Dominion Energy®

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

Before the State Corporation Commission of Virginia

230 kV Apollo-Twin Creeks Lines and Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo Substations

Application No. 334

Case No. PUR-2024-00044

Filed: March 27, 2024

Volume 2 of 3

COMMONWEALTH OF VIRGINIA
BEFORE THE
STATE CORPORATION COMMISSION

APPLICATION OF

VIRGINIA ELECTRIC AND POWER COMPANY

FOR APPROVAL AND CERTIFICATION
OF ELECTRIC TRANSMISSION FACILITIES

230 kV Apollo-Twin Creeks Lines and Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo Substations

Application No. 334

DEQ Supplement

Case No. PUR-2024-00044

Filed: March 27, 2024

Table of Contents

Page

Based on consultations with the 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 the DEQ and other relevant agencies.

1. Project Description

In order to provide service requested by three data center customers (collectively, the "Customers"), to maintain reliable service for the overall load growth in the area, and to comply with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, Dominion Energy Virginia proposes in Loudoun County, Virginia, to:

(1) Construct a new double circuit overhead 230 kilovolt ("kV") transmission line on entirely new right-of-way[1] by cutting the Company's existing 230 kV Edwards Ferry-Pleasant View Line #203 at Structure #203/2[2] (collectively, the "Apollo-Twin Creeks Lines").[3] From the cut-in location within the existing right-of-way, the Apollo-Twin Creeks Lines will extend approximately 1.9 miles within a predominantly 100-foot-

---

[1] On March 7, 2024, the Company filed an application for State Corporation Commission ("Commission") approval of new single circuit 500 kV and 230 kV electric transmission lines located in a new right-of-way varying between 100 and 150 feet in width and extending for approximately 9.4 miles (the "future Aspen-Golden Lines") between a new future 500-230 kV Aspen Substation and a new future 500-230 kV Golden Substation, a new approximately 0.2-mile 500 kV line extending between the new Aspen Substation and the existing 500 kV Goose Creek Substation (the "future Aspen-Goose Creek Line"), and a new transmission line loop of the existing Paragon Park-Sterling Park Line #2081 and Paragon Park-Sterling Park Line #2150 into and out of the new future Golden Substation (the "future Lines #2081/#2150 Loop"), all located in Loudoun County, Virginia (collectively, the "Aspen-Golden Project"). *See Application of Virginia Electric and Power Company for approval and certification of electric transmission facilities: 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line #5002, 500 kV and 230 kV Aspen-Golden Lines #5001 and #2333, 500-230 kV Golden Substation, and Lines #2081/#2150 Loop*, Case No. PUR-2024-00032 (filed March 7, 2024) (referred to herein as the "Aspen-Golden Application"). For approximately 0.9 mile of the 9.4-mile proposed route of the future Aspen-Golden Lines, the Company noted as part of the Aspen-Golden Application that it would need additional right-of-way with varying widths between 100 and 140 feet to accommodate construction of two new 230 kV double circuit lines—namely, the Apollo-Twin Creeks Lines (as defined herein but referred to in the Aspen-Golden Application as the "future Twin Creeks Lines"). As noted in the Aspen-Golden Application, the Company understood that it could not condemn for more than what was needed for the Aspen-Golden Project until such time as the Company sought approval of this instant Project, as defined herein, consistent with the Commission's approach in recent proceedings. *See* the Aspen-Golden Application, Appendix at n. 6. The Company is now seeking such approval in this Application. A map depicting the total right-of-way where the Apollo-Twin Creeks Lines are proposed for collocation with the future Aspen-Golden Lines, which ranges from a total of 200 to 260 feet, is provided in Attachment II.A.6 of the Appendix. As clarification, the Company notes that the use of "collocation" in this context indicates where the rights-of-way are adjacent to and/or overlap one another as depicted in Attachment II.A.2 of the Appendix.

[2] No structures will be removed on Line #203. However, to accommodate the cut in on Line #203, one set of arms on Structure #203/2 will be removed and a new monopole will be installed next to the existing monopole, resulting in a two-pole structure at Structure #203/2. The new monopole will not be more than 20% taller than the existing Structure #203/2 monopole.

[3] The Apollo-Twin Creeks Lines cut in at Structure #203/2, proceed 0.3 mile to the proposed Twin Creeks Substation, and then continue 1.7 miles to the proposed Apollo Substation, for a total of approximately 1.9 miles. Given the proximity of the proposed Twin Creeks Substation to the cut-in location (0.3 mile), the new lines are referred to as the Apollo-Twin Creeks Lines for ease of reference but are inclusive of the entire 1.9-mile length starting at Structure #203/2.

wide right-of-way,[4] interconnecting the proposed Twin Creeks, Sycolin Creek, Starlight, and Lunar Substations and terminating at the proposed Apollo Substation, as defined herein. The proposed Apollo-Twin Creeks Lines will be supported primarily by double circuit dulled galvanized steel monopoles and will utilize three-phase twin-bundled 768.2 Aluminum Conductor Steel Supported/Trapezoidal Wire/High Strength ("ACSS/TW/HS") type conductor with a summer transfer capability of 1,573 MVA; and

(2) Construct five new 230-34.5 kV substations in Loudoun County, Virginia, on property to be obtained by the Company (the "Twin Creeks Substation," "Sycolin Creek Substation," "Starlight Substation," "Lunar Substation," and "Apollo Substation").

The Apollo-Twin Creeks Lines, Twin Creeks Substation, Sycolin Creek Substation, Starlight Substation, Lunar Substation, and Apollo Substation are collectively referred to as the "Apollo-Twin Creeks 230 kV Electric Transmission Project" or the "Project."

The Project is necessary to ensure that Dominion Energy Virginia can provide service requested by the Customers in Loudoun County, Virginia, and maintain reliable electric service consistent with NERC Reliability Standards for the overall growth in the load area surrounding the eastern Leesburg area in Loudoun County, Virginia ("Leesburg Load Area"), which, for purposes of this Application, is defined generally as the area bounded to the north by Leesburg Pike ("State Route 7" or "Rt. 7"), to the west by Crosstrail Boulevard, to the south by portions of State Route 267 (Dulles Greenway) and 625 (Ashburn Farm Parkway), and to the east by the community of Ashburn and State Route 901 (Claiborne Parkway) in Loudoun County, Virginia. Specifically, three Customers (individually, "Customer A," "Customer B," and "Customer C") have requested that Dominion Energy Virginia serve three new data center campuses in the eastern area of Loudoun County, Virginia: Campus A, Campus B, and Campus C (collectively, the "Campuses"). To serve the Customers' projected load combined with emerging load in the area (approximately 1,372 MW), the Company is proposing to construct the proposed substations with the targeted sequencing as follows: the Twin Creeks Substation (2026) to serve Campus A, the Sycolin Creek Substation (2026) and the Starlight Substation (2028) to serve Campus B, and the Lunar Substation (2028) and the Apollo Substation (2028) to serve Campus C.

The proposed Twin Creeks Substation will be constructed with four 112 MVA 230-34.5 kV transformers and a 230 kV ring bus with a six circuit breaker configuration. The

[4] Notably, there are two segments of the proposed Apollo-Twin Creeks Lines where the right-of-way is 140 feet in width. The first is an approximately 0.2-mile segment where the proposed Apollo-Twin Creeks Lines expand to a 140-foot-wide right-of-way in order to feasibly cross under the future Aspen-Golden Lines and enter the proposed Sycolin Creek Substation. The second is an approximately 0.1-mile segment where the proposed Apollo-Twin Creeks Lines leave the proposed Starlight Substation and cross under the future Aspen-Golden Lines, which requires the structure configuration to switch from double circuit monopoles (vertical) to two-pole structures (delta) and then back to double circuit monopoles (vertical) for the remainder of the route. *See* Attachment II.A.6 of the Appendix.

substation will be connected to existing Edwards Ferry-Pleasant View Line #203, which will be split at the cut-in location creating new Pleasant View-Twin Creeks Line #2320 and new Edwards Ferry-Twin Creeks Line #203, thus providing the substation a double circuit 230 kV connection. The proposed Twin Creeks Substation will be designed to accommodate future growth in the area with an ultimate build-out of five 112 MVA 230-34.5 kV transformers. The total area of the Twin Creeks Substation is approximately 4.7 acres.

The proposed Sycolin Creek Substation will be constructed with two 112 MVA 230-34.5 kV transformers and a 230 kV ring bus with a four circuit breaker configuration. The substation will be connected by the Apollo-Twin Creeks Lines extending from the proposed Twin Creeks Substation. The proposed Sycolin Creek Substation will be designed to accommodate future growth in the area with an ultimate build-out of five 112 MVA 230-34.5 kV transformers and a 230 kV ring bus with a six circuit breaker configuration. The total area of the Sycolin Creek Substation is approximately 4.7 acres.

The proposed Starlight Substation initially will be constructed with two 84 MVA 230-34.5 kV transformers and a six 230 kV ring bus with a six circuit breaker configuration. The substation will be connected by the Apollo-Twin Creeks Lines extending from the proposed Sycolin Creek Substation. The proposed Starlight Substation will be designed to accommodate future growth in the area with an ultimate build-out of two 84 MVA, two 112 MVA transformers, and a nine 230 kV breaker-and-a-half scheme. The total area of the Starlight Substation is approximately 4.5 acres.

The proposed Lunar Substation initially will be constructed with two 112 MVA 230-34.5 kV transformers and a 230 kV gas-insulated substation ring bus with a six circuit breaker configuration. The substation will be connected by the Apollo-Twin Creeks Lines extending from the proposed Starlight Substation. The proposed Lunar Substation will be designed to accommodate future growth in the area with an ultimate build-out of four 112 MVA transformers and a 230 kV GIS ring bus with a six circuit breaker configuration. The total area of the Lunar Substation is approximately 4.0 acres.

The proposed Apollo Substation initially will be constructed with two 84 MVA 230-34.5 kV transformers and a 230 kV ring bus with a five circuit breaker configuration. The substation will be connected by the Apollo-Twin Creeks Lines extending from the proposed Lunar Substation. The proposed Apollo Substation will be designed to accommodate future growth in the area with an ultimate build-out of two 112 MVA transformers, two 84 MVA transformers, and a 230 kV ring bus with a six circuit breaker configuration. The total area of the Apollo Substation is approximately 5.0 acres.

For this Project, the Company retained the services of Environmental Resources Management ("ERM") to help collect information within the study area, identify potential routes, perform a routing analysis comparing the route alternatives, and document the routing efforts in an Environmental Routing Study.

The Company proposes to construct the Apollo-Twin Creeks Lines along the Proposed Route by cutting the Company's existing 230 kV Edwards Ferry-Pleasant View Line #203 at Structure #203/2 and extending a new double circuit overhead 230 kV transmission line approximately 1.9 miles to the proposed Twin Creeks, Sycolin Creek, Starlight, and Lunar Substations, terminating at the proposed Apollo Substation south of Rt. 7 and west of Belmont Ridge Road. The Proposed Route is located entirely within Loudoun County, Virginia, and maximizes collocation with the future Aspen-Golden Lines and other utility rights-of-way, and crossings of the Customers' properties to the extent feasible.

The Proposed Route is approximately 1.9 miles in length. From the cut-in location, the Proposed Route initially heads south for about 0.2 mile generally following the property line of an existing Luck Stone quarry and existing Loudoun Water utility lines to connect with the first substation, the proposed Twin Creeks Substation associated with Campus A. The substation site is within a parcel on the north side of Cochran Mill Road and south of a Luck Stone quarry. The Proposed Route then continues southeast for about 0.2 mile along a property boundary to a point just north of Cochran Mill Road, where the route intersects and begins to parallel and collocate with the Company's future Aspen-Golden Lines. From here, the Proposed Route crosses Cochran Mill Road and continues southeast across Customer A's property for about 0.4 mile. The route (still collocated with the future Aspen-Golden Lines) crosses Goose Creek at a spot just north of a former quarry (now a reservoir), about 0.2 mile northeast of the Company's existing Lines #227 and #274. Still collocated with the future Aspen-Golden Lines, the Proposed Route continues south across the Milestone Reservoir property for 0.1 mile, then turns northeast. The Proposed Route then connects to the proposed Sycolin Creek Substation and continues northeast across Customer B's property for about 0.3 mile to the south side of the proposed Starlight Substation. From there, the Proposed Route of the Apollo-Twin Creeks Lines separates from the future Aspen-Golden Lines and continues for 0.2 mile before entering the proposed Starlight Substation, while the Aspen-Golden Lines turn east along the north side of the substation. The Proposed Route then heads north for about 0.4 mile across Customer C's property, connecting to the proposed Lunar Substation and terminating at the proposed Apollo Substation south of Rt. 7 and east of Goose Creek.

2. Environmental Analysis

The Company solicited comments from all relevant state and local agencies about the proposed Project in letters sent on February 15, 2024. Copies of these letters are included as Attachment 2. The DEQ responded to the Company's request for the proposed Project in an email dated February 16, 2024, attaching the agency's Scoping Response (see Attachment 2.1).

The environmental analysis considers the impacts of the approximately 1.9-mile Proposed Route, which is inclusive of the five proposed substations (Twin Creeks, Sycolin Creek, Starlight, Lunar and Apollo Substations). In the discussions below, potential impacts from construction and operation of the Twin Creeks, Sycolin Creek, Starlight, Lunar and Apollo Substations are included with those of the Proposed Route, unless otherwise noted.

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 below in Section 2.H. 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.

Tree clearing will be required for parts of the Project. The Company does not expect to burn cleared material, but, if burning is necessary, the Company will coordinate with the responsible locality to obtain permits, comply with any conditions set forth by the locality, or take actions as otherwise set forth in the Company's right-of-way easements. 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, ERM 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"), ESRI World Elevation Terrain Data (2-foot contours), and recent (spring 2023) and historic digital aerial photography (Loudoun County Imagery, ESRI imagery, and Google Earth). ERM additionally used data from a field delineation completed by Wetland Studies and Solutions Inc. in June 2022 on a parcel south of Rt. 7 and north of Belmont Ridge Road between the proposed Starlight and Apollo Substation sites. The U.S. Army Corps of Engineers ("Corps") approved the field delineation in an Approved Jurisdictional Determination in August 2022 (Permit # NAO-2022-01498-RDB).

The Apollo-Twin Creeks Proposed Route will utilize an overhead configuration that spans waterbodies. No transmission structures for the Apollo-Twin Creeks Lines are planned to be placed within waterbodies, though tree clearing will be required within the right-of-way in forested riparian areas at waterbody crossings. The removal of forested riparian areas adjacent to waterbodies could reduce erosion control, stormwater filtration, and shading at these locations. Impacts to surface waters and riparian habitat will be reduced by minimizing rights-of-way at crossings to the extent possible, leaving roots and stumps in place, and implementing erosion control best management practices during construction.

The Proposed Route crosses perennial Goose Creek, unnamed, intermittent tributaries to Goose Creek, and an open waterbody feature. According to the Corps documentation, no waters considered navigable under Section 10 of the Rivers and Harbors Act are crossed by the Proposed Route for the Project.

Waterbodies in the vicinity of the Proposed Route, inclusive of the proposed substations, are shown on Attachment 2 of the Wetland and Waterbody Desktop Summary for the Project, which is included in Attachment 2.D.1.

Proposed Route

The Proposed Route would have a total of seven waterbody crossings. Of these, three are NHD-mapped waterbodies, including perennial Goose Creek and two unnamed, intermittent tributaries to Goose Creek. There are four unnamed waterbodies, including two open waterbody features that appear to be stormwater detention ponds, and two unnamed, unclassified streams identified within the right-of-way using recent aerial imagery (2023). Based on ERM's desktop wetland and waterbody analysis, the Proposed Route right-of-way encompasses approximately 0.6 acre of riverine wetlands and 0.1 acre of palustrine unconsolidated bottom ("PUB") wetlands.

Impacts to waterbodies would be limited to the conversion of riparian buffer that would be maintained as a shrub/open meadow habitat within the maintained right-of-way. 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. Tree removal adjacent to waterbodies could reduce riparian buffer functions such as stream bank stabilization and erosion control, nutrient and sediment filtration, floodwater storage and peak flow reduction, and would increase thermal impacts to riparian corridors due to loss of shading. To protect waterways from soil erosion and sedimentation during construction, the Company will use sediment barriers along waterways and steep slopes. The right-of-way will be maintained with a cover of herbaceous vegetation consistent with an open meadow during operations, which will provide some filtration and stabilization to protect waterbodies from runoff.

During construction, waterbodies will be maintained for proper drainage using culverts or other crossing devices, as needed, according to the Company's standard policies. 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.

The Company solicited comments from the Corps and the Virginia Marine Resources Commission ("VMRC") regarding the proposed Project on February 15, 2024. According to a response letter dated March 5, 2024, the Project is located within the jurisdictional areas of the VMRC and may require a permit from the agency. See Attachment 2.B.1 for a copy of that letter. According to the letter, the VMRC, pursuant to § 28.2-1200 *et seq.* of the Code of Virginia, has jurisdiction over encroachments in, on, or over the beds of the bays, ocean, rivers, streams, or creeks which are the property of the Commonwealth. Accordingly, if any portion of the subject project involves any encroachments channelward

of ordinary high water along non-tidal, natural rivers and streams with a drainage area greater than five square miles, a permit may be required from the VMRC. If necessary, a Joint Permit Application will be submitted for review by the VMRC, DEQ, and the Corps to authorize jurisdictional crossings and for any impacts on 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 study area. Non-tidal wetlands are summarized below.

On behalf of the Company, ERM identified potential wetlands along the Apollo-Twin Creeks Lines using GIS and remote sensing data sources to conduct an offsite desktop wetland delineation. Sources for this desktop summary include the United States Fish and Wildlife Service ("USFWS") National Wetland Inventory ("NWI"), the USGS NHD, the U.S. Department of Agriculture-Natural Resources Conservation Service Soil Survey Geographic database, ESRI World Elevation Terrain Data, National Agricultural Imagery Program Digital Ortho-Rectified Natural Color and Infrared Images, Corps-approved field delineation data, and recent (2022 and 2023) and historic digital aerial photography (Loudoun County Imagery, ESRI, and Google Earth). The Corps-approved field delineation completed in June 2022 was used to desktop delineate the boundaries of wetlands crossed by the Proposed Route between the proposed Starlight and Apollo Substations. A copy of ERM's Wetland and Waterbody Desktop Summary for the Project is included in Attachment 2.D.1.

ERM did not field delineate wetlands along the Proposed Route (or at any of the five proposed substation sites). A field wetland delineation will be completed for the approved route after the Company receives a final order on the Project.

Outside of the areas that have undergone previous field-delineations along the Proposed Route, ERM used a stepwise process to identify probable wetland and waterbody areas along the Proposed Route as follows:

1. Infrared and natural color aerial photography was used in conjunction with topographic maps, soils maps, and other data sources to identify potential wetland areas. Boundaries were assigned to the areas that appeared to exhibit wetland signatures based on this review (referred to here as "Interpreted Wetlands"), and a cover type was determined based on aerial photo interpretation.

2. To further determine the probability of a wetland occurring within a given location, polygon shapefiles for Interpreted Wetlands were digitally layered with NWI and NHD mapping and hydric soils information from the NRCS soil survey database.

3. ERM assigned a probability of wetland occurrence based on the number of overlapping data layers (*i.e.*, indicators of potential wetland presence) in any given area (Table D-1).

Table D-1

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 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

Using the above criteria, wetland and waterbody occurrence probabilities ranging from very low to high were identified for the Proposed Route, with acres of affected wetland calculated by probability class and cover type. The probability of wetland and waterbody occurrence increases as multiple indicators overlap toward the "high" end of the probability spectrum as shown in Table D-1. The medium to high probability categories were selected as the most reliable representation of in-situ conditions due to overlapping data sets. Results for these wetland probability classes are presented below.

The Proposed Route, inclusive of the five proposed substations, would cross approximately 1.0 acre of wetlands, including:

- Less than 0.01 acre of palustrine scrub-shrub ("PSS") wetlands
- 0.3 acre of palustrine emergent ("PEM") wetlands
- 0.1 acre of PUB wetlands
- 0.6 acre of riverine wetlands

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 clearing, permanent impacts would include the fill of approximately 0.3 acre of PEM wetland within the proposed Twin Creeks Substation footprint; however, Customer A (not the Company) will permit and grade the building pad reserved for the substation within the campus. Other permanent impacts include any

necessary structure placement within wetlands and clearing and conversion of less than 0.1 acre of PSS-type wetland to emergent type wetland in the maintained right-of-way.

Prior to construction, the Company will delineate wetlands and other waters of the United States along the Proposed Route (excluding the areas covered by the previous Corps-approved jurisdictional determination) 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). The Company will obtain all necessary permits for activities that will impact jurisdictional resources.

The Company solicited comments from the Corps and the DEQ Office of Wetlands and Stream Protection ("OWSP") on February 15, 2024. Dominion Energy Virginia received a response from DEQ-OWSP on March 14, 2024, and that response is included as Attachment 2.D.2.

E. Floodplains

As depicted on Federal Emergency Management Agency's ("FEMA") online Flood Insurance Rate Maps 24031C0260D and 24031C0280D (effective dates 9/28/2006), 51059C0025E (effective date 9/16/2010), 51107C0235E and 51107C0255E (effective dates 2/16/2017). The Project study area contains Zone AE, areas with a 1% annual chance of flooding, and Zone X, areas of minimal flood hazard. Temporary grading and timber mats may be used within the 100-year floodplain of Goose Creek during construction. The Company will coordinate with the local floodplain coordinators as required.

F. Solid and Hazardous Waste

Environmentally regulated sites that use and/or store hazardous materials or waste-producing facilities operating under regulatory permits in the study area have been identified using publicly available GIS databases obtained from the U.S. Environmental Protection Agency ("EPA") and the DEQ. These databases provide information about facilities, sites, or places subject to environmental regulation or of environmental interest, including Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA" or "Superfund") sites; Resource Conservation and Recovery Act ("RCRA") sites; Brownfield sites; petroleum storage and petroleum release sites; Pollution Response Programs (PREP sites), and solid waste sites. The identification of a site in the databases does not mean that the site necessarily has contaminated soil or groundwater.

Sites regulated by the EPA under the Clean Air Act ("CAA") Compliance Monitoring Program, Toxic Release Inventory ("TRI"), National Pollutant Discharge Elimination System ("NPDES") and RCRA, and sites regulated by the DEQ under the Air, Solid Waste, Virginia Pollutant Discharge Elimination System ("VPDES"), Voluntary Response Program ("VRP"), and Registered Petroleum Tank Facilities programs not associated with a petroleum leak, site assessment, remediation, corrective action or emergency response

case are anticipated to have no effect on, and will not be affected by, the Project. These sites are not discussed further.

Sites regulated by the EPA as Superfund, Brownfield, and RCRA Corrective Action or Emergency Response sites within 1.0 mile of the Project, and sites regulated by the DEQ, including Petroleum Release, VRP, and PREP sites that are located within 1.0 mile, 1,000 feet, and 200 feet of the Project, were evaluated for potential impacts, as summarized in Tables F-1, F-2, and F-3. The locations of the sites are depicted in Attachment 2.F.1.

TABLE F-1
Apollo-Twin Creeks 230 kV Electric Transmission Project

Environmental Regulated Facilities and Hazardous Waste / Petroleum Release Sites within 1.0 mile of the Apollo-Twin Creeks Proposed Route

Database	Apollo-Twin Creeks Proposed Route[a]
Waste	12
Toxics	4
Land	20
Air	14
Water	90
Solid Waste Facilities	1
Petroleum Facilities	11
Petroleum Releases	11
Total [b]	**163**

[a] Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo Substations are included in the Apollo-Twin Creeks Proposed Route analysis.

[b] Note that a single facility may be associated with multiple environmental permits; as such, the total number reflects the number of permits and releases within the specified distance from the Project.

Notes

Waste (Active and Inactive RCRA Facilities that handle or generate hazardous wastes)
Toxics (TRI Regulated facilities that handle and release toxic substances to the environment)
Land (Site cleanup under Superfund, RCRA or Brownfield programs, and/or DEQ VRP, or PREP sites)
Air (EPA and DEQ regulated facilities with a release of pollutants to the air)
Water (EPA and DEQ regulated facilities that discharge or process water to surface water)
Solid Waste Facilities (Former and existing landfills)
Petroleum Facilities (Regulated petroleum storage facilities)
Petroleum Releases (Typically associated with storage tank releases)

To evaluate potential impact to the routes, ERM further assessed sites within 1,000 feet of the Proposed Route, inclusive of the five proposed substations (Table F-2). Additional information on these sites is summarized below.

TABLE F-2
Apollo-Twin Creeks 230 kV Electric Transmission Project

Environmental Regulated Facilities and Hazardous Waste / Petroleum Release Sites within 1,000 feet of the Apollo-Twin Creeks Proposed Route

Database	Apollo-Twin Creeks Proposed Route[a]
Waste	1
Toxics	2
Land	4
Air	4
Water	22
Solid Waste Facilities	1
Petroleum Facilities	1
Petroleum Releases	3
Total [b]	**38**

[a] Twin Creeks, Sycolin Creek, Starlight, Lunar and Apollo Substations are included in the Apollo-Twin Creeks Proposed Route analysis.

[b] Note that a single facility may be associated with multiple environmental permits; as such, the total number reflects the number of permits and releases within the specified distance from the Project.

