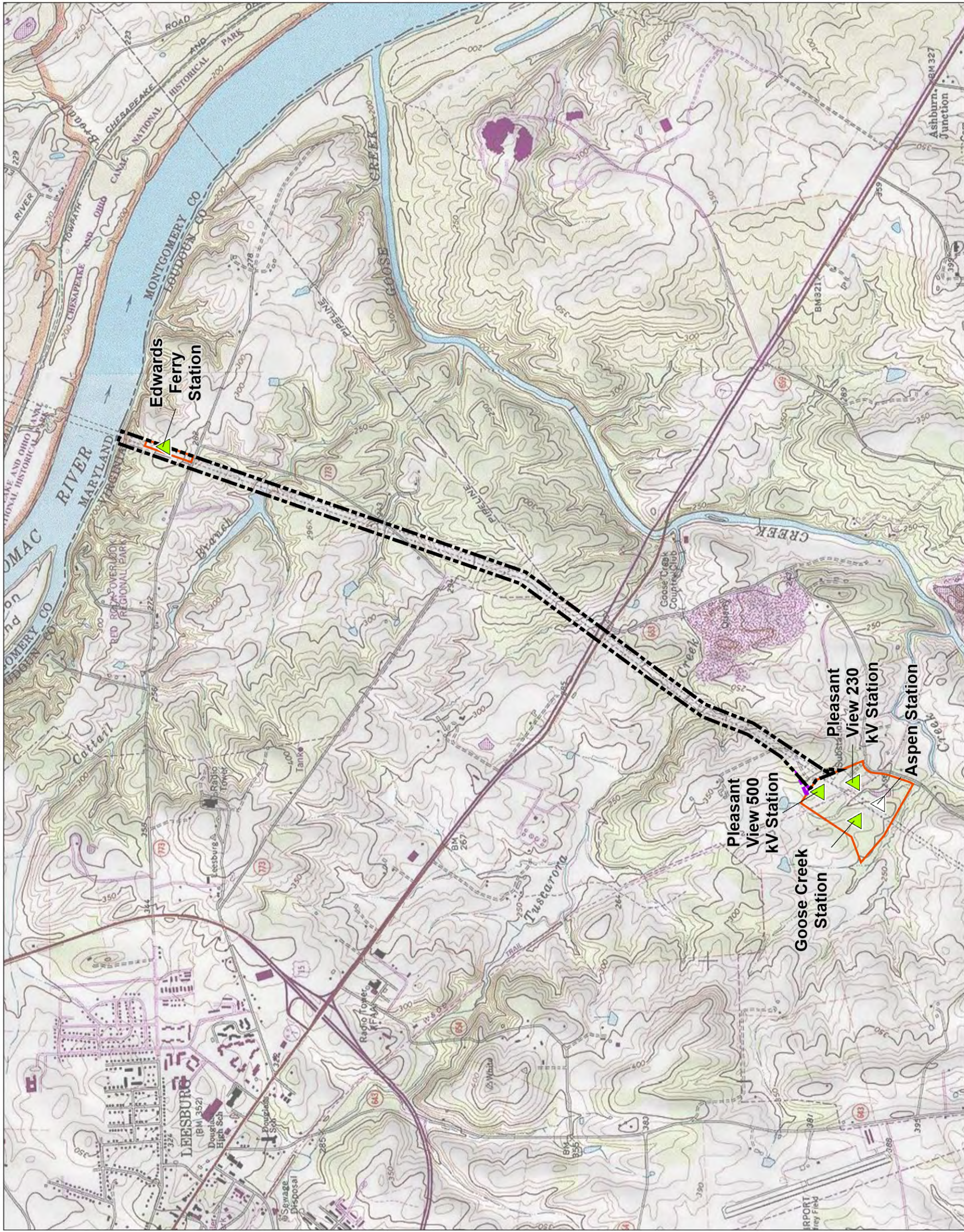
Client/Project	203402622
Dominion Energy Virginia	
Line #514 Corridor Optimization Project	
Project Location	
Loudoun County, Virginia	
Prepared by SGS on 2025-11-20	
TR by ECL on 2025-12-04	
IR by LRC on 2026-01-05	



- Future Station
- Existing Station
- Existing Right-of-Way
- New Right-of-Way
- Existing Company Property Rights



Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, U.S. Census Bureau
3. Topographic map © USGS 7.5 Minute Series Topographic Map, Leesburg, VA Quadrangle 1968 (Rev 1991), and Sterling, VA Quadrangle 1968 (Rev 1973)



Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

Background Research

2 Background Research

As part of the Stage I Pre-Application Analysis effort, DHR guidance recommends a four-tier study area strategy to be considered for each alternative alignment for the proposed undertaking (Table 2). Per this guidance consideration was given to NHL properties located within a 1.5-mile radius of the project centerline; NRHP-listed properties, battlefields, and historic landscapes located within a 1.0-mile radius of the project centerline; NRHP-eligible resources located within a 0.5-mile radius of the project centerline; and archaeological sites located within the project right-of-way.

Table 1 Study Areas as Defined by DHR Guidelines for Transmission Lines

Radial Buffer (in miles)	Considered Resources
1.5	National Historic Landmarks
1.0	Above resources and: National Register Properties (listed), Battlefields, Historic Landscapes (e.g. Rural HD)
0.5	Above resources and: National Register-eligible (as determined by DHR)
0.0 (Within Right-of-Way)	Above resources and Archaeological Sites

The background research included a review of the DHR archives and of data collected from the DHR's Virginia Cultural Resource Information System (V-CRIS) database using the most current data as provided by the DHR. The DHR files of archaeological sites and historic structures were examined and information was retrieved on all archaeological sites located up to a 0.5-mile radius of the project area and all previously recorded architectural resources up to a 1.5-mile radius of the project. ESRI ArcGIS Online aerial photography of current conditions was examined for the entire project area. Photographs of the viewshed of each of the architectural resources under consideration were taken from the public right-of-way.

2.1 Results of the Background Research

2.1.1 Architectural Resources

One NHL, the Ball's Bluff Battlefield Historic District/ Ball's Bluff Battlefield and National Cemetery Historic District Boundary Expansion (DHR #253-5021 and 253-5182), is located within the Project's 1.5-mile radius. One NRHP-listed resource and one potentially eligible battlefield are located within 1.0 mile, and two NRHP-eligible resources are within 0.5 mile of the centerline (Table 2, Appendix B). The transmission line right-of-way crosses two of the battlefield resources (DHR #053-5058 and 253-5182). As the study was completed prior to filing a State Corporation Commission (SCC) application, all digital images were taken from public right-of-way and/or Dominion Energy easements.



Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

Background Research

Table 2 Previously Recorded Architectural Resources Considered under the Stage I Pre-Application Guidelines

DHR #	Resource Name	DHR/NRHP Status	Distance to Closest Existing Structure (Feet)
053-0276	Washington & Old Dominion Railroad Historic District/Alexandria, Loudoun and Hampshire Railroad	NRHP-Eligible	267
053-5058	Ball's Bluff Battlefield	Potentially Eligible	0
253-5021/ 253-5182	Ball's Bluff Battlefield Historic District/ Ball's Bluff Battlefield and National Cemetery Historic District Boundary Expansion	NHL, NRHP Listed VLR Listed	7,883/0 ²
053-5783	Murray Hill, 42910 Edwards Ferry Road NE	NRHP-Listed	1,796
053-6078	Edwards Ferry Road	NRHP-Eligible	1,359

2.1.2 Archaeological Resources

One previously recorded archaeological resource was identified within the Project right-of-way during background research. The resource, Site 44LD1341 comprises a prehistoric temporary camp. The site was determined to be potentially eligible by the DHR in 2006 (Table 3; Appendix D).

Table 3 Previously Recorded Archaeological Resources Considered under the Stage I Pre-Application Guidelines

DHR #	Resource Name	NRHP Status	Distance to Right-of-Way (Feet)
44LD1341	Prehistoric Temporary Camp	Potentially Eligible, 2006	0

Fourteen previously conducted cultural resources surveys cross the Project right-of-way (Table 4). Surveys range in date from 1988 to 2024. A detailed review of the previous survey coverage and methodology is recommended as part of any future Stage II investigations to identify the level of effort for archaeological investigation.

² Ball's Bluff Battlefield Historic District and National Cemetery Historic District Boundary Expansion NHL (253-5182) boundary is crossed by the Project right-of-way. The Ball's Bluff Battlefield Historic District, comprising the National Cemetery only, is not intersected by the Project.



Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

Background Research

Table 4 Previously Recorded Archaeological Surveys Within the Project Right-of-Way

DHR #	Report Title	Firm/Agency	Report Date
LD-041	A Phase I Cultural Resource Survey of a Proposed Bridge Realignment and Approach on Route 7 Over Goose Creek in Loudoun County, Virginia	VDOT	1988
LD-043	Phase I Archaeological Survey of the CNG Transmission Corporation Leesburg Measuring and Regulation Station, Loudoun County, Virginia	NPW	1989
LD-065	Phase I Archaeology Survey for Loudoun County Power Plant: Appendix II: Survey of Historic Buildings Letter Report	GO	1991
LD-173	Phase I Cultural Resource Report Leesburg Overpressure Protection Project Leesburg, Loudoun County, Virginia	GAI	2006
LD-197	Phase I Cultural Resources Report for Dominion Transmission Inc. PL-1 Pipeline Upgrade, Loudoun County, Virginia	EA	2006
LD-212	Phase I Cultural Resources Survey at Festival Lakes, Leesburg, Loudoun County, Virginia	PSA	2006
LD-290	Phase I Archeological Investigations of the Loudoun Water Proposed Pump Station and Water Transmission Line, Loudoun County, Virginia	TAA	2010
LD-343	Cultural Resources Survey of the Proposed Dominion Pleasant View Station Expansion, Loudoun County, Virginia	WMCAR	2012
LD-350	A Phase I Cultural Resources Survey of Approximately 8.0 Miles of Proposed Improvements to the Dominion Virginia Power 500kV Transmission Line from the Goose Creek Station to the Brambleton Station, Loudoun County, Virginia	Stantec	2013
LD-397	Phase I Archeological Investigation, Tuscarora Crossing, Loudoun County, Virginia	TAA	2012
LD-398	Cultural Resources Survey of Section 3 of the Proposed Crosstrail Boulevard Project, Loudoun County, Virginia	WMCAR	2012
LD-485	Phase I Archaeological Investigation TransCanada SIAP 245 Line VC-010 Pressure Test/Replacement Project, Loudoun County, Virginia	GAI	2019
LD-691	Phase I Cultural Resources Investigation, Village at Leesburg, Loudoun County, Virginia	TAA	2024
LD-715	Phase I Archaeological Survey of Approximately 5 Acres for the Dominion Energy Virginia Pleasant View 500 kV (230 kV Delivery) Station Expansion Project, Loudoun County, Virginia	Stantec	2022



Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

Stage 1 Pre-application Analysis Results

3 Stage 1 Pre-application Analysis Results

3.1 Visual Impacts Methodology

Fieldwork for the proposed Project was undertaken by Stantec's Architectural Historian Assistant Olivia McCarty under the direction of Senior Architectural Historian, Sandra DeChard on October 1, 2025. The fieldwork for the assessment entailed photographing the resources requiring viewshed analysis according to the Stage I Pre-Application guidelines and examining the potential views from the resources towards the proposed transmission line improvements. As the fieldwork was conducted prior to a formal SCC application submittal, all photographs were taken from public right-of-way locations with aerial photography utilized to supplement the analysis of project visibility and potential visual effects. As the proposed Project includes the rebuild of existing transmission lines and the proposed new lines will be located within the existing alignment, the existing lines were utilized, to the extent possible, to assist with the assessment of potential visual effects.

A detailed viewshed was modeled for the existing and proposed structures. This analysis required the creation of two datasets, a digital elevation model (DEM) which provided base ground elevations, and a digital surface model (DSM) which provided overall elevations for features on the terrain, such as trees and buildings. Using the existing structure heights and preliminary proposed structure heights with data provided by Dominion to anticipate the as-built conditions of the structures in the model, two viewshed analyses were run using these datasets to determine where the existing and proposed structures are or will be visible in the landscape surrounding the proposed transmission line improvements. The visibility is illustrated by three color shadings:

- Orange - where both existing and proposed structures are/will be visible,
- Burgundy - where the existing structures are visible, but the proposed structures will not be, and
- Blue - where the existing structures are not visible, but the proposed structures will be.

3.2 Individual Architectural Resources Considered

Three individually NRHP-eligible or listed resources were assessed pursuant to the Stage I guidelines. The resources are further described below along with a discussion and recommendation of potential effects that may occur as a result of the Project.

3.2.1 Washington & Old Dominion Railroad Historic District/Alexandria, Loudoun and Hampshire Railroad (DHR #053-0276)

The Washington & Old Dominion Railroad Historic District/Alexandria, Loudoun and Hampshire Railroad (hereafter Washington & Old Dominion Railroad Historic District) is a 45-mile corridor which has been



Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

Stage 1 Pre-application Analysis Results

converted to the Washington and Old Dominion Railroad Regional Park, commonly known as the W & OD Trail, a paved walking and bicycling trail (Figure 2). Construction of the railroad began in 1855 and was completed to Leesburg by 1860 and by the mid- to late-nineteenth century became one of the major transportation corridors in this area of Virginia. The railroad line suffered damage during the Civil War but by 1868 was fully operational. In 1900, the railroad was incorporated under the Southern Railway and in turn this section of line was sold to the Washington and Old Dominion line. By the second decade of the twentieth century, the line carried upwards of three million passengers. During the 1920s, however, the number of passengers had decreased dramatically and by 1926, only 886,000 passengers rode the line due to the increased popularity of the automobile as a mode of transportation. The future of the railroad, thought to have been doomed, had a reverse of fortune as the population of the area after World War II began to increase substantially and the demand for lumber and other building materials increased freight. This prosperous time was short-lived and by the 1950s, the railroad's demise began. The importance of the railroad during the second half of the nineteenth century and first half of the twentieth century has been inextricably linked to the history of Northern Virginia and as such, the resource was determined eligible for listing in the NRHP under Criterion A for its significance in transportation and commerce in 2016, 2017 and 2019 (DHR Site Files).



Figure 2 View of Washington & Old Dominion Railroad Historic District (DHR #053-0276), Looking Northwest.



Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

Stage 1 Pre-application Analysis Results

3.2.1.1 Visual Effects

The Washington & Old Dominion Railroad Historic District is crossed by the Project right-of-way and extends beyond to the southeast and northwest. The closest existing Project structure is 267 feet (Structure #514/1856) to the southwest (Appendix B). Existing structures (Structure #514/1856 and #514/1855) in the vicinity of the resource measure approximately 90 to 142 feet, or an average height of 116 feet. Most of the existing structures were not visible during the field survey at Locations 3, 4 and 5; however, Structure #514/1855 was visible during the field survey at OP2 (Figures 3-6).



Figure 3 View from Washington & Old Dominion Railroad Historic District (DHR #053-0276), Looking Southeast from Location 3. Structures in view are not in Project. The Existing Transmission Line is not Visible.



Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

Stage 1 Pre-application Analysis Results



Figure 4 View from Washington & Old Dominion Railroad Historic District (DHR #053-0276), Looking East from Location 4. The Existing Transmission Line is not Visible.



Figure 5 View from Washington and Old Dominion Railroad Historic District (DHR #053-0276), Looking North from the Trails at Cochran Mill Road (Location 5). The Existing Transmission Line is not Visible.



Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

Stage 1 Pre-application Analysis Results



Figure 6 View from Washington and Old Dominion Railroad Historic District (DHR #053-0276), Looking South (OP 2). The Existing Transmission Line (Structure #514/1855) is Visible.

Based upon preliminary design, six existing structures within the viewshed of the historic district and at the point where the transmission line right-of-way crosses the historic district's boundary, will be replaced. These structures range in height from 65 to 142 feet. Nine new structures will be constructed within this same location (Table 5; Figure 7; Appendix C). The proposed structures will range in height from 65 to 195 feet. In addition to the replacement structures, tree clearing would be required on the north side of the historic district to meet required conductor clearance for the new Line #5004 to Goose Creek Station. The Goose Creek Station is not a part of the project (Appendix B; Figure 7).



Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

Stage 1 Pre-application Analysis Results

Table 5 Existing and Proposed Structure Details – Washington and Old Dominion Railroad Historic District (DHR #053-0276).

Structure Number-Existing	Existing Structure Height (ft)	Structure Type	Structure Number-Proposed ³	Proposed Structure Height (ft)	Structure Type
203/1B	65	Galvanized Steel 3-Pole	2320/1A	65	Dulled Galvanized Steel Monopole
-	-	-	5015/1	90	Dulled Galvanized Steel Monopole
-	-	-	5015/2	165	Dulled Galvanized Steel Monopole
-	-	-	5015/3	165	Dulled Galvanized Steel Monopole
-	-	-	5015/4	195	Dulled Galvanized Steel Monopole
2098/2 (203/1A)	107	Galvanized Steel Monopole	5015/5 (2320/1B)	195	Dulled Galvanized Steel Monopole
2098/3 (203/1)	136	Galvanized Steel Monopole	5015/6 (2320/1C)	170	Dulled Galvanized Steel Monopole
-	-	-	2098/2	65	Dulled Galvanized Steel Monopole
-	-	-	2098/3	65	Dulled Galvanized Steel Monopole
514/1856	90	Weathering Steel Lattice	514/1	90	Dulled Galvanized Steel Monopole
-	-	-	514/2	190	Dulled Galvanized Steel Monopole
514/1855	142	Weathering Steel Lattice	514/3	190	Dulled Galvanized Steel Monopole
-	-	-	514/4 (2098/4)	195	Dulled Galvanized Steel Monopole
514/1854	126	Weathering Steel Lattice	514/5 (2098/5)	195	Dulled Galvanized Steel Monopole
-	-	-	5004/1 (595/1)	90	Dulled Galvanized Steel Monopole
-	-	-	5004/2	190	Dulled Galvanized Steel Monopole

³ Prior to completion of the Corridor Optimization, the existing Dickerson-Pleasant View Line #203 will be cut in order to construct the Apollo-Twin Creeks Project, ultimately resulting in Pleasant View-Sycolin Creek Line #2320 and Dickerson-Twin Creeks Line #203. While, for ease of reference, this Application refers to Dickerson-Pleasant View Line #203 as the line being rebuilt as part of the instant Application, for purposes of clarity, the Pleasant View-Sycolin Creek Line #2320 is depicted with correlating structure heights and locations, subject to change based on final engineering design.



Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

Stage 1 Pre-application Analysis Results

Structure Number-Existing	Existing Structure Height (ft)	Structure Type	Structure Number-Proposed ³	Proposed Structure Height (ft)	Structure Type
-	-	-	5004/3	175	Dulled Galvanized Steel Monopole
-	-	-	5004/4	175	Dulled Galvanized Steel Monopole

Viewshed modeling indicates that the proposed structures would be visible from the resource at the point where the transmission line corridor crosses the historic district boundary and where tree clearing will be necessary near OP2 and Location 5 (Appendix C, OP2; Figure 7). The photo simulations utilizing the view from OP2 to the east and west indicate increased visibility largely due to the necessary tree clearing for the Project, and the addition of nine new transmission line structures. A limited change in the overall viewshed would occur at OP 1 (Appendix C; OP 1) with the addition of new Structure #5015/3. Although increased visibility is anticipated from the historic district it is localized to just a small portion of the overall district and to an area that is currently characterized by existing transmission infrastructure including the two Pleasant View Stations and the Goose Creek Station. The Washington and Old Dominion Railroad Historic District was found eligible under Criterion A for its significance in rail development and to the development of Northern Virginia. It is recommended that the change in setting in this one location within the over 40-mile historic district changes the view from the resource, but does not detract from the significance of the railroad corridor under Criterion A. ***Therefore, it is recommended that the Project would have a Minimal Visual Impact on the Washington & Old Dominion Railroad Historic District (DHR #053-0276).***



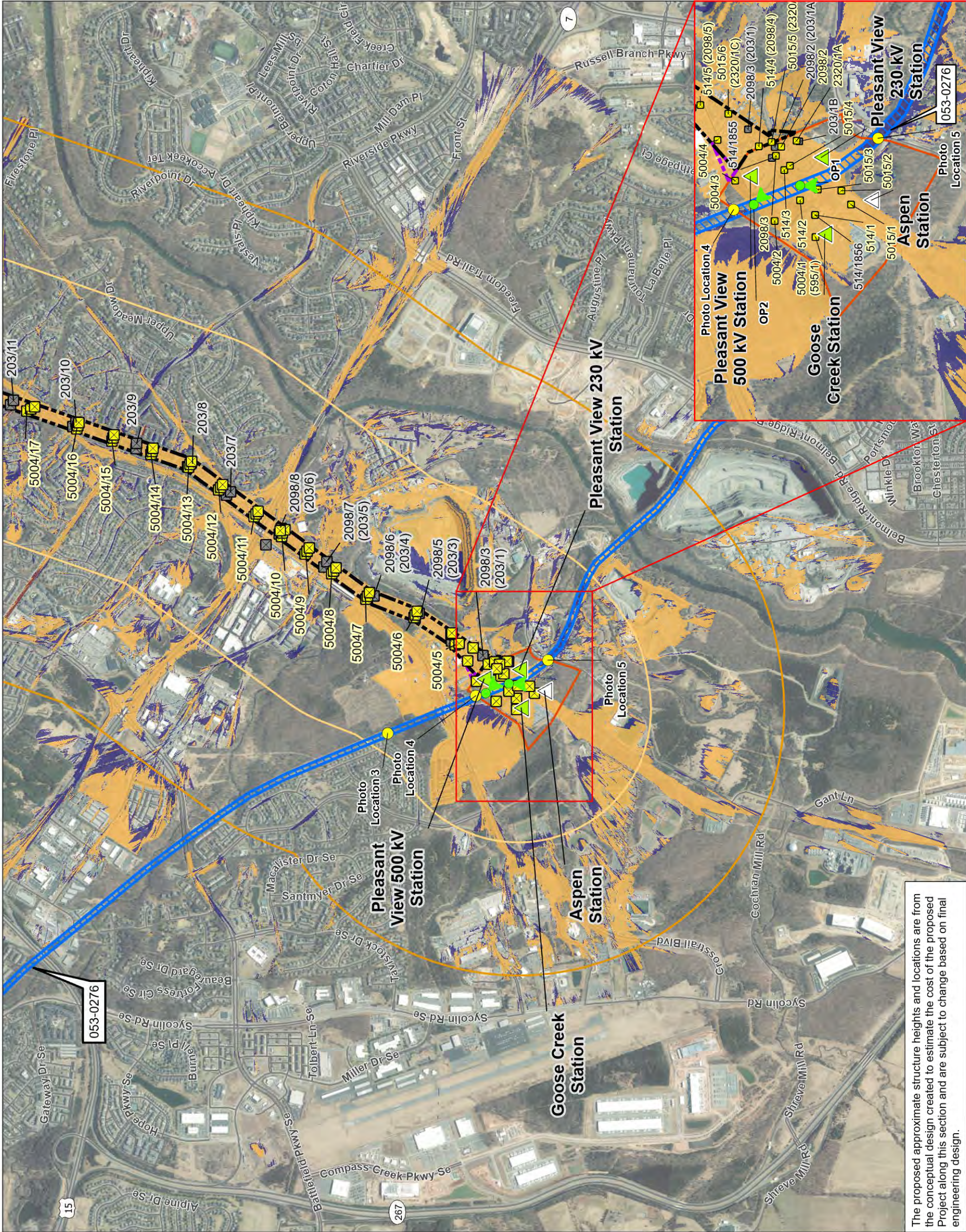
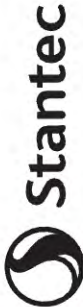


Figure No. 7



Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia**Stage 1 Pre-application Analysis Results****3.2.2 Murray Hill (DHR #053-5783)**

Murray Hill sits back from Edwards Ferry Road on a 56-acre property just east of Leesburg and overlooks the Potomac River. The dwelling, which is accessed by a long gravel driveway, was not visible from the public right-of-way (Figure 8; Appendix B). A tree line is located along the road and along the east side of the driveway with a dense area of woods to the west of the driveway. Beyond the tree line along the road is an open field dotted with areas of trees with a dense wooded area between the field and the house. Built in 1938 and designed in the Colonial Revival style, the dwelling is two-and-a-half-stories with five bays and constructed of coursed local ashlar stone. The center entry features a one-story, single-bay porch supported by columns and a single leaf wood paneled door flanked by sidelights and surmounted by a fanlight. A two-story wing was constructed off one end of the dwelling and gable-roofed dormers project from the front roof slope. Fenestration comprises six-over-six wood sash windows with a three-part window with fanlight on the second floor over the entry. In addition to the residence, 11 contributing resources are located on the property and include an early nineteenth century log dwelling, a smokehouse dating to the late nineteenth century, a turn-of-the twentieth century tenant house, and c. 1940 boat house, carriage house, sawmill, chicken house, and four sheds. Murray Hill was listed on the NRHP in 2014 under Criteria A and C for its association with the Civil War Battle of Ball's Bluff and for its architectural merit (DHR Site Files; Kimball 2014).