Notes

Waste (Active and Inactive RCRA Facilities that handle or generate hazardous wastes)
Toxics (TRI Regulated facilities that handle and release toxic substances to the environment)
Land (Site cleanup under Superfund, RCRA or Brownfield programs, and/or DEQ VRP, or PREP sites)
Air (EPA and DEQ regulated facilities with a release of pollutants to the air)
Water (EPA and DEQ regulated facilities that discharge or process water to surface water)
Solid Waste Facilities (Former and existing landfills)
Petroleum Facilities (Regulated petroleum storage facilities)
Petroleum Releases (Typically associated with storage tank releases)

EPA Regulated Sites

Based on the EPA's "Cleanups in My Community" database, no Brownfield or Superfund sites are located within 1.0 mile of the Proposed Route. The Proposed Route is located within 1.0 mile of twelve RCRA sites, but there are no active RCRA sites within 1,000 feet of the Proposed Route, inclusive of the five proposed substations.

DEQ Regulated Sites

ERM reviewed DEQ Petroleum Release, VRP, and PREP databases to identify sites within 1,000 feet of the routes. No VRP sites are located within 1,000 feet of the Proposed Route. There are three petroleum release sites and four PREP sites located within 1,000 feet of the Proposed Route, inclusive of the five proposed substation sites. Based on available DEQ case files, two petroleum release cases and two PREP sites are located within 200 feet of the Proposed Route. Each of these is further discussed below.

EPA and DEQ Regulated Sites Within 200 Feet of the Proposed Route

Of the regulated facilities and hazardous waste / petroleum release sites identified within 1,000 feet of the Project, four are located within 200 feet as shown in Table F-3. Case files were obtained via Freedom of Information Act requests to the DEQ for further review of these sites, which are summarized below.

TABLE F-3
Apollo-Twin Creeks 230 kV Electric Transmission Project

Environmental Regulated Facilities and Hazardous Waste / Petroleum Release Sites within 200 feet of Apollo-Twin Creeks Proposed Route [a]

Site Name	Site Type	Regulatory Authority	Distance from Route (feet)	Gradient from Project (up/down/side)	Agency Status
Waste Management of Northern Virginia (PC Number 19921766)	Petroleum Release	DEQ	100	Side/upgradient	Closed (1993)
Wallace Dale and Ian Residence (PC Number 20223034)	Petroleum Release	DEQ	130	Downgradient	Closed (2022)
Diesel Spill – Republic Services Trash Truck (IR Number 302595)	PREP	DEQ	25	Side/upgradient	Closed (2022)
Sewage Line Blockage – Leesburg Transfer Station (IR Number 295363)	PREP	DEQ	140	Side/upgradient	Closed (2020)

[a] Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo Substations are included in the Apollo-Twin Creeks Proposed Route analysis.

1) Waste Management of Northern Virginia (PC Number 19921766)

The Waste Management of Northern Virginia Petroleum Release site is located approximately 100 feet northwest of the Proposed Route in the Goose Creek Industrial Park, off Cochran Mill Road. Based on a review of the most recent USGS topographic maps and location of nearby surface water bodies, the site would be hydraulically side- or upgradient from the Proposed Route. Based on review of DEQ files, the petroleum release was reported in 1991 when a spill of diesel fuel was observed in the vicinity of an underground storage tank ("UST") during surface regrading activities. The initial amount of petroleum released to the soil was unknown but was estimated to be about 30-50 gallons based on the amount of contaminated soil that was removed. Approximately 20 cubic yards of contaminated soil were initially excavated from the tank pit. Depth to groundwater at the site is estimated to be approximately 20-40 feet below ground surface ("bgs"). Initial soil samples were collected from the soil located above the UST at depths of approximately 3-3.5 ft bgs. According to the Initial Abatement Report provided by the DEQ, additional soil samples were collected from the tank pit to evaluate the extent of residual contamination after the initial abatement process. Concentrations of total petroleum hydrocarbons ("TPH") (175 mg/kg) were

once again detected in the soil and an additional two cubic yards of soil were excavated and replaced with clean fill. The third round of soil sampling, which was conducted in April 1992, detected TPH in the soil at concentrations of 36.1 mg/kg.

In 1993, RUST Environment and Infrastructure produced a site characterization report ("SCR") based on a supplementary site investigation that was conducted following the initial abatement process. According to the 1993 SCR, removal of the UST and other remedial activities were deemed unnecessary based on the determination that risk of contamination to public water supply and nearby surface water bodies was minimal. The site was closed by the DEQ in 1993.

Due to the reported extent of contamination and time elapsed since closure, it is unlikely that the site impacted soil and/or groundwater in the immediate area of the Proposed Route, inclusive of the five proposed substations. However, if previously unidentified contamination is observed during Project construction, the Company will follow proper safety and reporting procedures, as discussed below.

2) Wallace Dale and Ian Residence (PC Number 20223034)

The Wallace Dale and Ian Residence petroleum release site is located approximately 130 feet northwest of the Proposed Route on Belmont Ridge Road. Based on a review of the most recent USGS topographic maps and the location of nearby surface water bodies, the site would be hydraulically downgradient from the Proposed Route. According to DEQ files, the petroleum release was reported in August 2021 from a 550-gallon UST located at the site. Following the removal of the UST, soil samples were collected and analyzed for total petroleum hydrocarbons – diesel-range organics ("TPH-DROs"), volatile organic compounds ("VOCs"), and semi-volatile organics ("SVOCs"). Concentrations of TPH-DRO were detected in the soil at 20,700 milligrams per kilogram (mg/kg). In October 2021, approximately 20.25 tons of soil were excavated from the holding tank area with confirmatory soil samples collected from the sidewalls and base of excavation. The only sample to detect concentrations of TPH-DRO (44.3 mg/kg) was collected from the base of the excavation at a depth of approximately 10 feet bgs. The groundwater sample collected from the on-site potable well located approximately 55 feet south of the tank pit did not detect concentrations of polycyclic aromatic hydrocarbons ("PAHs") or VOCs. Information regarding the depth to groundwater was not reported. The site was closed by the DEQ in March 2022.

Because the contamination is downgradient of the Project and the site was closed by DEQ, the Company does not anticipate identification of impacted soil and/or groundwater in the immediate area of the Proposed Route, inclusive of the five proposed substations. However, if previously unidentified contamination is observed during Project construction, the Company will follow proper safety and reporting procedures, as discussed below.

3) Diesel Spill – Republic Services Trash Truck (IR Number 302595)

The Diesel Spill – Republic Services Trash Truck PREP Report site is located approximately 25 feet northeast of the Proposed Route at the intersection of Cochran Mill Road and Durham Court. The incident resulting in the spill occurred on January 21, 2022, and it was reported that approximately 50 gallons of diesel fuel were released during a vehicle accident in a parking lot. Based on a review of the most recent USGS topographic maps and the location of nearby surface water bodies, the site would be hydraulically side- or upgradient from the Proposed Route. It was reported that no impacts were made to any surface water bodies and that the release was contained to the parking lot and adjacent grass areas. Cleanup was conducted on-site by Roadrunner Towing and no state agencies were required for assistance. The site was closed by the DEQ in February 2022.

Due to the reported extent of contamination, it is not anticipated that soil and/or groundwater is impacted in the immediate area of the Proposed Route, inclusive of the five proposed substations. This site may have a low probability of impacted soil and/or groundwater, so it is not anticipated that impacts will occur during Project construction. However, if previously unidentified contamination is observed during Project construction, the Company will follow proper safety and reporting procedures, as discussed below.

4) Sewage Line Blockage – Leesburg Transfer Station (IR Number 295363)

The Sewage Line Blockage – Leesburg Transfer Station PREP report site is approximately 150 feet northeast of the Proposed Route at the intersection of Cochran Mill Road and Durham Court. The reported incident occurred in June 2020 and involved a blockage within a sewage line connecting to a stormwater retention pond. The blockage occurred between the transfer station tunnel and grit chamber of the sewer line. ACE Environmental cleared the sewage line and observed a misalignment within one of the pipes in the grit chamber. Fluid waste was properly disposed of and transported to nearby treatment facilities. The site was closed by the DEQ July 2020. Based on a review of the most recent USGS topographic maps and the location of nearby surface water bodies, the site would be hydraulically side- or upgradient from the Proposed Route.

While information regarding the cause of release and the amount of released product was not made publicly available in the DEQ files obtained by ERM, due to the reported extent of contamination and distance from the Proposed Route, it is unlikely that the site impacted soil and/or groundwater in the immediate area of the Proposed Route, inclusive of the five proposed substations. However, if previously unidentified contamination is observed during Project construction, the Company will follow proper safety and reporting procedures, as discussed below.

In summary, all of the Petroleum Release cases within close proximity to the Project have been closed by the DEQ. The DEQ deems a petroleum release closed once there is no further risk to the general public, although petroleum residue might remain. The DEQ's risk assessments do not always consider the risk associated with temporary excavations and construction. Although the Project is constructing overhead lines, some subsurface work is required during installation. This disturbance occurs at discrete locations along the route, with temporary spoils contained as they are generated. The Company has a procedure in place to safely identify, manage, and dispose of any suspected hazardous or contaminated media encountered during construction. If contaminated soil or groundwater are identified, the associated regulatory agency will be coordinated with and the soils disposed of in accordance with applicable regulations.

Care will be taken to operate and maintain construction equipment to prevent any fuel or oil spills. Any waste created by the construction crews will be disposed of in a proper manner and recycled where appropriate. This is 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

On behalf of the Company, ERM conducted online database searches for threatened and endangered species in the vicinity of the Project, including the DCR Natural Heritage Data Explorer ("NHDE"). The NHDE includes Conservation Sites, Stream Conservation Units ("SCUs"), General Location Areas for Natural Heritage Resources, and Ecological Cores. ERM also obtained query results from the Virginia Department of Wildlife Resources ("DWR") Fish and Wildlife Information Service ("VaFWIS") and the USFWS Information for Planning and Consultation ("IPaC") System to identify federally and state-listed species that may occur within the study area. Digital data were obtained from the DCR NHDE to identify locations within the study area that potentially support protected species. Results of these queries are provided in Attachment 2.G.1.

Database queries of the above referenced sources identified multiple federally and state-listed threatened and endangered species within and adjacent to the study area (Table G-1). The Northern long-eared bat ("NLEB") (*Myotis septentrionalis*) and the Dwarf wedgemussel (*Alasmidonta heterodon*), are federally listed species (both of which are also state-listed) and have the potential to occur within the study area, as do the following five additional state-listed species: the Wood turtle (*Glyptemys insculpta*), the Tricolored bat ("TCB") (*Perimyotis subflavus*), the Green floater (*Lasmigona subviridis*), the Peregrine falcon (*Falco peregrinus*), and Torrey's mountain mint (*Pycnanthemum torreyi*). The federal listings of the TCB and Green floater have been proposed, but neither have been officially listed. The Monarch butterfly (*Danaus plexippus*) was also identified in the query but it is a candidate species.

According to the VaFWIS query, the state-listed Wood turtle and Green floater have been confirmed as present within a 2.0-mile radius of the geographic center of the study area.

Of the seven species, only the Green floater species has the potential to be impacted by construction and operation of the Apollo-Twin Creeks Lines along the Proposed Route due to the crossing of Goose Creek. No instream work will be performed; however, the right-of-way will be cleared adjacent to the streambank, which may have a minor impact to the stream, though not anticipated to be significant as it is within a centralized perpendicular crossing.

For additional information, see Section 6.4.5 of the Environmental Routing Study.

TABLE G-1
Apollo-Twin Creeks 230 kV Electric Transmission Project

Potential Federal and State-Listed Species in the Project Area

Species	Status	Database	Habitat	Results
Northern long-eared bat (*Myotis septentrionalis*)	FE, ST	USFWS IPaC, DWR Winter Habitat and Roost Tree Map	Generally associated with old-growth or late successional interior forests. Partially dead or decaying trees are used for breeding, summer day roosting, and foraging. Hibernation occurs primarily in caves, mines, and tunnels.	Summer foraging habitat present, but no hibernacula or roost trees identified within a 0.5-mile radius of the Proposed Route.
Tricolored bat (*Perimyotis subflavus)*	FPE, SE	USFWS IPaC, DWR Winter Habitat and Roost Tree Map	Typically roost in trees near forest edges during summer. Hibernate deep in caves or mines in areas with warm, stable temperatures during winter.	Summer foraging habitat present, but no hibernacula or roost trees identified within 0.5-mile radius of the Proposed Route
Dwarf wedgemussel (*Alasmidonta heterodon*)	FE, SE	USFWS IPaC	Large rivers and small streams, often burrowed into clay banks among the root systems of trees; also associated with mixed substrates of cobble, gravel, and sand.	Species not confirmed as present, and no instream work would be performed. No impacts are anticipated.
Green floater (*Lasmigona subviridis)*	FPT, ST	USFWS IPaC, VaFWIS	Small to medium streams in quiet pools and eddies with gravel and sand substrates.	VaFWIS Search Report confirmed species presence within 2.0-mile radius of study area geographic center. No instream work would be performed; however, shading along the Goose Creek streambank would be reduced due to tree clearing.
Wood turtle (*Glyptemys insculpta*)	ST	VaFWIS	Forested streams, and floodplains, wet meadows, and open fields or farmland with a perennial stream nearby.	VaFWIS Search Report confirmed species presence within 2.0-mile radius of study area geographic center. The Proposed Route does not intersect the area of observation. No impacts are anticipated.
Peregrine falcon (*Falco peregrinus*)	ST	DCR-DNH	Nest on cliffs, bluffs, talus slopes, old tree hollows, and abandoned nests of other birds of prey.	Non-database sources confirmed as present, but nesting habitat is not crossed by the Proposed Route.

TABLE G-1 Apollo-Twin Creeks 230 kV Electric Transmission Project Potential Federal and State-Listed Species in the Project Area				
Species	Status	Database	Habitat	Results
Torrey's mountain mint (*Pycnanthemum torreyi*)	ST	DCR-DNH	Dry upland forests; rocky woodlands over mafic, ultramafic, or calcareous rocks; edges of sandstone glades; dry-mesic barrens; thickets; upland meadows; and powerline rights-of-way.	Species not confirmed as present, and potential habitat is likely not present.
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

On behalf of the Company, ERM submitted the Project to the Virginia Department of Conservation and Recreation ("DCR") Division of Natural Heritage ("DNH") for review. The DCR completed its review on February 15, 2024, as discussed in detail below (see Attachment 2.G.1).

DCR indicated that one Conservation Site is present within the study area, the Ashburn Quarry Conservation Site.

Ashburn Quarry Conservation Site

Located east of Goose Creek, the Ashburn Quarry Conservation Site consists of approximately 280.5 acres of quarry land and has a conservation rating of B5, which represents a site of general interest or open space significance. Quarries can resemble natural cliff surfaces and act as habitat for certain species. The natural heritage resource associated with this site is the Peregrine falcon (*Falco peregrinus*). Peregrine falcons are currently state listed as threatened in Virginia and are federally protected under the Migratory Bird Treaty Act, which makes it unlawful to "take, kill, possess, transport, or import migratory birds, or their eggs, parts, or nests" without a federal permit from the USFWS (16 U.S.C. §703). Intentional take is considered to be direct and affirmative purposeful actions that reduce migratory birds, their eggs, or their nests. Peregrine falcon nests naturally exist on cliffs, bluffs, talus slopes, old tree hollows, and abandoned nests of other birds of prey, and the Ashburn Quarry has created a habitat that resembles this natural environment for the Peregrine falcon. This site is an active quarry called the Leesburg Plant and is owned by Luck Stone Corporation. In 2019, a pair of nesting falcons were first observed in the quarry, where they raised four eyasses

(i.e., chicks).[5] The following year, the CCB released a report identifying breeding adults in Virginia, and the presence of the Ashburn Quarry breeding pair and four additional eyasses were confirmed in 2020.[6] This Conservation Site is in the western portion of the study area, and the right-of-way of the Proposed Route spans the Quarry east of the Goose Creek crossing for approximately 0.3 acre.

There are no SCUs located within the study area.

According to the official review, DCR-DNH concluded that the Project will not affect any documented state-listed plants or insects and does not cross any State Natural Area Preserves under DCR's jurisdiction. However, according to a DCR-DNH 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)." See Attachment 2.G.1.

Due to the potential for this site to support populations of natural heritage resources, DCR-DNH recommends coordination with Virginia's regulatory authority on the protection of the Peregrine falcon and an inventory for rare plants associated with diabase glades in the study area. With the survey results, DCR-DNH indicates that it can more accurately evaluate potential impacts to natural heritage resources and offer specific protection recommendations for minimizing impacts to documented resources.

Diabase Glades

With regard to DCR-DNH's recommendation for an inventory for rare plants associated with diabase glades, the Company notes, for context, that diabase refers to unique plant communities that form in certain circumstances in the presence of underlying igneous diabase rock. Most diabase associated plant species, whose occurrence in Virginia is often

---

[5] Booth, G. C. 2020. *Luck-y Birds*. Ashburn Magazine. Available online at https://www.ashburnmagazine.com/features/peregrine-falcons-choose-ashburn-quarry-to-raise-their-young/. Accessed January 2024.

[6] Watts, B. D., & Watts M. U. 2020. *Virginia peregrine falcon monitoring and management program: Year 2020 report.* Center for Conservation Biology Technical Report Series, CCBTR-20-17. William & Mary, Williamsburg, VA. 21 pp. Available online at: https://scholarworks.wm.edu/cgi/viewcontent.cgi?article=1675&context=ccb_reports. Accessed January 2024.

associated with diabase derived soils, are not formally listed as endangered or threatened. One plant species having the potential to occur is Torrey's mountain mint (*Pycnanthemum torreyi*), and this species is listed as threatened in Virginia. Most of these plants and associated habitat, while considered rare by DCR-DNH, are not protected by any regulations.

Impacts to the Diabase Flatrocks are primarily associated with quarrying and road construction, which have a very direct permanent impact to the habitats within a potential defined Project area. Electric transmission lines, as proposed in this Application, typically do not have a significant permanent impact outside of structure foundation locations. Habitat conversion is possible, but the transmission line corridor will be maintained as a natural emergent/scrub shrub habitat that resembles successional conditions that would allow for natural communities to exist within this converted habitat regime. The permanent impacts associated with the Project are discrete and limited to the structure foundation locations only.

Diabase communities are most likely to occur in semi-open areas that have a disturbance regime similar to that of pre-settlement wildfires, and that also have not been heavily infested by invasive plants. Areas that do not receive this type of intermediate disturbance (including areas that are subject to intense disturbance) typically do not provide high quality habitat for the diabase associated species.

Dominion Energy Virginia strives to be in compliance with local, state, and federal regulations. Rare species are not classified as endangered or threatened, so are not protected by any regulations, and a requirement to inventory these resources prior to construction would result in significant delay to the construction schedule, potentially increasing project costs.

Due to the low likelihood of diabase plants in the Project area, and the lack of any legal status via federal or state law for any of the plants identified in Attachment 2.G.1, excluding the Torrey's mountain mint which is classified as state-threatened, the Company concludes that DCR-DNH's recommendation for an inventory for rare plants associated with diabase glades in the Project area is not warranted. Due to the mostly forested and developed nature along the majority of the Proposed Route, it is unlikely that the diabase glade habitat that Torrey's mountain mint relies upon is present in the Project area, and therefore, it is unlikely that this species and other rare plant species of concern as identified by the VDCR are present, meaning an inventory is not warranted. In lieu of conducting an inventory of these resources prior to construction, Dominion Energy Virginia suggests that it provide the Company's construction team with information about the rare diabase plant species and coordinate with DCR-DNH if a species of concern is observed.

Peregrine falcon

For Peregrine falcons in Virginia, nesting typically begins in March, following a period of courtship. The falcons build their nests in a depression scraped in substrate such as dirt,

sand, or fine gravel. Nests can be reused multiple times over the course of many breeding seasons. The breeding season concludes when the young leave the nests, typically in June.

The existence of transmission lines has caused many migratory bird deaths – collisions with electric lines may kill up to 175 million birds annually, and electrocution from lines may kill hundreds of thousands more birds annually.[7] However, few electrocution records exist for the Peregrine falcon, and according to the data, Peregrine falcon electrocutions are rare.[8] Therefore, the close proximity of the transmission lines to the nesting area is unlikely to pose a risk to the species.

As discussed above, DCR-DNH would like the Company to coordinate with Virginia's regulatory authority to protect the Peregrine falcon within the Project area based on predicted suitable habitat and the confirmed presence of the species in 2019 and 2020. However, it should be noted that the Proposed Route and the proposed Sycolin Creek Substation are the only components of the Project that are nearby suitable habitat for the Peregrine falcon, and furthermore, both the Proposed Route and Sycolin Creek Substation avoid the steep slopes of the quarry that could be utilized by the falcon.

Therefore, no impacts are anticipated, and Dominion Energy Virginia concludes that the recommendation by DCR-DNH is unnecessary. In lieu of conducting a habitat assessment or coordinating with a regulatory authority, the Company agrees to limit disturbances to periods outside of the breeding season when the species is most vulnerable to human disturbance, provide its construction team with information about the Peregrine falcon, and to coordinate with DCR-DNH if the species of concern is observed along the Proposed Route or Sycolin Creek Substation during construction.

Ecological Cores

DCR also found that the Project area intersects multiple Ecological Cores with the ranks of C4 (moderate ecological integrity) and C5 (general ecological integrity). The DCR defines areas of 100 acres or greater of contiguous natural land cover associated with areas of high ecological value as ecological cores, which provide refuge for thousands of species of animals and plants, in addition to a variety of recreational opportunities and open space resources for the public. Because the quality of ecological cores varies across different landscapes, the DCR evaluates ecological cores using an Ecological Integrity Score that

[7] Manville II, A. M. 2005. *Bird strike and electrocutions at power lines, communication towers, and wind turbines: state of the art and state of the science - next steps toward mitigation*. Available online at: https://www.fs.usda.gov/psw/publications/documents/psw_gtr191/psw_gtr191_1051-1064_manville.pdf. Accessed January 2024.

[8] Avian Power Line Interaction Committee. 2006. Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006. Available online at: https://www.nrc.gov/docs/ML1224/ML12243A391.pdf. Accessed January 2024.

ranks the relative contribution of different ecosystem services, from C5 (General) to C1 (Outstanding).

During the Project routing process, ERM attempts to avoid higher-ranking ecological cores to the extent practicable, while also taking into consideration other routing constraints. When avoidance is not possible, ERM attempts to minimize the crossing length of higher-ranking ecological cores, collocate with existing linear corridors, cross previously cleared or disturbed areas, and to minimize fragmentation by following ecological core boundaries to the extent practicable. Where cores are crossed, the habitat is not fully lost as the transmission lines are maintained as open meadow/shrub habitat that is consistent with successional habitat. Ecological cores crossed by the Proposed Route are presented in Table G-2.

Table G-2
Apollo-Twin Creeks 230 kV Electric Transmission Project

Ecological Cores C4 (Moderate) through C5 (General) Crossed by 230 kV Apollo-Twin Creeks Lines

Route	Ecological Core Crossed
Proposed Route	○ C4 – Moderate ▪ Core ID 30885: The Proposed Route crosses this C4 core on the east side of Goose Creek for about 0.6 mile. Along with the Proposed Route, the proposed Starlight, Lunar, and Apollo Substations are located within this core. This core is an approximately 182-acre forested area along the east side of Goose Creek and contained by the intersection of Rt. 7 and Belmont Ridge Road. Historical aerial imagery indicates that the core was recently altered between June 2022 and the Spring of 2023 due to clear cutting of approximately 26.3 acres. The Proposed Route would impact approximately 3.6 acres of the ecological core. The proposed Starlight, Lunar, and Apollo Substations would impact a combined total of 12.8 acres of this core. In addition to the Project, the core encompasses the area planned for data center campuses (Campuses B and C), which will be cleared of vegetation. ○ C5 – General ▪ Core ID 31054: The Proposed Route crosses this core between Cochran Mill Road and Goose Creek. This core is an approximately 64-acre forested and open space area around the convergence of Sycolin Creek with Goose Creek, south of Cochran Mill Road and northwest of the Ashburn Quarry Conservation Site. The Proposed Route bisects the core for approximately 0.3 mile, which would impact 3.7 acres. No proposed substations are located within this C5 core. The core encompasses areas previously developed by commercial/industrial business. In addition to the Proposed Route, the core encompasses the area planned for a future data center (Campus A) and future Loudoun Water pump and sewage station facilities, both of which will clear vegetation from the site.

To summarize, the only cores crossed by the Proposed Route or within a substation site have rankings of C4 (Moderate) or C5 (General) and are in areas planned for future development, which will remove vegetation.

To obtain the most current eagle nest data, ERM reviewed the Center for Conservation Biology ("CCB") Virginia Eagle Nest Locator mapping portal, which provides information about the Virginia bald eagle (*Haliaeetus leucocephalus*) population, including the results of the CCB's annual eagle nest survey. Based on the CCB Virginia Eagle Nest Locator mapping portal, the study area is not located within an Eagle Concentration Area, and the Proposed Route, inclusive of the substations, does not intersect any Primary or Secondary Buffers of currently documented Bald eagle nests as identified in The Bald Eagle Protection Guidelines for Virginia (2012). According to the CCB database, there are no eagle nests within the study area. The closest nest (Nest ID LD1901) is approximately 5.0 miles southeast of the study area and was last observed to be occupied in 2023. The Proposed Route is not within the 660-foot management buffer for the nest. The Company will work with the appropriate jurisdictional agencies to minimize impacts on this species.

A copy of the database search results can be found in Attachment 2.G.1. Construction and maintenance of the new transmission line facilities could have minor impacts on wildlife; however, impacts on most species will be short-term in nature and limited to the period of construction. The Company will work with the appropriate jurisdictional agencies to minimize impacts on resources, as appropriate and indicated above, during implementation of the Project.

Proposed Route

The Proposed Route, inclusive of the five proposed substations, has the potential to affect approximately:

- 36.8 acres of forested habitat, which could provide summer habitat for the NLEB and TCB.
- One perennial stream (Goose Creek), which could provide habitat for the Wood turtle or Green floater.
- 2.3 acres of open space, which could provide habitat for Torrey's mountain mint.
- 20.0 acres across two ecological cores with a DCR ranking of C4 (Moderate) to C5 (General).

Impacts to bat habitat will be minimized through coordination with appropriate jurisdictional agencies and consideration of time of year restrictions ("TOYRs"), as discussed in Section 2.K, Wildlife Resources. Work within streams would be limited to temporary crossings, where necessary, with impacts limited to tree clearing at waterbody crossings and the reduction of riparian buffers. There would be no in-stream construction.

As described in Section 2.B, waterbodies will be maintained for proper drainage using culverts or other crossing devices. Outside of structure placement, there would be no permanent impacts to open land habitat.

New and updated information is continually added to DCR's Biotics database. The Company shall re-submit Project information and a map for an update on this natural heritage information if the scope of the Project changes and/or six months have passed before this information is utilized.[9]

H. Erosion and Sediment Control

The DEQ approved the Company's *Standards & Specification for Erosion & Sediment Control and Stormwater Management for Construction of Linear Electric Transmission Facilities (TE VEP 8000).* 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 February 27, 2024, is provided as Attachment 2.H.1. According to the approval letter, coverage is effective from February 27, 2024, through February 26, 2025.

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

ERM conducted a Stage I Pre-Application Analysis ("Stage I Analysis") of potential impacts on cultural resources for the Apollo-Twin Creeks Proposed Route in accordance with the Virginia Department of Historic Resources' ("VDHR") *Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia* (Guidelines) (VDHR 2008). A copy of the Stage I Analysis, which was provided to VDHR on March 26, 2024, 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 located within a 1.5-mile radius of each route centerline.
- National Register of Historic Places ("NRHP")-listed properties, NHLs, battlefields, and historic landscapes within a 1.0-mile radius of each route centerline.
- NRHP-eligible and -listed properties, NHLs, battlefields, and historic landscapes within a 0.5-mile radius of each route centerline.

[9] The Company updated this commitment consistent with discussions held between the Company and DCR representatives on August 23, 2022.

- Qualifying architectural resources and archaeological sites located within the right-of-way for each route.

- Information on cultural resources within each of these study tiers was obtained from the Virginia Cultural Resources Information System ("VCRIS").

In addition to the VCRIS, ERM collected information from the Loudoun County Preservation Society (2023), Loudoun County Heritage Commission (2023), Loudoun County Preservation and Conservation Commission (2023), and the Loudoun County African-American Historic Architectural Resources Survey (2004) to find locally significant resources within a 1.0-mile radius of the centerline. Two locally significant resources were identified within the relevant study tiers for the Apollo-Twin Creeks Proposed Route during the data collection effort. ERM additionally collected information on battlefields surveyed and assessed by the National Park Service's American Battlefield Protection Program ("ABPP") (NPS 2023). No additional ABPP study areas, core areas, or potential NRHP boundaries for battlefields, beyond resources included in the VCRIS, were identified within the relevant study tiers for the Proposed Route through this source.

Along with a records review carried out for the four tiers as defined by VDHR, ERM also conducted field assessments of the considered aboveground resources for the Proposed Route in accordance with the VDHR Guidelines. Digital photographs of each resource and views of the proposed transmission line were taken. Photo simulations were prepared to assess potential viewshed impacts from construction of the proposed transmission line for each considered resource in the vicinity of the Proposed Route. For previously recorded archaeological sites under consideration, aerial photographs were examined to assess the current land condition and the spatial relationship between the sites and any existing or planned transmission lines.

A summary of the considered resources identified in the vicinity of the Proposed Route, inclusive of the five substations, 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 right-of-way of the Apollo-Twin Creeks Proposed Route 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 0-0.5-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 (to be completed following the selection of a route) is necessary to determine which resources would be visually impacted and to survey for additional unrecorded resources.

The nature of the impacts on cultural resources from construction and operation of the Project, while estimated in this study with the assistance of photo simulations, 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.

Proposed Route

Six aboveground historic resources were identified within the VDHR study tiers for the Proposed Route, inclusive of the five proposed substations (Table I-1).[10] Of these, ERM's analysis aided by simulations indicates that three resources would have no view of the Apollo-Twin Creeks Lines and associated substations due to intervening topography, vegetation, or structure. These sites are:

- Belmont Manor (053-0106) is located east of Belmont Ridge Road and south of Route 7, approximately 0.8 mile to the southeast of the Proposed Route and 0.8 mile to the southeast of the proposed Starlight Substation.
- Ball's Bluff Battlefield (053-5058) is located north of Rt. 7, approximately 1.0 mile to the north of the Proposed Route and 0.9 mile to the north of the proposed Apollo Substation.
- Ball's Bluff Battlefield and National Cemetery Historic District Boundary Increase (253-5182) is located north of Rt. 7 and along the Potomac River, approximately 1.4 miles to the northeast of the Proposed Route and 1.3 miles to the northeast of the proposed Apollo Substation.

The Project is predicted to have no impact on these resources. Three other sites would have some view of new transmission infrastructure installed along the Proposed Route or at the substation sites. These sites are discussed below.

The Washington and Old Dominion Railroad Historic District (053-0276) is located approximately 0.2 mile to the southwest of the Proposed Route, 0.2 mile southwest of the proposed Twin Creeks Substation, and 0.3 mile to the southwest of the proposed Sycolin Creek Substation. The surrounding area is wooded but also contains existing Dominion Energy Virginia substations and transmission corridor (containing Lines #203, #227, #274, and #2098). In fact, the historic district itself runs along and beneath the Company's

[10] This includes four resources identified in the VCRIS (053-0276, 053-0106, 053-5058, and 253-5182) and two resources identified as locally significant from local sources (053-0336 and 053-6238).

existing Lines #227 and #274. During operations, four transmission structures associated with the Proposed Route would be minimally visible from the resource where the route connects to Dominion Energy Virginia's existing Lines #203 and #2098, but the Project would not be visible from other vantage points. It is important to note that Dominion Energy Virginia's existing transmission lines are already a conspicuous element in the district's viewshed, as they share its right-of-way. Multiple existing Company substations also are visible directly adjacent to the historic district. Although the district's historic landscape has been severely altered by comparable infrastructure, because the Apollo-Twin Creeks Lines would be visible, this constitutes a change, if a minor one. Thus, ERM recommends that the Proposed Route would have a Minimal Impact on 053-0276. As noted in the Company's recently filed Aspen-Golden Application (Case No. PUR-2024-00032), the Aspen-Golden Lines would also be minimally visible from various locations in the district.

Along Goose Creek, Cooke's Mill (053-0336) is located 407 feet to the west of the Proposed Route, 587 feet to the west of the proposed Starlight Substation, and 560 feet to the northwest of the proposed Sycolin Creek Substation. The area between the resource and the route includes one residential property surrounded by dense vegetation consisting of mature trees. Only one transmission structure and its associated conductors would be visible from the eastern portion of the resource, through a clearing of trees. All other areas of the resource would have no visibility towards the route due to intervening vegetation. Because discrete locations within the resource would have limited views of the Apollo-Twin Creeks Proposed Route, installation of transmission infrastructure along the route would add modern elements to the historic viewshed, though the majority of the resource would have no view of the route. Thus, ERM recommends there would be no more than a Minimal Impact to the resource from the Proposed Route. As noted in the Company's recently filed Aspen-Golden Application (Case No. PUR-2024-00032), the Aspen-Golden Lines are closer to and would be minimally visible from the eastern portion of the resource at this location.

The African American Burial Ground for the Enslaved at Belmont (053-6238) is approximately 0.5 mile east of the Proposed Route, 0.4 mile southeast of the proposed Apollo Substation, 0.4 mile east of the proposed Lunar Substation, 0.5 mile northeast of the proposed Starlight Substation, and 0.8 mile northeast of the proposed Sycolin Creek Substation. No structures would be visible from inside of the resource boundary due to dense vegetation and all other areas within the cemetery trail would have no view of transmission infrastructure along the Proposed Route. The tip of one transmission structure would be visible from the entrance of the cemetery (about 235 feet outside of the VDHR boundary) where it is closest to the route. One area on Freedom Trail Road (about 100 feet outside of the VDHR boundary) would have an unobstructed sight line to the Aspen-Golden Project due to its location outside of the historic forested area. However, the proposed Starlight Substation and the tops of two structures on the Apollo-Twin Creeks Proposed Route would be visible from this location as well. The proposed Starlight Substation would appear in the distance.

TABLE I-1
Apollo-Twin Creeks 230 kV Electric Transmission Project
and
Resources in VDHR Tiers for Apollo-Twin Creeks Proposed Route

Buffer (miles)	Considered Resources	VDHR #	Description	Impact
1.0-1.5	National Historic Landmarks	253-5182	Ball's Bluff Battlefield & National Cemetery Historic District Boundary Increase	None
0.5-1.0	National Register—Listed	053-0106	Belmont Manor	None
	Battlefields	053-5058	Ball's Bluff Battlefield	None
	Historic Landscapes	NA	NA	NA
	National Register—Listed	NA	NA	NA
0.0- 0.5	National Register—Eligible	053-0276	Washington & Old Dominion Railroad Historic District	Minimal
		053-0336	Cooke's Mill	Minimal
	Locally Significant	053-6238	African American Burial Ground for the Enslaved at Belmont	Minimal
0.0 (within right-of-way)	National Register—Listed and Eligible	NA	NA	NA

NA = not applicable; VDHR = Virginia Department of Historic Resources

The Stage I Analysis also considered the potential effects to archaeological resources. Four archaeological sites are located within what would be the right-of-way for the Proposed Route and the five proposed substations: 44LD1999, 44LD2001, 44LD2002, and 44LD2012. Of these, 44LD1999, 44LD2001, and 44LD2002 have formally been determined not eligible for listing in the NRHP while 44LD2012 has not been formally evaluated to assess its eligibility for listing in the NRHP.

Site 44LD1999 is a domestic artifact scatter associated with a single dwelling dating from the Reconstruction and Growth to World War II periods. The site was identified in 2022 by Thunderbird Archeology, a division of Wetland Studies and Solutions, Inc., during a Phase I survey. Based on the results of the survey, the site was determined not eligible for listing in the NRHP. The current site setting appears to be undisturbed, based on a review of recent aerial photographs.

Site 44LD2001 is a multicomponent site consisting of a Pre-Contact temporary encampment and a historic artifact scatter from an undetermined cultural period. The site was identified in 2022 by Thunderbird Archeology. Portions of the site have been disturbed by historic-era plowing, likely affecting the site's integrity. The site was determined not eligible for listing in the NRHP as a result Thunderbird's survey. It is situated in a forested area east of Goose Creek and south of Harry Byrd Highway. It is likely that the footprint for the proposed Apollo Substation site will cover portions of 44LD1999.

Site 44LD2002 is interpreted as small lithic scatter representing a short-term temporary camp during an unknown period prior to European contact. The site was originally identified in a 2022 during a Phase I survey conducted by Thunderbird Archeology. As a result of the survey, the site was assessed ineligible for listing on the NRHP. The current site setting appears to be undisturbed, based on a review of recent aerial photographs.

Site 44LD2012 consists of a historic artifact scatter dating from the Post Cold War to the New Dominion cultural periods. The site is interpreted as a refuse area associated with a nearby mid-twentieth century dwelling. In their 2022 survey, Thunderbird Archaeology determined that up to a quarter of the site had been destroyed, though the site was not evaluated to determine its eligibility for listing in the NRHP. Based on the nature of the site and amount of disturbance that has occurred due to development, it is unlikely that intact cultural components are present.

On February 15, 2024, the Company solicited comments from several departments within Loudoun County. Dominion Energy Virginia received a response from the Loudoun County Planning and Zoning Department on March 13, 2024, which addresses, among other things, the potential visual impacts of the Project. A copy of that response is included as Attachment 2.I.2.

J. Chesapeake Bay Preservation Areas

Loudoun County is a locality subject to the Chesapeake Bay Preservation Act ("CBPA"), which regulates development of lands that could impact water quality in the Chesapeake Bay and its tributaries. Chesapeake Bay Preservation Areas that help maintain water quality are broken into Resource Protection Areas ("RPAs"), including tidal wetlands, tidal waterbodies, perennially flowing streams, wetlands associated with perennially flowing streams, and a 100-foot buffer around them; and Resource Management Areas, land that could degrade water quality or value of RPAs. As such, RPAs are located around perennial waterbodies and associated wetland areas along the Proposed Route, including Sycolin Creek, Goose Creek, other unnamed tributaries, and their associated wetlands.

Construction, installation, operation, and maintenance of electric transmission lines are conditionally exempt from the CBPA as stated in the exemption for public utilities, railroads, public roads and facilities in 9 VAC 25-830-150. The Company will meet those conditions. In addition, the Company will use Best Management Practices to limit impacts to RPAs to the minimum extent possible while safely and effectively constructing and maintaining its infrastructure.

K. Wildlife Resources

Relevant agency databases were reviewed and requests for comments from the USFWS, and DCR were submitted to determine if the Project has the potential to affect any threatened or endangered species. As discussed in Section 2.G and identified in Attachment 2.G.1, certain federal and state-listed species were identified as potentially occurring in the Project area. The Company will coordinate with the USFWS, DWR, and

DCR as appropriate to determine whether additional surveys are necessary and to minimize impacts on wildlife resources.

The Company is actively monitoring regulatory changes and requirements associated with the NLEB and how it could potentially impact construction timing associated with TOYRs. The USFWS has indicated that it plans to issue final NLEB guidance to replace the interim guidance, which expires on March 31, 2024. The Company actively is tracking updates from the USFWS with respect to the final guidance. Once issued, the Company plans to review and follow the final guidance to the extent it applies to the Company's projects. Until the final guidance is issued, the Company will continue following the interim guidance. For projects that may require additional coordination, the Company will coordinate with the USFWS.

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

L. Recreation, Agricultural, and Forest Resources

The Proposed Route is expected to have minimal, incremental impacts on recreational, agricultural, and forest resources. Opportunities for collocation with other rights-of-way, particularly the future Aspen-Golden Lines, were considered where possible as a means of avoiding or minimizing impacts on these resources. Based review of recent (2023) aerial photography and various databases, no agricultural lands are crossed by the Proposed Route. Where forested areas are crossed, trees would be removed, and vegetation kept to maintained heights within the right-of-way, though much of the Proposed Route crosses areas that will be developed into data centers within which vegetation will be removed.

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. According to the Virginia Department of Forestry, no Virginia Agricultural and Forestal Districts are crossed by the Proposed Route.

The Virginia Scenic Rivers Program identifies and designates outstanding scenic, recreational, and historic waterbodies of statewide significance to conserve their natural corridors. Goose Creek has been designated as a State Scenic River within Loudoun County under the Virginia Scenic Rivers System. To minimize impacts to the resource, the Proposed Route crosses Goose Creek along a common alignment with the Company's future Aspen-Golden Lines, a separate project.

Under the Virginia Open-Space Land Act, any public body can acquire title or rights to real property for the 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 but can be held in perpetuity. No easements of this type are crossed by the Proposed Route. The nearest VOF easement is approximately 0.2 mile west of the Proposed Route at the Goose Creek crossing. The Project would not impact resources within the easement or their preservation in perpetuity.

Any tree along 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 inspect the rights-of-way within the field and designate any danger trees present. Qualified contractors working in accordance with the Company's Electric Transmission specifications will perform all danger tree cutting. The Project is expected to have minimal impacts on forest resources.

On February 15, 2024, the Company solicited DCR, VOF and the Virginia Department of Forestry for comments on the Project. Dominion Energy Virginia received a response from VOF on February 16, 2024, indicating that the Project will not encroach on any existing or proposed VOF open-space easements. A copy of that response is included as Attachment 2.L.1.

Recreational, agricultural, and forest resources crossed by the Proposed Route are discussed below. An assessment of impacts on these resources is provided in the Environmental Routing Study.

Proposed Route

The Proposed Route crosses the Goose Creek State Scenic River at a perpendicular angle along an alignment adjacent to the future Aspen-Golden Lines within adjacent rights-of-way measuring 250-feet-wide. The Proposed Route crosses the creek about 0.2 mile northeast of the Washington & Old Dominion Trail ("W&OD Trail"; see below) and existing transmission lines, which create a perpendicular, linear clearing across Goose Creek. There are additional industrial uses in the vicinity, including mineral extraction, wastewater treatment, and pavement manufacturing. While the Proposed Route and future Aspen-Golden Lines would create a new, cleared corridor across a currently forested segment of Goose Creek, they would not affect the creek flow and impacts on setting would be mitigated through proximity to the W&OD Trail, transmission lines, and industrial uses. Moreover, the crossing location is between two bends in the creek, which would limit the visual impact from locations on the creek upstream and downstream of the new transmission lines. Construction noise could temporarily disturb some recreational activity

on the creek depending on season, but this would be temporary, limited to the period of construction in the immediate vicinity of the creek. Installation of the transmission line would not prevent uses of the creek, and though it could alter the viewshed, the alignment adjacent to the Aspen-Golden Lines and through a bend in the river would minimize visual effects.

The Proposed Route crosses Loudoun County's Scenic Creek Valley Buffer, a conservation overlay district that the County enforces to prevent construction adjacent to creeks or streams within watersheds greater than 640 acres. The Proposed Route crosses the Scenic Creek Valley Buffer for approximately 0.2 mile encompassing about 2.6 acres. On Campus B, a proffered 200-foot-wide transitional open space area adjacent to the 300-foot-wide Scenic Creek Valley Buffer off Goose Creek (which increases the buffer to 500-feet-wide) is proposed as part of zoning application to Loudoun County. In coordination with Dominion Energy Virginia, Customer B preferred the Project alignment right-of-way be located adjacent and within their proposed transitional open space buffer. In doing so, the transmission right-of-way would allow the transitional open space buffer to exist with grasses and shrubs and thus meet its open space goal. In discussions with Customer B, a Project alignment elsewhere on the property would result in locating data center buildings and substations closer to the creek in which the additional 200-foot-wide open space buffer would be compromised. Where the Proposed Route is located adjacent to the future Aspen-Golden Lines, the Company and Customer B are coordinating to have compatible native plantings for the transmission line easements within this buffer area.

The W&OD Trail is about 910 feet south of what would be the Proposed Route right-of-way at the Goose Creek crossing. The resource is a NOVA Parks-owned and maintained 45.0-mile-long paved trail between Shirlington and Purcellville, Virginia. Within the study area, the trail runs along other existing Company overhead transmission lines (Beaumeade-Belmont Line #227 and Beaumeade-Pleasant View Line #274). Due to distance and the intervening development, minimal impacts to the W&OD Trail are anticipated.

NRCS soils data indicates that no land classified as prime farmland is present within what would be the right-of-way of the Proposed Route, inclusive of the five proposed substations. The Proposed Route, inclusive of the proposed substations, encompasses 31.2 acres of lands classified as farmland of statewide importance. As noted above, however, there is no agricultural land along the Proposed Route or within the substation sites.

The Proposed Route crosses approximately 14.8 acres of forested lands. The five proposed substations (Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo) encompass a total of 22.0 acres of forested lands. Some of the forested land will be cleared for construction of Campuses A, B, and C.

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 rights-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 the 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, based on a discussion between Company and DCR-DNH representatives, the Company reviewed 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 will continue to meet with DCR to further discuss the documentation provided. Once the addendum is finalized, the Company will report on the results of its communications with DCR in future transmission certificate of public convenience and necessity filings.[11]

N. Geology and Mineral Resources

The Proposed Route, including the five proposed substations, are located within the Piedmont geologic province, which lies between the mountainous Blue Ridge province to

---

[11] *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 9-11 (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 certificate of public convenience and necessity ("CPCN") filing)*; *see also* Report of Alexander F. Skirpan, Jr., Chief Hearing Examiner (Jun. 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)*.

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 geologic terranes of the province are relatively complex where many of the rock units are separated by faults and contain various igneous and metamorphic histories. Based on review of the Geologic Map of Virginia, the Project is located within a Mesozoic basin between the Blue Ridge and Western Piedmont-Potomac Terranes. The bedrock underlying the entirety of the Proposed Route is Jurassic-age intrusive igneous mafic bedrock (diabase) (William and Mary Department of Geology 2024).

ERM reviewed publicly available Virginia Energy datasets (2024), USGS topographic quadrangles, and recent (2023) digital aerial photographs to identify mineral resources in the study area. There are two active mineral resource sites located within approximately 0.25 mile of the Proposed Route. The closest active permitted mining site, the Goose Creek Plant site, is on Cochran Mill Road adjacent to the Proposed Route. The closest inactive mineral occurrence is a diabase prospect belonging to Quarry A (Milestone Reservoir), an abandoned quarry approximately 100 feet southwest of the Proposed Route, east of Goose Creek. According to Loudoun Water, adjacent to this quarry is a zone of potential embankment with slope stability issues. Commonly referred to as the Goose Creek Dike, this zone received a factor of safety rating below the Corps Levee Design requirement for long-term stability of 1.4 (Arcadis 2022). The zone is located 100 feet south of the closest Proposed Route structure on the east side of Goose Creek. Due to the distance of this structure from the Proposed Route, Dominion Energy Virginia engineering concluded that construction and operation of the new transmission line would not likely impact or be impacted by this zone of embankment. By placing structures at high points, the Company determined that the conductors can safely span over Goose Creek and the adjacent steep banks. The Company will continue to coordinate with Loudoun Water, which operates Goose Creek Dike, regarding the embankment, and work with Loudoun Water on a plan to minimize clearing within the right-of-way near the dike in the segment of the Proposed Route spanning Goose Creek to avoid exacerbating slope stability issues.

O. Transportation Infrastructure

Road and Railroad Crossings

No railroads are crossed by the Proposed Route.

Proposed Route

The Proposed Route crosses one public roadway, Cochran Mill Road. No structures are planned to be placed within the public right-of-way.

In addition, there are two planned road extensions identified in the Loudoun County 2019 Countywide Transportation Roadway Plan: Gloucester Parkway and Russell

Branch Parkway. East of Goose Creek, the Proposed Route crosses each planned road extension once.

Temporary closures of roads and or traffic lanes could be required during construction of the Project. No long-term impacts on roads are anticipated. The Company will comply with the Virginia Department of Transportation ("VDOT") requirements for access to the rights-of-way from public roads. At the appropriate time, the Company will obtain the necessary VDOT permits as required and comply with permit conditions. The Company will work with Loudoun County to ensure existing and planned roads and proposed transmission facilities can co-exist.

On February 15, 2024, the Company solicited comments from VDOT on the proposed Project.

Airports

The design of the proposed Project must prevent interference with pilots' safe air travel in and out of airports. Such hazards or impediments include interference with navigation, communication equipment, and glare from materials and external lights.

ERM reviewed the Federal Aviation Administration's ("FAA") website 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 (nm) of the Proposed Route. Of the nine facilities identified by ERM in this area, seven are private and two are public use.

The Leesburg Executive Airport (1.4 nm to the southwest) and Dulles International Airport (7.6 nm to the southeast) are public facilities where the Project could potentially impact navigable airspace. ERM conducted an airport analysis to determine if any of the FAA defined Civil Airport Imaginary Surface would be penetrated by structures associated with the Project. ERM reviewed the height limitations associated with FAA-defined imaginary surfaces for all runways associated with these airports. Standard GIS tools, including ESRI's ArcMap 3D and Spatial Extension software were used to create and geo-reference the imaginary surfaces in space, and in relation to the locations and proposed heights of the transmission structures. Ground surface data for the study area was derived by using a USGS 10 Meter Digital Elevation Model. Based on the results of this review, ERM found there would be no potential for penetration into any of the imaginary surfaces associated with either Leesburg Executive Airport or Dulles International Airport. Thus, there would be no impacts to navigable airspace from the Project.

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, Dominion Energy Virginia will submit an FAA Form 7460-1 Notice pursuant to 14 CFR Part 77 for any tower locations that meet the review criteria.

On February 15, 2024, the Company solicited comments from the Virginia Department of Aviation on the proposed Project.

P. Drinking Water Wells

In response to an agency letter sent on February 15, 2024, Dominion Energy Virginia received an email from the Virginia Department of Health ("VDH"), Office of Drinking Water ("ODW") dated February 29, 2024, regarding potential Project impacts to public water distribution systems or sanitary sewage collection systems. A copy of this email is included as Attachment 2.P.1.

Although VDH-ODW made this recommendation, as a general matter, water wells within 1,000 feet of the Project may be outside of the transmission line corridor and located on private property. The Company does not have the ability or right to field mark wells on private property. In August 2021, the Company contacted VDH-ODW to propose a method of well protection, including plotting and calling out the wells on the Partial Rebuild 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.2. The Company intends to follow this same approach in this proceeding, as it has in other cases, and will coordinate with VDH-ODW, as needed.

Q. Pollution Prevention

Generally as to pollution prevention, as part of Dominion Energy Virginia's environmental compliance, the Company has a comprehensive Environmental Management System Manual in place that ensures it is committed to 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

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

February 15, 2024

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

RE: Dominion Energy Virginia's Proposed 230 kV Apollo-Twin Creeks Lines and Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo Substations in Loudoun County, Virginia

Dear Ms. Henicheck,

Dominion Energy Virginia (the "Company") is proposing to construct a new double circuit 230 kilovolt ("kV") transmission line entirely in new right-of-way (the "Apollo-Twin Creeks Lines"), and to construct five new 230-34.5 kV substations on property to be obtained by the Company (the "Twin Creeks Substation," "Sycolin Creek Substation," "Starlight Substation," "Lunar Substation," and "Apollo Substation") in Loudoun County, Virginia (collectively, the "Apollo-Twin Creeks Project" or the "Project").