Figure 8 View Looking towards Murray Hill (DHR #053-5783) from the End of the Driveway at Photo Location 15, Looking North.



Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

Stage 1 Pre-application Analysis Results

3.2.2.1 Visual Effects

Murray Hill is located within the 1.0-mile radius of the Project centerline, and the closest existing structure is approximately 1,796 feet (Structure #514/1841) to the northwest (Appendix C). Existing Structures (Structure #514/1841 through #514/1843; Structures #203/14, #203/14A, #203/15) in the vicinity of the resource, which measure approximately 113 to 161 feet in height, were not visible (Figures 9-10; Figure 13) during the field survey from Photo Locations 15 and 16.

Based upon preliminary design, the closest proposed replacement structures to the resource (Structures #514/21 to #514/23, #5004/21 to #5004/23, #5015/23 (203/19) to #5015/26, and #203/22), will have heights ranging from approximately 170 feet to 195 feet with an average height of approximately 182 feet, representing a height increase of 67 feet. The closest proposed structure is Structure #5004/23, which has a proposed height of approximately 195 feet and is 1,753 feet from the resource. Viewshed modeling indicates that the proposed structures would be visible only from the far western boundary, small areas in the center, and near Photo Location 15 of the resources as mapped in V-CRIS (Figure 11); however, from the location of the photo simulation, utilizing the view to the east, the proposed structures will have limited visibility over the tops of the trees (Appendix C; OP 5). Based on the fieldwork, the proposed structure heights, photo simulation, and the viewshed modeling, ***it is anticipated that the Project would have a Minimal Visual Impact on Murray Hill (DHR #053-5783).***



Figure 9 View from Murray Hill (DHR# 053-5783) and the Ball's Bluff Battlefield (DHR #053-5058) and the Balls Bluff Battlefield and National Cemetery Historic District Boundary Expansion (DHR #253-5182), Looking Southeast (Photo Location 15). The Existing Transmission Line is not Visible.



Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

Stage 1 Pre-application Analysis Results



Figure 10 View from Murray Hill (DHR #053-5783) and the Ball's Bluff Battlefield (DHR #053-5058) and the Balls Bluff Battlefield and National Cemetery Historic District Boundary Expansion (DHR #253-5182) Looking Southeast (Photo Location 15). The Existing Transmission Line is not Visible. Distribution Structures Visible are not Part of the Project.



Figure No.

11

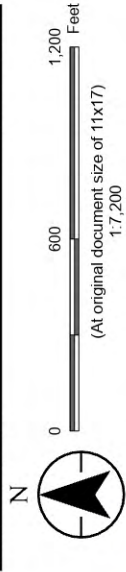
11

**Viewshed Analysis and Photo Location
Map for Murray Hill, 42910 Edwards Ferry
Road NE (DHR #053-5783)**

Client/Project 203402622

Dominion Energy Virginia
Line #514 Corridor Optimization Project

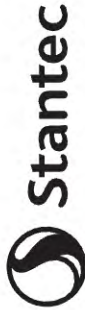
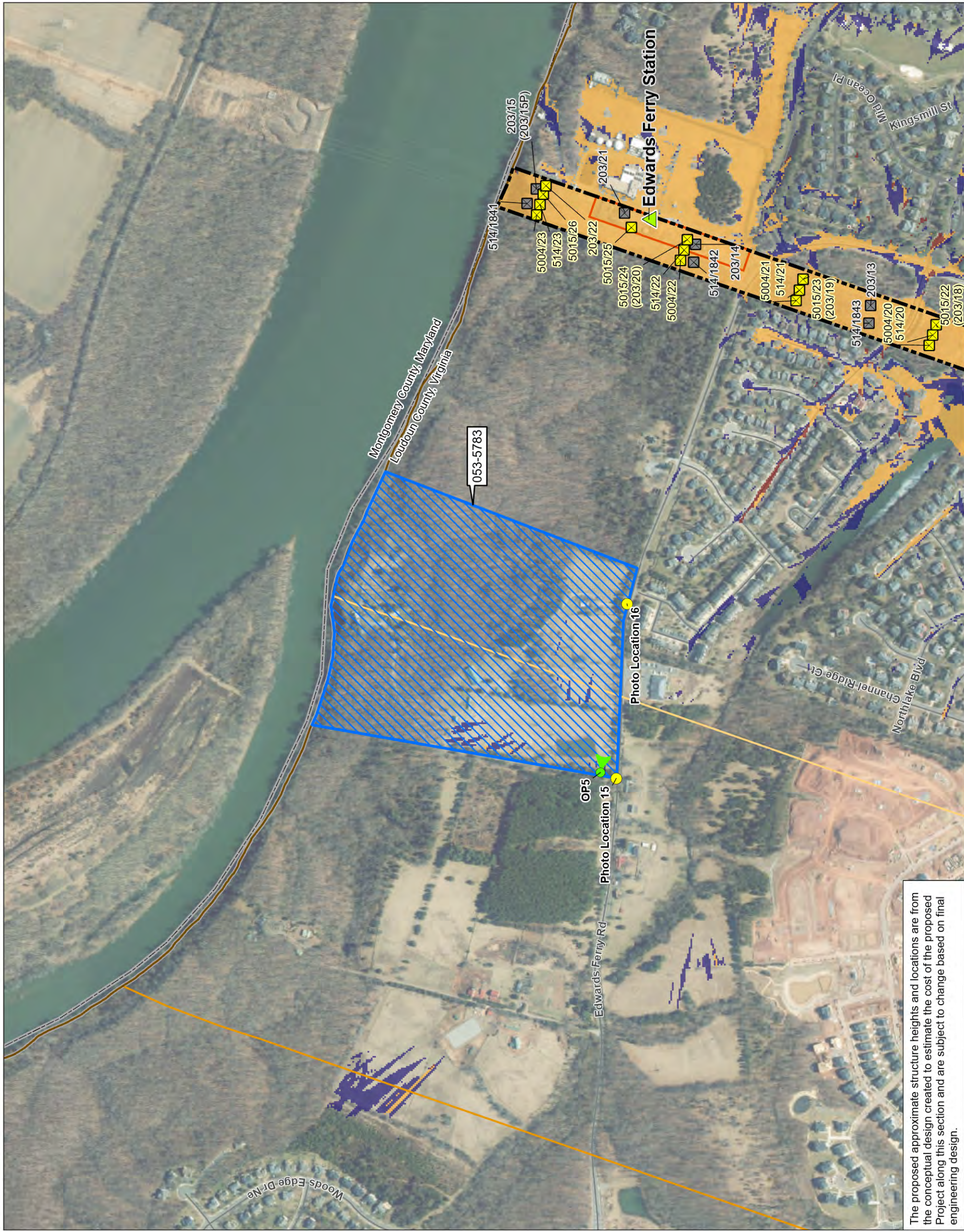
Project Location
Loudoun County, Virginia
Prepared by SGS on 2025-11-25
TR by ECL on 2025-12-04
IR by LRC on 2026-01-05



- Existing Station
- Photo Location/Observation Point
- Photo Location Point
- Proposed Structure
- Existing Structure
- Existing Right-of-Way
- Existing Company Property Rights
- 1-Mile Buffer
- 0.5-Mile Buffer
- Architectural Resource
- Existing Structure Visible, Proposed Structure Not Visible
- Both Existing and Proposed Structure Visible
- Existing Structure Not Visible, Proposed Structure Visible



Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, U.S. Census Bureau, Virginia Department of Historic Resources, Virginia Cultural Resources Information System (VCRIS), VGIN, U.S. National Park Service, American Battlefield Protection Program, U.S. National Park Service, Cultural Resources Geographic Information System Facility
3. Orthomosaic © ESRI
4. Viewshed analysis produced from digital elevation model and digital surface model derived from VGIN LIDAR



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.

Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia**Stage 1 Pre-application Analysis Results****3.2.3 Edwards Ferry Road (DHR #053-6078)**

The documented section of Edwards Ferry Road is a two-lane paved road which extends from Battlefield Parkway to just northwest of Red Rock Way, although the road continues west. This section of the road traverses mainly through rural areas, however, the eastern terminus of the documented section is now flanked by a modern residential development to the south (Figure 12; Appendix B). The date of construction is contested and may date as early as the second half of the eighteenth century or from the early nineteenth century and historically ran from Market Street in Leesburg to “the Warehouse”, presumably also the point of service for Edwards Ferry (DHR Site Files). The road, prior to the Civil War, was used as an escape route to the north by enslaved people. During the Civil War the road was an important thoroughfare for troops moving through Loudoun County. The road was determined to be eligible for listing on the NRHP in 1996 under Criterion A for its significance as an early transportation corridor in Loudoun County and for its role during the Battle of Ball’s Bluff in the movement of Confederate and Union troops during the Civil War (DHR Site Files).



Figure 12 View of Edwards Ferry Road (DHR #053-6078), Looking Southwest.

3.2.3.1 Visual Effects

Edwards Ferry Road is located within the 0.5-mile radius of the Project centerline, and the closest existing structure is approximately 1,359 feet (Structure #514/1842) northwest of the existing/proposed transmission line (Appendix C). Under current conditions, the existing transmission line structures, which range in height from approximately 113 to 125 feet in the vicinity of the resource (Structure #514/1841 through #514/1843), were only visible where the line crosses the road. At this point only the wires were visible. No structures were visible at Photo Location 16 or 21 (Figures 12 to 15).



Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia**Stage 1 Pre-application Analysis Results**

Based upon preliminary design, the proposed structures closest to the resource (Structures #514/21 to #514/23, #5004/21 to #5004/23, #5015/23 (203/19) to #5015/26, and #203/22) will have a height of approximately 170 feet to 195 feet, with an average height of approximately 182 feet and representing a height increase of 67 feet. This closest proposed structure is Structure #5004/22, which will have a height of approximately 175 feet and 1,360 feet from the resource. Viewshed modeling (see Figure 16) indicates that the proposed structures would not be visible at Photo Location 16 (Figure 14); however, the proposed structures would be visible at Photo Location 21 near the resource's eastern boundary (Figure 15). The photo simulation at OP6, utilizing the view to the east, indicates that proposed Structures #514/21, #5015/23 and #5004/21 would be visible above the trees just south of the point where the transmission line corridor crosses the road. The conductor wire would be visible from the road corridor at this same location. However, there would be only limited visibility of the Project from OP 5, just over 0.5-mile west of the Project right-of-way (Appendix C, OP 5). Although minimally visible from OP 5 and more visible from OP6 and at the point where the Project right-of-way crosses the road, it is anticipated that the view would be localized and limited to a small portion of the overall road corridor (Appendix C; OP 5 and 6). Although the transmission line structures and conductor wire introduce a new element to the viewshed for Edwards Ferry Road at this location, the overall impact of this change would not detract from the road's significance under Criterion A. Therefore, ***it is recommended that the Project would have a Minimal Visual Impact on Edwards Ferry Road (DHR #053-6078).***



Figure 13 View from Edwards Ferry Road (DHR #053-6078), Ball's Bluff Battlefield (DHR #053-5058), Murray Hill (DHR #053-5783), and the Ball's Bluff Battlefield & National Cemetery Historic District Boundary Increase (DHR #253-5182) Looking Southeast (Location 16). The Existing Transmission Line Wires are Visible.



Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

Stage 1 Pre-application Analysis Results



Figure 14 View from Edwards Ferry Road (DHR #053-6078), Ball's Bluff Battlefield (DHR #053-5058), and the Ball's Bluff Battlefield & National Cemetery Historic District Boundary Increase (DHR #253-5182) Looking Southeast (Location 16). The Existing Transmission Line is not Visible.



Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

Stage 1 Pre-application Analysis Results



Figure 15 View from Edwards Ferry Road (DHR #053-6078), Ball's Bluff Battlefield (DHR #053-5058), and the Ball's Bluff Battlefield & National Cemetery Historic District Boundary Increase (DHR #253-5182) Looking Southeast (OP 6). The Existing Transmission Line wires are Visible in the Distance.



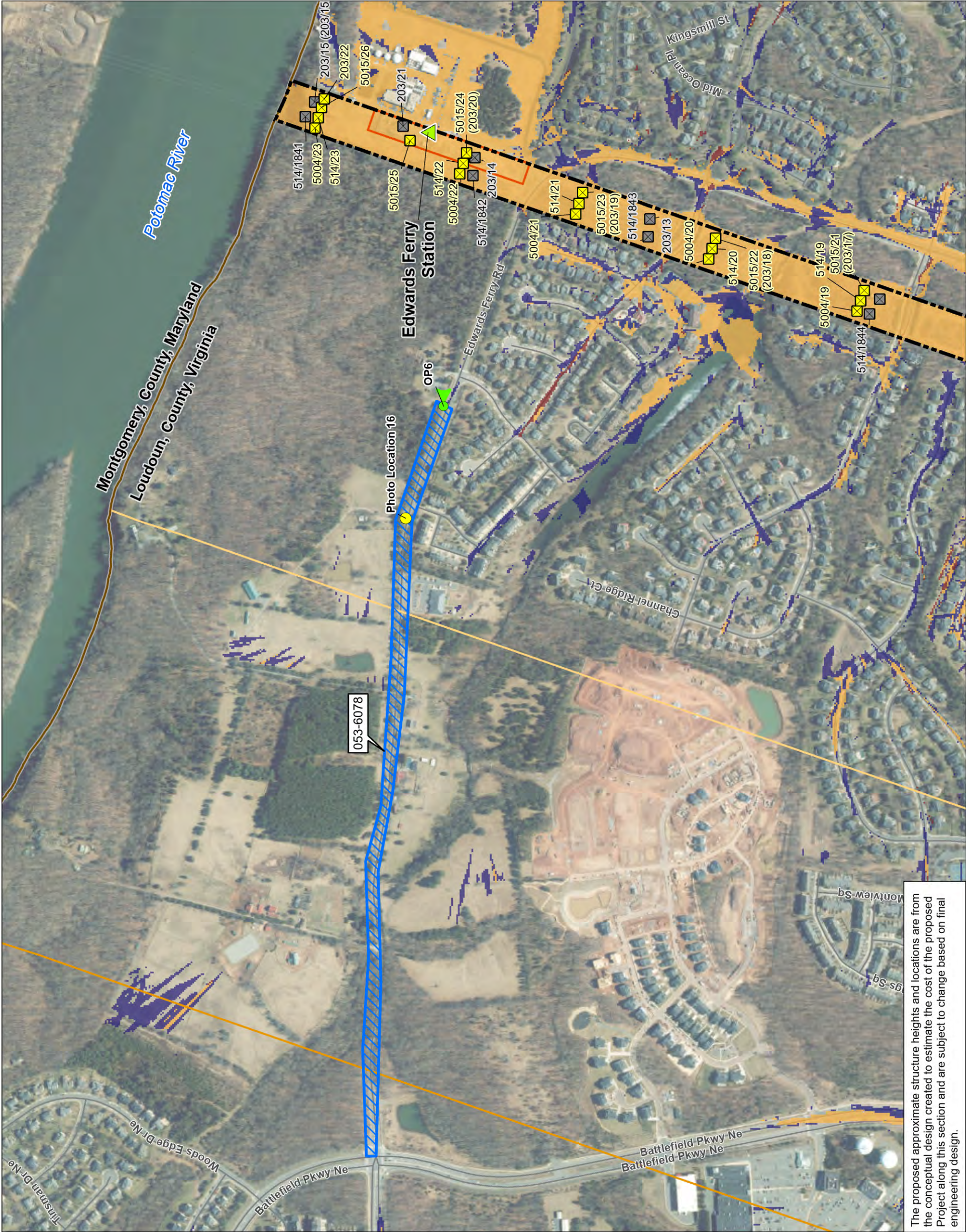


Figure No.
16

Title
**Viewshed Analysis and Photo Location
Map for Edwards Ferry Road (DHR
#053-6078)**

Client/Project
Dominion Energy Virginia
Line #514 Corridor Optimization Project

203402622

Project Location
Loudoun County, Virginia

Prepared by SGS on 2025-11-25
TR by ECL on 2025-12-04
IR by LRC on 2026-01-05

N

0

600

1,200

Feet

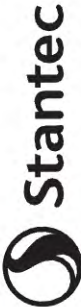
(At original document size of 11x17)

1:7,200

- Existing Station
- Photo Location/Observation Point
- Photo Location Point
- Proposed Structure
- Existing Structure
- Existing Right-of-Way
- Existing Company Property Rights
- 0.5-Mile Buffer
- 1-Mile Buffer
- Architectural Resource
- Existing Structure Visible, Proposed Structure Not Visible
- Both Existing and Proposed Structure Visible
- Existing Structure Not Visible, Proposed Structure Visible



Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, U.S. Census Bureau, Virginia Department of Historic Resources, Virginia Cultural Resources Information System (VCRIS), VGIN, U.S. National Park Service, American Battlefield Protection Program, U.S. National Park Service, Cultural Resources Geographic Information System Facility
3. Orthomageary © ESRI
4. Viewshed analysis produced from digital elevation model and digital surface model derived from VGIN LIDAR



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.

Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

Stage 1 Pre-application Analysis Results

3.3 Battlefield Resources Considered

Three battlefield resources, all associated with the Ball's Bluff Battlefield were reviewed for this Stage I analysis (Table 6). The Ball's Bluff Battlefield Historic District is mapped as two resources in V-CRIS and recorded under two DHR numbers (DHR# 253-5021/253-5182) and the ABPP-defined Ball's Bluff Battlefield is recorded as DHR# 053-5058 and comprises a larger boundary for the battlefield than that related to the historic district. Collectively, the Ball's Bluff Battlefield Historic District (DHR #253-5021) which comprises the limits of the Ball's Bluff National Cemetery, and the Ball's Bluff Battlefield and National Cemetery Historic District Boundary Increase are a National Historic Landmark. The Ball's Bluff Battlefield, which comprises the limits of the ABPP-defined battlefield boundary, has been identified as potentially eligible for listing in the NRHP. The battlefield resources are located within all three study tiers and are also intersected by the Project. The resources are further described in the following sections along with a discussion of potential effects as a result of the project.

Table 6 Battlefield Resources Considered within the Stage I Pre-Application Process

DHR #	Resource Name	Approx. Total Acreage of Battlefield Resource	Approx. Acreage within Virginia
253-5021/ 253-5182	Ball's Bluff Battlefield Historic District / Ball's Bluff Battlefield and National Cemetery Historic District Boundary Increase	3,036	1,705
053-5058	Ball's Bluff Battlefield	10,432	5742

*Acreage is based on calculation as mapped in V-CRIS and is not the ABPP designated acreage for the resource.

For the assessment of battlefield resources, Stantec took into consideration the guidance and recommendations of the ABPP's 2009 assessment of Virginia's Civil War period resources and subsequent updates. In 2009, the ABPP revised the 1992 Civil War Sites Advisory Commission (CWSAC) boundaries for Virginia, and many of the battlefields were greatly expanded in size. For battlefields, the ABPP defined Study Areas, Potential National Register (PotNR) Areas, and Core Areas for each battlefield resource. The larger Study Area contains all resources known to relate or contribute to the battlefield event, such as where troops maneuvered and deployed immediately before or after combat, and where they fought during combat. Within the Study Area are Core Areas, which denote the actual fighting areas located within the larger battlefield. In addition, the ABPP defined PotNR boundaries for each battlefield. The PotNR boundary represents ABPP's assessment of a Study Area's current integrity. The PotNR Area may include all or some of the Study Area or all or some of the Core Area associated with a battlefield engagement. The PotNR boundary does not constitute a formal determination of eligibility by the Keeper of the NRHP; however, it is a recommendation of potential eligibility by the ABPP and/or DHR.

3.3.1 Ball's Bluff Battlefield (DHR #053-5058)

The Battle of Ball's Bluff, which took place October 21, 1861, was the largest battle fought in Loudoun County. Earlier in 1861, Union General McClellan's forces were guarding the northern shore of the Potomac River to prevent Confederate forces crossing into Maryland from Loudoun County. While troops held their respective positions for two months, tensions broke on the 21st of October as Union General



Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia**Stage 1 Pre-application Analysis Results**

McClellan called for action and the two sides met on the Virginia side of the river. The battle was a decidedly Confederate victory with 921 casualties on the Union side and only 155 on the Confederate side (DHR Site Files). The extensive losses on the Union side were deemed suspect and as a result the Congressional Joint Committee of the Conduct of War was established to investigate. Due to the importance of the battle, the Ball's Bluff Battlefield was determined to be potentially eligible by DHR in 2007 under Criterion A as a battlefield and for the impetus for the creation of the Congressional Joint Committee (DHR Site Files). A portion of this battlefield is also within the bounds of the Ball's Bluff Battlefield Historic District NHL.

3.3.1.1 Visual Effects

Approximately 2,799 acres of the 10,436-acre ABPP battlefield resource are located within 1.0 mile of and cross the project centerline (Appendix B). The acres within 1.0-mile consist of the ABPP-defined Study Area (Appendix B) as well as sections of the PotNR (1,420 acres) and Core (1,137 acres) areas of the battlefield. The remaining PotNR and Core Areas of the battlefield are located outside 1.0-mile of the project centerline. Structures #514/1841 through #514/1847 (Appendix A) are located within the resource.

Large sections of the battlefield within the project vicinity have been compromised by recent residential and commercial development along Fort Evans Road, Battlefield Parkway, River Creek Parkway, and portions of Edwards Ferry Road. The wooded and open areas of the battlefield that have little modern intrusions share a boundary with the NHL Ball's Bluff Battlefield Historic District (DHR #253-5021) (Appendix B). Under current conditions, the existing project transmission line structures (Structure #514/1841 through #514/1847), which range in height from approximately 113 to 125 feet in the vicinity of the resource, were visible from Photograph Locations 11, 13, and 19 within open spaces and along streets within the modern development areas (Figures 17, 18, and 19). The structures were not visible from Photograph Locations 7, 10, 15, 16, 22, and 23; however, the transmission wires are visible from Location 16 (Figures 9, 13, 20, 21 23, and 24).

Based upon preliminary design, the proposed structures closest to the resource (Structures #514/14 to #514/23, #5004/22, #5004/23, #5015/24, #5015/25, #5015/26, and #203/22) will range in height from approximately 170 to 195 feet with an average height of approximately 185 feet, representing an increase in height of approximately 70 feet. Viewshed modeling indicates that the proposed structures would mainly be visible along streets within modern residential development such as River Creek Club, commercial developments near Battlefield Shopping Center, as well as along Fort Evans Road and Battlefield Parkway NE (Figure 22). Simulations prepared for the Project indicate that the battlefield will view the Project in varying degrees from OP 2, 3, 4, 5, 6, and 7. Although the proposed structures will be visible in these locations, generally, the view will be localized to areas of cleared land, where the Project right-of-way crosses roadways and within modern residential areas. Therefore, it is anticipated that the viewshed will not be significantly altered by the proposed Project (Appendix C; OP 2-7). Due to the compromised areas within the battlefield resource and based on the fieldwork, the proposed structure heights, photo simulations, and the viewshed modeling, ***it is anticipated that the Project would have a Minimal Visual Impact on the NRHP potentially eligible Ball's Bluff Battlefield (DHR #053-5058).***



Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

Stage 1 Pre-application Analysis Results



Figure 17 View from the Ball's Bluff Battlefield (DHR #053-5058) at the Intersection of Riverside Parkway and Potomac Station Drive (Location 11) Looking Northwest. The Existing Transmission Line Wires are Visible.



Figure 18 View from Ball's Bluff Battlefield (DHR #053-5058; Location 13) Looking Southeast. Existing Transmission Line is Visible.



Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

Stage 1 Pre-application Analysis Results



Figure 19 View from the Ball's Bluff Battlefield (DHR #053-5058) at the Intersection of Fort Evans Road and Orchid Drive (Location 19) Looking Southeast. The Existing Transmission Line is Visible.

Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

Stage 1 Pre-application Analysis Results



Figure 20 View from Ball's Bluff Battlefield (DHR #053-5058; Location 7) and Ball's Bluff Battlefield & National Cemetery Historic District Boundary Increase (DHR #253-5182) Looking Northwest. Existing Transmission Line is not Visible.



Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

Stage 1 Pre-application Analysis Results



Figure 21 View from the Ball's Bluff Battlefield (DHR #053-5058) at the Intersection of Parkers Ridge Drive and Cory Street (Location 10) Looking Northwest. The Existing Transmission Line is not Visible.

Figure No.

22

Title

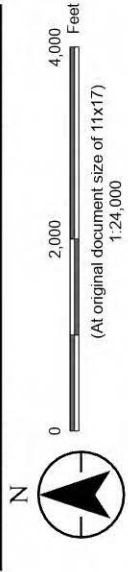
**Viewshed Analysis and Photo Location
Map for Ball's Bluff Battlefield (DHR
#053-5058)**

Client/Project 203402622

Dominion Energy Virginia
Line #514 Corridor Optimization Project

Project Location

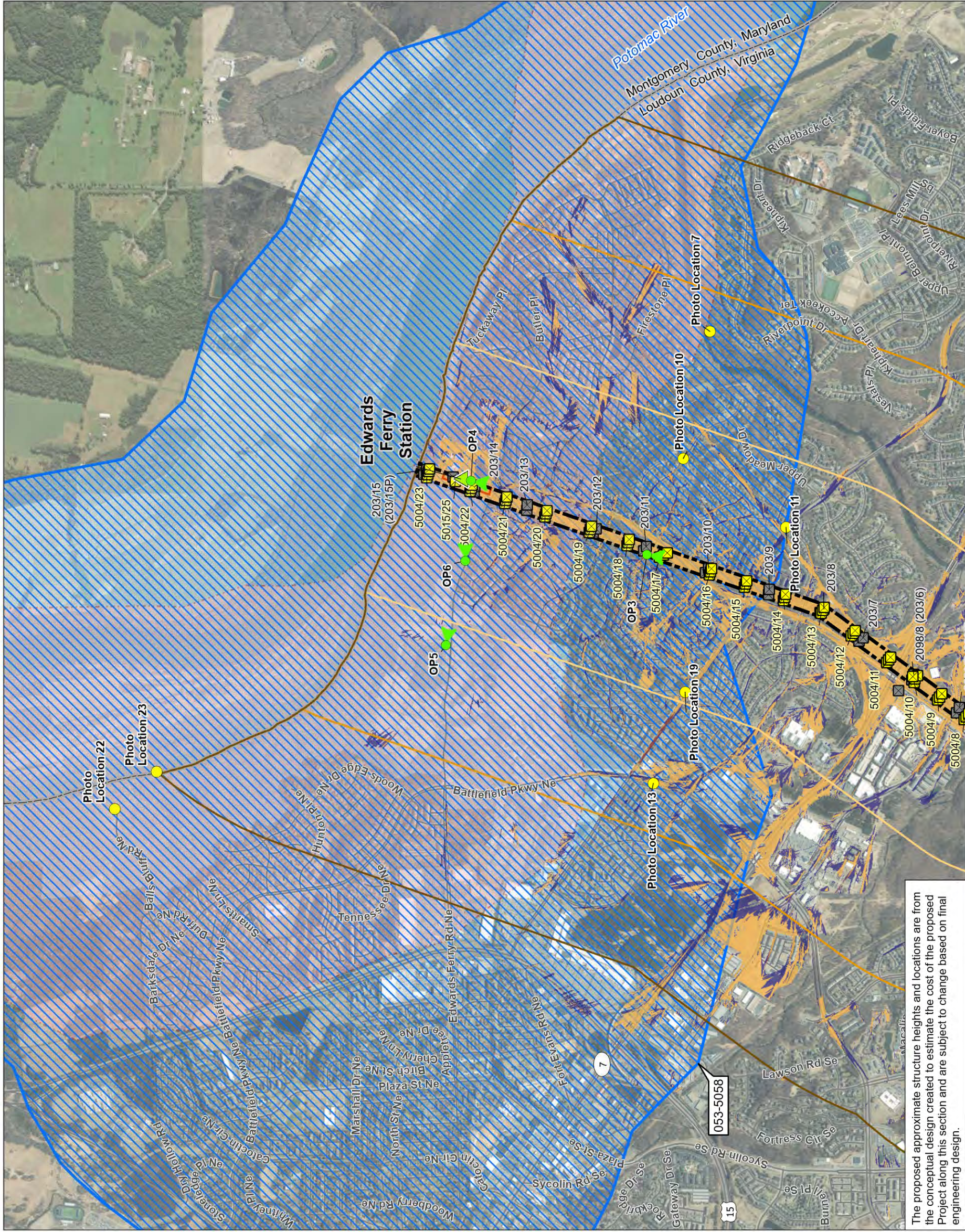
Loudoun County, Virginia
Prepared by SGS on 2025-11-25
TR by ECL on 2025-12-04
IR by LRC on 2026-01-05



- Existing Station
- Photo Location/Observation Point
- Photo Location Point
- Proposed Structure
- Existing Structure
- Existing Right-of-Way
- Existing Company Property Rights
- 1.5-Mile Buffer
- 1-Mile Buffer
- 0.5-Mile Buffer
- Existing Structure Visible, Proposed Structure Not Visible
- Both Existing and Proposed Structure Visible
- Existing Structure Not Visible, Proposed Structure Visible
- Architectural Resource
- ABPP Core Area
- ABPP Potential National Register Area



Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, U.S. Census Bureau, Virginia Department of Historic Resources, Virginia Cultural Resources Information System (VCRIS), VGIN, U.S. National Park Service, American Battlefield Protection Program, U.S. National Park Service, Cultural Resources Geographic Information System Facility
3. Orthomagey © ESRI
4. Viewshed analysis produced from digital elevation model and digital surface model derived from VGIN LIDAR



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.

Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia**Stage 1 Pre-application Analysis Results****3.3.2 Ball's Bluff Battlefield Historic District (DHR #253-5021) and Ball's Bluff Battlefield & National Cemetery Historic District Boundary Expansion (DHR #253-5182)**

The NHL-listed Ball's Bluff Battlefield Historic District (DHR #253-5021) was originally limited to the approximately 76-acre boundary associated with the National Cemetery and was listed as an NHL in 1984 (see Appendix B). The current boundary of the NHL and the historic district now also includes the Ball's Bluff Battlefield and National Cemetery Historic District Boundary Expansion (DHR #253-5182). The current boundary encompasses the original 76 acres and is now approximately 3,301 acres. For purposes of this report, these two resources are discussed and assessed together as a single resource and NHL. The combined resources comprise portions of the ABPP Study, Core, and PotNR areas of the battlefield as well as the national cemetery associated with the Battle of Ball's Bluff (Appendix B). Important to the following discussion of potential impacts on the resource resulting from the Project, is the documentation of a discrepancy identified between the boundary defined by Loudoun County for the NHL boundary expansion nomination and that on file in the DHR's V-CRIS data. During the review of nomination details available through Loudoun County's website ([Ball's Bluff Battlefield Expansion Project | Loudoun County, VA - Official Website](#)), and according to the maps included with the approved nomination ([Ball's Bluff Battlefield Historic District: Draft Nomination \(Redacted\)](#); Map Inset 9, page 154; see Figures 23 and 24), the Project right-of-way is only present within approximately 250 feet (inclusive of the width of right-of-way) of the NHL resource boundary as the Project approaches the Potomac River. Utilizing the DHR boundary, the Project impacts to the resource encompass a distance of approximately 1,500 feet, inclusive of the proposed Project right-of-way. For purposes of assessing the potential Project impacts, this report utilizes the approved NHL boundary as documented in the NHL nomination form.

Ball's Bluff rises 300 feet above the Potomac River's western shore. At the top of the cleared bluff are the Baker and Hatcher monuments, the cemetery road, and the national cemetery. The national cemetery is a contributing resource to the historic district and was established in December 1865 by the War Department, containing the remains of 53 unknown and one known Union soldier with the graves arranged in a semi-circle. The cemetery is enclosed by a red sandstone wall. The Ball's Bluff Battlefield Historic District (DHR #253-5021) and Ball's Bluff Battlefield Historic District and National Cemetery Historic District Boundary Expansion (DHR #253-5192) was, as an overall resource, listed in the NRHP in 2016 under Criterion A for its association with the Civil War (DHR Site Files). As an NHL, it was listed as significant under Criterion 1 in the areas of Politics/Government and Military during 1862 (Ford and Thompson et al. 2024).

3.3.2.1 Visual Effects

The northwestern portion of the resource is divided by the Potomac River between Virginia and Maryland. Most of the historic district is wooded with areas of open fields. The resource includes a 300-foot bluff above the Potomac River which flows east of the bluff (Figures 23 and 24). A parking lot at the base of the bluff's western side connects to a cart path that winds its way to the top of the cleared bluff. At the top of the bluff are the Baker and Hatcher monuments, the cemetery, and the cemetery road. The remaining bluff is a combination of open woods and dense understory.



Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

Stage 1 Pre-application Analysis Results

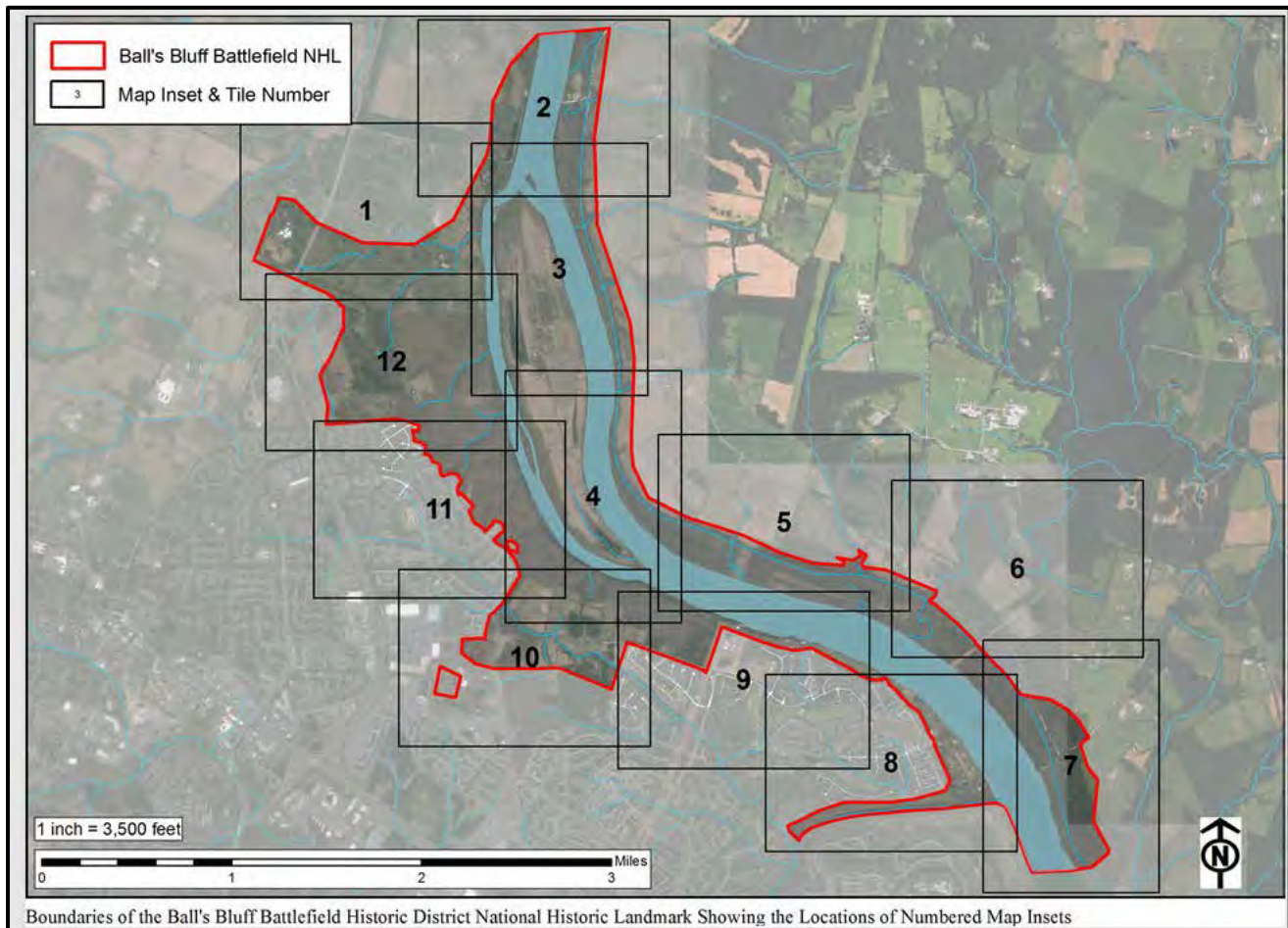


Figure 23 Boundary Map Ball's Bluff Battlefield Historic District National Historic Landmark (DHR #253-5021/253-5182) ([Ball's Bluff Battlefield Historic District: Draft Nomination \(Redacted\)](#); accessed March 2026) illustrating the NHL Boundary in the Vicinity of the Project (Map Inset 9; see Figure 24).



Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

Stage 1 Pre-application Analysis Results

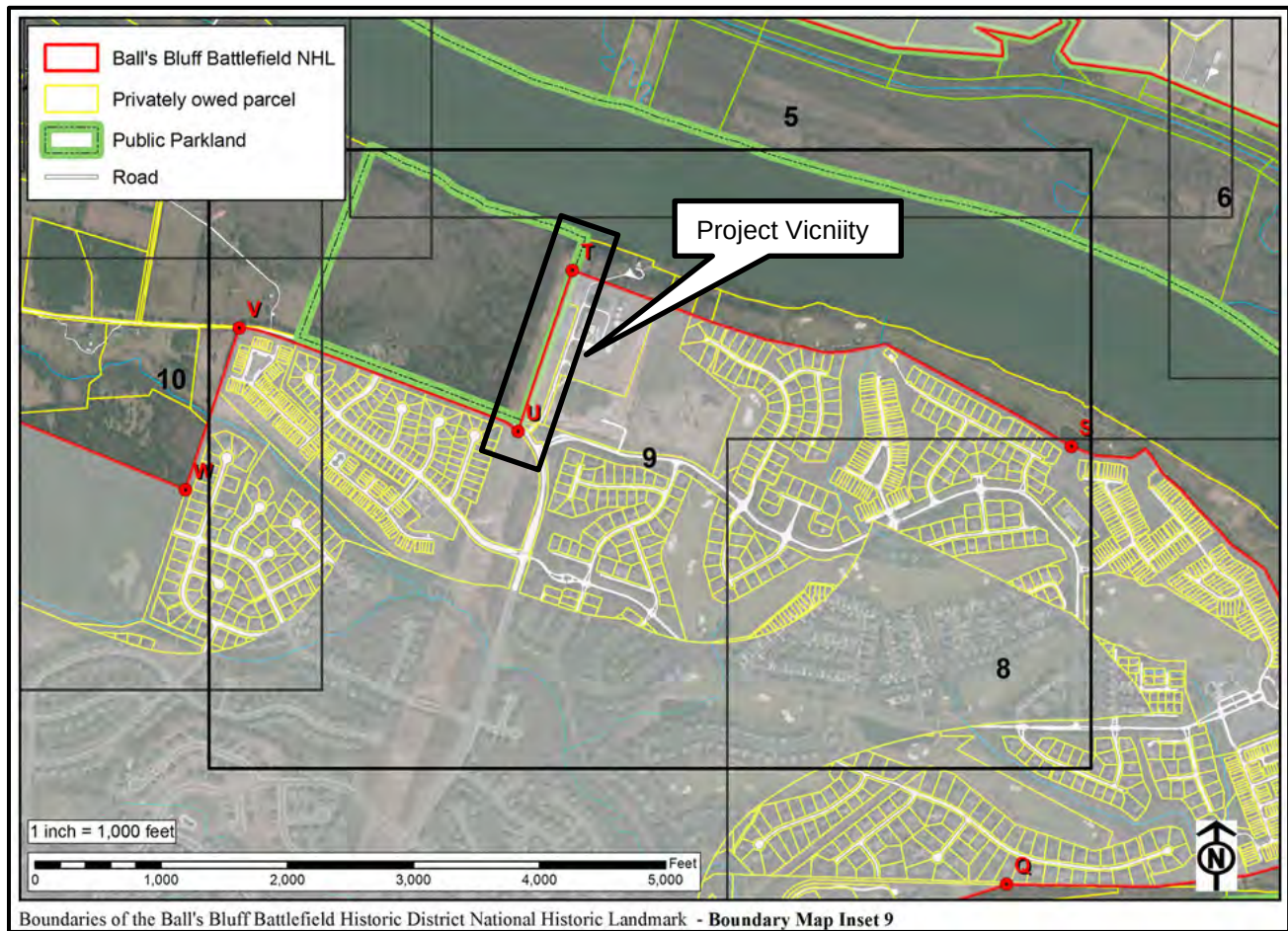


Figure 24 Boundary Map (Inset 9) Ball's Bluff Battlefield Historic District National Historic Landmark (DHR #253-5021/253-5182) ([Ball's Bluff Battlefield Historic District: Draft Nomination \(Redacted\)](#); accessed March 2026) illustrating the NHL Boundary in the Vicinity of the Project.



Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia**Stage 1 Pre-application Analysis Results**

Approximately 1,705 acres of the historic district and historic district expansion are in Virginia, and the rest of the historic district is in Maryland. Of these acres, approximately 1,005 are located within 1.5 miles of the Project. A very small portion of the historic district (approximately 250 linear feet) is crossed by the Project (Appendix B; see Figures 23, 24, and 31). The acres within 1.5-mile consist of the ABPP defined Study, Core, and PotNR areas (Appendix B) with portions of the PotNR as well as the Core Areas of the battlefield extending beyond 1.5-mile of the project centerline. Existing Structures #514/1841 through #514/1842 are located within the resource's boundaries.

While sections of the resource within 1.5-mile of the Project corridor are wooded and retain integrity with little modern intrusions, there is some modern residential development near Whites Ferry Road east of Route 15 (Appendix B). Under current conditions, the existing transmission line structures in the vicinity of the resource (Structures #514/1841 and #514/1842), which are approximately 125 and 116 feet in height respectively, were not visible from Photograph Locations 7, 10, 15, 22, 23, and 25 (Figures 9, 10, 20, 21, 27, 28, and 30). The existing line was visible from Photograph Locations 16 and 24 (Figures 13 and 29).

Based upon preliminary design, the proposed structures (Structures #514/22, #514/23, #5004/22, #5004/23, #5015/24, #5015/25, #5015/26, and #203/22) will range in height from approximately 175 to 195 feet with an average height of approximately 186 feet, representing an increase in height of approximately 68 feet. Viewshed modeling indicates that the proposed structures would mainly be visible within the transmission line right-of-way and in an open field to the east of the right-of-way. In most of these areas the existing and proposed structures would have visibility (Figure 31). The modeling indicates that there could be some visibility of the Project from agricultural land located to the west of the project and within the limits of the historic district. The National Cemetery, however, would have no visibility of the Project due to the distance and the presence of dense expanses of trees located between the cemetery area and the Project right-of-way (see Figure 31).

Simulations prepared for the Project at OP 4, 5, 6, and 7 (Appendix C; OPs 4, 5, 6, and 7) indicate that there would be some visibility of the Project, to varying degrees, from these observation points. From OP 4, located within the Project right-of-way north of Shoal Creek Drive, the Project would be largely visible from within the battlefield boundaries. However, this location is industrial and has already been compromised visually by existing infrastructure. Views from OPs 5, 6, and 7 would be primarily limited to locations where the Project crosses Edwards Ferry Road and those portions of the proposed structures that extend above the trees.

Changes in the visual setting would be limited to only the portions of the NHL boundary in proximity to the Project right-of-way and along Edwards Ferry Road. Based on the fieldwork, a review of the photo simulations, and the viewshed modeling, ***it is anticipated that the Project would have a Minimal Visual Impact on the Ball's Bluff Battlefield Historic District (DHR #253-5021) and Ball's Bluff Battlefield Historic District & National Cemetery Historic District Boundary Expansion (DHR #253-5182) NHL.***



Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

Stage 1 Pre-application Analysis Results



Figure 25 View of the Ball's Bluff Battlefield Historic District (DHR #253-5021), Ball's Bluff Battlefield and National Cemetery Historic District Boundary Expansion (DHR #253-5182), and Ball's Bluff Battlefield (DHR #053-5058) at the top of the Bluff (Location 22) Looking Northeast.



Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

Stage 1 Pre-application Analysis Results



Figure 26 View of the Ball's Bluff Battlefield Historic District (DHR #253-5021), Ball's Bluff Battlefield and National Cemetery Historic District Boundary Expansion (DHR #253-5182), and Ball's Bluff Battlefield (DHR #053-5058) at the Potomac River (Location 23) Looking North.

Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

Stage 1 Pre-application Analysis Results



Figure 27 View of the Ball's Bluff Battlefield Historic District (DHR #253-5021), Ball's Bluff Battlefield and National Cemetery Historic District Boundary Expansion (DHR #253-5182), and Ball's Bluff Battlefield (DHR #053-5058) at the bluff (Location 22) Looking Southeast Towards Project. Existing Transmission Line Not Visible.



Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

Stage 1 Pre-application Analysis Results



Figure 28 View of the Ball's Bluff Battlefield Historic District (DHR #253-5021), Ball's Bluff Battlefield and National Cemetery Historic District Boundary Expansion (DHR #253-5182), and Ball's Bluff Battlefield (DHR #053-5058) at the Potomac River (Location 23) Looking Southeast Towards Project. Existing Transmission Line Not Visible.



Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

Stage 1 Pre-application Analysis Results



Figure 29 View of the Ball's Bluff Battlefield Historic District (DHR #253-5021), Ball's Bluff Battlefield and National Cemetery Historic District Boundary Expansion (DHR #253-5182), and Ball's Bluff Battlefield (DHR #053-5058) (Location 24/OP 4) Looking Southwest Towards Project. Existing Transmission Line is Visible.



Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

Stage 1 Pre-application Analysis Results



Figure 30 View of the Ball's Bluff Battlefield Historic District (DHR #253-5021), Ball's Bluff Battlefield and National Cemetery Historic District Boundary Expansion (DHR #253-5182), and Ball's Bluff Battlefield (DHR #053-5058) (Location 25/OP 5) Looking East Towards Project. Existing Transmission Line is Not Visible. Distribution Structures Visible are Not Part of the Project.

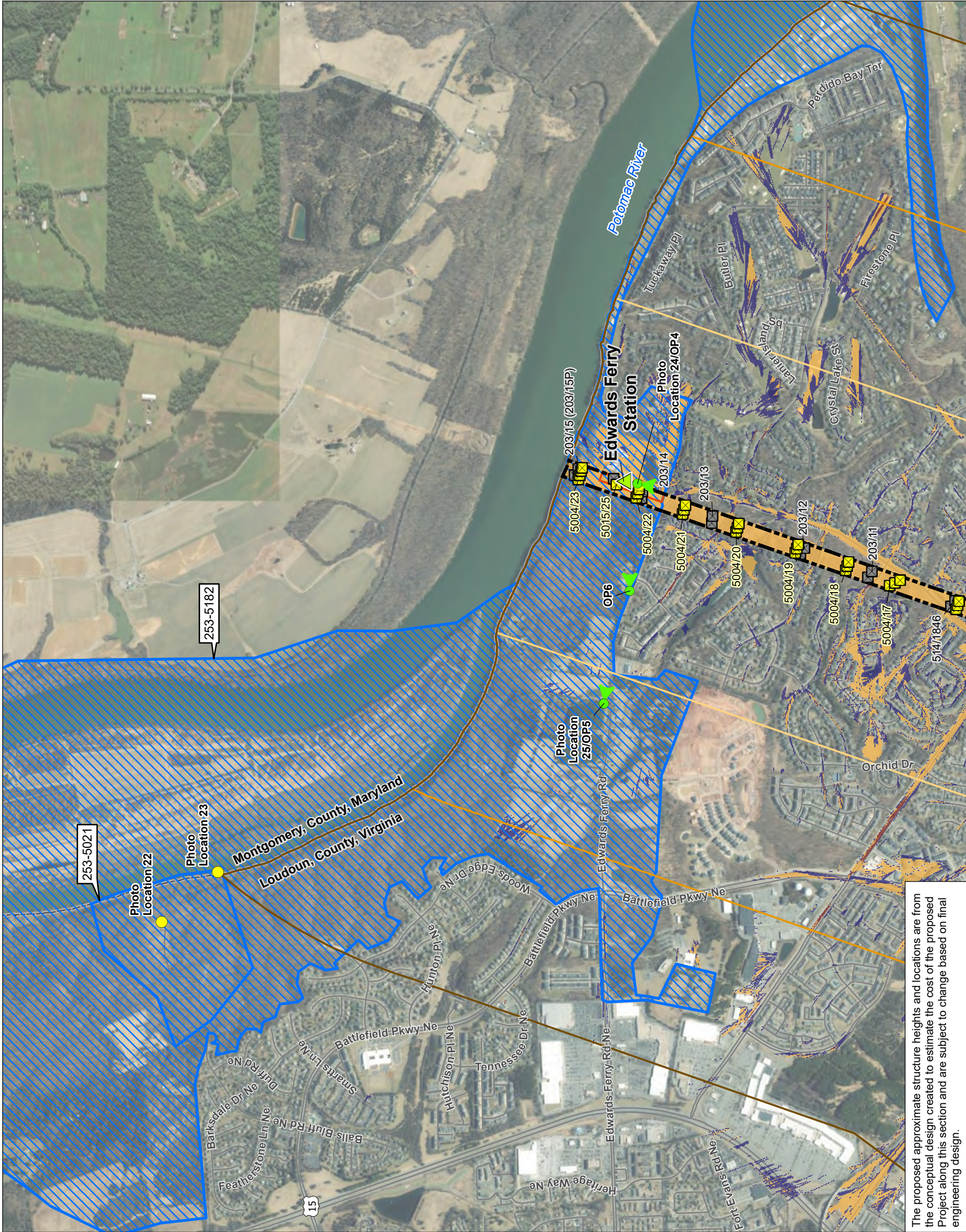


Figure No. **31**

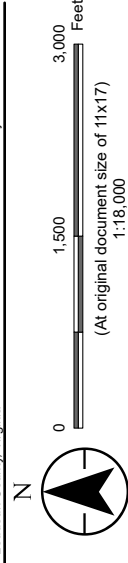
Title
Viewshed Analysis and Photo Location Map for Ball's Bluff Battlefield Historic District (DHR #253-5021) and National Cemetery Historic District Boundary Expansion (DHR #253-5182)

Client/Project
Dominion Energy Virginia
Line #514 Corridor Optimization Project

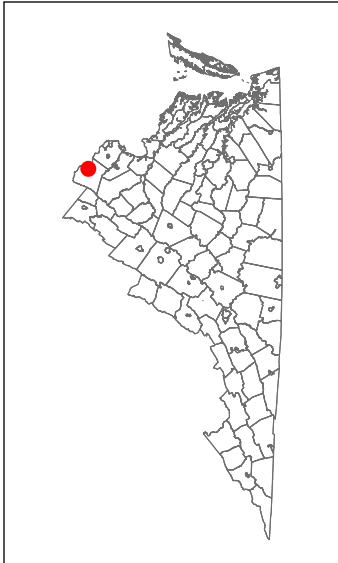
Project Location
Loudoun County, Virginia

Prepared by SGS on 2025-11-25
TR by ECL on 2025-12-04
IR by LRC on 2026-01-05

203402622



- Existing Station
- Photo Location/Observation Point
- Photo Location Point
- Proposed Structure
- Existing Structure
- Existing Right-of-Way
- Existing Company Property Rights
- 1.5-Mile Buffer
- 1-Mile Buffer
- 0.5-Mile Buffer
- Architectural Resource
- Existing Structure Visible, Proposed Structure Not Visible
- Both Existing and Proposed Structure Visible
- Existing Structure Not Visible, Proposed Structure Visible



Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, U.S. Census Bureau, Virginia Department of Historic Resources, Virginia Cultural Resources Information System (VCRIS), VGIN, U.S. National Park Service, American Battlefield Protection Program, U.S. National Park Service, Cultural Resources Geographic Information System Facility
3. Orthorectified imagery © ESRI
4. Viewshed analysis produced from digital elevation model and digital surface model derived from VGIN LiDAR



Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

Stage 1 Pre-application Analysis Results

3.4 Archaeology Resources Considered

One previously recorded archaeological resource was identified within the Project right-of-way during the background research. The resource, Site 44LD1341, comprises a prehistoric temporary camp. The site was determined potentially eligible by DHR. ***It is recommended that archaeological sites located within the right-of-way be investigated and evaluated as appropriate during future investigations*** (Appendix E; Table 7). It is further recommended that a detailed review of the previous survey coverage and methodology be undertaken as part of any future Stage II investigations to identify the level of effort for archaeological investigation.

Table 7 Previously Recorded Archaeological Resources Considered within the Stage I Pre-Application Process

DHR #	Resource Name	NRHP Status	Distance to Project (Feet)	Recommendation
44LD1341	Prehistoric Temporary Camp	Potentially Eligible, 2006	0 feet	Investigate During Archaeological Survey



Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

CONCLUSIONS

4 CONCLUSIONS

Stantec Consulting Services Inc. (Stantec) was retained by Dominion Energy to conduct a Stage I Pre-Application Analysis for the Dominion Energy Virginia Line #514 Corridor Optimization Project. The proposed rebuild of Line #514 will replace the existing primarily single circuit weathering steel lattice structures with primarily single circuit dulled galvanized steel monopole structures for approximately 2.1 miles and with primarily 500/230kV double circuit dulled galvanized steel monopole structures for approximately 1.0 mile where collocated with the rebuilt Line #2098. Existing Structure #514/1854 will remain. New 500 kV Line #5015 and the rebuild of Line #203 will replace the 230 kV existing primarily double circuit galvanized steel monopole structures primarily with 500/230kV double circuit dulled galvanized steel monopole structures which will support the new Line #5015 and rebuilt Line #203 on collocated structures. The new Line #5004 will be built on primarily single circuit dulled galvanized steel monopole structures. All proposed structure heights and locations provided in this report are based upon preliminary engineering and are subject to final design.

Background research for the Stage I Pre-Application Analysis was conducted in June 2025 by Stantec staff. The preliminary background research and the field study was conducted pursuant to the *Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia* (DHR 2008) for proposed transmission line improvements. The research identified five previously recorded architectural resources and one previously recorded archaeological resource for inclusion in the Stage I analysis.

4.1 Recommendations – Architectural Resources

One NHL, Ball's Bluff Battlefield Historic District/ Ball's Bluff Battlefield and National Cemetery (DHR #253-5021 and 253-5182), is located within the Project's 1.5-mile radius. One NRHP-listed resource and one potentially eligible battlefield are located within the 1.0-mile radius, and two NRHP-eligible resources are within 0.5-mile of the centerline. The two battlefield resources (DHR #053-5058 and 253-5182) are also crossed by the transmission line right-of-way corridor. ***Based on the fieldwork, review of photo simulations, viewshed modeling, and analysis of the proposed structures, it is recommended that the Project would have a Minimal Visual Impact on all five architectural resources.*** Table 8 details the recommendations for the project.

Table 8 Previously Recorded Architectural Resources Considered under the Stage I Pre-Application Guidelines

DHR #	Resource Name	NRHP Status	Distance to Closest Proposed Structure (Feet)	Stantec Impact Recommendation
053-0276	Washington & Old Dominion Railroad Historic District/Alexandria, Loudoun and Hampshire Railroad	NRHP-Eligible	40	Minimal



Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

CONCLUSIONS

DHR #	Resource Name	NRHP Status	Distance to Closest Proposed Structure (Feet)	Stantec Impact Recommendation
053-5058	Ball's Bluff Battlefield	NRHP Potentially Eligible	0	Minimal
053-5783	Murray Hill, 42910 Edwards Ferry Road NE	NRHP-Listed	1,753	Minimal
053-6078	Edwards Ferry Road	NRHP-Eligible	1,360	Minimal
253-5021/ 253-5182	Ball's Bluff Battlefield Historic District and Ball's Bluff Battlefield Historic and National Cemetery Historic District Boundary Expansion	NHL, NRHP Listed VLR Listed	7,871/0	Minimal

4.2 Recommendations – Archaeological Resources

One previously recorded archaeological resource was identified within the Project right-of-way during the background research. The resource, Site 44LD1341, comprises a prehistoric temporary camp. The site was determined potentially eligible by DHR. ***It is recommended that the archaeological site located within the right-of-way be investigated and evaluated as appropriate during future investigations*** (Appendix E; Table 7). It is further recommended that a detailed review of the previous survey coverage and methodology be undertaken prior to and as part of any future Stage II investigations.

Table 9 Previously Recorded Archaeological Resources Considered within the Stage I Pre-Application Process

DHR #	Resource Name	NRHP Status	Distance to Project (Feet)	Recommendation
44LD1341	Prehistoric Temporary Camp	Potentially Eligible	0 feet	Investigate During Archaeological Survey



STAGE I PRE-APPLICATION ANALYSIS FOR THE PROPOSED DOMINION ENERGY VIRGINIA LINE #514
CORRIDOR OPTIMIZATION PROJECT, LOUDOUN COUNTY, VIRGINIA

5 REFERENCES

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1981 *Department of the Interior's Regulations, 36 CFR Part 60: National Register of Historic Places*. Interagency Resources Division, National Park Service, U.S. Department of the Interior, Washington, D.C.

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2017 *Guidelines for Historic Resources Survey in Virginia*. DHR, Richmond.

2026 DHR Archive Files.

**Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor
Optimization Project, Loudoun County, Virginia**

Appendix A Structure Tables and Structure Details

Appendix A Structure Tables and Structure Details



Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

Appendix A Structure Tables and Structure Details

Existing and Proposed Structure Heights

Structure Number (Existing)	Existing Structure Height (ft)	Structure Type	Structure Number (Proposed) 4	Proposed Structure Height (ft)	Structure Type
203/1B	65	Galvanized Steel 3-Pole	2320/1A	65	Dulled Galvanized Steel Monopole
-	-	-	5015/1	90	Dulled Galvanized Steel Monopole
-	-	-	5015/2	165	Dulled Galvanized Steel Monopole
-	-	-	5015/3	165	Dulled Galvanized Steel Monopole
-	-	-	5015/4	195	Dulled Galvanized Steel Monopole
2098/2 (203/1A)	107	Galvanized Steel Monopole	5015/5 (2320/1B)	195	Dulled Galvanized Steel Monopole
2098/3 (203/1)	136	Galvanized Steel Monopole	5015/6 (2320/1C)	170	Dulled Galvanized Steel Monopole
2098/4 (203/2)	126	Galvanized Steel Monopole	5015/7	170	Dulled Galvanized Steel Monopole
-	-	-	203/3D (2320/2)	120	Dulled Galvanized Steel Monopole
2098/5 (203/3)	121	Galvanized Steel Monopole	5015/8 (203/4)	195	Dulled Galvanized Steel Monopole
2098/6 (203/4)	122	Galvanized Steel Monopole	5015/9 (203/5)	195	Dulled Galvanized Steel Monopole

⁴ Prior to completion of the Corridor Optimization, the existing Dickerson-Pleasant View Line #203 will be cut in order to construct the Apollo-Twin Creeks Project, ultimately resulting in Pleasant View-Sycolin Creek Line #2320 and Dickerson-Twin Creeks Line #203. While, for ease of reference, this Application refers to Dickerson-Pleasant View Line #203 as the line being rebuilt as part of the instant Application, for purposes of clarity, the Pleasant View-Sycolin Creek Line #2320 is depicted with correlating structure heights and locations, subject to change based on final engineering design.



Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

Appendix A Structure Tables and Structure Details

Structure Number (Existing)	Existing Structure Height (ft)	Structure Type	Structure Number (Proposed) 4	Proposed Structure Height (ft)	Structure Type
2098/7 (203/5)	152	Galvanized Steel Monopole	5015/10 (203/6)	185	Dulled Galvanized Steel Monopole
-	-	-	5015/11 (203/7)	190	Dulled Galvanized Steel Monopole
2098/8 (203/6)	164	Galvanized Steel Monopole	5015/12 (203/8)	180	Dulled Galvanized Steel Monopole
2098/9	139	Galvanized Steel Monopole	2098/9B	135	Dulled Galvanized Steel 3-Pole
-	-	-	5015/13 (203/9)	195	Dulled Galvanized Steel Monopole
203/7	127	Galvanized Steel Monopole	5015/14 (203/10)	190	Dulled Galvanized Steel Monopole
203/8	166	Galvanized Steel Monopole	5015/15 (203/11)	190	Dulled Galvanized Steel Monopole
203/9	140	Galvanized Steel Monopole	5015/16 (203/12)	195	Dulled Galvanized Steel Monopole
-	-	-	5015/17 (203/13)	175	Dulled Galvanized Steel Monopole
203/10	137	Galvanized Steel Monopole	5015/18 (203/14)	180	Dulled Galvanized Steel Monopole
-	-	-	5015/19 (203/15)	195	Dulled Galvanized Steel Monopole
203/11	130	Galvanized Steel Monopole	5015/20 (203/16)	190	Dulled Galvanized Steel Monopole
203/12	149	Galvanized Steel Monopole	5015/21 (203/17)	190	Dulled Galvanized Steel Monopole
203/13	147	Galvanized Steel Monopole	5015/22 (203/18)	190	Dulled Galvanized Steel Monopole
-	-	-	5015/23 (203/19)	175	Dulled Galvanized Steel Monopole
203/14	139	Galvanized Steel Monopole	5015/24 (203/20)	175	Dulled Galvanized Steel Monopole



Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

Appendix A Structure Tables and Structure Details

Structure Number (Existing)	Existing Structure Height (ft)	Structure Type	Structure Number (Proposed) 4	Proposed Structure Height (ft)	Structure Type
-	-	-	5015/25	185	Dulled Galvanized Steel Monopole
203/14A	95	Galvanized Steel Monopole	203/21	95	Dulled Galvanized Steel Monopole
203/15 (203/15P)	161	Galvanized Steel Monopole	203/22	195	Dulled Galvanized Steel Monopole
-	-	-	5015/26	195	Dulled Galvanized Steel Monopole
-	-	-	2098/2	65	Dulled Galvanized Steel Monopole
-	-	-	2098/3	65	Dulled Galvanized Steel Monopole
514/1856	90	Weathering Steel Lattice	514/1	90	Dulled Galvanized Steel Monopole
-	-	-	514/2	190	Dulled Galvanized Steel Monopole
514/1855	142	Weathering Steel Lattice	514/3	190	Dulled Galvanized Steel Monopole
-	-	-	514/4 (2098/4)	195	Dulled Galvanized Steel Monopole
514/1854	126	Weathering Steel Lattice	514/5 (2098/5)	195	Dulled Galvanized Steel Monopole
514/1853	100	Weathering Steel Lattice	514/6 (2098/6)	195	Dulled Galvanized Steel Monopole
514/1852	104	Weathering Steel Lattice	514/7 (2098/7)	195	Dulled Galvanized Steel Monopole
514/1851	103	Weathering Steel Lattice	514/8 (2098/8)	185	Dulled Galvanized Steel Monopole
-	-	-	514/9 (2098/9)	190	Dulled Galvanized Steel Monopole
514/1850	129	Galvanized Steel H-Frame	514/10 (2098/9A)	190	Dulled Galvanized Steel Monopole



Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor Optimization Project, Loudoun County, Virginia

Appendix A Structure Tables and Structure Details

Structure Number (Existing)	Existing Structure Height (ft)	Structure Type	Structure Number (Proposed) 4	Proposed Structure Height (ft)	Structure Type
-	-	-	514/11	195	Dulled Galvanized Steel Monopole
514/1849	109	Weathering Steel Lattice	514/12	190	Dulled Galvanized Steel Monopole
514/1848	121	Weathering Steel Lattice	514/13	190	Dulled Galvanized Steel Monopole
514/1847	122	Weathering Steel Lattice	514/14	190	Dulled Galvanized Steel Monopole
-	-	-	514/15	175	Dulled Galvanized Steel Monopole
514/1846	118	Weathering Steel Lattice	514/16	170	Dulled Galvanized Steel Monopole
-	-	-	514/17	195	Dulled Galvanized Steel Monopole
514/1845	113	Weathering Steel Lattice	514/18	190	Dulled Galvanized Steel Monopole
514/1844	122	Weathering Steel Lattice	514/19	190	Dulled Galvanized Steel Monopole
-	-	-	514/20	190	Dulled Galvanized Steel Monopole
514/1843	113	Weathering Steel Lattice	514/21	170	Dulled Galvanized Steel Monopole
514/1842	116	Weathering Steel Lattice	514/22	175	Dulled Galvanized Steel Monopole
514/1841	125	Weathering Steel Lattice	514/23	195	Dulled Galvanized Steel Monopole
-	-	-	5004/1 (595/1)	90	Dulled Galvanized Steel Monopole
-	-	-	5004/2	190	Dulled Galvanized Steel Monopole
-	-	-	5004/3	175	Dulled Galvanized Steel Monopole



**Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor
Optimization Project, Loudoun County, Virginia**

Appendix A Structure Tables and Structure Details

Structure Number (Existing)	Existing Structure Height (ft)	Structure Type	Structure Number (Proposed) 4	Proposed Structure Height (ft)	Structure Type
-	-	-	5004/4	175	Dulled Galvanized Steel Monopole
-	-	-	5004/5	195	Dulled Galvanized Steel Monopole
-	-	-	5004/6	195	Dulled Galvanized Steel Monopole
-	-	-	5004/7	190	Dulled Galvanized Steel Monopole
-	-	-	5004/8	180	Dulled Galvanized Steel Monopole
-	-	-	5004/9	190	Dulled Galvanized Steel Monopole
-	-	-	5004/10	195	Dulled Galvanized Steel Monopole
-	-	-	5004/11	195	Dulled Galvanized Steel Monopole
-	-	-	5004/12	195	Dulled Galvanized Steel Monopole
-	-	-	5004/13	195	Dulled Galvanized Steel Monopole
-	-	-	5004/14	195	Dulled Galvanized Steel Monopole
-	-	-	5004/15	180	Dulled Galvanized Steel Monopole
-	-	-	5004/16	175	Dulled Galvanized Steel Monopole
-	-	-	5004/17	195	Dulled Galvanized Steel Monopole
-	-	-	5004/18	190	Dulled Galvanized Steel Monopole
-	-	-	5004/19	190	Dulled Galvanized Steel Monopole



**Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor
Optimization Project, Loudoun County, Virginia**

Appendix A Structure Tables and Structure Details

Structure Number (Existing)	Existing Structure Height (ft)	Structure Type	Structure Number (Proposed) 4	Proposed Structure Height (ft)	Structure Type
-	-	-	5004/20	190	Dulled Galvanized Steel Monopole
-	-	-	5004/21	170	Dulled Galvanized Steel Monopole
-	-	-	5004/22	175	Dulled Galvanized Steel Monopole
-	-	-	5004/23	195	Dulled Galvanized Steel Monopole



**Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor
Optimization Project, Loudoun County, Virginia**

Appendix B Architectural Resource Maps

Appendix B Architectural Resource Maps



Figure No.