The Project is necessary to ensure that Dominion Energy Virginia can provide electric service requested by three customers (the "Customers") in Loudoun County, Virginia, and to maintain reliable electric service consistent with North American Electric Reliability Corporation Reliability Standards for the overall growth in the load area.

The Company is in the process of preparing an application for a certificate of public convenience and necessity ("CPCN") from the State Corporation Commission of Virginia (the "Commission"). Pursuant to the July 2003 Memorandum Wetlands Impact Consultation, Dominion Energy Virginia is sending this letter to initiate consultation with the Virginia Department of Environmental Quality prior to filing an application for a CPCN from the Commission.

A wetland delineation has not been conducted by the Company at this time. However, Environmental Resources Management ("ERM") conducted a wetland desktop study to identify probable wetlands based on a review of multiple data sources. The table below provides a summary of the medium to high probability wetlands expected to be present within the proposed Project right-of-way.

Table 1: Summary of the Probabilities of Wetland and Waterbody Occurrence along the Proposed Route for the Apollo-Twin Creeks Lines [a]

Probability	Total within right-of-way Acres [b, c]	Wetland and Waterbody type (acres)				
		PEM (Emergent)	PFO (Forested)	PSS (Scrub-shrub)	PUB (Freshwater pond)	Riverine (Stream)
Proposed Route [d]						
High	NA	NA	NA	NA	NA	NA
Medium/High	0.6	0.2	NA	NA	NA	0.3
Medium	0.4	NA	NA	0.0	0.1	0.3

NA *Not applicable due to absence of wetland or waterbody type within the route.*

a *The numbers in this table have been rounded for presentation purposes; as a result, the sums may not equal the totals due to rounding.*

b *Total acres may not total the sum of wetland and waterbody types. This is due to some of the lower probability rankings not overlapping with NWI or interpreted wetlands, and therefore not having a wetland/waterbody type associated with them.*

c *The Company identified a field delineation which had been completed by an external party in association with one of the three Customers. This field delineation was used to outline boundaries of potential wetlands in these locations in lieu of the wetland desktop delineation method and as such, these field delineated boundaries are incorporated into the wetland and waterbody probability table.*

d *Wetlands and waterbodies within the proposed Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo Substation footprints are included within the Proposed Route.*

The full Wetland Desktop Study will be submitted once finalized. Subsequently, a field wetland delineation will be conducted and the extent of wetlands of other waters of the United States will be submitted to the U.S. Army Corps of Engineers for confirmation.

At this time, in advance of filing an application with the Commission, the Company respectfully requests that you submit any comments or additional information you feel would have bearing on the Project within 30 days of the date of this letter.

Enclosed is a Project Overview Map depicting the proposed route for the Apollo-Twin Creeks Lines, the location of the proposed Twin Creeks, Sycolin Creek, Starlight, Lunar and Apollo Substations, and the general Project location of the Apollo-Twin Creeks Project. Note that the Project Overview Map also depicts the location of future transmission facilities associated with the Aspen-Golden Project. The Company solicited comments from all relevant state and local agencies regarding the Aspen-Golden Project on February 6, 2024. To the extent the Apollo-Twin Creeks Project and the Aspen-Golden Project are located within the same project area and are in some instances collocated within proposed new right-of-way, the Company included those Aspen-Golden Project facilities on the Project Overview Map for reference. However, to be clear, the Aspen-Golden Project facilities identified on the Project Overview Map are not being proposed for filing as part of Apollo-Twin Creeks CPCN application.

Finally, attached is a GIS shapefile of the proposed route to assist in your project review. Please do not hesitate to contact Heather Kennedy at 804-317-9930 or heather.e.kennedy@dominionenergy.com if you have any additional questions.

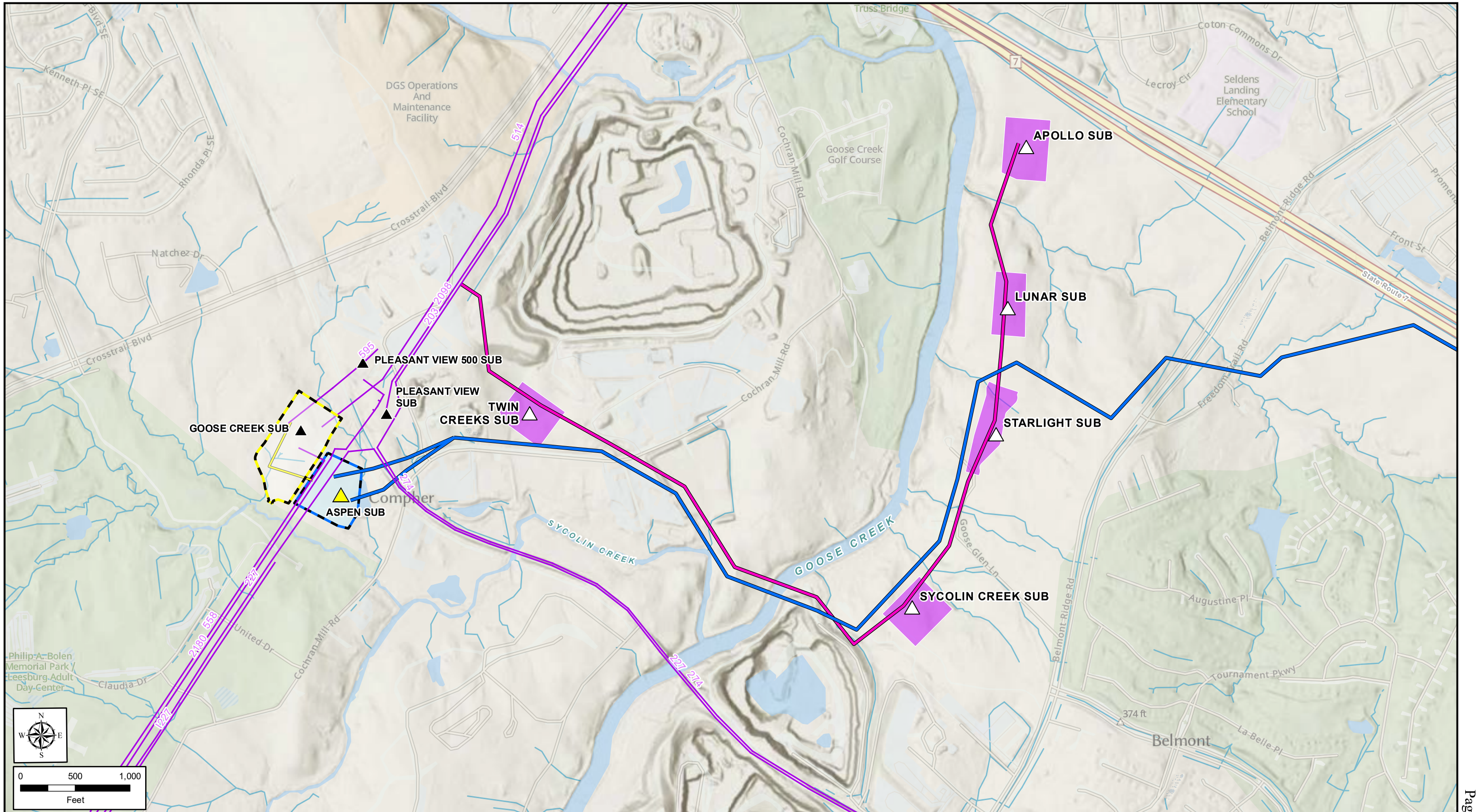
We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

Sincerely,

Dominion Energy Virginia

Elizabeth L. Hester
Manager, Environmental Services

Attachment: Project Overview Map
GIS Shapefiles



Project Overview Map

230 kV Apollo-Twin Creeks Lines, Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo Substations
Dominion Energy Virginia
Loudoun County, Virginia

ERM

Dominion Energy

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

February 15, 2024

RE: Dominion Energy Virginia's Proposed 230 kV Apollo-Twin Creeks Lines and Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo Substations in Loudoun County, Virginia

To Whom It May Concern:

Dominion Energy Virginia (the "Company") is proposing to construct a new double circuit 230 kilovolt ("kV") transmission line entirely in new right-of-way (the "Apollo-Twin Creeks Lines"), and to construct five new 230-34.5 kV substations on property to be obtained by the Company (the "Twin Creeks Substation," "Sycolin Creek Substation," "Starlight Substation," "Lunar Substation," and "Apollo Substation") in Loudoun County, Virginia (collectively, the "Apollo-Twin Creeks Project" or the "Project").

The Project is necessary to ensure that Dominion Energy Virginia can provide electric service requested by three customers (the "Customers") in Loudoun County, Virginia, and to maintain reliable electric service consistent with North American Electric Reliability Corporation Reliability Standards for the overall growth in the load area.

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

Enclosed is a Project Overview Map depicting the proposed route for the Apollo-Twin Creeks Lines, the location of the proposed Twin Creeks, Sycolin Creek, Starlight, Lunar and Apollo Substations, and the general Project location of the Apollo-Twin Creeks Project. Note that the Project Overview Map also depicts the location of future transmission facilities associated with the Aspen-Golden Project. The Company solicited comments from all relevant state and local agencies regarding the Aspen-Golden Project on February 6, 2024. To the extent the Apollo-Twin Creeks Project and the Aspen-Golden Project are located within the same project area and are in some instances collocated within proposed new right-of-way, the Company included those Aspen-Golden Project facilities on the Project Overview Map for reference. However, to be clear, the Aspen-Golden Project facilities identified on the Project Overview Map are not being proposed for filing as part of Apollo-Twin Creeks CPCN application.

Finally, attached is a GIS shapefile of the proposed route to assist in project review. If you have any questions, please contact Heather Kennedy at 804-317-9930 or heather.e.kennedy@dominionenergy.com.

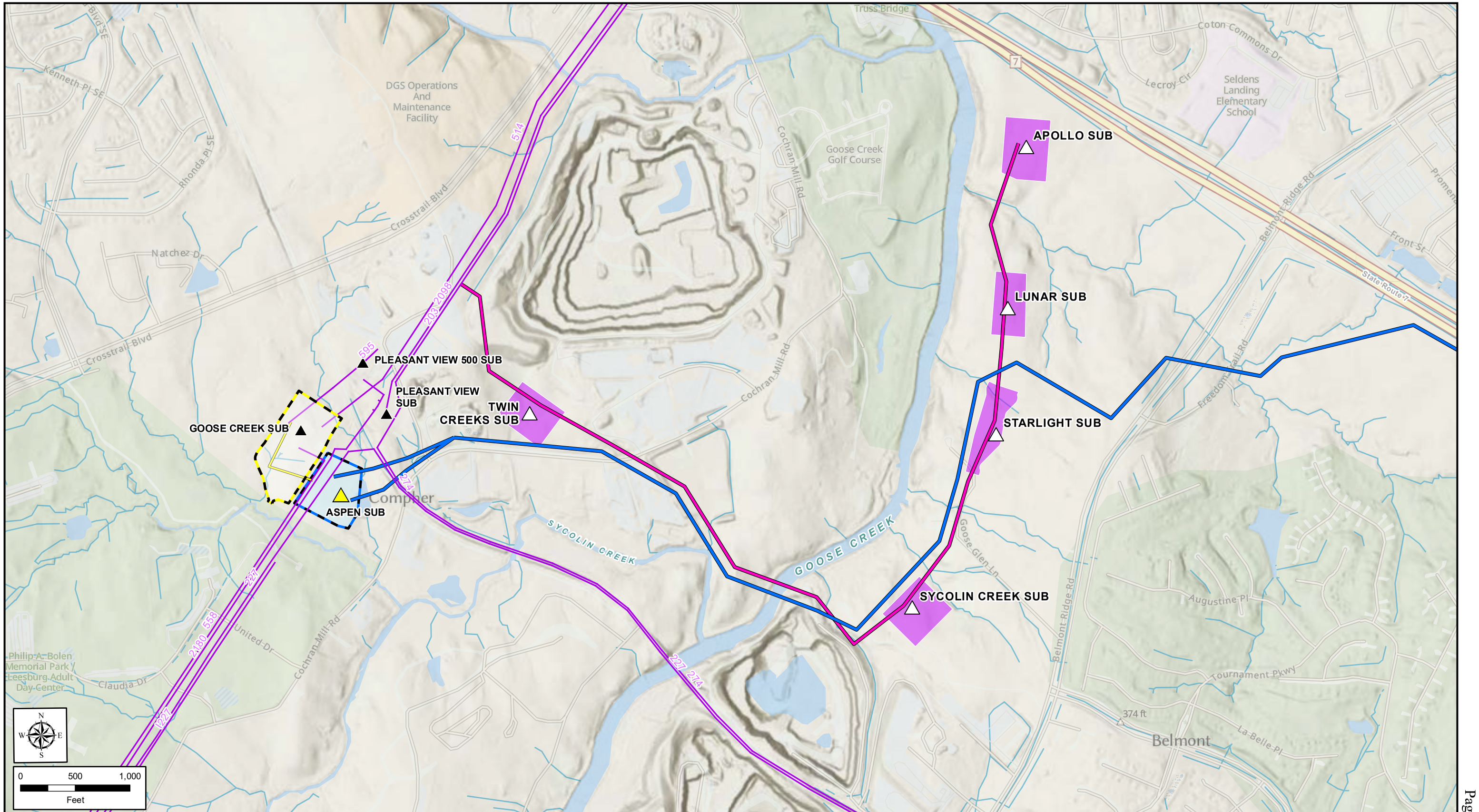
We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

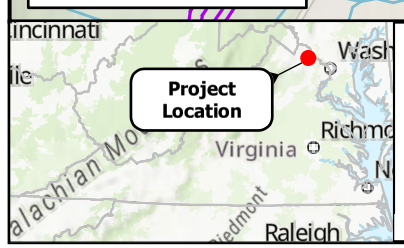
Sincerely,

Dominion Energy Virginia

Elizabeth L. Hester
Manager, Environmental Services

Attachment: Project Overview Map
GIS Shapefiles





Existing Facilities
- Existing Substation
- Existing Dominion Transmission Line
- Existing Substation Boundary

Apollo-Twin Creeks Project
- Proposed Substation
- Proposed Apollo–Twin Creeks Lines
- Proposed Substation Boundary

Aspen-Golden Project (Separate Filing)
- Future Aspen Substation
- Future Aspen–Golden Lines Proposed Route
- Future Aspen-Goose Creek Line
- Future Substation Boundary

Project Overview Map

230 kV Apollo-Twin Creeks Lines, Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo Substations

Dominion Energy Virginia

Loudoun County, Virginia

ERM

Dominion Energy

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

February 15, 2024

BY EMAIL

Mr. Bill Cuttler, P.E.
District Engineer
Virginia Department of Transportation, Northern Virginia
4795 Alliance Dr.
Fairfax, VA 22030

RE: Dominion Energy Virginia's Proposed 230 kV Apollo-Twin Creeks Lines and Twin Creeks, Sycolin Creek, Starlight, Lunar and Apollo Substations in Loudoun County, Virginia.

Dear Mr. Cuttler:

Dominion Energy Virginia (the "Company") is proposing to construct a new double circuit 230 kilovolt ("kV") transmission line entirely in new right-of-way (the "Apollo-Twin Creeks Lines"), and to construct five new 230-34.5 kV substations on property to be obtained by the Company (the "Twin Creeks Substation," "Sycolin Creek Substation," "Starlight Substation," "Lunar Substation," and "Apollo Substation") in Loudoun County, Virginia (collectively, the "Apollo-Twin Creeks Project" or the "Project").

The Project is necessary to ensure that Dominion Energy Virginia can provide electric service requested by three customers (the "Customers") in Loudoun County, Virginia, and to maintain reliable electric service consistent with North American Electric Reliability Corporation Reliability Standards for the overall growth in the load area.

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

Enclosed is a Project Overview Map depicting the proposed route for the Apollo-Twin Creeks Lines, the location of the proposed Twin Creeks, Sycolin Creek, Starlight, Lunar and Apollo Substations, and the general Project location of the Apollo-Twin Creeks Project. Note that the Project Overview Map also depicts the location of future transmission facilities associated with the Aspen-Golden Project. The Company solicited comments from all relevant state and local agencies regarding the Aspen-Golden Project on February 6, 2024. To the extent the Apollo-Twin Creeks Project and the Aspen-Golden Project are located within the same project area and are in some instances collocated within proposed new right-of-way, the Company included those Aspen-Golden Project facilities on the Project Overview Map for reference. However, to be clear, the Aspen-Golden Project facilities identified on the Project Overview Map are not being proposed for filing as part of Apollo-Twin Creeks CPCN application.

All final materials, including maps, will be available in the Company's application filing to the Commission.

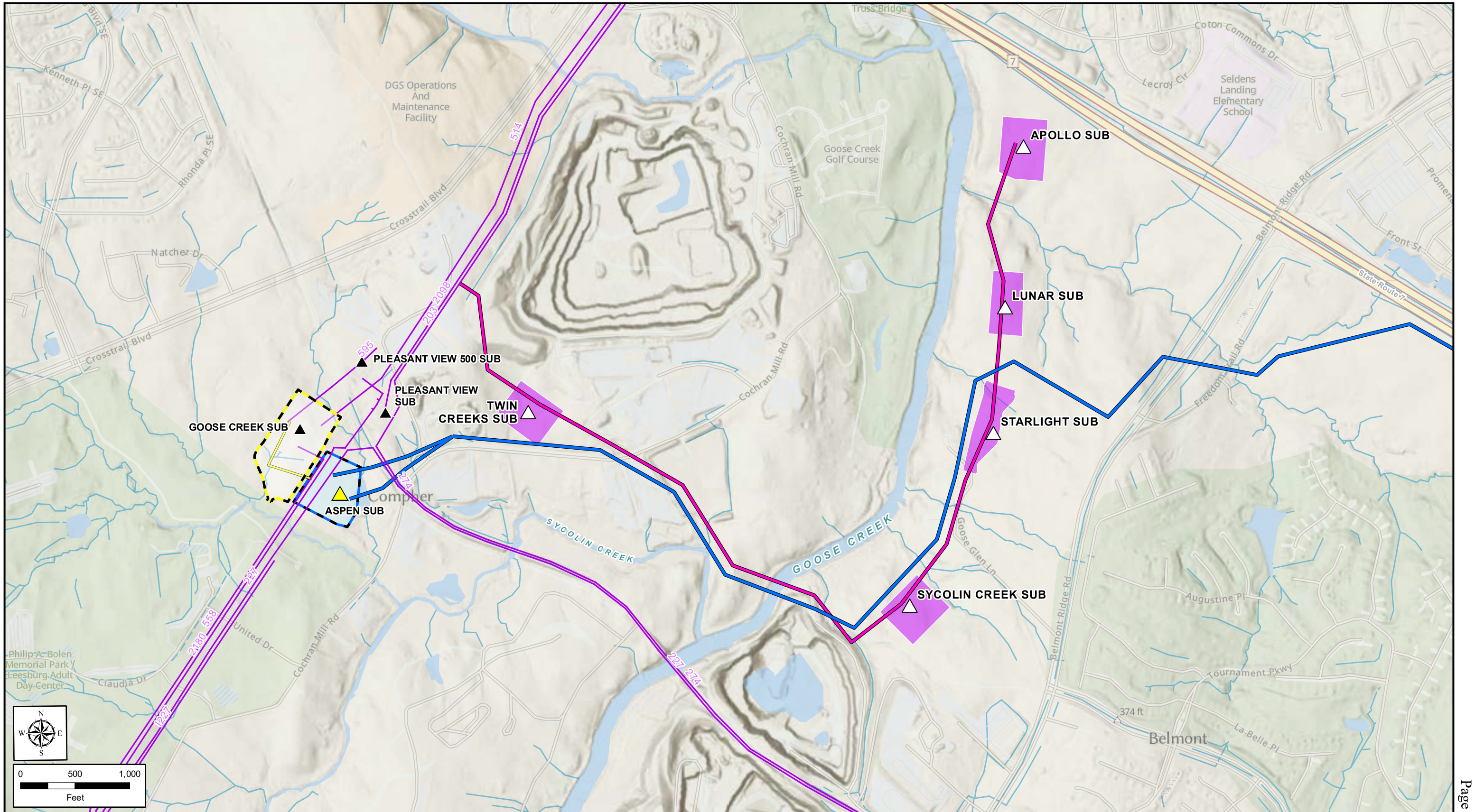
If you would like to receive a GIS shapefile of the transmission line route to assist in the project review or if there are any questions, please do not hesitate to contact Craig Hurd at 804-201-5020 or craig.r.hurd@dominionenergy.com. We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

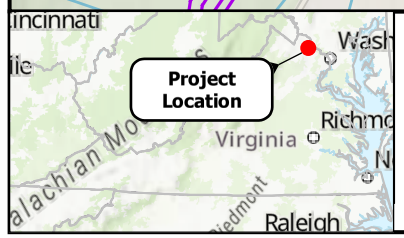
Sincerely,

Craig Hurd

Craig R. Hurd
Siting and Permitting
Dominion Energy Virginia

Attachment: Project Overview Map





Existing Facilities
- Existing Substation
- Existing Dominion Transmission Line
- Existing Substation Boundary

Apollo-Twin Creeks Project
- Proposed Substation
- Proposed Apollo–Twin Creeks Lines
- Proposed Substation Boundary

Aspen-Golden Project (Separate Filing)
- Future Aspen Substation
- Future Aspen–Golden Lines Proposed Route
- Future Aspen-Goose Creek Line
- Future Substation Boundary

Project Overview Map

230 kV Apollo-Twin Creeks Lines, Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo Substations
Dominion Energy Virginia
Loudoun County, Virginia

ERM

Dominion Energy

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

February 15, 2024

BY EMAIL

Mr. Daniel Galindo
Loudoun County Director of Planning
P.O. Box 7000
Leesburg, Virginia 20177-7000

RE: Dominion Energy Virginia's Proposed 230 kV Apollo-Twin Creeks Lines and Twin Creeks, Sycolin Creek, Starlight, Lunar and Apollo Substations in Loudoun County, Virginia.

Dear Mr. Galindo:

Dominion Energy Virginia (the "Company") is proposing to construct a new double circuit 230 kilovolt ("kV") transmission line entirely in new right-of-way (the "Apollo-Twin Creeks Lines"), and to construct five new 230-34.5 kV substations on property to be obtained by the Company (the "Twin Creeks Substation," "Sycolin Creek Substation," "Starlight Substation," "Lunar Substation," and "Apollo Substation") in Loudoun County, Virginia (collectively, the "Apollo-Twin Creeks Project" or the "Project").

The Project is necessary to ensure that Dominion Energy Virginia can provide electric service requested by three customers (the "Customers") in Loudoun County, Virginia, and to maintain reliable electric service consistent with North American Electric Reliability Corporation Reliability Standards for the overall growth in the load area.

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

Enclosed is a Project Overview Map depicting the proposed route for the Apollo-Twin Creeks Lines, the location of the proposed Twin Creeks, Sycolin Creek, Starlight, Lunar and Apollo Substations, and the general Project location of the Apollo-Twin Creeks Project. Note that the Project Overview Map also depicts the location of future transmission facilities associated with the Aspen-Golden Project. The Company solicited comments from all relevant state and local agencies regarding the Aspen-Golden Project on February 6, 2024. To the extent the Apollo-Twin Creeks Project and the Aspen-Golden Project are located within the same project area and are in some instances collocated within proposed new right-of-way, the Company included those Aspen-Golden Project facilities on the Project Overview Map for reference. However, to be clear, the Aspen-Golden Project facilities identified on the Project Overview Map are not being proposed for filing as part of Apollo-Twin Creeks CPCN application.

All final materials, including maps, will be available in the Company's application filing to the Commission.