Appendix B

Title

Architectural Resources Map

Client/Project

203402622

Dominion Energy Virginia

Line #514 Corridor Optimization Project

Project Location

Loudoun County, Virginia

Prepared by SGS on 2025-11-20

TR by ECL on 2025-12-04

IR by LRC on 2026-01-05

N

0 3,500 7,000 Feet

(At original document size of 11x17)

1:42,000

Future Station

Existing Station

Existing Right-of-Way

New Right-of-Way

Existing Company Property Rights

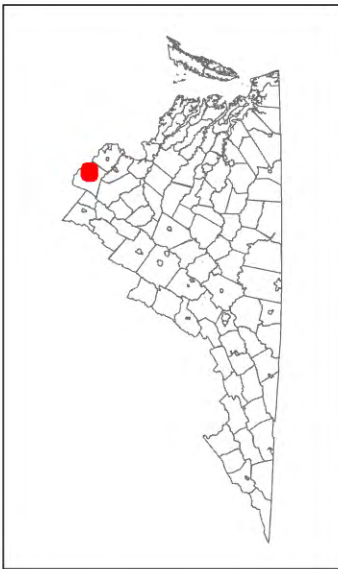
Architectural Resource

Architectural Resource 053-5058

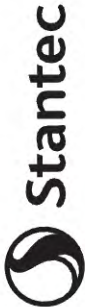
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1-Mile Buffer

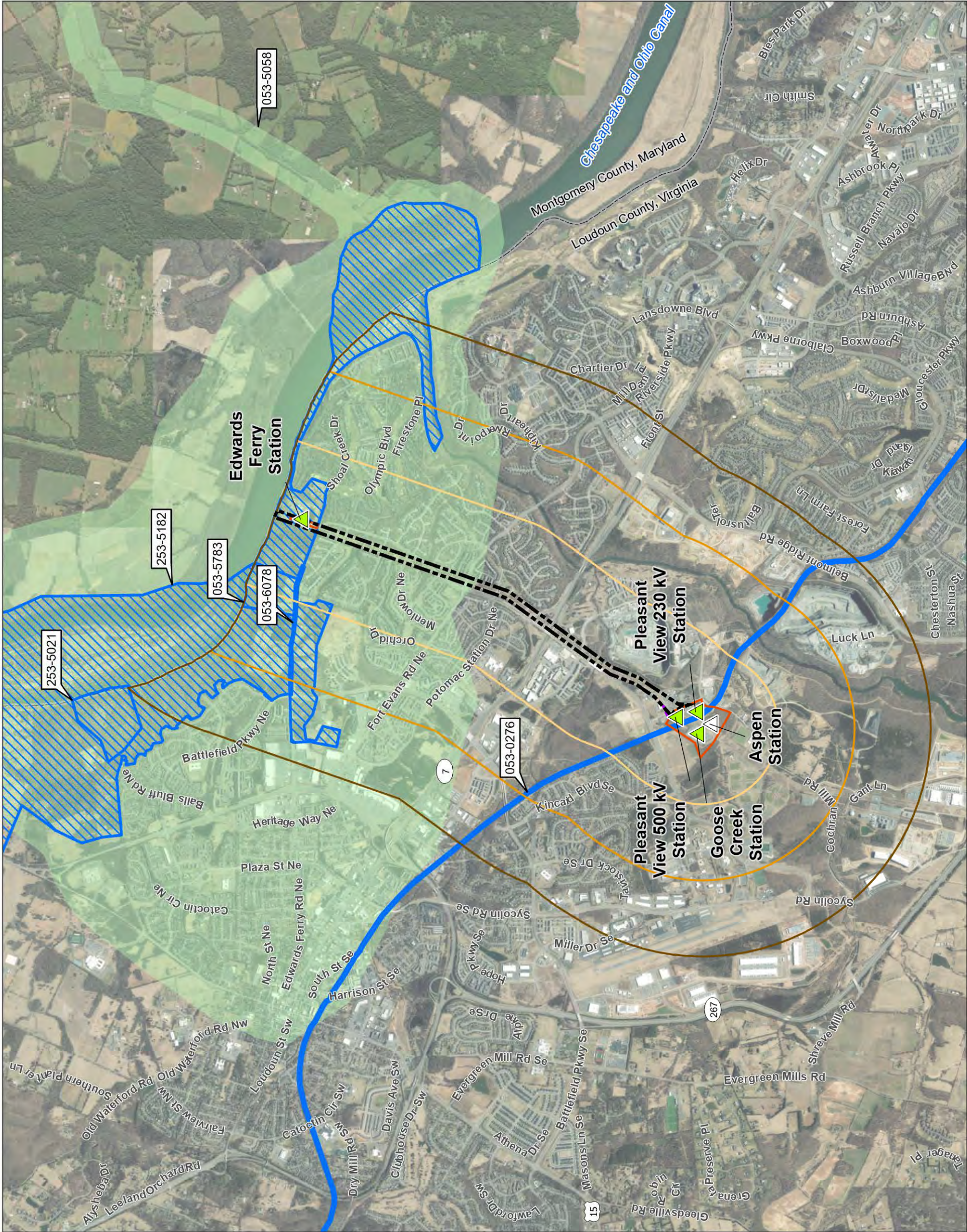
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Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, U.S. Census Bureau, Virginia Department of Historic Resources, Virginia Cultural Resources Information System (VCRIS), VGIN
3. Orthimagery © ESRI



Page 1 of 1



**Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor
Optimization Project, Loudoun County, Virginia**

Appendix C Viewshed Map and Photo Simulations

Appendix C Viewshed Map and Photo Simulations



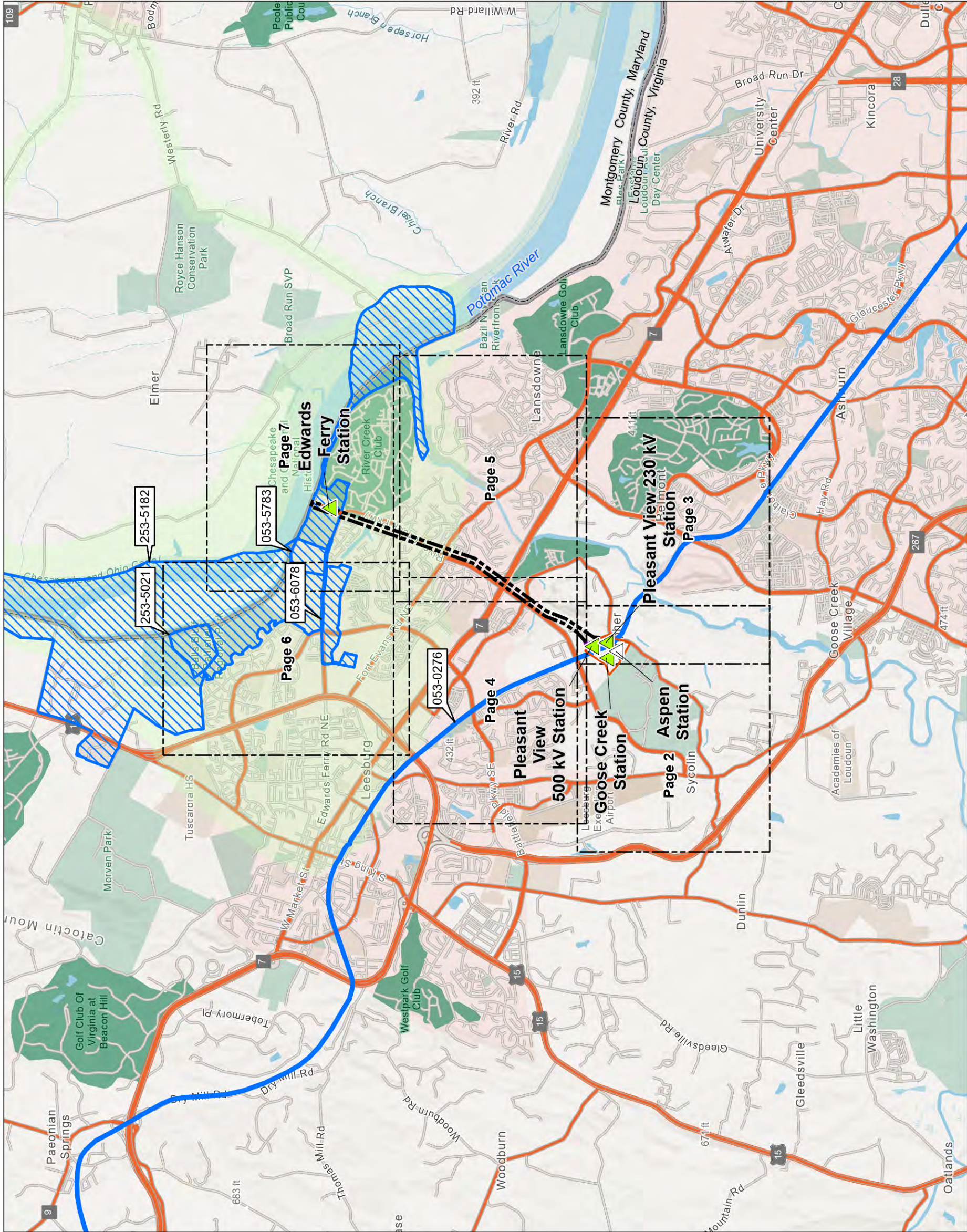


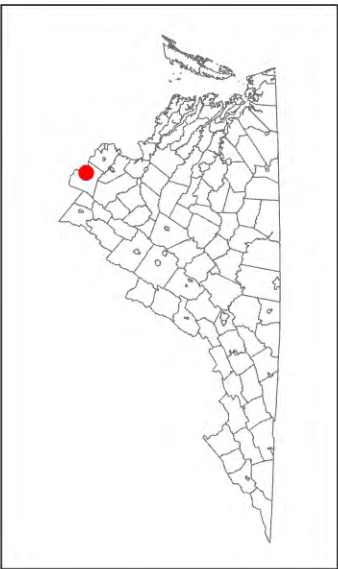
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Appendix C
Cultural Resources Viewshed

Client/Project
Dominion Energy Virginia
Line #514 Corridor Optimization Project
203402622

Project Location
Loudoun County, Virginia
Prepared by SGS on 2025-11-18
TR by MGS on 2025-01-13
IR by LRC on 2025-01-05



- Future Station
- Existing Station
- Existing Right-of-Way
- Existing Company Property Rights
- New Right-of-Way
- Architectural Resource
- Architectural Resource: 053-5058
- Page Index



Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, U.S. Census Bureau
3. Basemap © ESRI

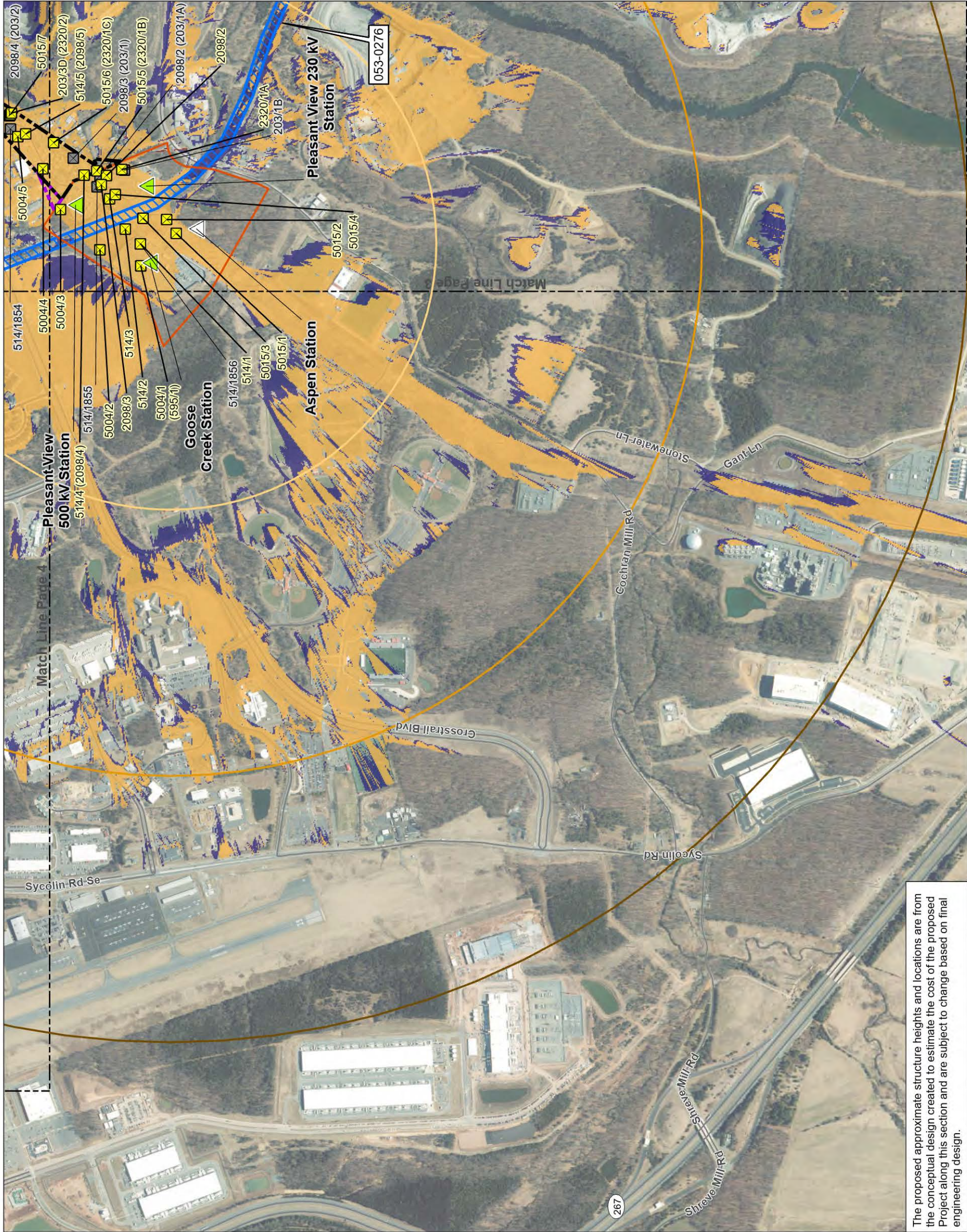


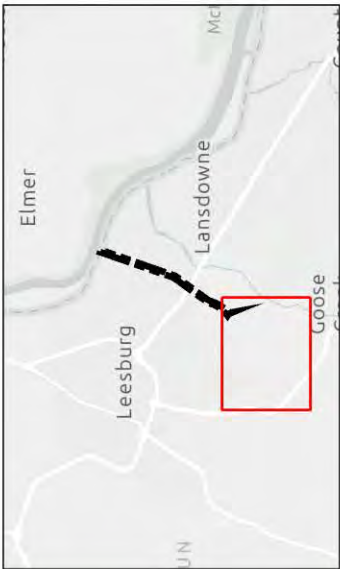
Figure No. **Appendix C**
Title **Cultural Resources Viewshed**

Client/Project
Dominion Energy Virginia
Line #514 Corridor Optimization Project
203402622

Project Location
Loudoun County, Virginia
Prepared by SGS on 2025-11-18
TR by MGS on 2025-01-13
IR by LRC on 2025-01-05



- Future Station
- Existing Station
- Proposed Structure
- Existing Structure
- Existing Right-of-Way
- New Right-of-Way
- Existing Company Property Rights
- 1.5-Mile Buffer
- 1-Mile Buffer
- 0.5-Mile Buffer
- Architectural Resource
- Existing Structure Visible, Proposed Structure Not Visible
- Both Existing and Proposed Structure Visible
- Existing Structure Not Visible, Proposed Structure Visible



Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, U.S. Census Bureau, VCRIS
3. Viewshed analysis produced from digital elevation model and digital elevation surface model derived from VGIN LIDAR
4. Orthomagey © ESRI



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.

Figure No.

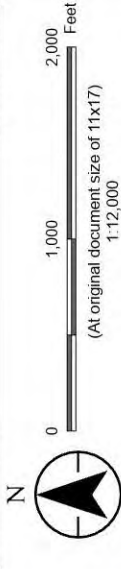
Appendix C

Title

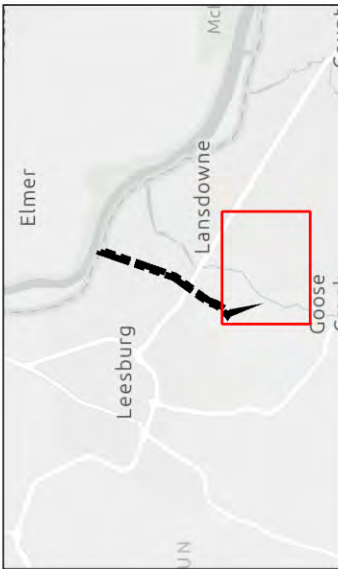
Cultural Resources Viewshed

Client/Project
Dominion Energy Virginia
Line #514 Corridor Optimization Project
203402622

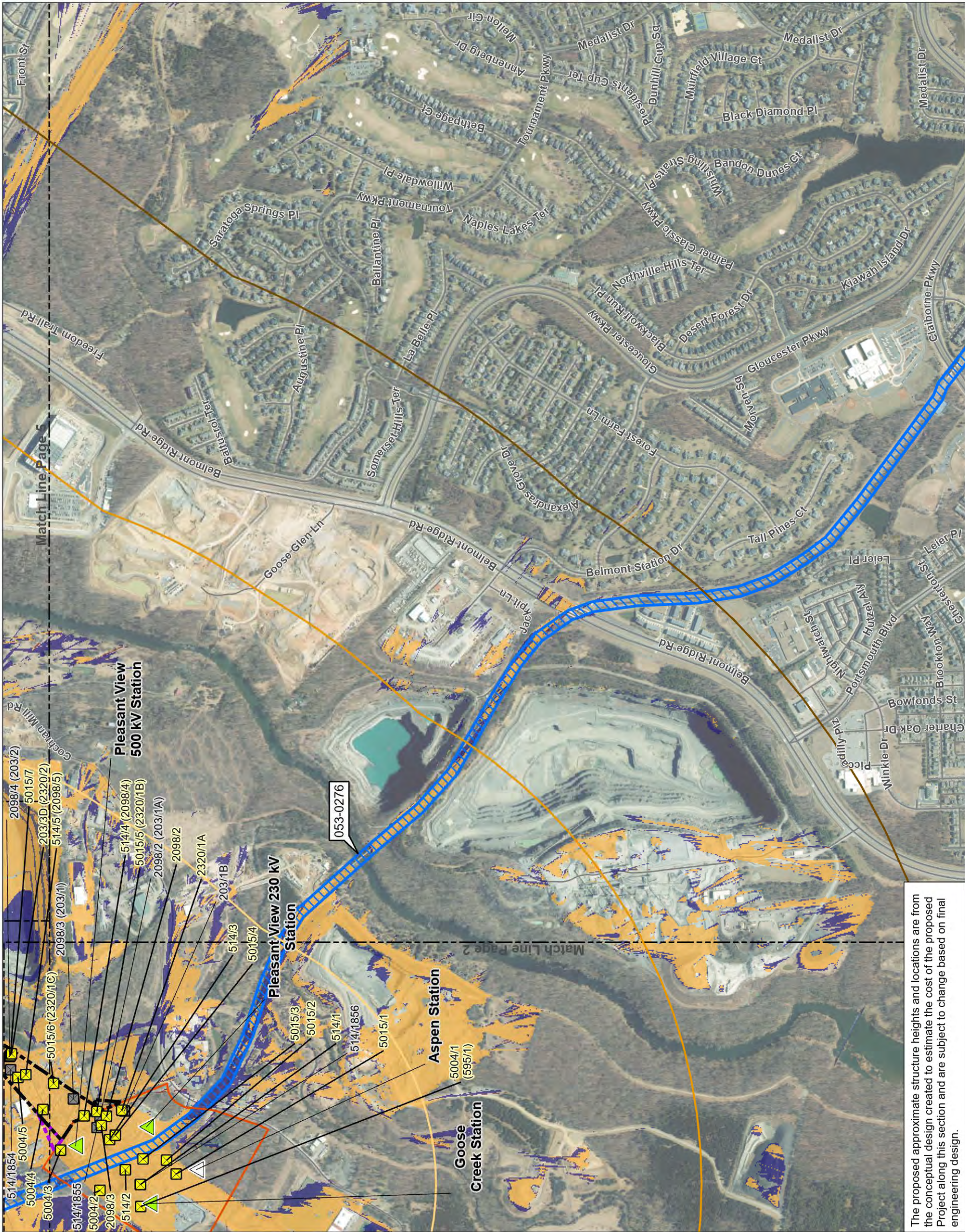
Project Location
Loudoun County, Virginia
Prepared by SGS on 2025-11-18
TR by MGS on 2025-01-13
IR by LRC on 2025-01-05



- Future Station
- Existing Station
- Proposed Structure
- Existing Structure
- Existing Right-of-Way
- New Right-of-Way
- Existing Company Property Rights
- 1.5-Mile Buffer
- 1-Mile Buffer
- 0.5-Mile Buffer
- Architectural Resource
- Existing Structure Visible, Proposed Structure Not Visible
- Both Existing and Proposed Structure Visible
- Existing Structure Not Visible, Proposed Structure Visible



Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, U.S. Census Bureau, VCRIS
3. Viewshed analysis produced from digital elevation model and digital elevation surface model derived from VGIN LIDAR
4. Orthomage © ESRI



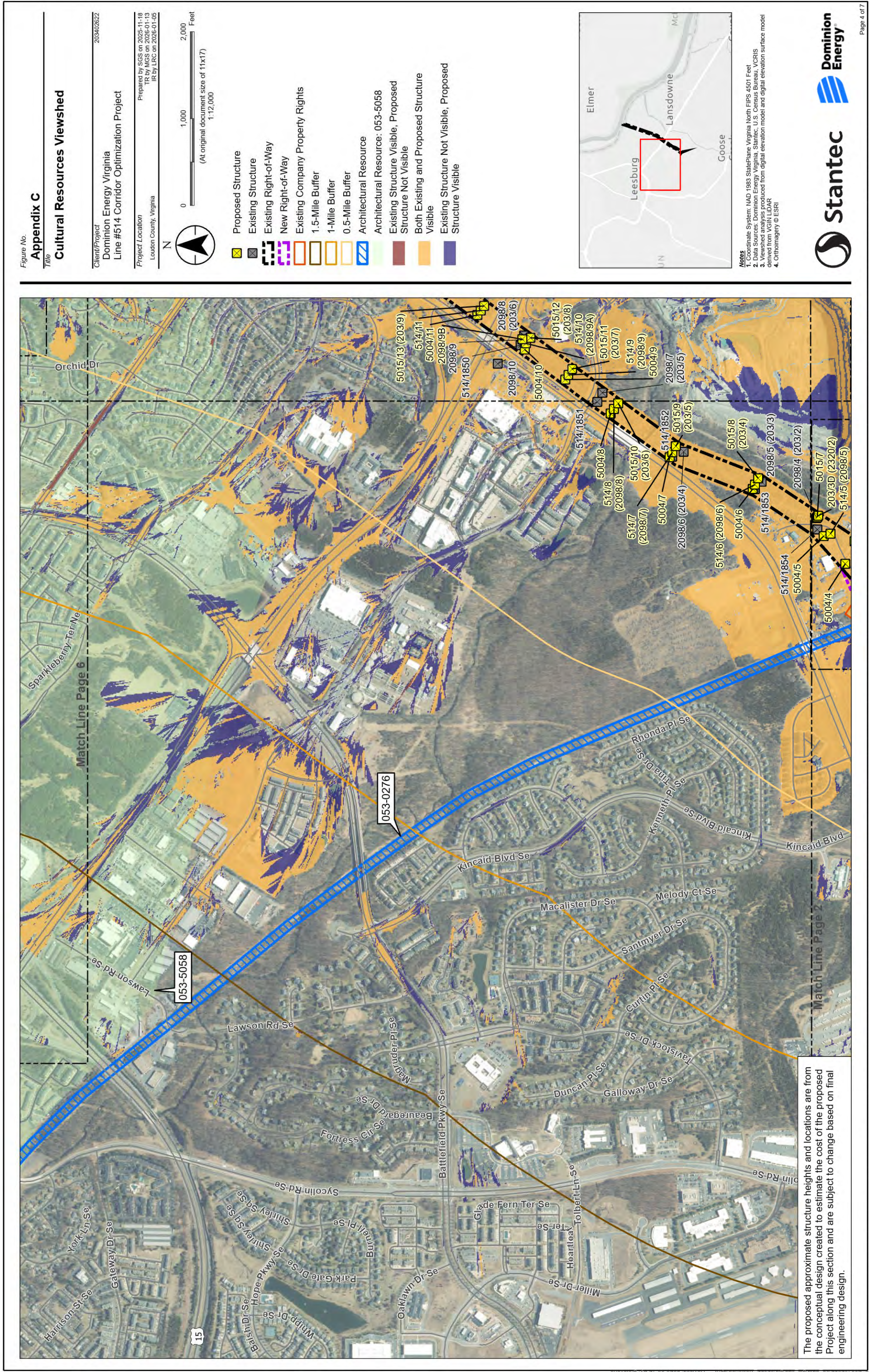
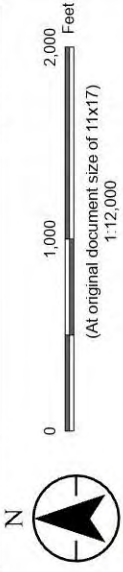


Figure No.
Appendix C
Title
Cultural Resources Viewshed

Client/Project
Dominion Energy Virginia
Line #514 Corridor Optimization Project
203402622

Project Location
Loudoun County, Virginia
Prepared by SGS on 2025-11-18
TR by MGS on 2025-01-13
IR by LRC on 2025-01-05



- Proposed Structure
- Existing Structure
- Existing Right-of-Way
- 1.5-Mile Buffer
- 1-Mile Buffer
- 0.5-Mile Buffer
- Architectural Resource
- Architectural Resource: 053-5058
- Existing Structure Visible, Proposed Structure Not Visible
- Both Existing and Proposed Structure Visible
- Existing Structure Not Visible, Proposed Structure Visible



Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, U.S. Census Bureau, VCRIS
3. Viewshed analysis produced from digital elevation model and digital elevation surface model derived from VGIN LIDAR
4. Orthomagey © ESRI

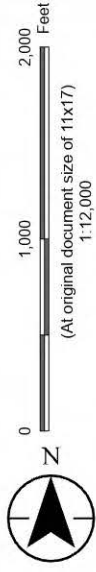


The proposed approximate structure heights and locations are from the conceptual design created to estimate the cost of the proposed Project along this section and are subject to change based on final engineering design.

Figure No.
Appendix C
Title
Cultural Resources Viewshed

Client/Project
Dominion Energy Virginia
Line #514 Corridor Optimization Project
203402622

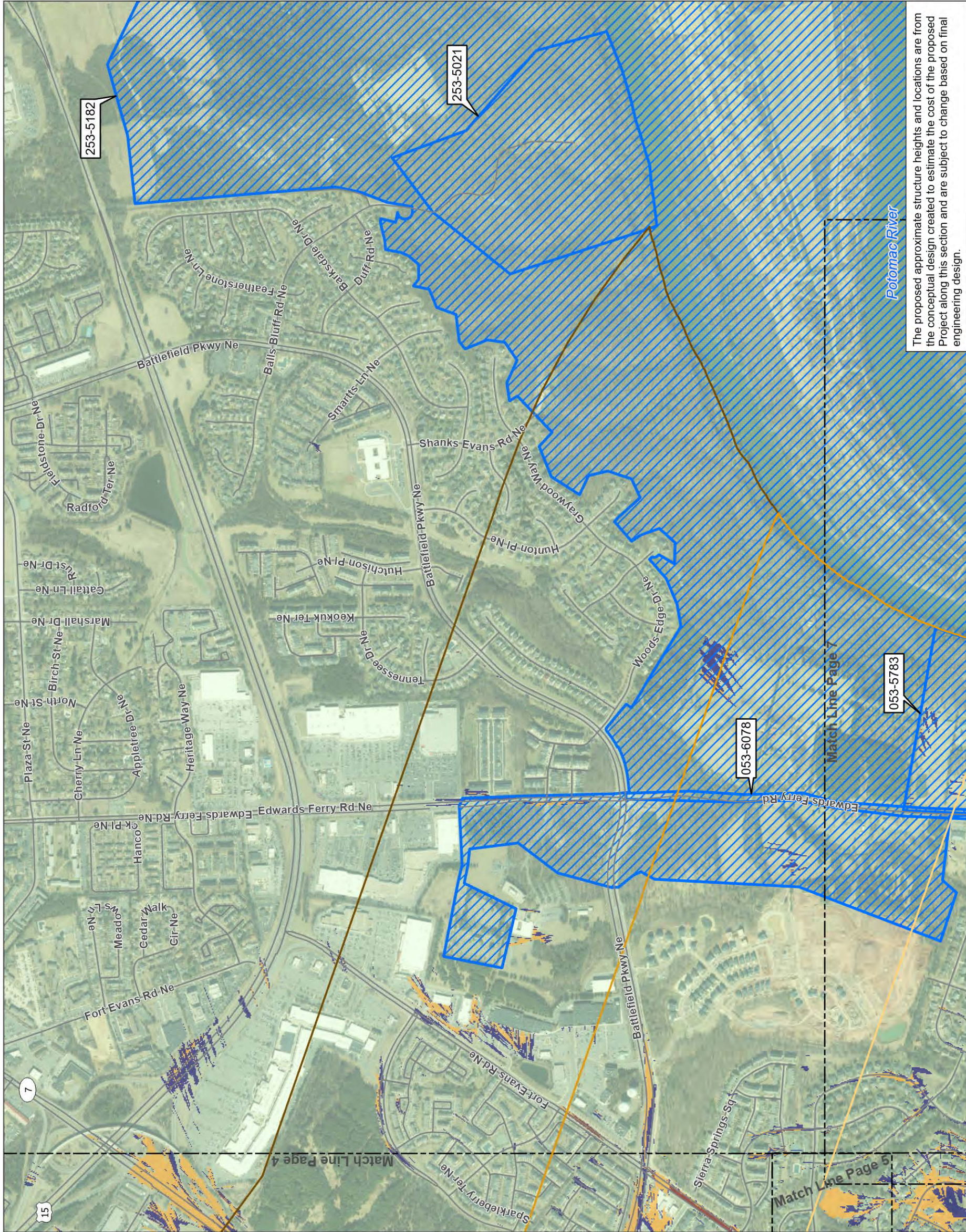
Project Location
Loudoun County, Virginia
Prepared by SGS on 2025-11-18
TR by MGS on 2025-01-13
IR by LRC on 2025-01-05



- 1.5-Mile Buffer
- 1-Mile Buffer
- 0.5-Mile Buffer
- Architectural Resource
- Architectural Resource: 053-5058
- Existing Structure Visible, Proposed Structure Not Visible
- Both Existing and Proposed Structure Visible
- Existing Structure Not Visible, Proposed Structure Visible



Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, U.S. Census Bureau, VCRIS
3. Viewshed analysis produced from digital elevation model and digital elevation surface model derived from VGIN LIDAR
4. Orthomagey © ESRI



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.

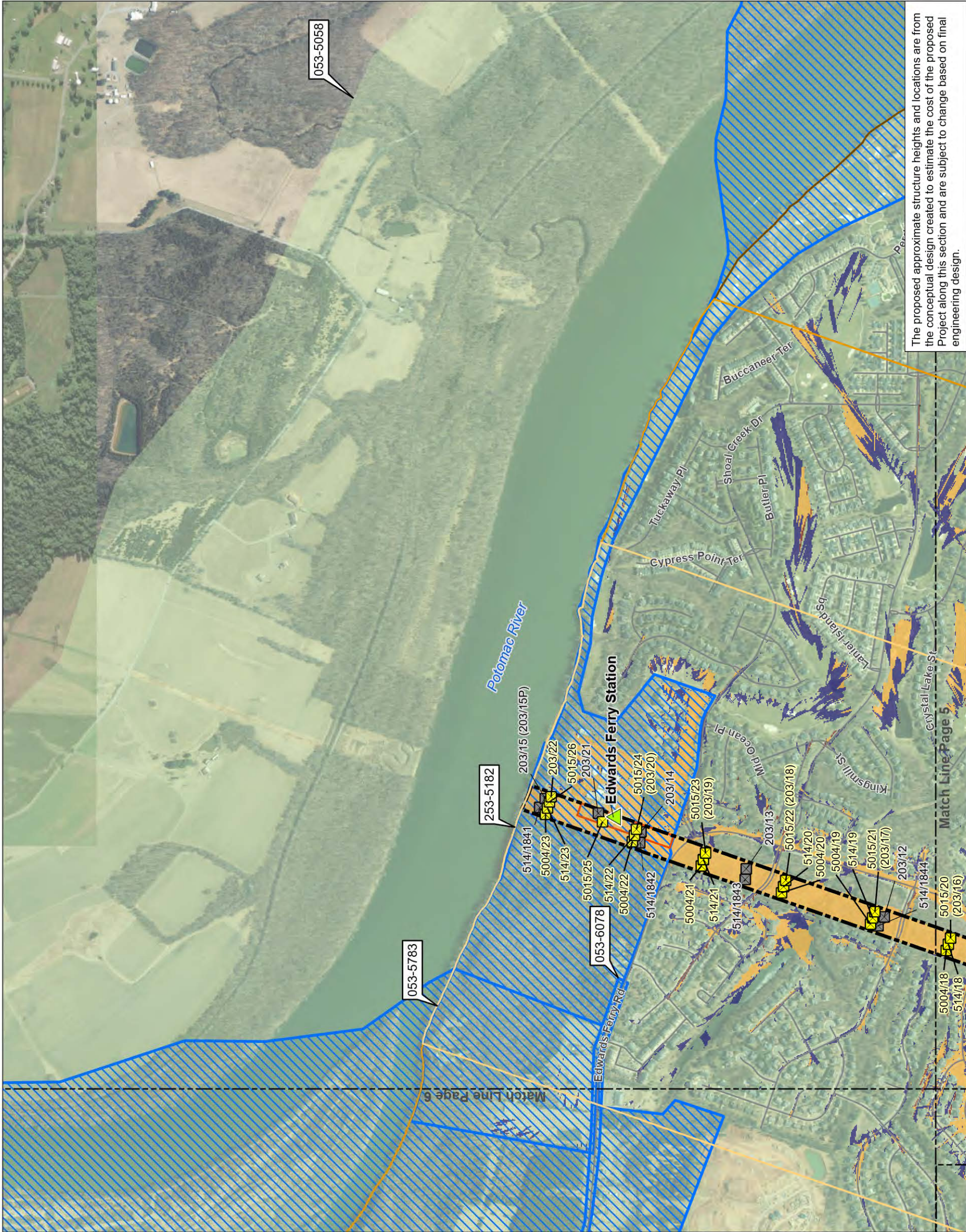


Figure No. **Appendix C**
Title **Cultural Resources Viewshed**

Client/Project
Dominion Energy Virginia
Line #514 Corridor Optimization Project
203402622

Project Location
Loudoun County, Virginia
Prepared by SGS on 2025-11-18
TR by MGS on 2026-01-13
IR by LRC on 2026-01-05

0 1,000 2,000 Feet
(At original document size of 11x17)
1:12,000

- Existing Station
- Proposed Structure
- Existing Structure
- Existing Right-of-Way
- Existing Company Property Rights
- 1.5-Mile Buffer
- 1-Mile Buffer
- 0.5-Mile Buffer
- Architectural Resource
- Architectural Resource: 053-5058
- Existing Structure Visible, Proposed Structure Not Visible
- Both Existing and Proposed Structure Visible
- Existing Structure Not Visible, Proposed Structure Visible



Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, U.S. Census Bureau, VCRIS
3. Viewshed analysis produced from digital elevation model and digital elevation surface model derived from VGIN LIDAR
4. Orthimagery © ESRI



Simulation provided by
Stantec



OP 1 Existing

Alexandria, Loudoun and Hampshire Railroad
(DHR #053-0276)

Date: 10/01/25
 Existing Station
 Project Centerline

Time: 2:56 PM
 Future Station

Viewing Direction: South
 Viewpoint Location
 Architectural Resource





*Proposed structure locations and heights are based upon preliminary engineering used for cost estimating and are subject to change during final design

*Aspen Substation proposed under separate cover and not portrayed in this simulation

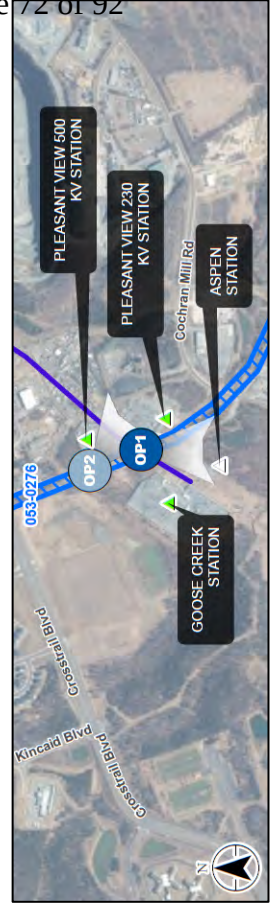
Simulation provided by
Stantec



OP 1 Proposed

Alexandria, Loudoun and Hampshire Railroad
(DHR #053-0276)

Date: 10/01/25	Time: 2:56 PM	Viewing Direction: South
 Existing Station	 Future Station	 Viewpoint Location
 Project Centerline		 Architectural Resource





*Proposed structure locations and heights are based upon preliminary engineering used for cost estimating and are subject to change during final design

*Aspen Substation proposed under separate cover and not portrayed in this simulation

Simulation provided by
Stantec



OP 1 Proposed Guide

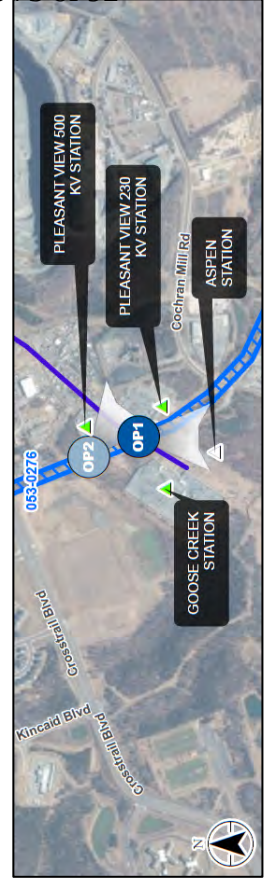
Alexandria, Loudoun and Hampshire Railroad

(DHR #053-0276)

Date: 10/01/25
Existing Station 
Project Centerline 

Time: 2:56 PM
Future Station 

Viewing Direction: South
Viewpoint Location 
Architectural Resource





Simulation provided by
Stantec



OP 2 Existing

Alexandria, Loudoun and Hampshire Railroad
(DHR #053-0276)

Date: 10/01/25
Time: 2:43 PM
Viewing Direction: Southeast
Viewpoint Location: Architectural Resource



Date: 10/01/25
Time: 2:43 PM
Viewing Direction: Southeast
Viewpoint Location: Architectural Resource

Date: 10/01/25
Time: 2:43 PM
Viewing Direction: Southeast
Viewpoint Location: Architectural Resource



*Proposed structure locations and heights are based upon preliminary engineering used for cost estimating and are subject to change during final design

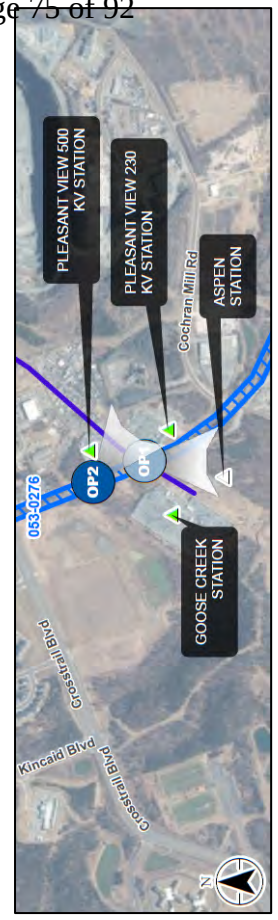
Simulation provided by
Stantec



OP 2 Proposed

Alexandria, Loudoun and Hampshire Railroad
(DHR #053-0276)

Date: 10/01/25	Time: 2:43 PM	Viewing Direction: Southeast
 Existing Station	 Future Station	 Viewpoint Location
 Project Centerline	 Architectural Resource	





*Proposed structure locations and heights are based upon preliminary engineering used for cost estimating and are subject to change during final design

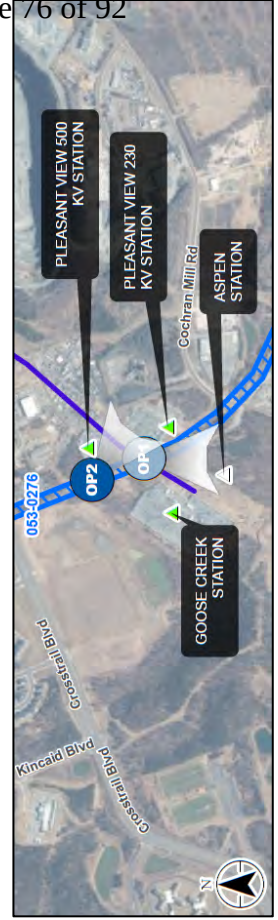
Simulation provided by
Stantec



OP 2 Proposed Guide

Alexandria, Loudoun and Hampshire Railroad
(DHR #053-0276)

Date: 10/01/25	Time: 2:43 PM	Viewing Direction: Southeast
Existing Station Project Centerline	Future Station	Viewpoint Location
Architectural Resource		





Simulation provided by
Stantec

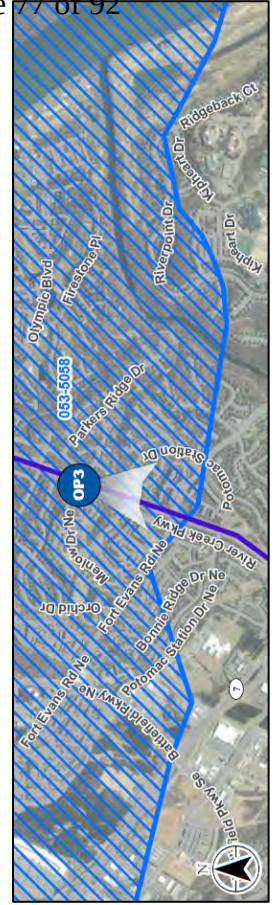


OP 3 Existing
Ball's Bluff Battlefield
(DHR #053-5058)

Date: 10/01/25
 **Viewpoint**
Location

Time: 3:52 PM
 **Architectural**
Resource

Viewing Direction:
Southeast
Project
Centerline





*Proposed structure locations and heights are based upon preliminary engineering used for cost estimating and are subject to change during final design.