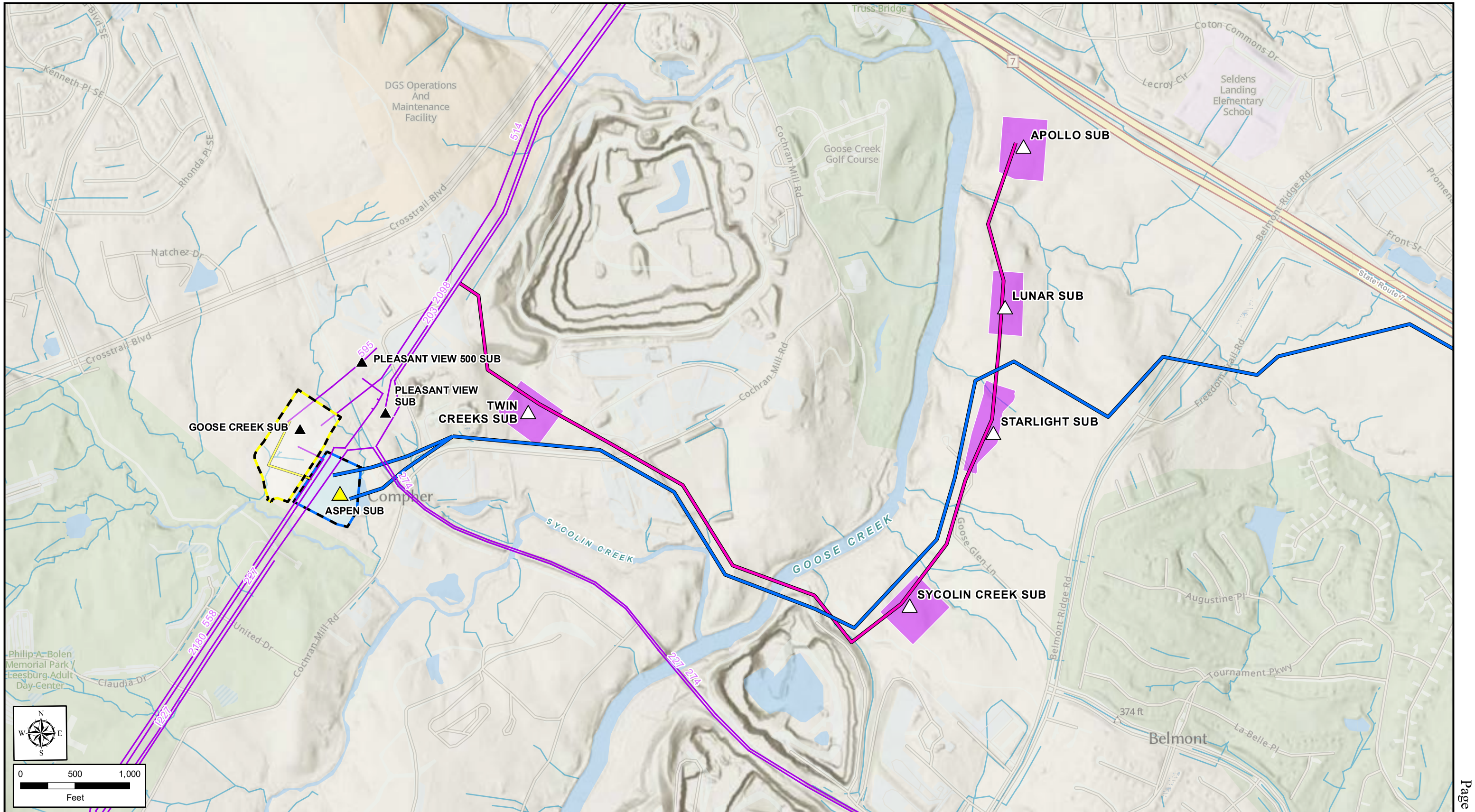
If you would like to receive a GIS shapefile of the transmission line route to assist in the project review or if there are any questions, please do not hesitate to contact Craig Hurd at 804-201-5020 or craig.r.hurd@dominionenergy.com. We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

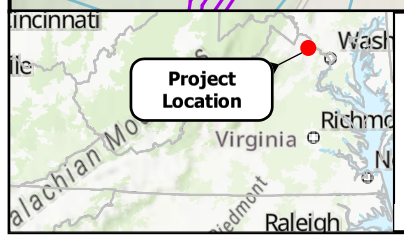
Sincerely,

Craig Hurd

Craig R. Hurd
Siting and Permitting
Dominion Energy Virginia

Attachment: Project Overview Map





Existing Facilities
- Existing Substation
- Existing Dominion Transmission Line
- Existing Substation Boundary

Apollo-Twin Creeks Project
- Proposed Substation
- Proposed Apollo–Twin Creeks Lines
- Proposed Substation Boundary

Aspen-Golden Project (Separate Filing)
- Future Aspen Substation
- Future Aspen–Golden Lines Proposed Route
- Future Aspen-Goose Creek Line
- Future Substation Boundary

Project Overview Map

230 kV Apollo-Twin Creeks Lines, Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo Substations
Dominion Energy Virginia
Loudoun County, Virginia

ERM

Dominion Energy

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

February 15, 2024

BY EMAIL

Mr. James Betz
Virginia Department of Transportation
41 Lawson Rd. S.E.
Leesburg, VA 20175

RE: Dominion Energy Virginia's Proposed 230 kV Apollo-Twin Creeks Lines and Twin Creeks, Sycolin Creek, Starlight, Lunar and Apollo Substations in Loudoun County, Virginia.

Dear Mr. Betz:

Dominion Energy Virginia (the "Company") is proposing to construct a new double circuit 230 kilovolt ("kV") transmission line entirely in new right-of-way (the "Apollo-Twin Creeks Lines"), and to construct five new 230-34.5 kV substations on property to be obtained by the Company (the "Twin Creeks Substation," "Sycolin Creek Substation," "Starlight Substation," "Lunar Substation," and "Apollo Substation") in Loudoun County, Virginia (collectively, the "Apollo-Twin Creeks Project" or the "Project").

The Project is necessary to ensure that Dominion Energy Virginia can provide electric service requested by three customers (the "Customers") in Loudoun County, Virginia, and to maintain reliable electric service consistent with North American Electric Reliability Corporation Reliability Standards for the overall growth in the load area.

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

Enclosed is a Project Overview Map depicting the proposed route for the Apollo-Twin Creeks Lines, the location of the proposed Twin Creeks, Sycolin Creek, Starlight, Lunar and Apollo Substations, and the general Project location of the Apollo-Twin Creeks Project. Note that the Project Overview Map also depicts the location of future transmission facilities associated with the Aspen-Golden Project. The Company solicited comments from all relevant state and local agencies regarding the Aspen-Golden Project on February 6, 2024. To the extent the Apollo-Twin Creeks Project and the Aspen-Golden Project are located within the same project area and are in some instances collocated within proposed new right-of-way, the Company included those Aspen-Golden Project facilities on the Project Overview Map for reference. However, to be clear, the Aspen-Golden Project facilities identified on the Project Overview Map are not being proposed for filing as part of Apollo-Twin Creeks CPCN application.

All final materials, including maps, will be available in the Company's application filing to the Commission.

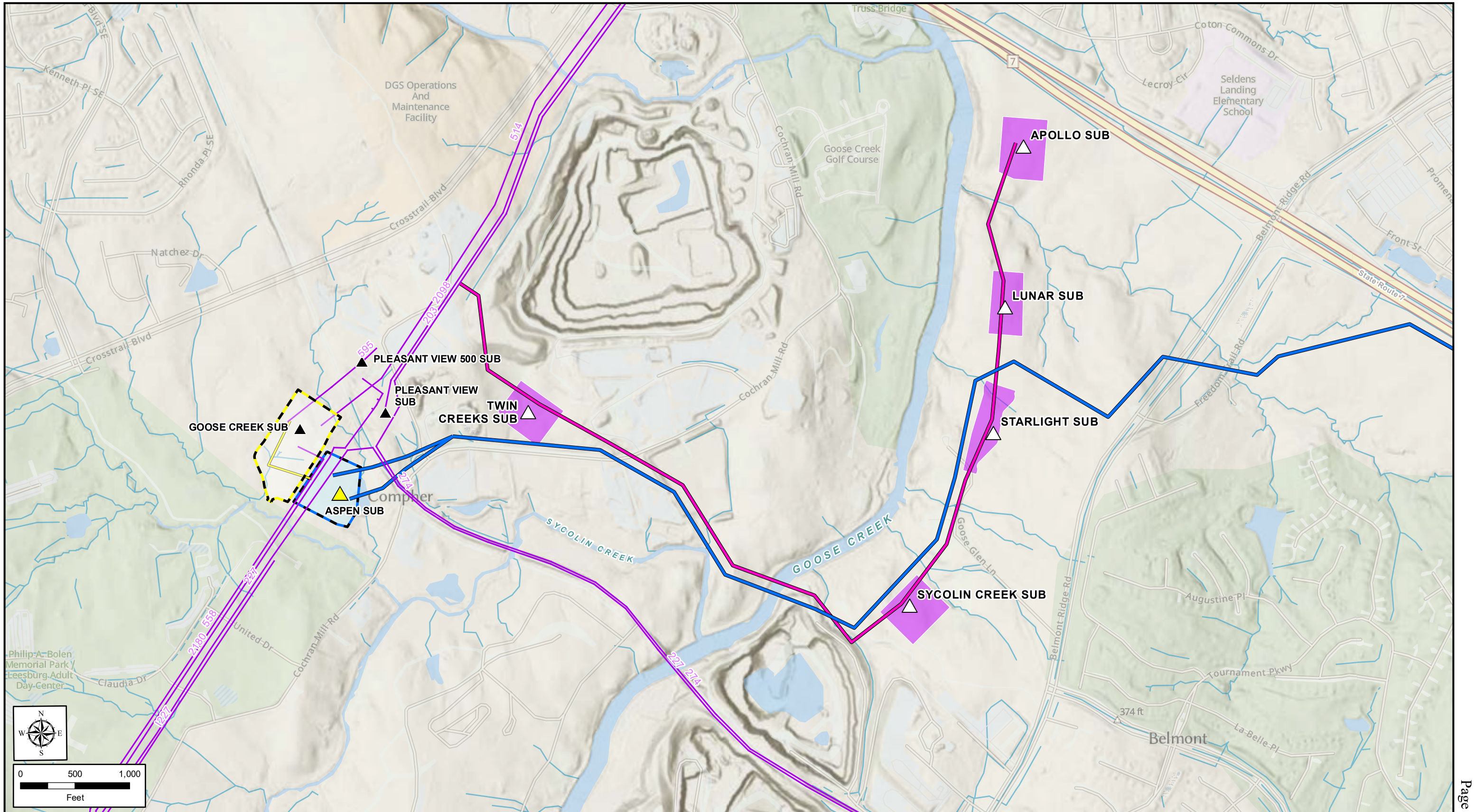
If you would like to receive a GIS shapefile of the transmission line route to assist in the project review or if there are any questions, please do not hesitate to contact Craig Hurd at 804-201-5020 or craig.r.hurd@dominionenergy.com. We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

Sincerely,

Craig Hurd

Craig R. Hurd
Siting and Permitting
Dominion Energy Virginia

Attachment: Project Overview Map



Project Overview Map

230 kV Apollo-Twin Creeks Lines, Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo Substations
Dominion Energy Virginia
Loudoun County, Virginia

ERM

Dominion Energy

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

February 15, 2024

BY EMAIL

Mr. Michael R. Turner
Loudoun County Board of Supervisors (Ashburn District)
P.O. Box 7000
Leesburg, Virginia 20177-7000

RE: Dominion Energy Virginia's Proposed 230 kV Apollo-Twin Creeks Lines and Twin Creeks, Sycolin Creek, Starlight, Lunar and Apollo Substations in Loudoun County, Virginia.

Dear Mr. Turner:

Dominion Energy Virginia (the "Company") is proposing to construct a new double circuit 230 kilovolt ("kV") transmission line entirely in new right-of-way (the "Apollo-Twin Creeks Lines"), and to construct five new 230-34.5 kV substations on property to be obtained by the Company (the "Twin Creeks Substation," "Sycolin Creek Substation," "Starlight Substation," "Lunar Substation," and "Apollo Substation") in Loudoun County, Virginia (collectively, the "Apollo-Twin Creeks Project" or the "Project").

The Project is necessary to ensure that Dominion Energy Virginia can provide electric service requested by three customers (the "Customers") in Loudoun County, Virginia, and to maintain reliable electric service consistent with North American Electric Reliability Corporation Reliability Standards for the overall growth in the load area.

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

Enclosed is a Project Overview Map depicting the proposed route for the Apollo-Twin Creeks Lines, the location of the proposed Twin Creeks, Sycolin Creek, Starlight, Lunar and Apollo Substations, and the general Project location of the Apollo-Twin Creeks Project. Note that the Project Overview Map also depicts the location of future transmission facilities associated with the Aspen-Golden Project. The Company solicited comments from all relevant state and local agencies regarding the Aspen-Golden Project on February 6, 2024. To the extent the Apollo-Twin Creeks Project and the Aspen-Golden Project are located within the same project area and are in some instances collocated within proposed new right-of-way, the Company included those Aspen-Golden Project facilities on the Project Overview Map for reference. However, to be clear, the Aspen-Golden Project facilities identified on the Project Overview Map are not being proposed for filing as part of Apollo-Twin Creeks CPCN application.

All final materials, including maps, will be available in the Company's application filing to the Commission.

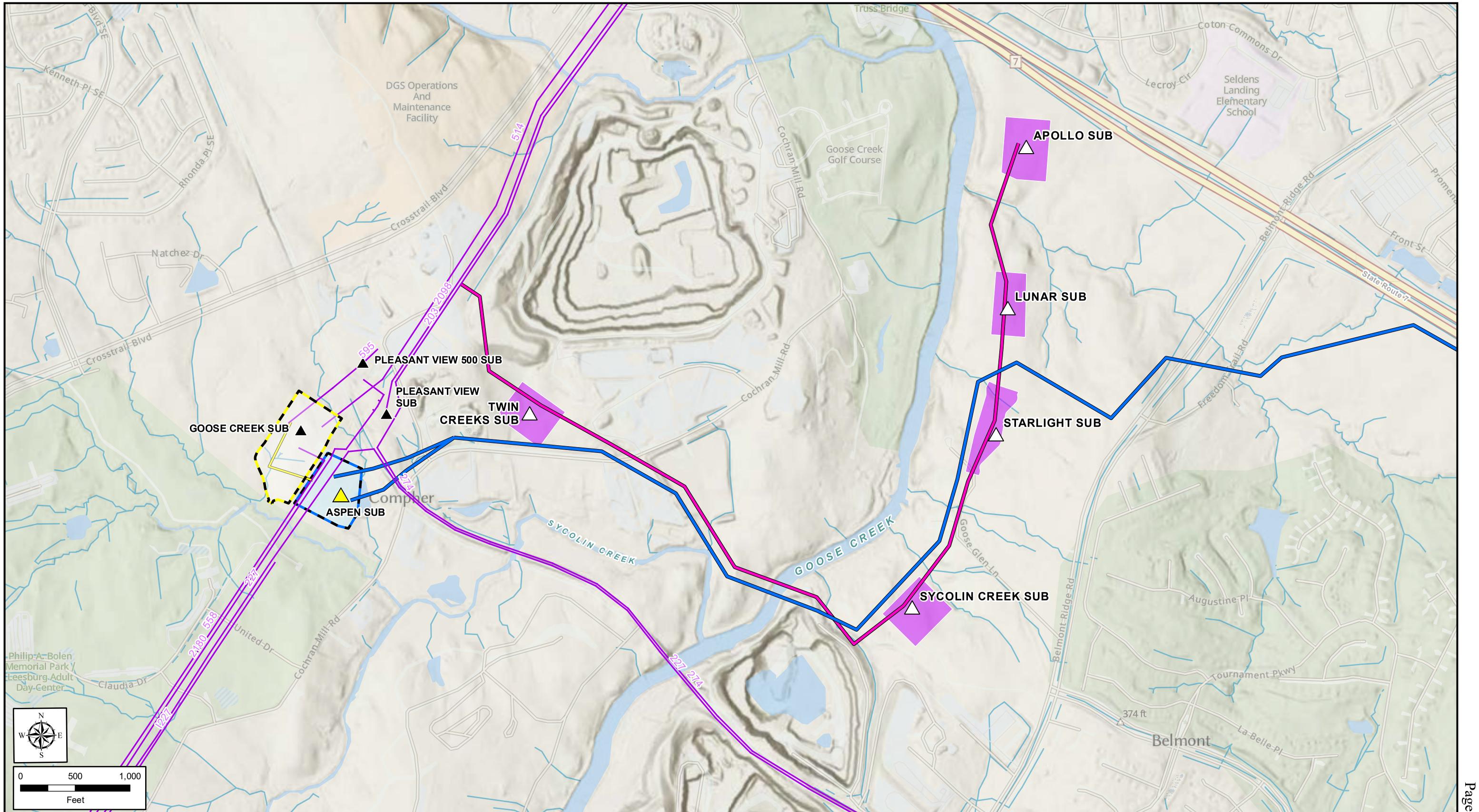
If you would like to receive a GIS shapefile of the transmission line route to assist in the project review or if there are any questions, please do not hesitate to contact Craig Hurd at 804-201-5020 or craig.r.hurd@dominionenergy.com. We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

Sincerely,

Craig Hurd

Craig R. Hurd
Siting and Permitting
Dominion Energy Virginia

Attachment: Project Overview Map



Project Overview Map

230 kV Apollo-Twin Creeks Lines, Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo Substations
Dominion Energy Virginia
Loudoun County, Virginia

ERM

Dominion Energy

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

February 15, 2024

BY EMAIL

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

RE: Dominion Energy Virginia's Proposed 230 kV Apollo-Twin Creeks Lines and Twin Creeks, Sycolin Creek, Starlight, Lunar and Apollo Substations in Loudoun County, Virginia.

Dear Mr. Denny:

Dominion Energy Virginia (the "Company") is proposing to construct a new double circuit 230 kilovolt ("kV") transmission line entirely in new right-of-way (the "Apollo-Twin Creeks Lines"), and to construct five new 230-34.5 kV substations on property to be obtained by the Company (the "Twin Creeks Substation," "Sycolin Creek Substation," "Starlight Substation," "Lunar Substation," and "Apollo Substation") in Loudoun County, Virginia (collectively, the "Apollo-Twin Creeks Project" or the "Project").

The Project is necessary to ensure that Dominion Energy Virginia can provide electric service requested by three customers (the "Customers") in Loudoun County, Virginia, and to maintain reliable electric service consistent with North American Electric Reliability Corporation Reliability Standards for the overall growth in the load area.

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

Enclosed is a Project Overview Map depicting the proposed route for the Apollo-Twin Creeks Lines, the location of the proposed Twin Creeks, Sycolin Creek, Starlight, Lunar and Apollo Substations, and the general Project location of the Apollo-Twin Creeks Project. Note that the Project Overview Map also depicts the location of future transmission facilities associated with the Aspen-Golden Project. The Company solicited comments from all relevant state and local agencies regarding the Aspen-Golden Project on February 6, 2024. To the extent the Apollo-Twin Creeks Project and the Aspen-Golden Project are located within the same project area and are in some instances collocated within proposed new right-of-way, the Company included those Aspen-Golden Project facilities on the Project Overview Map for reference. However, to be clear, the Aspen-Golden Project facilities identified on the Project Overview Map are not being proposed for filing as part of Apollo-Twin Creeks CPCN application.

All final materials, including maps, will be available in the Company's application filing to the Commission.

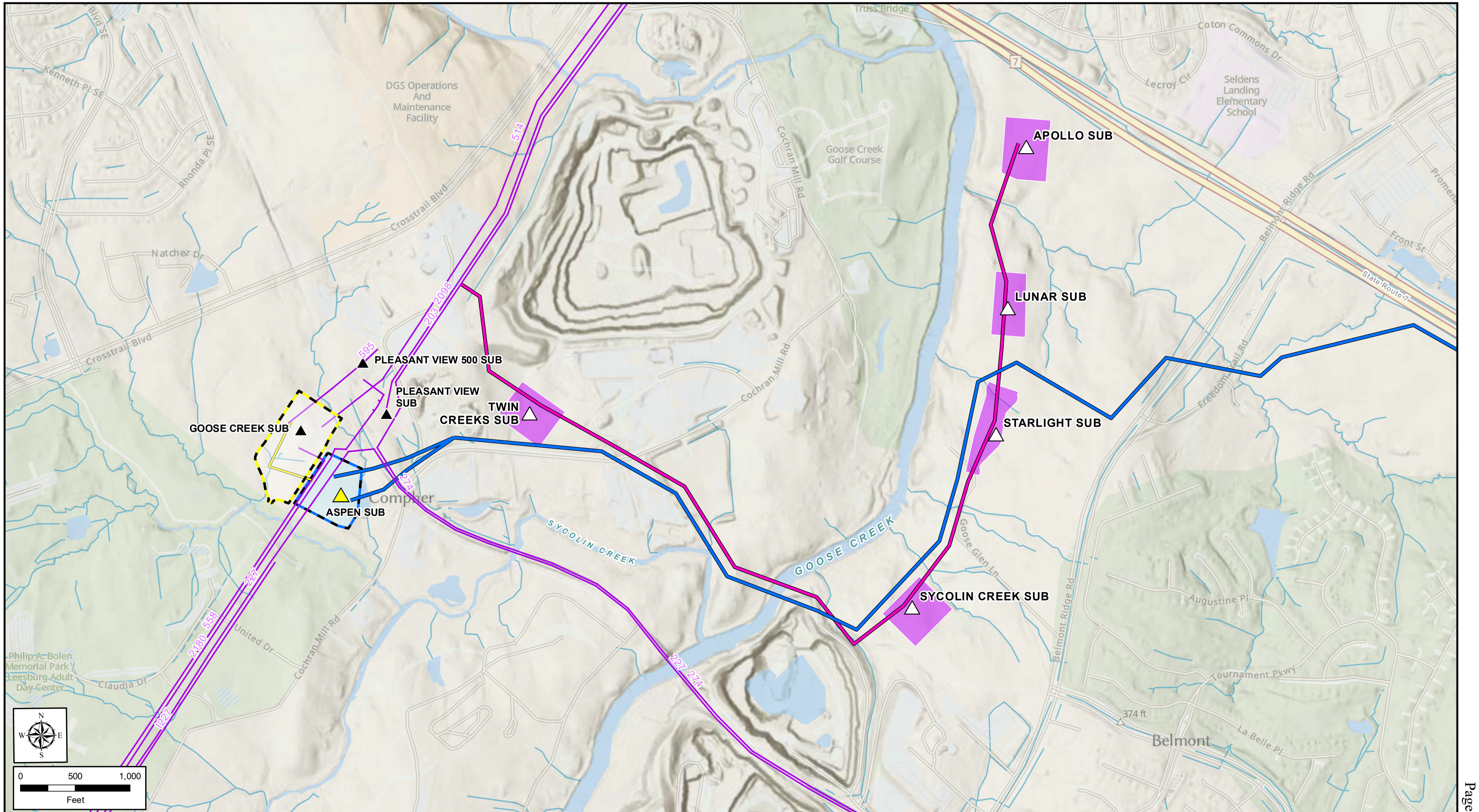
If you would like to receive a GIS shapefile of the transmission line route to assist in the project review or if there are any questions, please do not hesitate to contact Craig Hurd at 804-201-5020 or craig.r.hurd@dominionenergy.com. We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

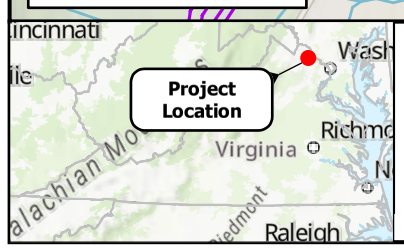
Sincerely,

Craig Hurd

Craig R. Hurd
Siting and Permitting
Dominion Energy Virginia

Attachment: Project Overview Map





Existing Facilities
- Existing Substation
- Existing Dominion Transmission Line
- Existing Substation Boundary

Apollo-Twin Creeks Project
- Proposed Substation
- Proposed Apollo–Twin Creeks Lines
- Proposed Substation Boundary

Aspen-Golden Project (Separate Filing)
- Future Aspen Substation
- Future Aspen–Golden Lines Proposed Route
- Future Aspen-Goose Creek Line
- Future Substation Boundary

Project Overview Map

230 kV Apollo-Twin Creeks Lines, Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo Substations
Dominion Energy Virginia
Loudoun County, Virginia

ERM

Dominion Energy

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

February 15, 2024

BY EMAIL

Ms. Kristen C. Umstattd
Loudoun County Board of Supervisors (Leesburg District)
P.O. Box 7000
Leesburg, Virginia 20177-7000

RE: Dominion Energy Virginia's Proposed 230 kV Apollo-Twin Creeks Lines and Twin Creeks, Sycolin Creek, Starlight, Lunar and Apollo Substations in Loudoun County, Virginia.

Dear Ms. Umstattd:

Dominion Energy Virginia (the "Company") is proposing to construct a new double circuit 230 kilovolt ("kV") transmission line entirely in new right-of-way (the "Apollo-Twin Creeks Lines"), and to construct five new 230-34.5 kV substations on property to be obtained by the Company (the "Twin Creeks Substation," "Sycolin Creek Substation," "Starlight Substation," "Lunar Substation," and "Apollo Substation") in Loudoun County, Virginia (collectively, the "Apollo-Twin Creeks Project" or the "Project").

The Project is necessary to ensure that Dominion Energy Virginia can provide electric service requested by three customers (the "Customers") in Loudoun County, Virginia, and to maintain reliable electric service consistent with North American Electric Reliability Corporation Reliability Standards for the overall growth in the load area.

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

Enclosed is a Project Overview Map depicting the proposed route for the Apollo-Twin Creeks Lines, the location of the proposed Twin Creeks, Sycolin Creek, Starlight, Lunar and Apollo Substations, and the general Project location of the Apollo-Twin Creeks Project. Note that the Project Overview Map also depicts the location of future transmission facilities associated with the Aspen-Golden Project. The Company solicited comments from all relevant state and local agencies regarding the Aspen-Golden Project on February 6, 2024. To the extent the Apollo-Twin Creeks Project and the Aspen-Golden Project are located within the same project area and are in some instances collocated within proposed new right-of-way, the Company included those Aspen-Golden Project facilities on the Project Overview Map for reference. However, to be clear, the Aspen-Golden Project facilities identified on the Project Overview Map are not being proposed for filing as part of Apollo-Twin Creeks CPCN application.

All final materials, including maps, will be available in the Company's application filing to the Commission.