Simulation provided by
Stantec

Stantec



**Dominion
Energy**

OP 3 Proposed

Ball's Bluff Battlefield
(DHR #053-5058)

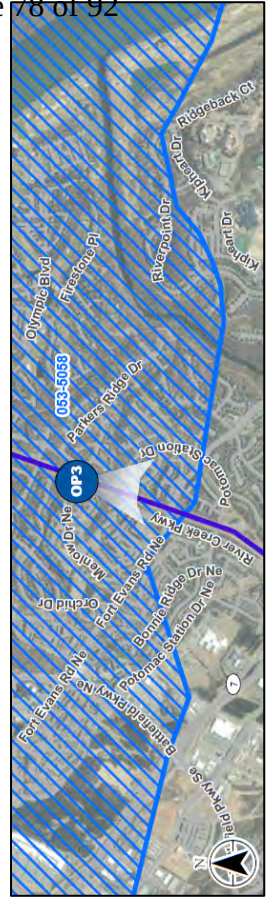
Time: 3:52 PM

Viewpoint
Location

Architectural
Resource

Viewing
Project
Centerline

Viewing Direction: Southeast





*Proposed structure locations and heights are based upon preliminary engineering used for cost estimating and are subject to change during final design

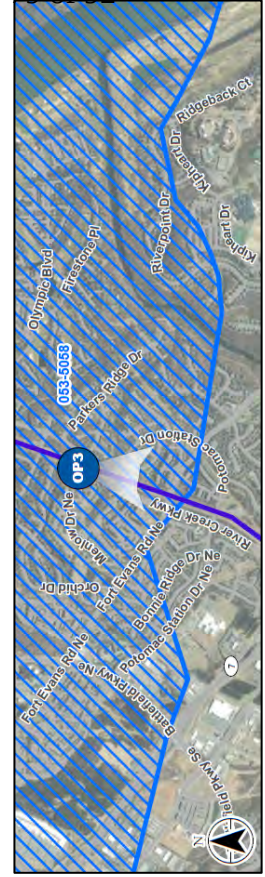
Simulation provided by
Stantec



OP 3 Proposed Guide

Ball's Bluff Battlefield
(DHR #053-5058)

Date: 10/01/25
Viewpoint Location
Time: 3:52 PM
Architectural Resource
Viewing Direction: Southeast
Project Centerline

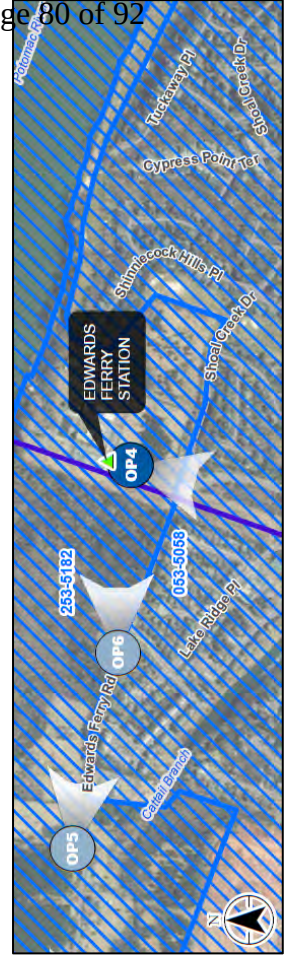




Simulation provided by
Stantec



OP 4 Existing
Ball's Bluff Battlefield, Ball's Bluff Battlefield and National Cemetery/Ball's Bluff Battlefield Historic District Boundary Expansion (DHR #053-5058 and #253-5021/#253-5182)
Date: 10/01/25 **Time:** 4:14 PM **Viewing Direction:** Southwest
Existing Station **Viewpoint Location** **Architectural Resource** **Project Centerline**





*Proposed structure locations and heights are based upon preliminary engineering used for cost estimating and are subject to change during final design

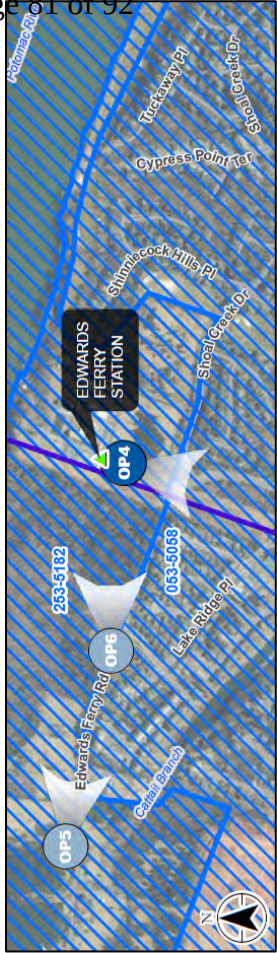
Simulation provided by
Stantec

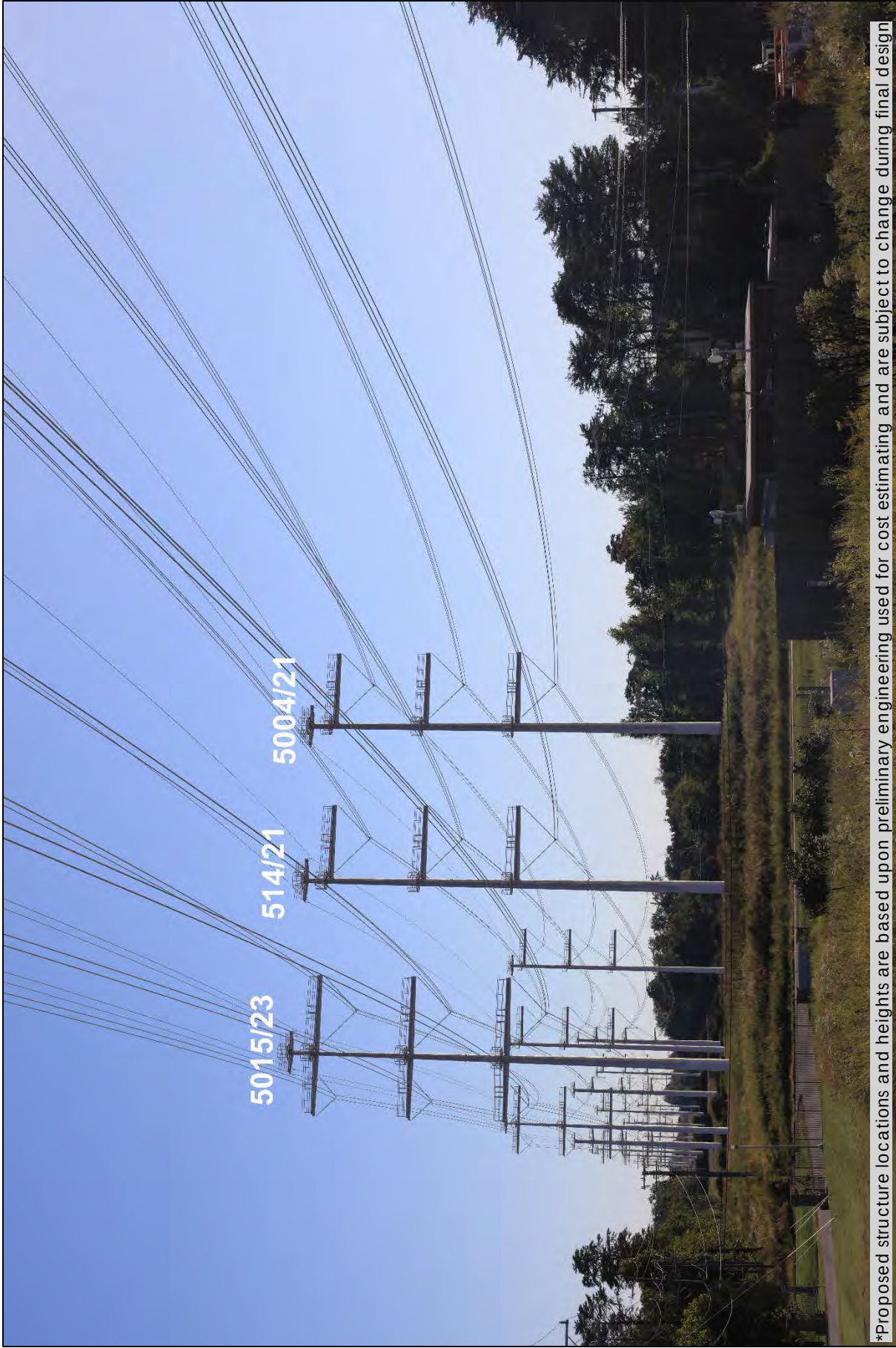


OP 4 Proposed

Ball's Bluff Battlefield, Ball's Bluff Battlefield and National Cemetery/Ball's Bluff Battlefield Historic District Boundary Expansion (DHR #053-5058 and #253-5021/#253-5182)

Date: 10/01/25
Existing Station 
Viewpoint Location 
Time: 4:14 PM
Architectural Resource 
Viewing Direction: Southwest
Project Centerline 





*Proposed structure locations and heights are based upon preliminary engineering used for cost estimating and are subject to change during final design.

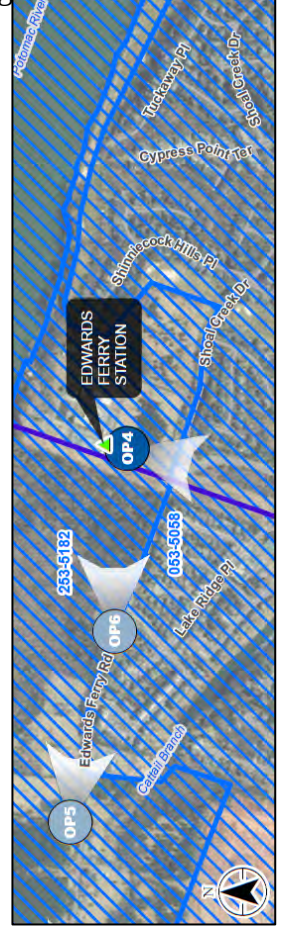
Simulation provided by
Stantec



OP 4 Proposed Guide

Ball's Bluff Battlefield, Ball's Bluff Battlefield and National Cemetery/Ball's Bluff Battlefield Historic District Boundary Expansion (DHR #053-5058 and #253-5021/#253-5182)

Date: 10/01/25 **Time:** 4:14 PM **Viewing Direction:** Southwest
 Existing Station Viewpoint Location Architectural Resource Project Centerline





Simulation provided by
Stantec



OP 5 Existing

Ball's Bluff Battlefield, Ball's Bluff Battlefield and National Cemetery/Ball's Bluff Battlefield Historic District Boundary Expansion, Murray Hill

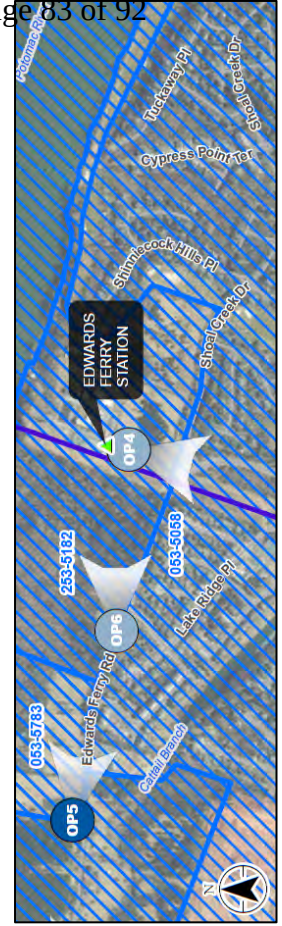
(DHR #053-5058, #253-5021 / #253-5182, and #053-5783)

Date: 10/01/25

Time: 4:57 PM

Viewing Direction: East

 Existing Station
 Viewpoint Location
 Architectural Resource
 Project Centerline



*Proposed structure locations and heights are based upon preliminary engineering used for cost estimating and are subject to change during final design



Simulation provided by
Stantec



OP 5 Proposed

Ball's Bluff Battlefield, Ball's Bluff Battlefield and National Cemetery/Ball's Bluff Battlefield Historic District Boundary Expansion, Murray Hill

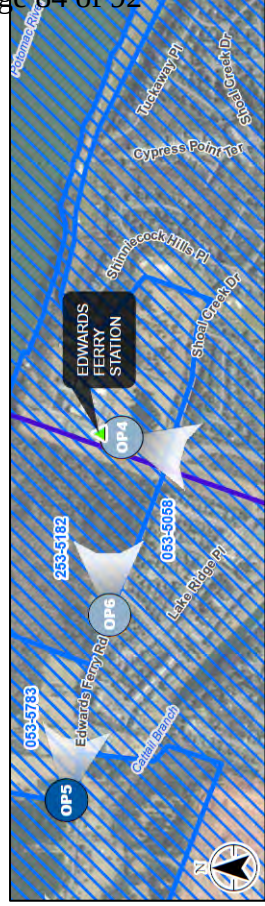
(DHR #053-5058, #253-5021/ #253-5182, and #053-5783)

Date: 10/01/25

Time: 4:57 PM

Viewing Direction: East

Existing Station Viewpoint Location Architectural Resource Project Centerline



*Proposed structure locations and heights are based upon preliminary engineering used for cost estimating and are subject to change during final design



Simulation provided by
Stantec



OP 5 Proposed Guide

Ball's Bluff Battlefield, Ball's Bluff Battlefield and National Cemetery/Ball's Bluff Battlefield Historic District Boundary Expansion, Murray Hill

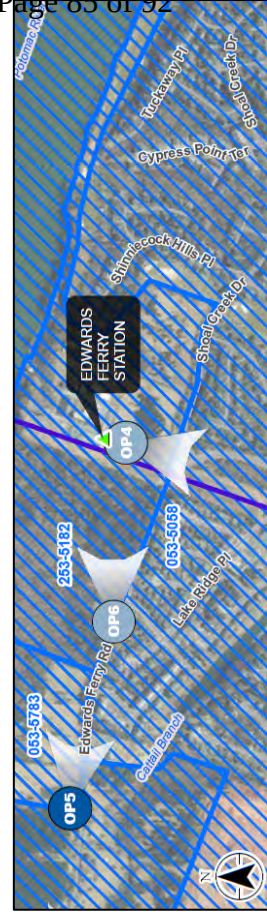
(DHR #053-5058, #253-5021/#253-5182, and #053-5783)

Date: 10/01/25

Time: 4:57 PM

Viewing Direction: East

▲ Existing Station ● Viewpoint Location ■ Architectural Resource — Project Centerline





Simulation provided by
Stantec



OP 6 Existing

Ball's Bluff Battlefield, Ball's Bluff Battlefield and National Cemetery/Ball's Bluff Battlefield Historic District Boundary Expansion, Edwards Ferry Road

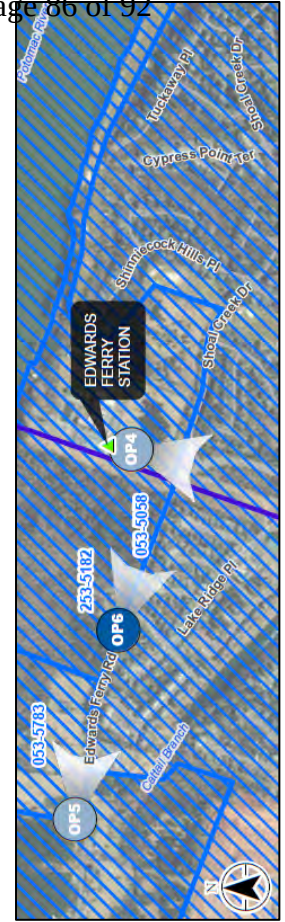
(DHR #053-5058, #253-5021/#253-5182, and #053-6078)

Date: 10/01/25

Time: 4:38 PM

Viewing Direction: East

Existing Station Viewpoint Location Architectural Resource Project Centerline



*Proposed structure locations and heights are based upon preliminary engineering used for cost estimating and are subject to change during final design



Simulation provided by
Stantec



OP 6 Proposed

Ball's Bluff Battlefield, Ball's Bluff Battlefield and National Cemetery/Ball's Bluff Battlefield Historic District Boundary Expansion, Edwards Ferry Road

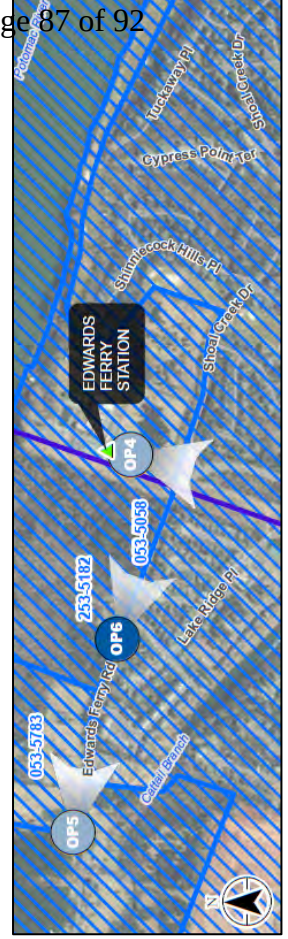
(DHR #053-5058, #253-5021 / #253-5182, and #053-6078)

Date: 10/01/25

Time: 4:38 PM

Viewing Direction: East

Existing Station Viewpoint Location Architectural Resource Project Centerline



*Proposed structure locations and heights are based upon preliminary engineering used for cost estimating and are subject to change during final design



Simulation provided by
Stantec



OP 6 Proposed Guide

Ball's Bluff Battlefield, Ball's Bluff Battlefield and National Cemetery/Ball's Bluff Battlefield Historic District Boundary Expansion, Edwards Ferry Road

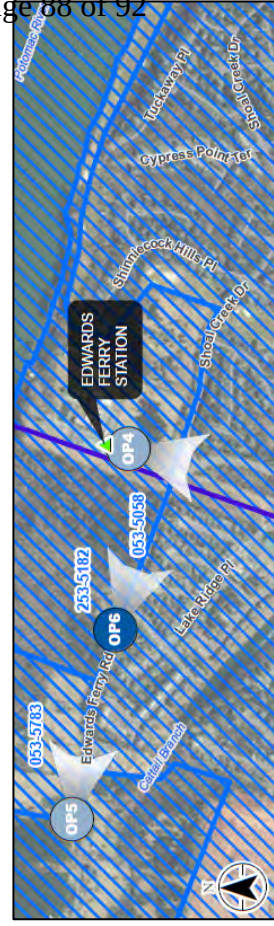
(DHR #053-5058, #253-5021/#253-5182, and #053-6078)

Date: 10/01/25

Time: 4:38 PM

Viewing Direction: East

Existing Station  Viewpoint  Location  Architectural Resource  Project Centerline 





Simulation provided by
Stantec

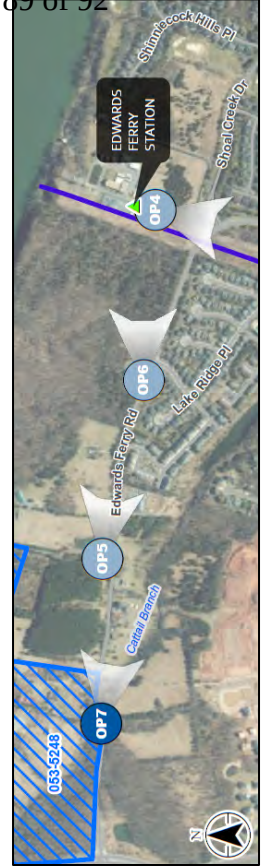


OP 7 Existing
Sage Hill Farm
(DHR #053-5248)

Date: 10/01/25
▲ Existing Station

Time: 5:13 PM
● Viewpoint Location

Viewing Direction: East
■ Architectural Resource
— Project Centerline



*Proposed structure locations and heights are based upon preliminary engineering used for cost estimating and are subject to change during final design



Simulation provided by
Stantec



OP 7 Proposed Guide (No Visibility)

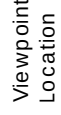
Sage Hill Farm

(DHR #053-5248)

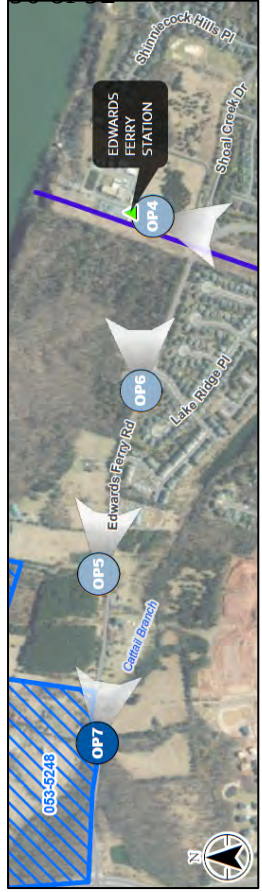
Date: 10/01/25



Time: 5:13 PM



Viewing Direction: East



**Stage I Pre-application Analysis for the Proposed Dominion Energy Virginia Line #514 Corridor
Optimization Project, Loudoun County, Virginia**

Appendix D Archaeological Resources

Appendix D Archaeological Resources

CONFIDENTIAL DATA - MAP REMOVED



With every community, we redefine what's possible.

Stantec is a global leader in sustainable engineering, architecture, and environmental consulting. The diverse perspectives of our partners and interested parties drive us to think beyond what's previously been done on critical issues like climate change, digital transformation, and future-proofing our cities and infrastructure. We innovate at the intersection of community, creativity, and client relationships to advance communities everywhere, so that together we can redefine what's possible.



Stantec Consulting Services Inc.
1011 Boulder Springs Drive, Suite 225
Richmond VA 23225-4951
stantec.com

Figure No.
2.O.1

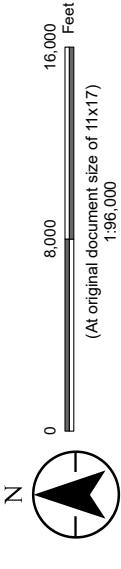
Title

Airport Overlay Surfaces Map

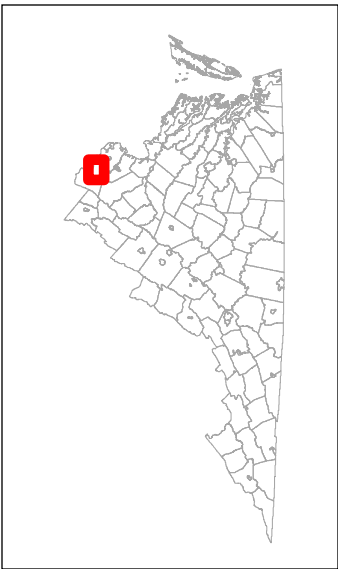
Client/Project 203402622

Dominion Energy Virginia
Line #514 Corridor Optimization Project

Project Location
Loudoun County, Virginia
Prepared by MER on 2025-08-29
TR by BJW on 2025-12-17
IR by LRC on 2025-12-29



- FAA Airport
- Page Index
- Existing Right-of-Way
- New Right-of-Way
- Existing Dominion Property Rights
- Primary Surface
- Horizontal Surface
- Conical Surface
- Approach Surface
- Transitional Surface



Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, FAA, ESRI, US Census Bureau
3. Background © ESRI