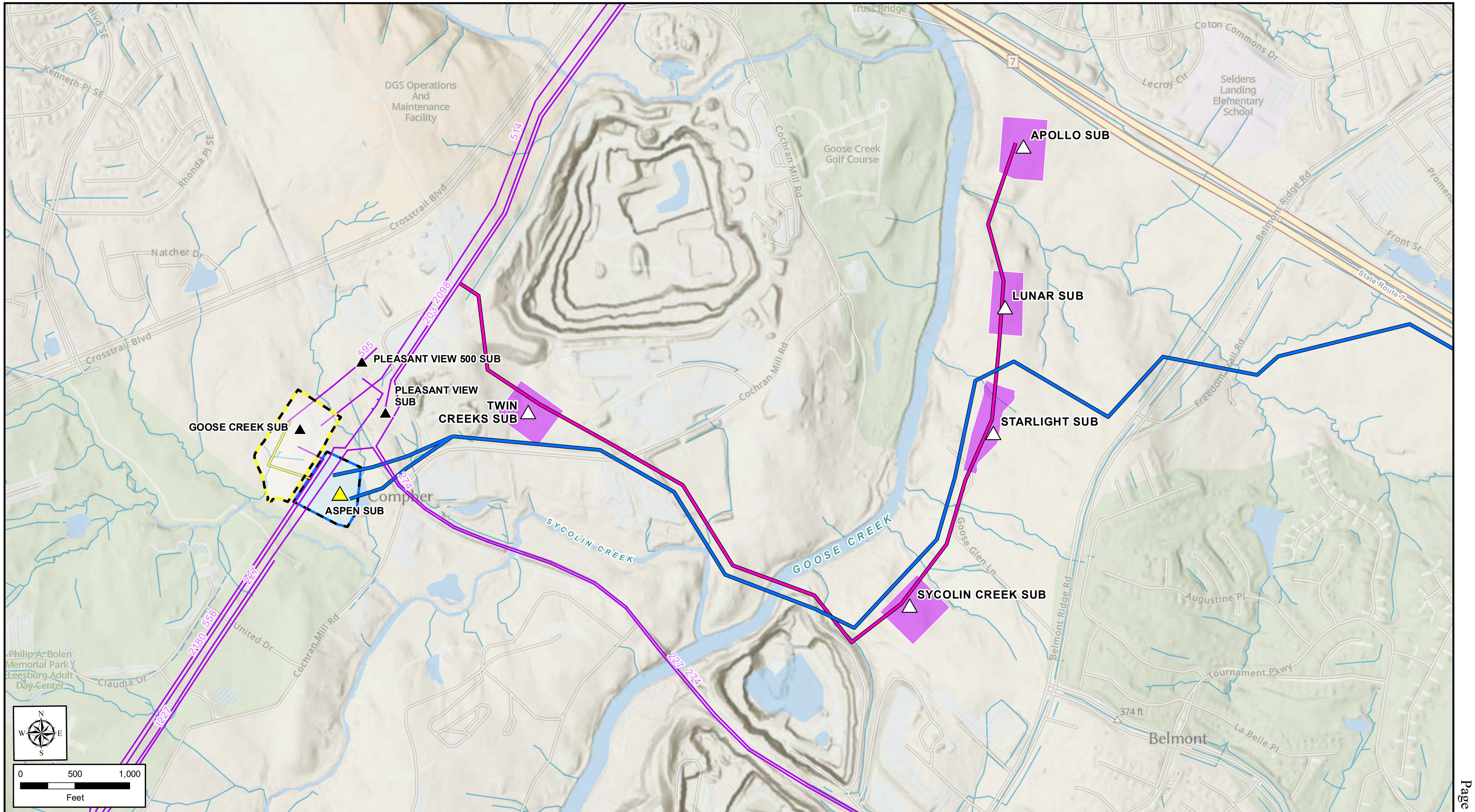
If you would like to receive a GIS shapefile of the transmission line route to assist in the project review or if there are any questions, please do not hesitate to contact Craig Hurd at 804-201-5020 or craig.r.hurd@dominionenergy.com. We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

Sincerely,

Craig Hurd

Craig R. Hurd
Siting and Permitting
Dominion Energy Virginia

Attachment: Project Overview Map



Project Overview Map

230 kV Apollo-Twin Creeks Lines, Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo Substations

Dominion Energy Virginia

Loudoun County, Virginia

ERM

Dominion Energy

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

February 15, 2024

BY EMAIL & CERTIFIED MAIL

Ms. Martha Little
Virginia Outdoors Foundation
P.O. Box 85072, PMB 38979
Richmond, Virginia 23285

RE: Dominion Energy Virginia's Proposed 230 kV Apollo-Twin Creeks Lines and Twin Creeks, Sycolin Creek, Starlight, Lunar and Apollo Substations in Loudoun County, Virginia.

Dear Ms. Little:

Dominion Energy Virginia (the "Company") is proposing to construct a new double circuit 230 kilovolt ("kV") transmission line entirely in new right-of-way (the "Apollo-Twin Creeks Lines"), and to construct five new 230-34.5 kV substations on property to be obtained by the Company (the "Twin Creeks Substation," "Sycolin Creek Substation," "Starlight Substation," "Lunar Substation," and "Apollo Substation") in Loudoun County, Virginia (collectively, the "Apollo-Twin Creeks Project" or the "Project").

The Project is necessary to ensure that Dominion Energy Virginia can provide electric service requested by three customers (the "Customers") in Loudoun County, Virginia, and to maintain reliable electric service consistent with North American Electric Reliability Corporation Reliability Standards for the overall growth in the load area.

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

Enclosed is a Project Overview Map depicting the proposed route for the Apollo-Twin Creeks Lines, the location of the proposed Twin Creeks, Sycolin Creek, Starlight, Lunar and Apollo Substations, and the general Project location of the Apollo-Twin Creeks Project. Note that the Project Overview Map also depicts the location of future transmission facilities associated with the Aspen-Golden Project. The Company solicited comments from all relevant state and local agencies regarding the Aspen-Golden Project on February 6, 2024. To the extent the Apollo-Twin Creeks Project and the Aspen-Golden Project are located within the same project area and are in some instances collocated within proposed new right-of-way, the Company included those Aspen-Golden Project facilities on the Project Overview Map for reference. However, to be clear, the Aspen-Golden Project facilities identified on the Project Overview Map are not being proposed for filing as part of Apollo-Twin Creeks CPCN application.

All final materials, including maps, will be available in the Company's application filing to the Commission.

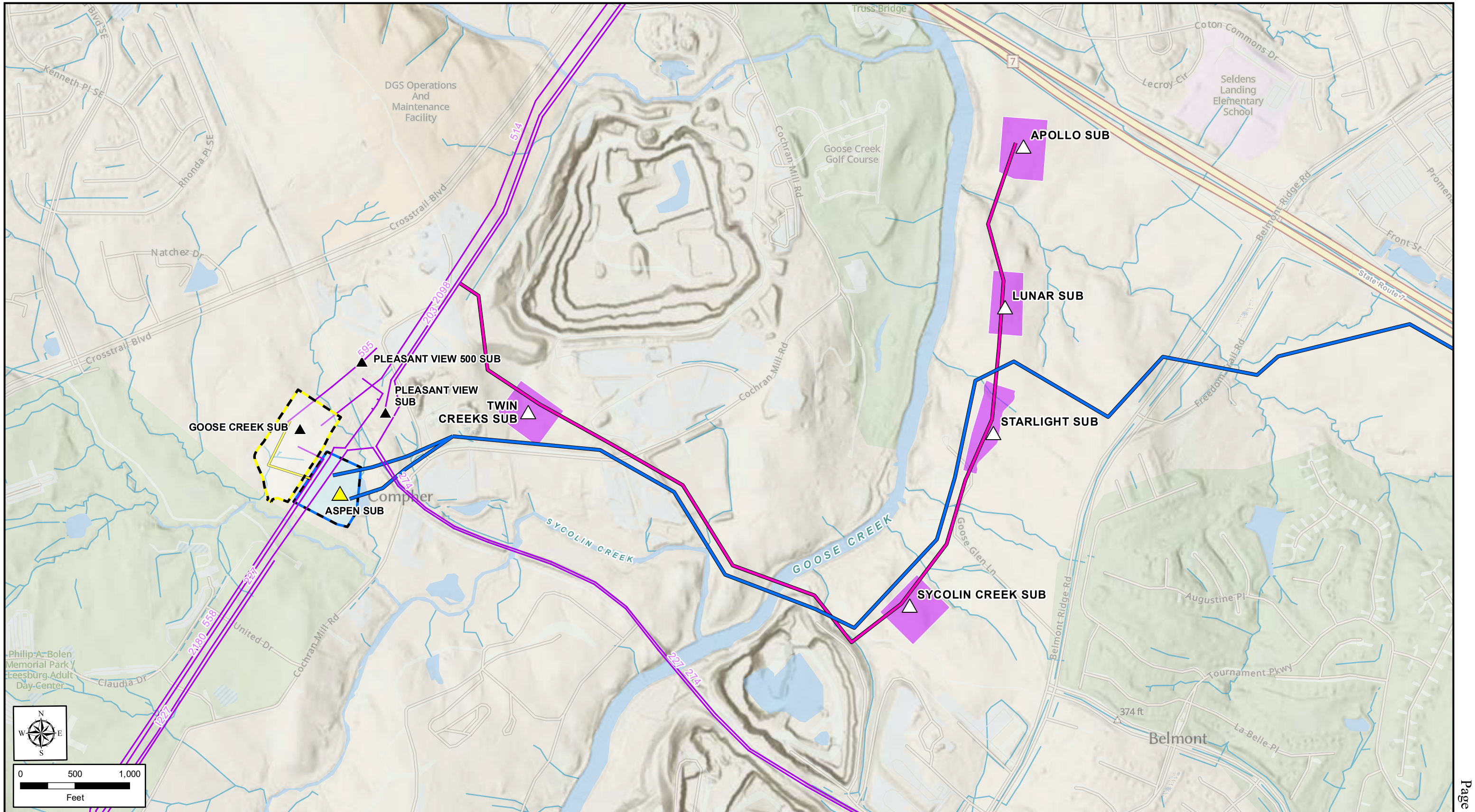
If you would like to receive a GIS shapefile of the transmission line route to assist in the project review or if there are any questions, please do not hesitate to contact Craig Hurd at 804-201-5020 or craig.r.hurd@dominionenergy.com. We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

Sincerely,

Craig Hurd

Craig R. Hurd
Siting and Permitting
Dominion Energy Virginia

Attachment: Project Overview Map



Project Overview Map

230 kV Apollo-Twin Creeks Lines, Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo Substations
Dominion Energy Virginia
Loudoun County, Virginia

ERM

Dominion Energy

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

February 15, 2024

BY EMAIL & CERTIFIED MAIL

Mr. Tim Hemstreet
Loudoun County Administrator
P.O. Box 7000
Leesburg, Virginia 20177-7000

RE: Dominion Energy Virginia's Proposed 230 kV Apollo-Twin Creeks Lines and Twin Creeks, Sycolin Creek, Starlight, Lunar and Apollo Substations in Loudoun County, Virginia. Notice Pursuant to Va. Code § 15.2-2202

Dear Mr. Hemstreet,

Dominion Energy Virginia (the "Company") is proposing to construct a new double circuit 230 kilovolt ("kV") transmission line entirely in new right-of-way (the "Apollo-Twin Creeks Lines"), and to construct five new 230-34.5 kV substations on property to be obtained by the Company (the "Twin Creeks Substation," "Sycolin Creek Substation," "Starlight Substation," "Lunar Substation," and "Apollo Substation") in Loudoun County, Virginia (collectively, the "Apollo-Twin Creeks Project" or the "Project").

The Project is necessary to ensure that Dominion Energy Virginia can provide electric service requested by three customers (the "Customers") in Loudoun County, Virginia, and to maintain reliable electric service consistent with North American Electric Reliability Corporation Reliability Standards for the overall growth in the load area.

The Company is in the process of preparing an application for a certificate of public convenience and necessity ("CPCN") from the State Corporation Commission of Virginia (the "Commission"). Pursuant to Va. Code § 15.2-2202, the Company is writing to notify Loudoun County of the proposed Project in advance of filing the application for a CPCN. The Company respectfully requests that you submit any comments or additional information that would have bearing on the proposed Project within 30 days of the date of this letter.

Enclosed is a Project Overview Map depicting the proposed route for the Apollo-Twin Creeks Lines, the location of the proposed Twin Creeks, Sycolin Creek, Starlight, Lunar and Apollo Substations, and the general Project location of the Apollo-Twin Creeks Project. Note that the Project Overview Map also depicts the location of future transmission facilities associated with the Aspen-Golden Project. The Company solicited comments from all relevant state and local agencies regarding the Aspen-Golden Project on February 6, 2024. To the extent the Apollo-Twin Creeks Project and the Aspen-Golden Project are located within the same project area and are in some instances collocated within proposed new right-of-way, the Company included those Aspen-Golden Project facilities on the Project Overview Map for reference. However, to be clear, the Aspen-Golden Project facilities identified on the Project Overview Map are not being proposed for filing as part of Apollo-Twin Creeks CPCN application.

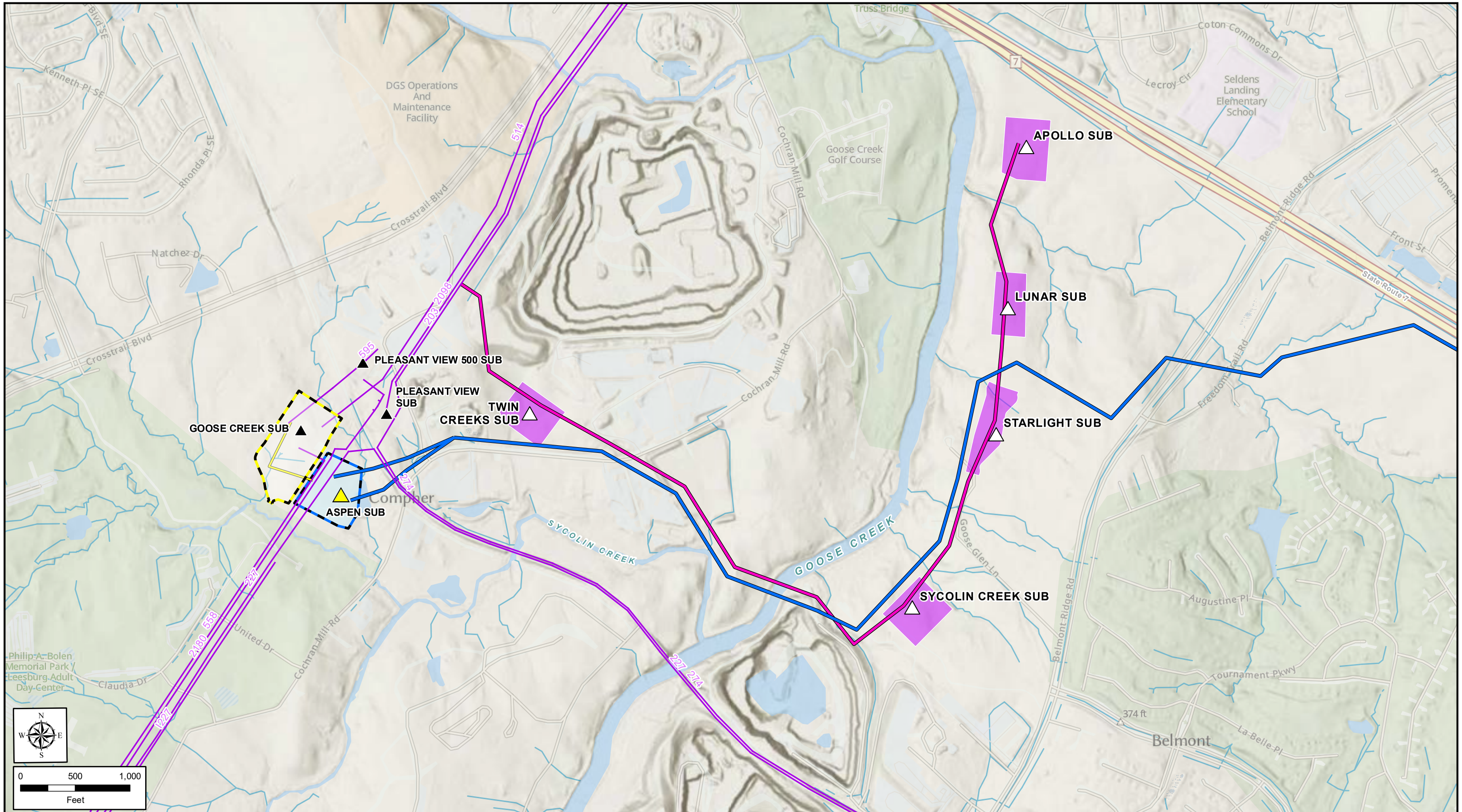
If you would like to receive a GIS shapefile of the transmission line route to assist in the project review or if there are any questions, please do not hesitate to contact Craig Hurd at 804-201-5020 or craig.r.hurd@dominionenergy.com. We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

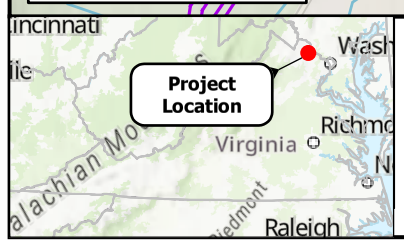
Sincerely,

Craig Hurd

Craig R. Hurd
Siting and Permitting
Dominion Energy Virginia

Attachment: Project Overview Map





Existing Facilities
- Existing Substation
- Existing Dominion Transmission Line
- Existing Substation Boundary

Apollo-Twin Creeks Project
- Proposed Substation
- Proposed Apollo–Twin Creeks Lines
- Proposed Substation Boundary

Aspen-Golden Project (Separate Filing)
- Future Aspen Substation
- Future Aspen–Golden Lines Proposed Route
- Future Aspen-Goose Creek Line
- Future Substation Boundary

Project Overview Map

230 kV Apollo-Twin Creeks Lines, Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo Substations
Dominion Energy Virginia
Loudoun County, Virginia

ERM

Dominion Energy

Heather E Kennedy (Services - 6)

From: Fulcher, Valerie (DEQ) <Valerie.Fulcher@deq.virginia.gov>
Sent: Friday, February 16, 2024 2:13 PM
To: dgif-ESS Projects (DWR); Tignor, Keith (VDACS); DCR-PRR Environmental Review (DCR); odwreview (VDH); Gavan, Larry (DEQ); Miller, Mark (DEQ); Kirchen, Roger (DHR); Lasher, Terrance J. (DOF); Folks, Clint (DOF); Lovain, Anna (DEQ); Ballou, Thomas (DEQ); Churchill, Nikolas (DEQ); Heller, Matthew (Energy); EIR Coordination (VDOT); ImpactReview (impactreview@vof.org); Lazaro, Robert (VDOT)
Cc: Heather E Kennedy (Services - 6)
Subject: [EXTERNAL] NEW SCOPING Dominion Apollo-Twin Creeks Lines, Loudoun County, Virginia
Attachments: Apollo to Twins Creek Scoping Response.pdf; Agency Letter - Project Overview Map (Apollo-Twin Creeks).pdf; SCC_Apollo-Twin Creeks Project_Alignment_Route.zip; SCC_Apollo-Twin Creeks Project_ROW_Footprints.zip; Apollo to Twins Creek_Agency Letter - General.docx

Follow Up Flag: Follow up
Flag Status: Flagged

Good afternoon—attached is a request for scoping comments on the following:

> **Dominion Energy Virginia's Proposed 230 kV Apollo-Twin Creeks Lines and Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo Substations in Loudoun County, Virginia**

If you choose to make comments, please send them directly to the project sponsor (Heather.E.Kennedy@Dominionenergy.com) and copy the DEQ Office of Environmental Impact Review: eir@deq.virginia.gov. We will coordinate a review when the environmental document is completed.

DEQ-OEIR's scoping response is also attached.

Valerie

Valerie A. Fulcher, CAP, OM, Admin/Data Coordinator Senior
Department of Environmental Quality
Environmental Enhancement - Office of Environmental Impact Review
1111 East Main Street
Richmond, VA 23219
NEW PHONE NUMBER: 804-659-1550
Email: Valerie.Fulcher@deq.virginia.gov
https://www.deq.virginia.gov/permits-regulations/environmental-impact-review [deq.virginia.gov]

For program updates and public notices please subscribe to Constant Contact:
https://lp.constantcontact.com/su/MVcCump/EIR [lp.constantcontact.com]

Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

1111 E. Main Street, Suite 1400, Richmond, Virginia 23219
P.O. Box 1105, Richmond, Virginia 23218
(800) 592-5482 FAX (804) 698-4178
www.deq.virginia.gov

Travis A. Voyles
Secretary of Natural and Historic Resources

Michael S. Rolband, PE, PWD, PWS Emeritus
Director
(804) 698-4020

February 16, 2024

Heather E.B. Kennedy
Environmental Specialist II
Dominion Energy Environmental and Sustainability
120 Tredegar Street, Richmond, VA 23219
Via email: Heather.E.Kennedy@Dominionenergy.com

RE: Dominion Energy Virginia's Proposed 230 kV Apollo-Twin Creeks Lines and Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo Substations in Loudoun County, Virginia, Scoping Response

Dear Ms. Kennedy:

This letter is in response to the scoping request for the above-referenced project.

As you may know, the Department of Environmental Quality, through its Office of Environmental Impact Review (DEQ-OEIR), is responsible for coordinating Virginia's review of environmental impacts for electric power generating projects and power line projects in conjunction with the licensing process of the State Corporation Commission.

DOCUMENT SUBMISSIONS

In order to ensure an effective coordinated review of the environmental impact analysis may be sent directly to OEIR. We request that you submit one electronic to eir@deq.virginia.gov (25 MB maximum) or make the documents available for download at a website, file transfer protocol (ftp) site or the VITA LFT file share system (Requires an "invitation" for access. An invitation request should be sent to eir@deq.virginia.gov.). The required "Wetlands Impact Consultation" can be sent directly to Michelle Henicheck at michelle.henicheck @deq.virginia.gov or at the address above.

ENVIRONMENTAL REVIEW UNDER VIRGINIA CODE 56-46.1

While this Office does not participate in scoping efforts beyond the advice given herein, other agencies are free to provide scoping comments concerning the preparation of the environmental impact analysis document. Accordingly, we have coordinated your request with the following state agencies and those localities and Planning District Commissions, including but not limited to:

Department of Environmental Quality:
- DEQ Regional Office
- Air Division
- Office of Wetlands and Stream Protection
- Office of Local Government Programs
- Division of Land Protection and Revitalization
- Office of Stormwater Management

Department of Conservation and Recreation
Department of Health
Department of Agriculture and Consumer Services
Department of Wildlife Resources
Virginia Marine Resources Commission
Department of Historic Resources
Virginia Energy
Department of Forestry
Department of Transportation

DATA BASE ASSISTANCE

Below is a list of databases that may assist you in the preparation of a NEPA document:

- DEQ Online Database: Virginia Environmental Geographic Information Systems

  Information on Permitted Solid Waste Management Facilities, Impaired Waters, Petroleum Releases, Registered Petroleum Facilities, Permitted Discharge (Virginia Pollution Discharge Elimination System Permits) Facilities, Resource Conservation and Recovery Act (RCRA) Sites, Water Monitoring Stations, National Wetlands Inventory:
  - www.deq.virginia.gov/ConnectWithDEQ/VEGIS.aspx

- DEQ Virginia Coastal Geospatial and Educational Mapping System (GEMS)

  Virginia's coastal resource data and maps; coastal laws and policies; facts on coastal resource values; and direct links to collaborating agencies responsible for current data:
  - https://www.deq.virginia.gov/?splash=https%3a%2f%2fgaia.vcu.edu%2fportal%2fapps%2fsites%2f%23%2fgemsmaps&____isexternal=true

- MARCO Mid-Atlantic Ocean Data Portal

  The Mid-Atlantic Ocean Data Portal is a publicly available online toolkit and resource center that consolidates available data and enables users to visualize and analyze ocean resources and human use information such as fishing grounds, recreational areas, shipping lanes, habitat areas, and energy sites, among others.

  - http://portal.midatlanticocean.org/visualize/#x=-73.24&y=38.93&z=7&logo=true&controls=true&basemap=Ocean&tab=data&legends=false&layers=true

- DHR Data Sharing System.

Survey records in the DHR inventory:

- www.dhr.virginia.gov/archives/data_sharing_sys.htm

- DCR Natural Heritage Search

  Produces lists of resources that occur in specific counties, watersheds or physiographic regions:
  - www.dcr.virginia.gov/natural_heritage/dbsearchtool.shtml

- Wetland Condition Assessment Tool (WetCAT)
  - https://www.deq.virginia.gov/our-programs/water/wetlands-streams/wetcat

- DWR Fish and Wildlife Information Service

  Information about Virginia's Wildlife resources:
  - http://vafwis.org/fwis/

- Total Maximum Daily Loads Approved Reports
  - https://www.deq.virginia.gov/programs/water/waterqualityinformationtmdls/tmdl/tmdldevelopment/approvedtmdlreports.aspx

- Virginia Outdoors Foundation: Identify VOF-protected land
  - http://vof.maps.arcgis.com/home/index.html

- Environmental Protection Agency (EPA) Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) Database: Superfund Information Systems

  Information on hazardous waste sites, potentially hazardous waste sites and remedial activities across the nation, including sites that are on the National Priorities List (NPL) or being considered for the NPL:
  - www.epa.gov/superfund/sites/cursites/index.htm

- EPA RCRAInfo Search

  Information on hazardous waste facilities:
  - www.epa.gov/enviro/facts/rcrainfo/search.html

- Total Maximum Daily Loads Approved Reports
  - https://www.deq.virginia.gov/our-programs/water/water-quality/tmdl-development/approved-tmdls

- EPA Envirofacts Database

  EPA Environmental Information, including EPA-Regulated Facilities and Toxics Release Inventory Reports:
  - www.epa.gov/enviro/index.html

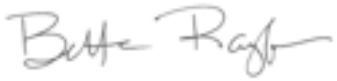
- EPA NEPAssist Database

  Facilitates the environmental review process and project planning:
  http://nepaassisttool.epa.gov/nepaassist/entry.aspx

If you have questions about the environmental review process, please feel free to contact me (telephone (804) 659-1915 or e-mail bettina.rayfield@deq.virginia.gov).

I hope this information is helpful to you.

Sincerely,



Bettina Rayfield, Program Manager
Environmental Impact Review and
Long-Range Priorities

COMMONWEALTH of VIRGINIA
Marine Resources Commission
380 Fenwick Road
Bldg 96
Fort Monroe, VA 23651-1064

Travis A. Voyles
Secretary of Natural and Historic Resources

Jamie L. Green
Commissioner

March 5, 2024

Dominion Energy Services, Inc.
Attn: Heather Kennedy
120 Tredegar Street
Richmond, VA 23219

Re: Apollo-Twin Creeks Lines Project

Dear Ms. Kennedy:

This will respond to the request for comments regarding the State Corporation Commission (SCC) Project Notification for the Apollo-Twin Creeks Lines Project, prepared by Dominion Energy Services, Inc. (Dominion). Specifically, Dominion has proposed to impact non-tidal wetlands and streams for the construction of a double circuit 230kV transmission line in new right-of-way and for the construction of five new 230-34.5kV substations on properties located in the Compher area of Loudoun County, Virginia.

We reviewed the provided project documents and found the proposed project may impact resources within the jurisdictional areas of the Virginia Marine Resources Commission (VMRC) and may therefore require a permit from this agency. Please be advised that the VMRC, pursuant to §28.2-1200 et seq of the Code of Virginia, has jurisdiction over encroachments in, on, or over the beds of the bays, ocean, rivers, streams, or creeks which are the property of the Commonwealth. Accordingly, if any portion of the subject project involves any encroachments channelward of ordinary high water along non-tidal, natural rivers and streams with a drainage area greater than 5-square miles, a permit may be required from our agency or the Department of Environmental Quality. Any jurisdictional impacts will be reviewed by the VMRC during the JPA process.

Please contact me at (757) 247-2255 or by email at mike.johnson@mrc.virginia.gov if you have any questions. Thank you for the opportunity to comment.

Sincerely,

Mike Johnson
Environmental Engineer, Habitat Management

MJ/dd
HM

222 South 9th Street
Suite 2900
Minneapolis, Minnesota 55402

T +0 804 253 1090
F +0 804 253 1091

erm.com

Virginia Department of Environmental Quality
Office of Environmental Impact Review
Ms. Bettina Rayfield, Manager
P.O. Box 1105
Richmond, Virginia 23218

DATE
27 March 2024

SUBJECT
Apollo-Twin Creeks 230 kV Electric Transmission Project Wetland and Waterbody Desktop Summary

REFERENCE
0655669

Dear Ms. Rayfield:

Environmental Resources Management (ERM), on behalf of Virginia Electric and Power Company (Dominion Energy Virginia, Dominion, or the Company), conducted a desktop wetland and waterbody review of publicly available information for the proposed overhead 230 kilovolt (kV) double circuit Apollo-Twin Creeks Lines, Twin Creeks Substation, Sycolin Creek Substation, Starlight Substation, Lunar Substation, and Apollo Substation (Apollo-Twin Creeks 230 kV Electric Transmission Project, or Project) in Loudoun County, Virginia. This delineation was done using desktop resources and methodology. A field delineation is required to verify the accuracy and extent of aquatic resource boundaries. The Project Route is shown in Attachment 1, with identified wetland boundaries shown in Attachment 2.

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

- Construct five new 230-34.5 kV substations in Loudoun County, Virginia, on property to be obtained by the Company (referred to as the Twin Creeks Substation, Sycolin Creek Substation, Starlight Substation, Lunar Substation, and Apollo Substation).
- Construct a new double circuit overhead 230 kV transmission line in entirely new right-of-way[1] by cutting the Company's existing 230 kV Edwards Ferry-Pleasant

[1] On March 7, 2024, the Company filed an application for SCC approval of new single circuit 500 kV and 230 kV electric transmission lines located in a new right-of-way varying between 100 and 150 feet in width and extending for approximately 9.4 miles (the future Aspen-Golden Lines)

View Line #203 at Structure #203/2 (collectively, the Apollo-Twin Creeks Lines). From the cut-in location within the existing right-of-way, the Apollo-Twin Creeks Lines will extend approximately 1.9 miles within a predominantly 100-foot-wide right-of-way,[2] interconnecting the proposed Twin Creeks, Sycolin Creek, Starlight, and Lunar Substations and terminating at the proposed Apollo Substation.

The Project is needed to provide service requested by three data center customers (individually, Customers A, B and C; collectively, the Customers) and to maintain and improve reliable electric service consistent with North American Electric Reliability Corporation Standards to customers in the eastern Leesburg area in Loudoun County. The Company considered the facilities required to construct and operate the Project, the amount of new rights-of-way that will be required, amount of existing development in each area, potential for environmental impacts on communities, and the relative cost of the Project.

The purpose of this desktop analysis is to identify and evaluate potential impacts of the Project on aquatic resources (streams, creeks, runs, and open water features) 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 data sets

---

between a new 500-230 kV Aspen Substation and a new 500-230 kV Golden Substation, as well as an approximately 0.2-mile line between the new 500-230 kV Aspen Substation and the existing 500 kV Goose Creek Substation, all located in Loudoun County, Virginia (collectively, the Aspen-Golden Project). *See Application of Virginia Electric and Power Company for approval and certification of electric transmission facilities: 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line #5002, 500 kV and 230 kV Aspen-Golden Lines #5001 and #2333, 500-230 kV Golden Substation and Lines# 2081/#2150 Loop*, Case No. PUR-2024-00032 (filed March 7, 2024) (referred to herein as the Aspen-Golden Application). For approximately 0.9 mile of the 9.4-mile proposed route of the future Aspen-Golden Lines, the Company noted as part of the Aspen-Golden Application that it would need additional right-of-way with varying widths between 100 and 140 feet to accommodate construction of two new 230 kV double circuit lines—namely, the Apollo-Twin Creeks Lines (as defined herein but referred to in the Aspen-Golden Application as the future Twin Creeks Lines). As noted in the Aspen-Golden Application, the Company understood that it could not condemn for more than what was needed for the Aspen-Golden Project until such time as the Company sought approval of this instant Project, as defined herein, consistent with the Commission's approach in recent proceedings. *See* the Aspen-Golden Application, Appendix at n. 6. The Company is now seeking such approval in this Application and is filing contemporaneous with the filing of this Application a motion to consolidate these two cases for purposes of judicial economy. A map depicting the total right-of-way where the Apollo-Twin Creeks Lines are proposed for collocation with the future Aspen-Golden Lines, which ranges from a total of 200 to 260 feet, is provided in Attachment II.A.6 of the Appendix. As clarification, the Company notes that the use of "collocation" in this context indicates where the rights-of-way are adjacent to and/or overlap one another as depicted in Attachment II.A.2 of the Appendix.

[2] Notably, there are two segments of the proposed Apollo-Twin Creeks Lines where the right-of-way is 140 feet in width. The first is an approximately 0.2-mile segment where the proposed Apollo-Twin Creeks Lines expand to a 140-foot-wide right-of-way in order to feasibly cross under the future Aspen-Golden Lines and enter the proposed Sycolin Creek Substation. The second is an approximately 0.1-mile segment where the proposed Apollo-Twin Creeks Lines leave the proposed Starlight Substation and cross under the future Aspen-Golden Lines, which requires the structure configuration to switch from double circuit monopoles (vertical) to 2-pole structures (delta) and then back to double circuit monopoles (vertical) for the remainder of the route.

that may indicate wetland location and type. This report is being submitted to the DEQ as part of the DEQ Wetland Impacts Consultation.

PROJECT STUDY AREA AND POTENTIAL ROUTE

The study area encompasses approximately 1.9 square miles (1,152 acres) entirely in Loudoun County. The study area includes portions of the U.S. Census Bureau census-designated places of Belmont, and there are no incorporated cities within the study area. The limits of the study area are depicted in Attachment A and are generally defined by the following features:

The limits of the study area are generally defined by the following features:

- Leesburg Pike (Rt. 7) to the north;
- Belmont Ridge Road to the east;
- Beaumeade-Belmont Line #227 and Beaumeade-Pleasant View Line #274 and the Washington and Old Dominion Trail to the south; and
- the Company's existing Edwards Ferry-Pleasant View Line #203, Hamilton-Pleasant View Line #2098, and Doubs-Goose Creek #514 to the west.

Dominion identified one viable overhead route alternative for the Apollo-Twin Creeks Lines, described below.

ROUTE 1

From the cut-in location, the Proposed Route (Route 1) initially heads south for about 0.2 mile generally following the property line of an existing Luck Stone quarry and existing Loudoun Water utility lines to connect with the first substation, the proposed Twin Creeks Substation associated with Campus A. The site for the substation is within a parcel on the north side of Cochran Mill Road and south of a Luck Stone quarry. Route 1 then continues southeast for about 0.2 mile along a property boundary to a point just north of Cochran Mill Road, where the route intersects and begins to parallel the Company's future Aspen-Golden Lines. From here, Route 1 crosses Cochran Mill Road and continues southeast across the Customer A parcels for about 0.4 mile. The route crosses Goose Creek collocated with the future Aspen-Golden Lines at a spot just north of a former quarry (now a reservoir), about 0.2 mile northeast of the Company's existing Lines #227 and #274. Still collocated with the future Aspen-Golden Lines, Route 1 continues south on the former quarry property for 0.1 mile then turns northeast. The route connects to the proposed Sycolin Creek Substation and continues northeast across Customer B's parcels for about 0.3 mile to the south side of the proposed Starlight Substation. From there, Route 1 of the Apollo-Twin Creeks Lines splits from the future Aspen-Golden-Lines for 0.2 mile before entering the proposed Starlight Substation, while the future Aspen-Golden Lines continue east along the north side of the substation. Route 1 then heads north for about 0.4 mile across the

Customer C parcel connecting to the proposed Lunar Substation and terminating at the proposed Apollo Substation south of Rt. 7 and west of Belmont Ridge Road.

Route 1 measures approximately 1.9 miles in length and encompasses approximately 18.7 acres. Combined with the proposed substations, the Project facilities encompass approximately 41.6 acres.

PROPOSED SUBSTATIONS

TWIN CREEKS SUBSTATION

The proposed Twin Creeks Substation is located north of Cochran Mill Road, approximately 0.7 mile south of the intersection of Cochran Mill Road and Crosstrail Boulevard. The substation footprint occupies approximately 4.7 acres, which consists entirely of forested land cover. The Company's existing 230 kV and 500 kV electrical substations and other existing industrial and mining lands surround the proposed Twin Creeks Substation.

SYCOLIN CREEK AND STARLIGHT SUBSTATIONS

The proposed Sycolin Creek and Starlight Substations are located on the properties associated with Campus B (the Belmont Innovation Campus). The future substations are located east of Goose Creek and approximately 0.2 mile west from the frontage of Belmont Ridge Road. To the south, the Sycolin Creek Substation footprint occupies approximately 4.7 acres of which the entire area consists of forested land cover. To the north, the Starlight Substation footprint occupies approximately 4.5 acres of which about 90 percent is forested and 10 percent is developed.

LUNAR AND APOLLO SUBSTATIONS

The proposed Lunar and Apollo Substations are located east of Goose Creek and approximately 200 feet to the south of Route 7. To the south, the Lunar Substation footprint occupies approximately 4.0 acres of which is entirely forested. To the north, the Apollo Substation footprint occupies approximately 5.0 acres of which is entirely forested.

DESKTOP EVALUATION METHODOLOGY

The area of effect considered for this study consists of the proposed rights-of-way identified above within which the electric transmission lines would be constructed and operated. Data sources used for this review include the following, each of which is described briefly below:

- USA National Agricultural Imagery Program (NAIP) Natural Color Images, Virginia, 1-meter pixel resolution (NAIP 2023)
- USA NAIP Imagery: Color Infrared NAIP Infrared Images, Virginia, 1-meter pixel resolution (NAIP 2023a)

- USGS 10-meter Digital Elevation Model (USGS 2022)
- Current aerial imagery, taken in spring of 2023 (Loudoun County 2023)
- Historic aerial imagery (Google LLC 2022)
- ESRI World Topographic Map, multiple scales (ESRI et al. 2023)
- U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) mapping (USFWS 2023)
- U.S. Department of Agriculture-Natural Resources Conservation Service (USDA-NRCS) Soil Survey Geographic (SSURGO) database (USDA-NRCS 2023)
- USGS National Hydrography Dataset (NHD) Plus High Resolution (USGS 2023)

NATURAL COLOR AND INFRARED AERIAL PHOTOGRAPHY

Recent (2023) natural color aerial photography was used to provide a visual overview of the Project area and to assist in evaluating current conditions. Infrared aerial photography was used to identify the potential presence of wetlands based on signatures associated with the levels of reflectance. For example, areas that are inundated with water appear very dark (almost black) due to the low level of reflectance in the infrared spectrum. The presence of these dark colors can be used as a potential indicator of hydric or inundated soils that are likely associated with wetlands.

TOPOGRAPHIC MAPS

Recent ESRI world topographic maps show the topography of the area as well as other important landscape features such as forest cover, development, buildings, agricultural areas, streams, lakes, and wetlands (USGS 2022; ESRI et al., 2023).

USFWS NATIONAL WETLAND INVENTORY MAPPING

NWI maps provide the boundaries and classifications of potential wetland areas as mapped by the USFWS (USFWS 2023). NWI data is based primarily on aerial photo interpretations with limited ground-truthing and may represent incorrect boundaries or wetland cover types. NWI data can be unreliable in some areas, especially in forested landscapes, where aerial photography is used as the major data source. The classifications of the majority of the NWI polygons in the study area appear to be accurate based on a review of the cover types observed in the aerial photography. However, in areas where there was an obvious discrepancy between the NWI classification and the aerial photography, ERM modified the classification to more accurately reflect current conditions. To acknowledge ERM's adjustment of NWI classifications where appropriate, all wetland types referenced in this assessment are referred to as assigned wetland cover types regardless of whether the cover type was modified from the NWI classification.

USDA-NRCS SOILS DATA

Soils in the study area were identified and assessed using the SSURGO database, which is a digital version of the original county soil surveys (USDA-NRCS 2023). The attribute data within the SSURGO database provides the proportionate extent of the component soils and their properties (e.g., hydric rating) for each soil map unit. The soils in the study area were grouped into three categories based on the hydric rating of the component soils within each map unit: hydric, partially hydric, and non-hydric. Hydric soils were defined as those where the major component soils, and minor components in some cases, are designated as hydric. Hydric components in these map units account for more than 80 percent of the map unit. Partially hydric soils include map units that only contain minor component soils that are designated as hydric. The partially hydric map units in the Project area contain 10 percent or less hydric soils. The remaining map units do not contain any component soils that are designated as hydric. Areas mapped as hydric or partially hydric have a higher probability of containing wetlands than areas with no hydric soils.

USGS NATIONAL HYDROGRAPHY DATASET

The National Hydrography Dataset (NHD) dataset contains features such as lakes, ponds, streams, rivers, and canals (USGS 2023). The waterbodies mapped by the NHD appeared generally consistent with those visible on the USGS maps and aerial photography.

PROBABILITY ANALYSIS

ERM used a stepwise process to identify probable wetland areas along the route segments, as follows:

1. Infrared and natural color aerial photography was used in conjunction with topographic maps and soils maps to identify potential wetland areas. 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. For the purpose of the study, these areas are referred to as Interpreted Wetlands.

2. To further determine the probability of a wetland occurring within a given location, the Interpreted Wetland polygon shape files were digitally layered with the NWI mapping and soils information from the SSURGO database.

3. The probability of a wetland occurring was assigned based on the number of overlapping data layers (i.e., indicators of potential wetland presence) that occurred in a particular area.

The criteria assigned to each probability are outlined in Table 1.

Table 1: 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

WETLAND AND WATERBODY CROSSINGS

The desktop analysis provides a probability of wetlands and waterbody occurrence within each route, with wetlands classified based on the Cowardin classification system described below:

- 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;
- Palustrine Scrub-Shrub (PSS) – wetlands characterized by woody vegetation, excluding woody vines, approximately 3 to 20 feet in height;
- Palustrine Forested (PFO) – wetlands characterized by woody vegetation, excluding woody vines, approximately 20 feet or more in height and 3 inches or larger diameter at breast height;
- Palustrine Unconsolidated Bottom (PUB) – wetlands 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; and
- Riverine – wetlands within a channel, with two exceptions: (1) wetlands dominated by trees, shrubs, persistent emergent, emergent mosses, or lichens, and (2) habitats with water containing ocean-derived salts in excess of 0.5%. (USFWS 2013).

As stated above, field delineations were not performed and would be required to verify the accuracy and extent of aquatic resource boundaries. A range of wetland occurrence probabilities are reported by this study from very low to high. The probability of wetland occurrence increases as multiple indicators begin to overlap towards the high end of the spectrum. The medium, medium-high and high probability categories are the most reliable representation of in-situ conditions, due to overlapping data sets, and these categories are reported in the summary below as a percentage of the total acreage of

each route. Attachment 2 depicts two map sets: one which interprets the wetland cover types and one with the probabilities displayed on color base map images.

FIELD DELINEATIONS COMPLETED WITHIN THE PROPOSED ROUTE

As noted above, ERM did not conduct an onsite delineation of wetlands or waterbodies along Route 1; however, a field delineation was completed by Wetland Studies and Solutions Inc. in June 2022 on a parcel south of Rt. 7 and west of Belmont Ridge Road, between the proposed Starlight and Apollo Substations (between mileposts 1.5 and 1.9). This field delineation of wetlands and waterbodies was approved by the U.S. Army Corps of Engineers (USACE) in an Approved Jurisdictional Determination (AJD) in August 2022 (Permit # NAO-2022-01498-RDB). This field delineation (USACE 2022) was used to outline boundaries of potential wetlands in this area in lieu of the wetland desktop delineation method. The field delineated boundaries in these locations are incorporated into the wetland and waterbody probability table below.

RESULTS

Results of the probability analysis are presented in Table 2 below. Summaries are provided in the sections following the table.

Table 2: Summary of the Probabilities of Wetland and Waterbody Occurrence along Route 1 and the Proposed Substations [a,b]

Probability	Total within right-of-way (acres) [c]	Wetland and Waterbody type (acres)				
		PEM Emergent	PFO Forested	PSS Scrub-shrub	PUB Freshwater pond	Riverine Stream
Route 1						
High	NA	NA	NA	NA	NA	NA
Medium/High	0.6	0.3	NA	NA	NA	0.3
Medium	0.4	NA	NA	0.0	0.1	0.3
Medium/Low	0.1	NA	NA	NA	NA	0.1
Low	NA	NA	NA	NA	NA	NA
Very Low	NA	NA	NA	NA	NA	NA

NA: Not applicable due to absence of wetland or waterbody type within the Project footprint; 0.0 indicates less than 0.05 acre of the wetland is present.

a Numbers in this table have been rounded for presentation purposes; as a result, the totals may not equal the sum due to rounding.

b Any wetlands or waterbodies within the proposed Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo Substations footprints are included within Route 1.

c 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.

WETLAND CROSSINGS

ROUTE 1 AND PROPOSED SUBSTATIONS

The length of the corridor of Route 1 is approximately 1.9 miles and encompasses a total of approximately 41.6 acres (including the 4.7-acre Twin Creeks, 4.7-acre Sycolin Creek, 4.5-acre Starlight, 4.0-acre Lunar, and 5.0-acre Apollo Substation footprints). Based on the methodology discussed above, the right-of-way footprint will encompass approximately 2.4% percent (1.0 acre) of land with a medium or higher probability of containing wetlands and waterbodies.

WATERBODY CROSSINGS

ERM identified and mapped waterbodies in the study area using similar publicly available GIS databases as those used to identify and map wetlands. Route 1 and the Proposed Substations cross perennial and intermittent waterbodies (rivers, streams, tributaries, and open water features). According to the USACE documentation, no waters considered navigable under Section 10 of the Rivers and Harbors Act are crossed by Route 1 for the Project.

ROUTE 1

Based on ERM's desktop wetland and waterbody analysis, there are no waterbodies within the footprints of any of the proposed substations. Route 1 has seven waterbody crossings, of which three are NHD-mapped waterbodies, including perennial Goose Creek and two, unnamed, intermittent tributaries to Goose Creek. There are four unmapped waterbodies including two open water features that appear to be stormwater detention ponds, and two unnamed, unclassified streams identified within the right-of-way using recent (2023) aerial imagery. Based on ERM's desktop wetland and waterbody analysis, the Route 1 right-of-way would encompass approximately 0.6 acre of riverine wetlands and 0.1 acre of PUB wetlands.

PROJECT IMPACTS

Avoiding or minimizing new impacts on wetlands and streams was among the criteria used in developing routes for the Project. To minimize impacts on wetland areas, the transmission line has been designed to span or avoid wetlands where possible, keeping transmission structures outside of wetlands to the extent practicable. Permanent direct impacts to wetlands would be limited to the fill of approximately 0.3 acre of PEM wetland within the footprint of the Twin Creeks Substation, placement of structures within wetlands if unavoidable, and the potential permanent conversion of less than 0.1 acre of PSS wetlands within the right-of-way to PEM wetland type, depending on vegetation type and height maintained within the right-of-way.

There would be no change in contours of wetlands and waterbodies, or redirection of the flow of water, and the amount of spoil from foundations and structure placement would be minimal. Excess soil in wetlands generated through foundation construction would be

limited through the use of Best Management Practices (erosion and sediment controls) and would be removed from the wetland.

The majority of potential direct impacts on wetlands due to Project construction would be temporary in nature. Mats would be used for construction equipment to travel over wetlands, as appropriate. Due to the absence of an existing right-of-way, some new access roads may be necessary along the route. If a section of line cannot be accessed from existing roads, Dominion Energy Virginia may need to install a culvert, ford, or temporary bridge along the right-of-way to cross small streams. In such cases, some temporary fill material in wetlands adjacent to such crossings may be required. This fill would be placed on erosion control fabric and removed when work is completed, returning ground elevations to original contours. When siting transmission lines, perpendicular crossings of wetland systems are prioritized to minimize direct impacts to these sensitive areas and reduce overall impacts to the watershed.

Where the removal of trees or shrubby vegetation occurs within wetlands, Dominion Energy Virginia would use the least intrusive method reasonably possible to clear the corridor. Hand-cutting of vegetation would be conducted, where needed, to avoid and minimize impacts on streams and/or wetlands. Where tree clearing is required within the new right-of-way, PFO and PSS wetlands would be permanently converted to PSS or PEM wetland types. Forested wetlands and riparian buffers provide functions such as peak flood flow reduction, nutrient and sediment capture, filtration of pollutants to adjacent waterbodies, and habitat diversity. The conversion of forested wetlands would reduce or eliminate some of these functions.

Required tree removal adjacent to waterbodies would reduce riparian buffer functions such as stream bank stabilization and erosion control, nutrient and sediment filtration, floodwater storage and peak flow reduction, and water temperature modification from shading. Vegetation within the right-of-way would be allowed to return to maintained grasses and shrubs after construction, which would provide some filtration stabilization to help protect waterbodies from pollutants. Within the stream buffers (100 feet), all trees will be hand felled with stumps left in place to reduce the potential for erosion. Shrubs and trees with a diameter at breast height of less than three inches will be left in place unless it impedes temporary access where they would be clipped, leaving roots in place which will be able to naturally regenerate.

DATE
27 March 2024

REFERENCE
0655669

SUMMARY

This Wetland and Waterbody Summary report was prepared in accordance with the Memorandum of Agreement between the DEQ and the SCC for the purpose of initiating a Wetlands Impact Consultation. Please note that a formal onsite wetland delineation was not conducted as part of this review.

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: www.dominionenergy.com/NOVA.

If you have any questions regarding this wetland assessment, please contact me at 612-347-7178 or by email at mariah.weitzenkamp@erm.com.

Sincerely,

Mariah Weitzenkamp
Environmental Resources Management

cc: Heather Kennedy, Dominion Energy Virginia

Enclosures: Attachments 1 and 2

REFERENCES

Environmental Laboratory. 1987. Technical Report Y-87-1: Corps of Engineers Wetlands Delineation Manual US Army Corps of Engineers, Waterways Experiment Station. January 1987.

Environmental Laboratory. 2012. Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region. Prepared for U.S. Army Corps of Engineers Wetlands Regulatory Assistance Program. ERDC/EL TR-12-9.

ESRI, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community. (ESRI et al). 2023. World Topographic Map. https://basemaps.arcgis.com/arcgis/rest/services/World_Basemap_v2/VectorTileServer. Accessed January 2024.

Google Earth LLC. 2022. Google Earth Pro, Version 7.3.6. Historic Aerial Imagery in Virginia, United States. Accessed January 2024.

Loudoun County Imagery. 2023. Aerial images taken Spring of 2023. Ordered by ERM.

United States Department of the Army, Army Corps of Engineers (USACE). 2022. Notification of Approved Jurisdictional Determination, Northern Virginia Regulatory Section. Permit # NAO-2022-01498-RDB. Provided to Dominion Energy by Customer C.

United States Department of Agriculture, Natural Resource Conservation (USDA-NRCS). 2023. Soil Survey Geographic Data (SSURGO). Available online at https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/survey/?cid=nrcs142p2_053627. Accessed January 2024.

USA National Agricultural Imagery Program (NAIP). 2023. USA NAIP Imagery: Natural Color. Available online at: https://naip-usdaonline.hub.arcgis.com/. Accessed January 2024.