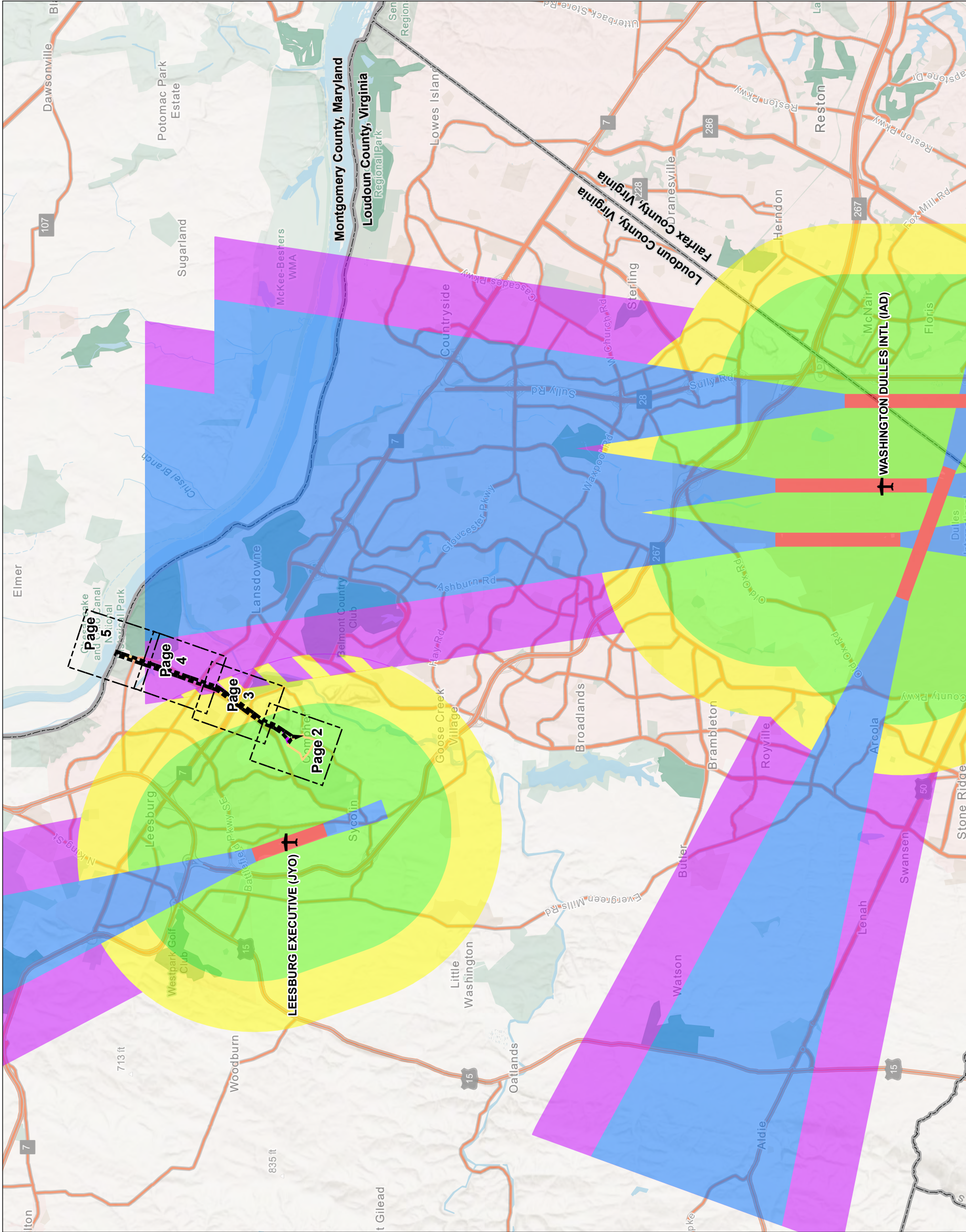


Figure No.
2.0.1

Title

Airport Overlay Surfaces Map

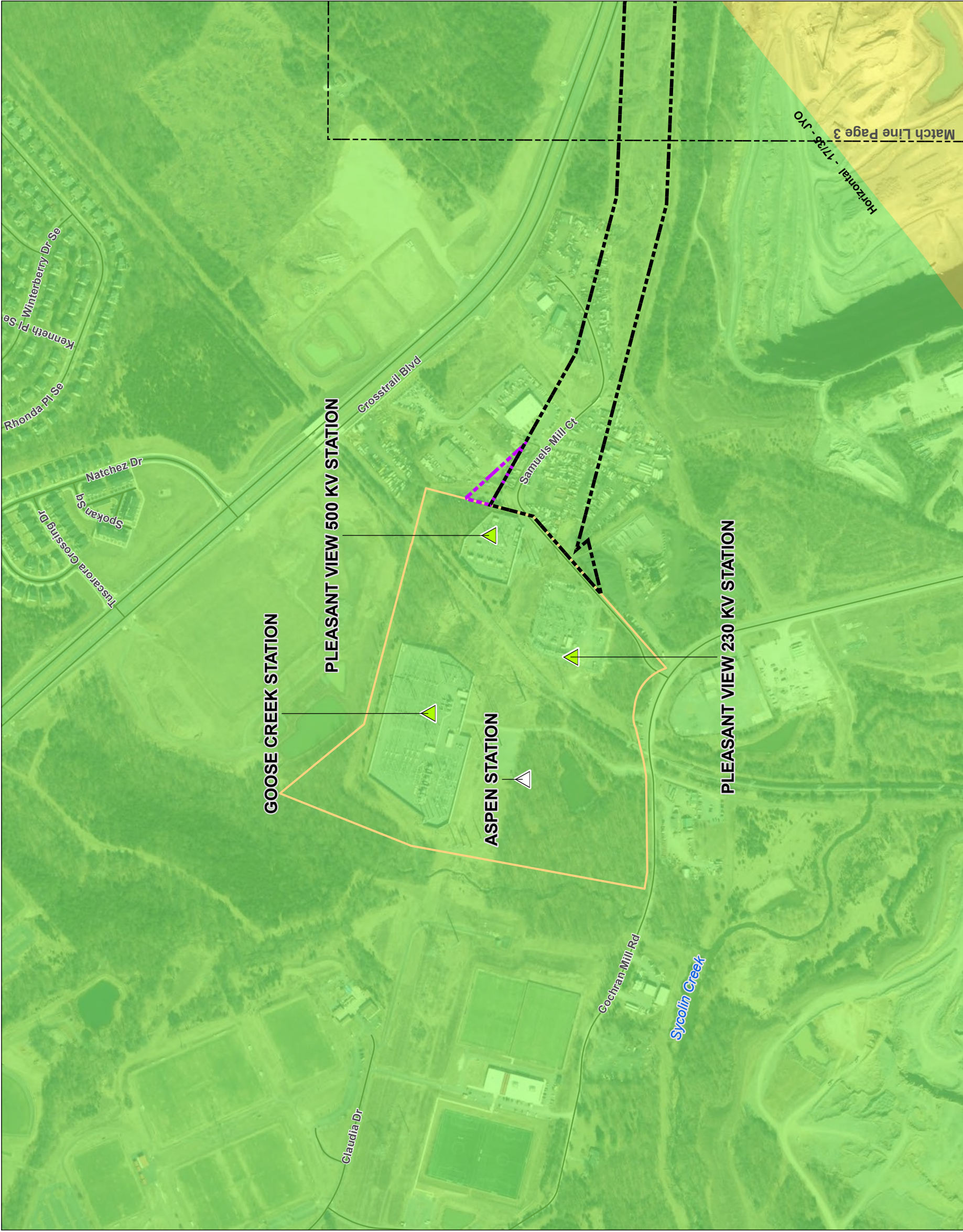
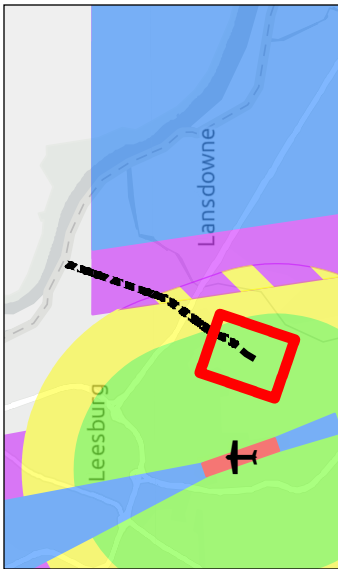
Client/Project
203402622

Dominion Energy Virginia
Line #514 Corridor Optimization Project

Project Location
Loudoun County, Virginia
Prepared by MER on 2025-08-29
TR by BJW on 2025-12-17
IR by LRC on 2025-12-29



- Future Station
- Existing Station
- Existing Right-of-Way
- New Right-of-Way
- Existing Company Property Rights
- Horizontal Surface
- Conical Surface



Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, FAA, VGIN, USGS National Hydrology Dataset (NHD), US Census Bureau
3. Orthimagery © Virginia Geographic Information Network (VGIN)
4. Background © ESRI
5. All proposed structure heights and locations provided in this map are based upon preliminary engineering and are subject to final design.



Figure No.
2.0.1

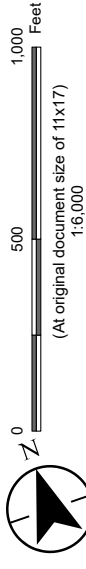
Title

Airport Overlay Surfaces Map

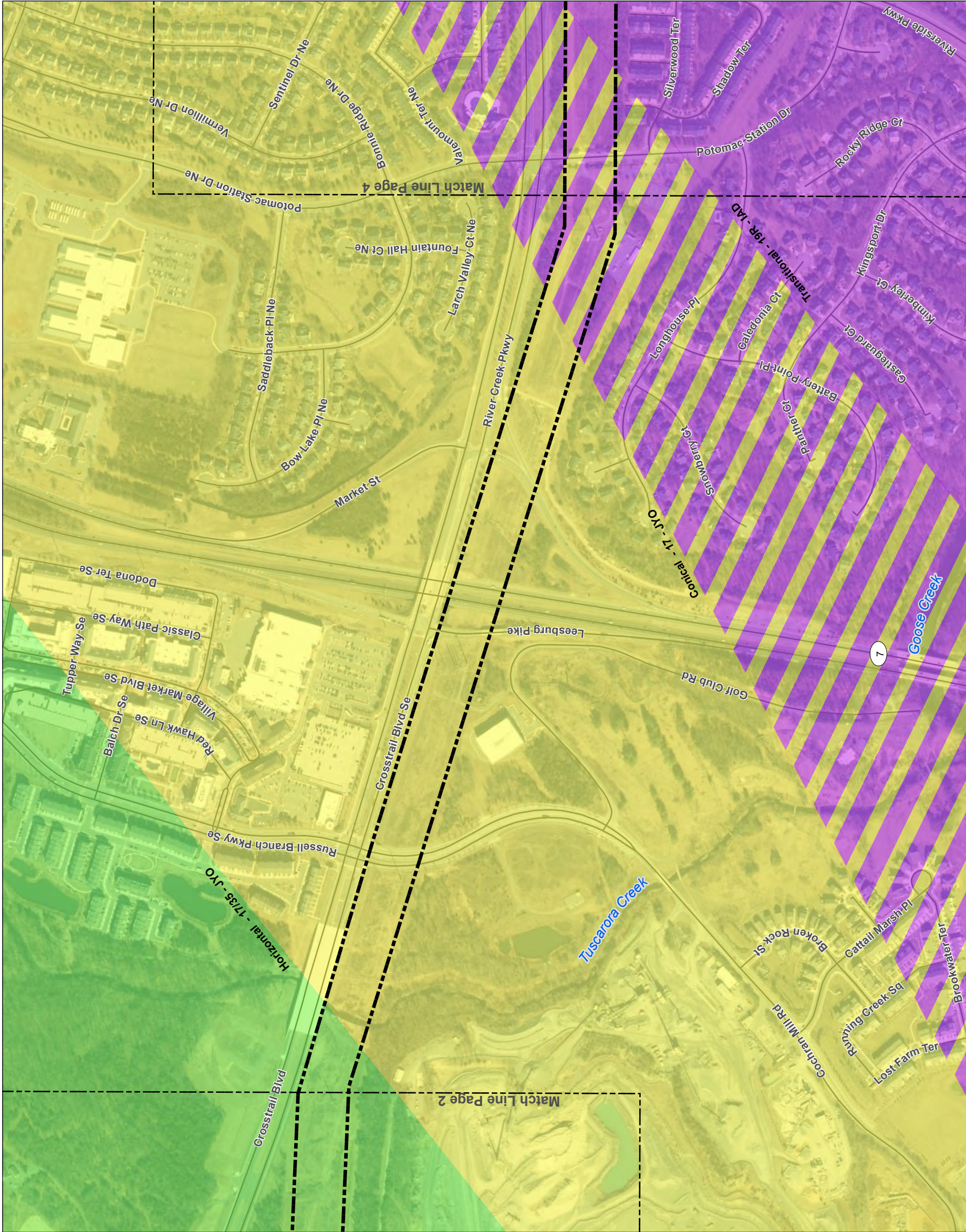
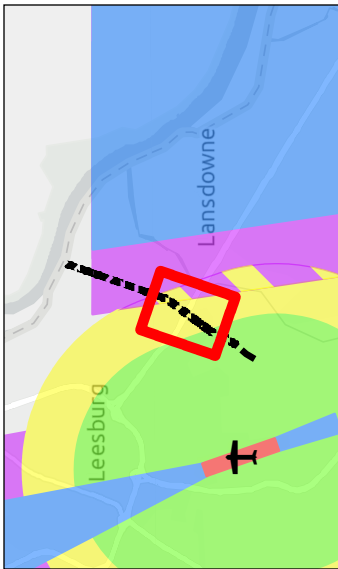
Client/Project
203402622

Dominion Energy Virginia
Line #514 Corridor Optimization Project

Project Location
Loudoun County, Virginia
Prepared by MER on 2025-08-29
TR by BJW on 2025-12-17
IR by LRC on 2025-12-29



- Existing Right-of-Way
- Horizontal Surface
- Conical Surface
- Transitional Surface



Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, FAA, VGIN, USGS National Hydrology Dataset (NHD), US Census Bureau
3. Orthimagery © Virginia Geographic Information Network (VGIN)
4. Background © ESRI
5. All proposed structure heights and locations provided in this map are based upon preliminary engineering and are subject to final design.



Figure No.
2.0.1

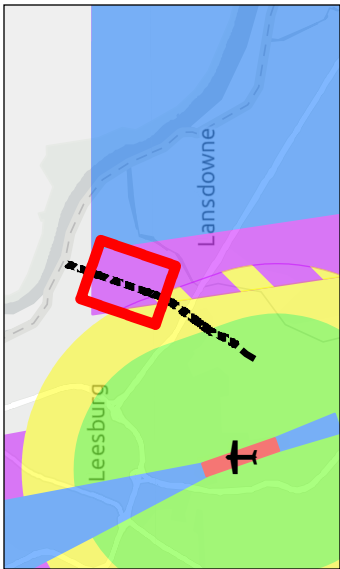
Title

Airport Overlay Surfaces Map

Client/Project	203402622
Dominion Energy Virginia	
Line #514 Corridor Optimization Project	
Project Location	
Loudoun County, Virginia	
Prepared by MER on 2025-08-29	
TR by BJW on 2025-12-17	
IR by LRC on 2025-12-29	



- Existing Right-of-Way
- Conical Surface
- Approach Surface
- Transitional Surface



Notes

1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, FAA, VGIN, USGS National Hydrology Dataset (NHD), US Census Bureau
3. Orthimagery © Virginia Geographic Information Network (VGIN)
4. Background © ESRI
5. All proposed structure heights and locations provided in this map are based upon preliminary engineering and are subject to final design.

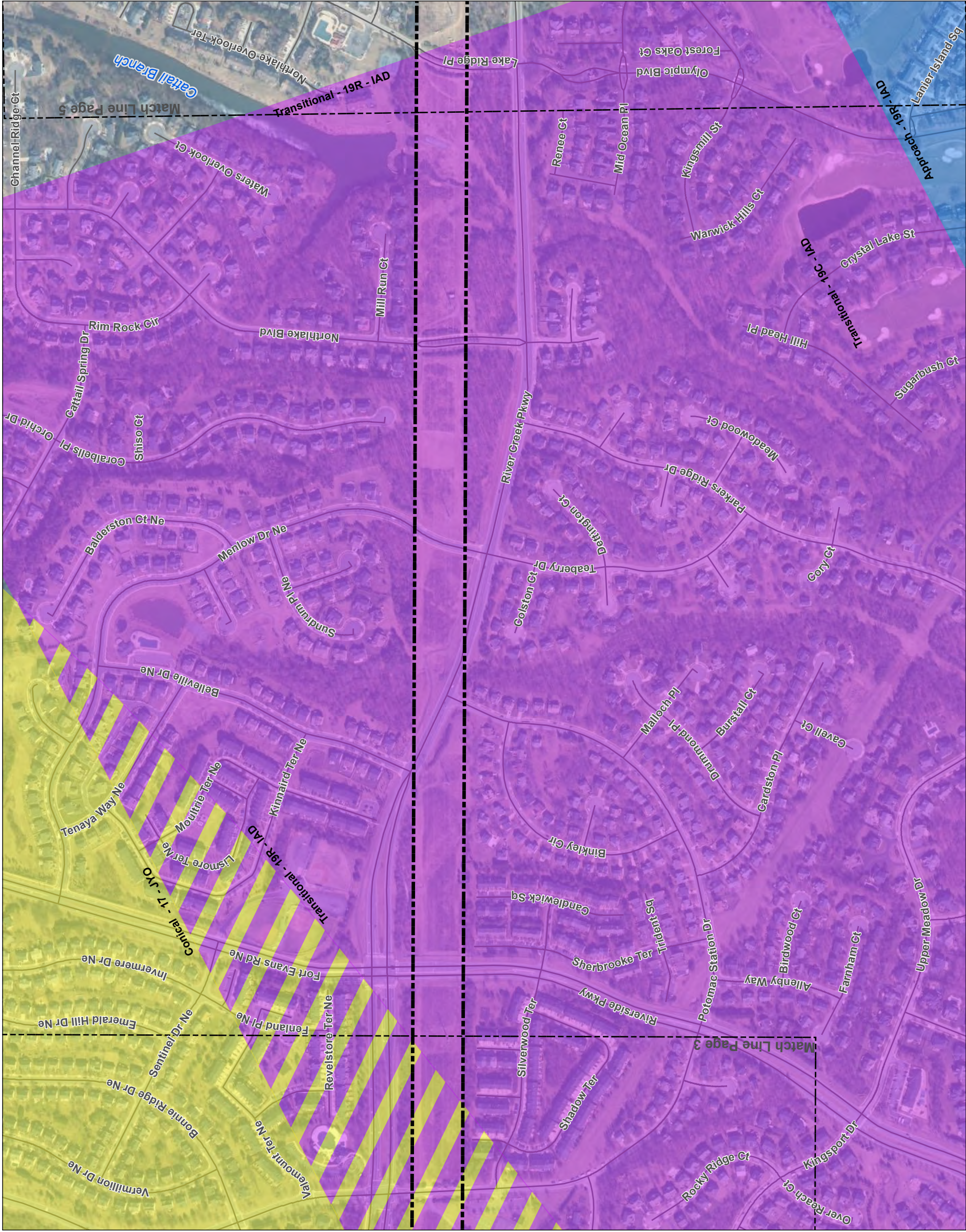


Figure No.
2.0.1

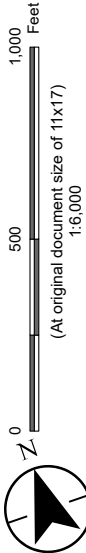
Title

Airport Overlay Surfaces Map

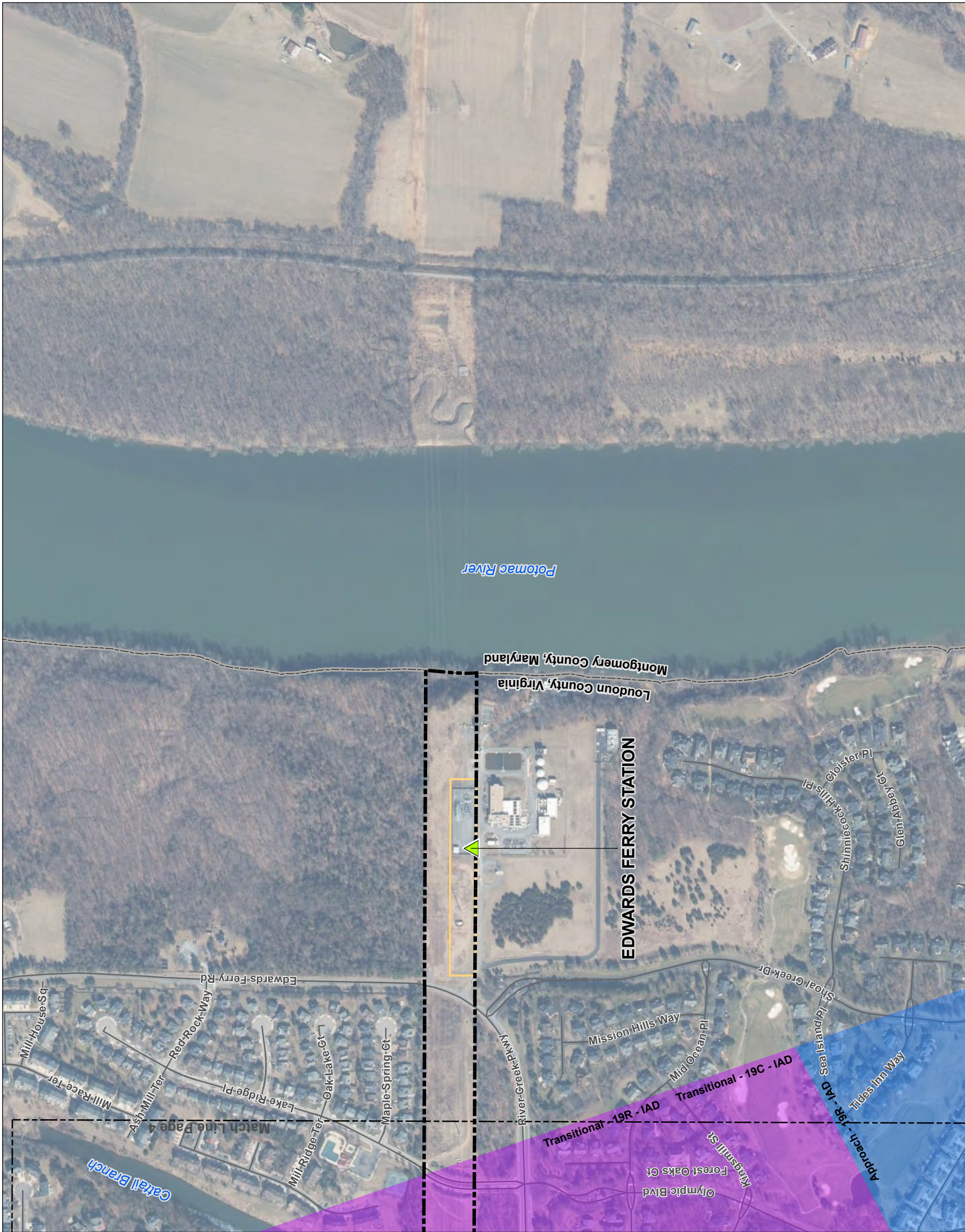
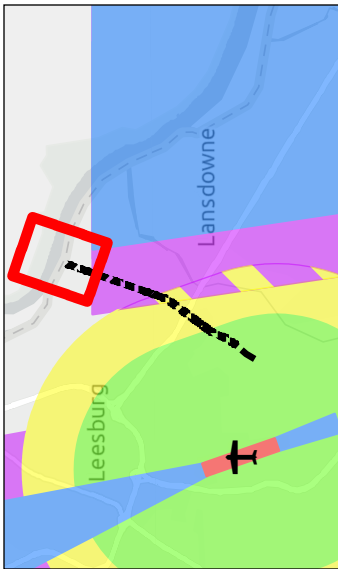
Client/Project
203402622

Dominion Energy Virginia
Line #514 Corridor Optimization Project

Project Location
Loudoun County, Virginia
Prepared by MER on 2025-08-29
TR by BJW on 2025-12-17
IR by LRC on 2025-12-29



- Existing Station
- Existing Right-of-Way
- Existing Company Property Rights
- Approach Surface
- Transitional Surface



- Notes
1. Coordinate System: NAD 1983 StatePlane Virginia North FIPS 4501 Feet
 2. Data Sources: Dominion Energy Virginia, Stantec, FAA, VGIN, USGS National Hydrology Dataset (NHD), US Census Bureau
 3. Orthimagery © Virginia Geographic Information Network (VGIN)
 4. Background © ESRI
 5. All proposed structure heights and locations provided in this map are based upon preliminary engineering and are subject to final design.



From: Warren, Arlene <arlene.warren@vdh.virginia.gov>
Sent: Tuesday, June 22, 2021 7:53 AM
To: Rachel.M.Studebaker@dominionenergy.com
Subject: [EXTERNAL] Re: FW: SCC Case No. PUR-2021-00010/DEQ21-013S

This is an EXTERNAL email that was NOT sent from Dominion Energy. Are you expecting this message? Are you expecting a link or attachment? DO NOT click links or open attachments until you verify them

The proposal from Dominion is reasonable and we consider it acceptable.

Best Regards,

Arlene Fields Warren

GIS Program Support Technician

Office of Drinking Water

Virginia Department of Health

109 Governor Street

Richmond, VA 23219

(804) 864-7781

On Thu, Jun 17, 2021 at 4:33 PM Rachel.M.Studebaker@dominionenergy.com
<Rachel.M.Studebaker@dominionenergy.com> wrote:

Hello Ms. Warren,

I am reaching out in regard to the DEQ Report for SCC Case No. PUR-2021-00010/DEQ21-013S (230 kV lines #2113 and #2154 Transmission Line Rebuilds and Related Projects). As part of the VDH ODW review, it was recommended that all wells within a 1,000-foot radius of the project site be field marked and protected from accidental damage. It is our custom construction process to not conduct any work outside of the existing right-of-way (ROW), with the exception of entry using existing access roads, and use DEQ approved erosion and sediment controls. These well are located outside of the project area ROW on private land and Dominion Energy does not have permission to enter private property to field mark the wells.

Therefore, we are proposing to plot and call out the wells on the Erosion and Sediment control plans as a way of flagging them for the construction team for protection from accidental damage. Is this a sufficient approach to comply with the ODW recommendation?

Thank you,

Rachel Studebaker

Environmental Specialist II

Dominion Energy Services

120 Tredegar Street, Richmond, VA 23219

Office: (804) 273-4086

Cell: (804) 217-1847

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