USA National Agricultural Imagery Program (NAIP). 2023a. USA NAIP Imagery: Color Infrared. Available online at: https://naip-usdaonline.hub.arcgis.com/. Accessed January 2024.

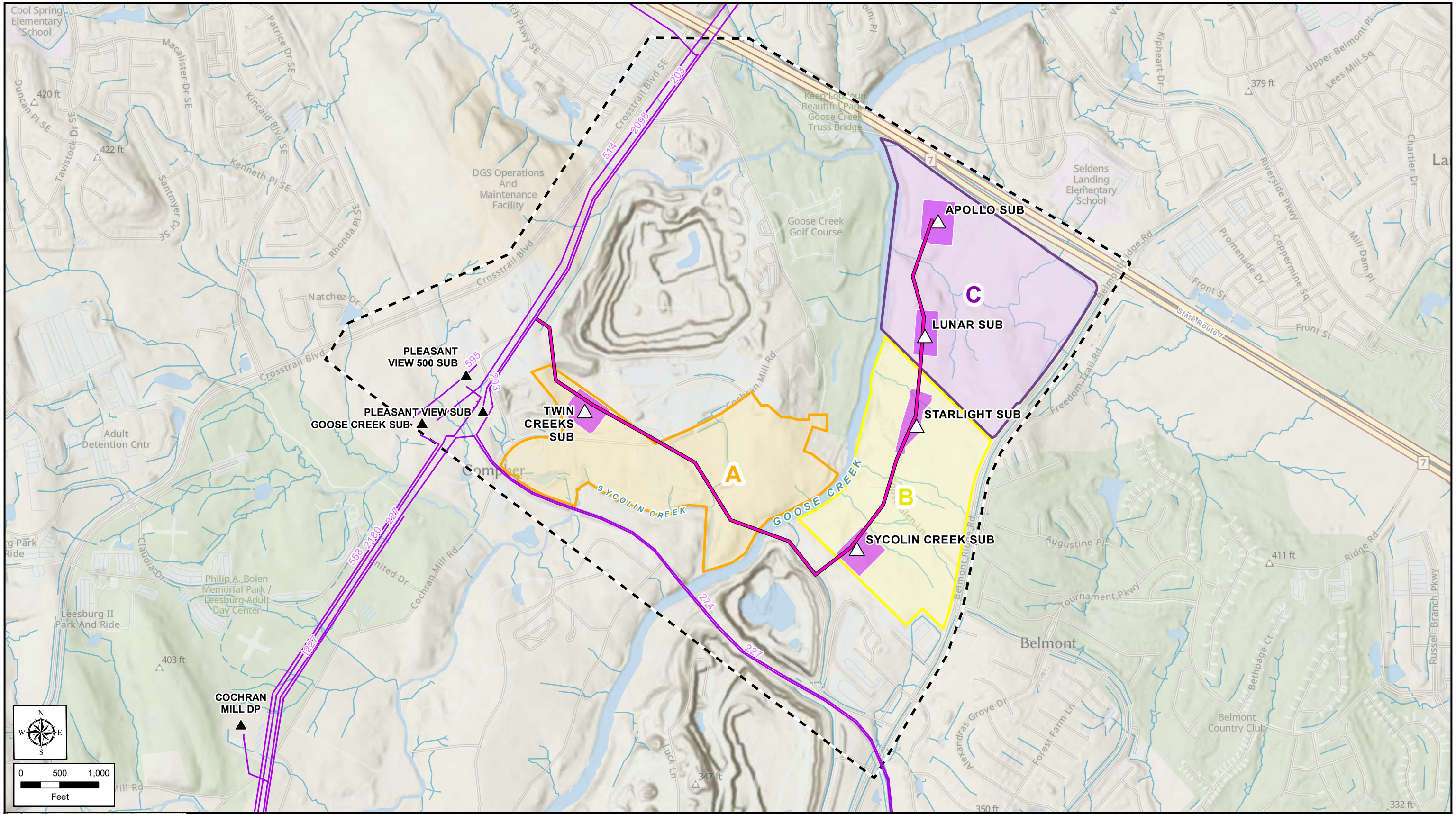
USFWS (U.S. Fish and Wildlife Service). 2013. Classification of Wetlands and Deepwater Habitats of the United States. Available online at: https://www.fws.gov/program/national-wetlands-inventory/classification-codes. Accessed January 2024.

U.S. Fish and Wildlife (USFWS). 2023. National Wetlands Inventory. Available online at http://www.fws.gov/wetlands/. Accessed January 2024.

USGS (United States Geological Survey EROS Data Center). 2022. 7.5-minute Digital Elevation Model (10-meter resolution) Accessed: January 2024. Retrieved from: https://pubs.usgs.gov/of/2003/of03-150/arcview/metadata/dem/dem.htm

USGS (U.S. Geological Survey). 2023. The National Hydrography Dataset Plus High Resolution. Accessed: January 2024. Retrieved from: https://hydro.nationalmap.gov/arcgis/rest/services/nhd/MapServer

ATTACHMENT 1

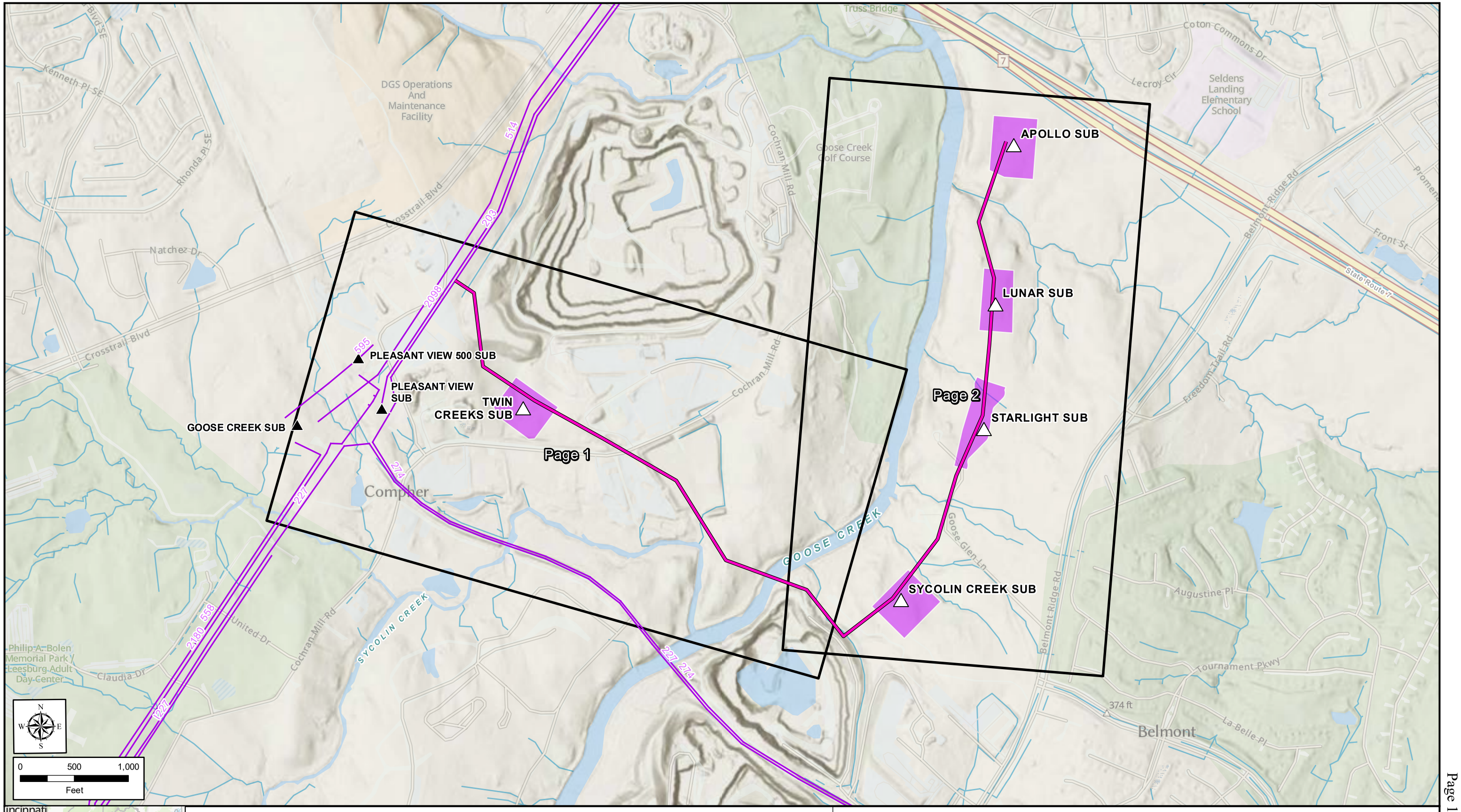


Attachment 1
Project Overview Map
230 kV Apollo-Twin Creeks Lines, Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo Substations
Dominion Energy Virginia
Loudoun County, Virginia

ERM

Dominion Energy

ATTACHMENT 2



Attachment 2
Overview Map Index
230 kV Apollo-Twin Creeks Lines, Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo Substations
Dominion Energy Virginia
Loudoun County, Virginia

ERM

Dominion Energy

- Mileposts
- Existing Substation
- Proposed Substation
- Proposed Apollo-Twin Creeks Lines (Route 1)
- Proposed Substation Footprint

Wetland Probability
- Medium
- Medium/High

SSURGO Hydric Soil Rating
- Not Hydric Soil
- Partially Hydric Soil
- Hydric Soil
- NWI Wetland

Attachment 2
Wetland Probability Map Set-Probability
230 kV Apollo-Twin Creeks Lines, Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo Substations
Dominion Energy Virginia
Loudoun County, Virginia

ERM

Dominion Energy

- Mileposts
- Proposed Substation
- Proposed Apollo-Twin Creeks Lines (Route 1)
- Proposed Substation Footprint

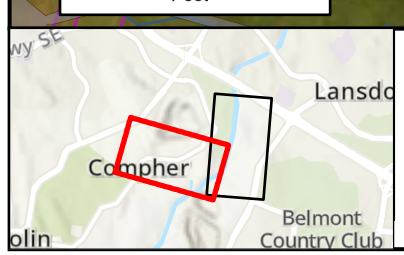
Wetland Probability
- Medium
- Medium/High

SSURGO Hydric Soil Rating
- Not Hydric Soil
- Partially Hydric Soil
- Hydric Soil
- NWI Wetland

Attachment 2
Wetland Probability Map Set-Probability
230 kV Apollo-Twin Creeks Lines, Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo Substations
Dominion Energy Virginia
Loudoun County, Virginia

ERM

Dominion Energy



- Mileposts
- Existing Substation
- Proposed Substation
- Proposed Apollo-Twin Creeks Lines (Route 1)
- Proposed Substation Footprint

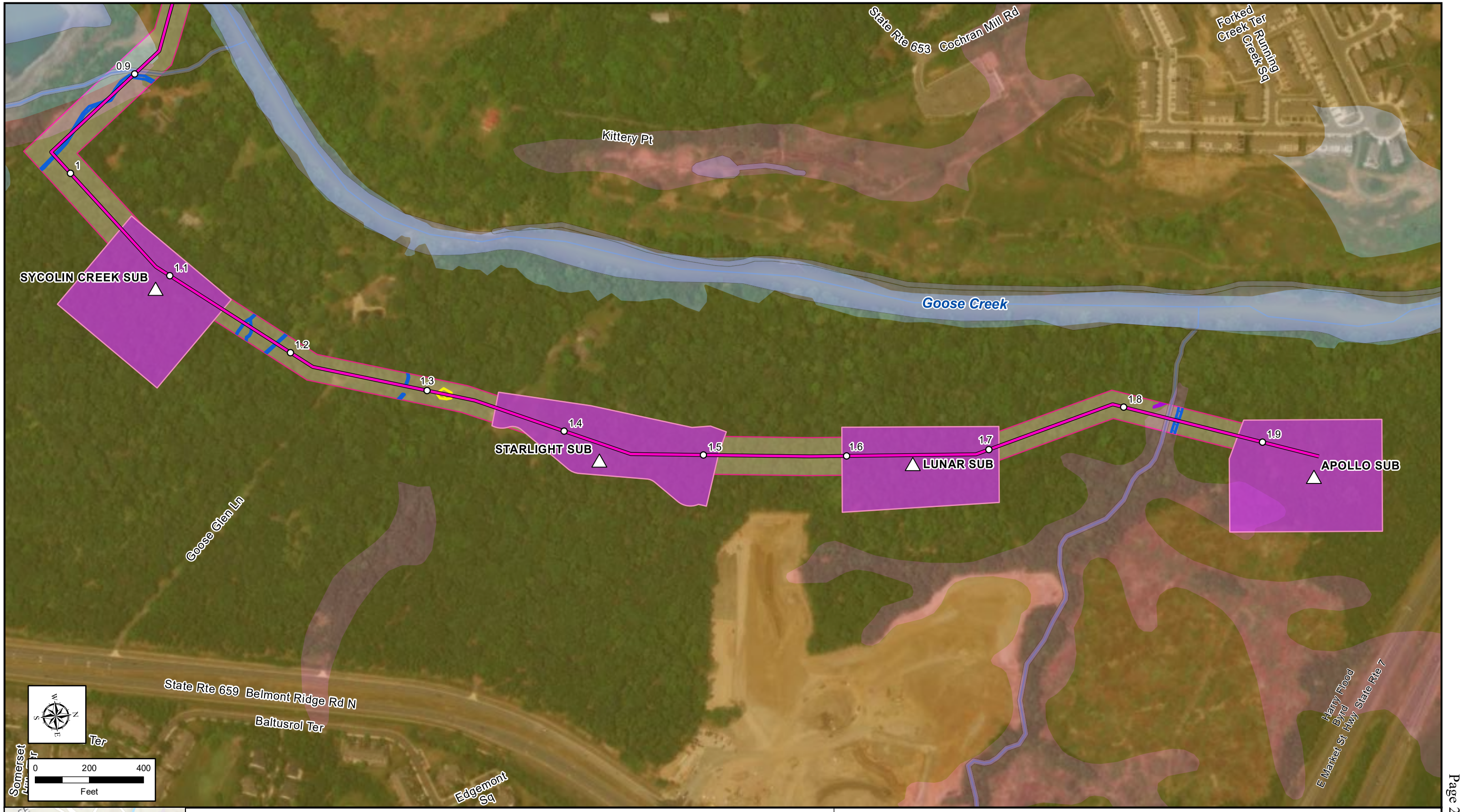
Cowardin
- PEM
- PUB
- Riverine

SSURGO Hydric Soil Rating
- Not Hydric Soil
- Partially Hydric Soil
- Hydric Soil
- NWI Wetland

Attachment 2
Wetland Probability Map Set-Cowardin Classification
230 kV Apollo-Twin Creeks Lines, Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo Substations
Dominion Energy Virginia
Loudoun County, Virginia

ERM

Dominion Energy



- Mileposts
- Proposed Substation
- Proposed Apollo-Twin Creeks Lines (Route 1)
- Proposed Substation Footprint

Cowardin
- PSS
- PUB
- Riverine

SSURGO Hydric Soil Rating
- Not Hydric Soil
- Partially Hydric Soil
- Hydric Soil
- NWI Wetland

Attachment 2
Wetland Probability Map Set-Cowardin Classification
230 kV Apollo-Twin Creeks Lines, Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo Substations
Dominion Energy Virginia
Loudoun County, Virginia

ERM

Dominion Energy

Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

1111 E. Main Street, Suite 1400, Richmond, Virginia 23219
P.O. Box 1105, Richmond, Virginia 23218
(800) 592-5482 FAX (804) 698-4178
www.deq.virginia.gov

Travis A. Voyles
Secretary of Natural and Historic Resources

Michael S. Rolband, PE, PWD, PWS Emeritus
Director
(804) 698-4020

March 14, 2024

Heather E.B. Kennedy
Environmental Specialist III
Dominion Energy Services
120 Tredegar Street, Richmond, VA 23219

RE: **Dominion Energy Virginia's Proposed 230 kV Apollo-Twin Creeks Lines and Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo Substations in Loudoun County, Virginia**

Dear Ms. Kennedy,

In accordance with the Department of Environmental Quality-State Corporation Commission *Memorandum of Agreement Regarding Wetland Impact Consultation* (July 2003), we have reviewed the information submitted by Dominion Energy Virginia. Dominion is proposing to construct a new double circuit 230 kilovolt ("kV") transmission line entirely in new right-of-way (the "Apollo-Twin Creeks Lines"), and to construct five new 230-34.5 kV substations on property to be obtained by the Company (the "Twin Creeks Substation," "Sycolin Creek Substation," "Starlight Substation," "Lunar Substation," and "Apollo Substation") in Loudoun County, Virginia (collectively, the "Apollo-Twin Creeks Project" or the "Project").

Summary of Findings
A jurisdictional wetland and waters delineation has not been conducted at this time; however, Environmental Resources Management conducted a wetland desktop study to identify probable wetlands based on a review of multiple data sources. The full Wetland Desktop Study will be submitted once finalized. Subsequently, a field wetland delineation will be conducted and the extent of wetlands of other waters of the United States will be submitted to the U.S. Army Corps of Engineers for confirmation.

Table 1 below provides a summary of the medium to high probability wetlands that could be affected by the proposed options.

Table 1: Summary of the Probabilities of Wetland and Waterbody Occurrence along the Proposed Route for the Apollo-Twin Creeks Lines [a]

Probability	Total within right-of-way Acres [b, c]	Wetland and Waterbody type (acres)				
		PEM (Emergent)	PFO (Forested)	PSS (Scrub-shrub)	PUB (Freshwater pond)	Riverine (Stream)
Proposed Route [d]						
High	NA	NA	NA	NA	NA	NA
Medium/High	0.6	0.2	NA	NA	NA	0.3
Medium	0.4	NA	NA	0.0	0.1	0.3

NA *Not applicable due to absence of wetland or waterbody type within the route.*

a *The numbers in this table have been rounded for presentation purposes; as a result, the sums may not equal the totals due to rounding.*

b *Total acres may not total the sum of wetland and waterbody types. This is due to some of the lower probability rankings not overlapping with NWI or interpreted wetlands, and therefore not having a wetland/waterbody type associated with them.*

c *The Company identified a field delineation which had been completed by an external party in association with one of the three Customers. This field delineation was used to outline boundaries of potential wetlands in these locations in lieu of the wetland desktop delineation method and as such, these field delineated boundaries are incorporated into the wetland and waterbody probability table.*

d *Wetlands and waterbodies within the proposed Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo Substation footprints are included within the Proposed Route.*

Water Quality and Wetlands. The disturbance of land and surface waters, which include wetlands, open water, and streams, may require prior approval by the Virginia Department of Environmental Quality (DEQ); the U.S. Army Corps of Engineers (USACE); the Virginia Marine Resources Commission (VMRC); and/or local government wetlands boards (generally in the northern and piedmont regions of Virginia). Measures such as but not limited to Best Management Practices (BMPs) must be taken to first avoid and minimize impacts to surface waters during construction activities, including potential water quality impacts resulting from construction site runoff. Unavoidable impacts may require compensatory mitigation.

The USACE and DEQ work in conjunction to provide official confirmation of whether there are federal and/or state jurisdictional surface waters that may be impacted by the proposed project. DEQ may confirm additional waters as jurisdictional beyond those under federal authority. VMRC provides its own review to determine its agency jurisdiction. Review of National Wetland Inventory maps or topographic maps for locating wetlands, open waters, or streams may not be sufficient; there may need to be a site-specific review by a qualified professional.

If construction activities will occur in or along any streams (perennial, intermittent, or ephemeral), open water, or wetlands, the applicant should contact the DEQ-VWP manager at the DEQ regional office closest to the project location (https://www.deq.virginia.gov/get-involved/about-us/contact-us) to determine the need for any permits prior to commencing work that could impact surface waters. Even if there will be no intentional placement of fill material in jurisdictional waters, potential water quality impacts resulting from construction site surface runoff must be minimized. This can be achieved by using BMPs. DEQ's permit need decisions neither replace nor supersede requirements set forth by other local, state, federal, and tribal laws, nor eliminate the need to obtain additional permits, approvals, consultations, or authorizations as required by law before proposed activities may commence.

Erosion and Sediment Control and Storm Water Management. DEQ has regulatory authority for the Virginia Pollutant Discharge Elimination System (VPDES) programs related to municipal separate storm sewer systems (MS4s) and construction activities. Erosion and sediment control (ESC) measures are addressed in local ordinances and State regulations. Additional information is available at https://www.deq.virginia.gov/permits/water/stormwater-construction. Non-point source pollution resulting from this project should be minimized by using effective erosion and sediment control practices and structures. Consideration should also be given to denuded areas to be promptly revegetated following construction work. If the total land disturbance exceeds 10,000 square feet, an ESC plan will be required. Some localities also require an ESC plan for disturbances less than 10,000 square feet. A stormwater management plan may also be required. For any land disturbing activities equal to one acre or more, you are required to apply for coverage under the VPDES General Permit for Discharges of Storm Water from Construction Activities. The Virginia Stormwater Management Permit Authority may be DEQ or the locality.

Recommendations and Potential Permits:

Based upon review of the information provided, DEQ's Virginia Water Protection (VWP) Permit Program offers the following general recommendations concerning potential surface water impacts:

1. Prior to commencing project work, all surface waters on the project site should be delineated by a qualified professional and verified by the USACE or DEQ. Note that the USACE can confirm boundaries of federal jurisdictional waters and state jurisdictional waters but may only provide confirmation of Waters of the United States (WOTUS) boundaries. Except in couple of situations, DEQ provides confirmation of all state surface waters boundaries, whether or not the USACE has jurisdiction.
2. Wetland, stream, and open water impacts should be avoided and minimized to the maximum extent practicable.
3. If the scope of the project changes, additional review will be necessary by one or more offices in the Commonwealth's Secretariat of Natural Resources and/or the USACE.
4. At a minimum, any required compensation for permanent impacts to State Waters, including the compensation for permanent conversion of forested wetlands and scrub-shrub wetlands to emergent wetlands, should be in accordance with all applicable state regulations and laws. The typical ratios for permanent conversion impacts is 1:1 (not a standard ratio). Secondary impacts (e.g., loss of hydrology, significant temporary impacts, etc.) should also be considered, and may require compensatory mitigation at the standard ratios, unless determined otherwise based on project-specific considerations. Permanent impacts to forested or converted wetlands are required to be compensated by establishing or restoring new forested or scrub-shrub wetlands, within the impacted watershed. Compensation is preferred through available sources of mitigation bank and in-lieu program wetland mitigation credits.
5. Any temporary impacts to surface waters associated with this project should be restored to pre-existing conditions.
6. No activity may substantially disrupt the movement of aquatic life indigenous to the water body, including those species which normally migrate through the area, unless the primary purpose of the activity is to impound water. Culverts placed in streams must be installed to maintain low

flow conditions. No activity may cause more than minimal adverse effect on navigation. Furthermore, the activity must not impede the passage of normal or expected high flows and the structure or discharge must withstand expected high flows.

7. Erosion and sedimentation controls (ESC) should be designed in accordance with the most recent version of the Virginia Stormwater Management Handbook. These controls should be placed prior to clearing and grading and maintained in good working order to minimize impacts to state waters. These controls should also remain in place until the area is stabilized and should then be removed. Any exposed slopes and streambanks should be stabilized immediately upon completion of work in each permitted area. All denuded areas should be properly stabilized in accordance with the most recent Virginia Stormwater Management Handbook. Please note that on June 22, 2023, Virginia's State Water Control Board adopted new Virginia Erosion and Stormwater Management Regulations (9VAC25-875) to consolidate program requirements and correct inconsistencies between erosion and sediment control and stormwater management program regulations. Additionally, the project will require coverage under the new Construction General Permit. These changes will become effective on July 1, 2024.
8. No machinery may enter state surface waters, unless authorized by a Virginia Water Protection (VWP) individual permit, general permit, or general permit coverage.
9. Heavy equipment in temporarily impacted surface waters should be placed on mats, geotextile fabric, or other suitable material, to minimize soil disturbance to the maximum extent practicable. Equipment and materials should be removed immediately upon completion of work.
10. Activities should be conducted in accordance with any time-of-year restriction(s) as recommended by the Department of Wildlife Resources, the Department of Conservation and Recreation (DCR), the Virginia Marine Resources Commission (VMRC), and the U.S. Fish and Wildlife Service (USFWS), or other protective measures for listed threatened or endangered species and/or critical habitat. The permittee should retain a copy of any DEQ and resource agency correspondence concerning species or habitats for the duration of the construction phase of the project.
11. All construction, construction access, and demolition activities associated with this project should be accomplished in a manner that minimizes construction materials or waste materials from entering surface waters, unless authorized by a Virginia Water Protection (VWP) individual permit, general permit, or general permit coverage. Wet, excess, or waste concrete is prohibited from entering surface waters.
12. Herbicides used in or around any surface water should be approved for aquatic use by the United States Environmental Protection Agency (EPA) or the USFWS. Use of herbicides in state waters shall be performed in accordance with Code of Virginia Chapter 39 - Pesticide Control (§§ 3.2-3900 through 3.2-3947) and 9VAC25-800 et. seq. These herbicides should be applied according to label directions by an herbicide applicator licensed by the Virginia Department of Agriculture and Consumer Services (VDACS), Office of Pesticide Services. A non-petroleum-based surfactant should be used in or around any surface waters.

Permits:

Based on DEQ's review of Dominion's letter dated February 15, 2024, the proposed project may require a Virginia Water Protection (VWP) individual permit or general permit coverage. The applicant may submit a Joint Permit Application (JPA) in accordance with form instructions for further evaluation and final permit need determination by DEQ.

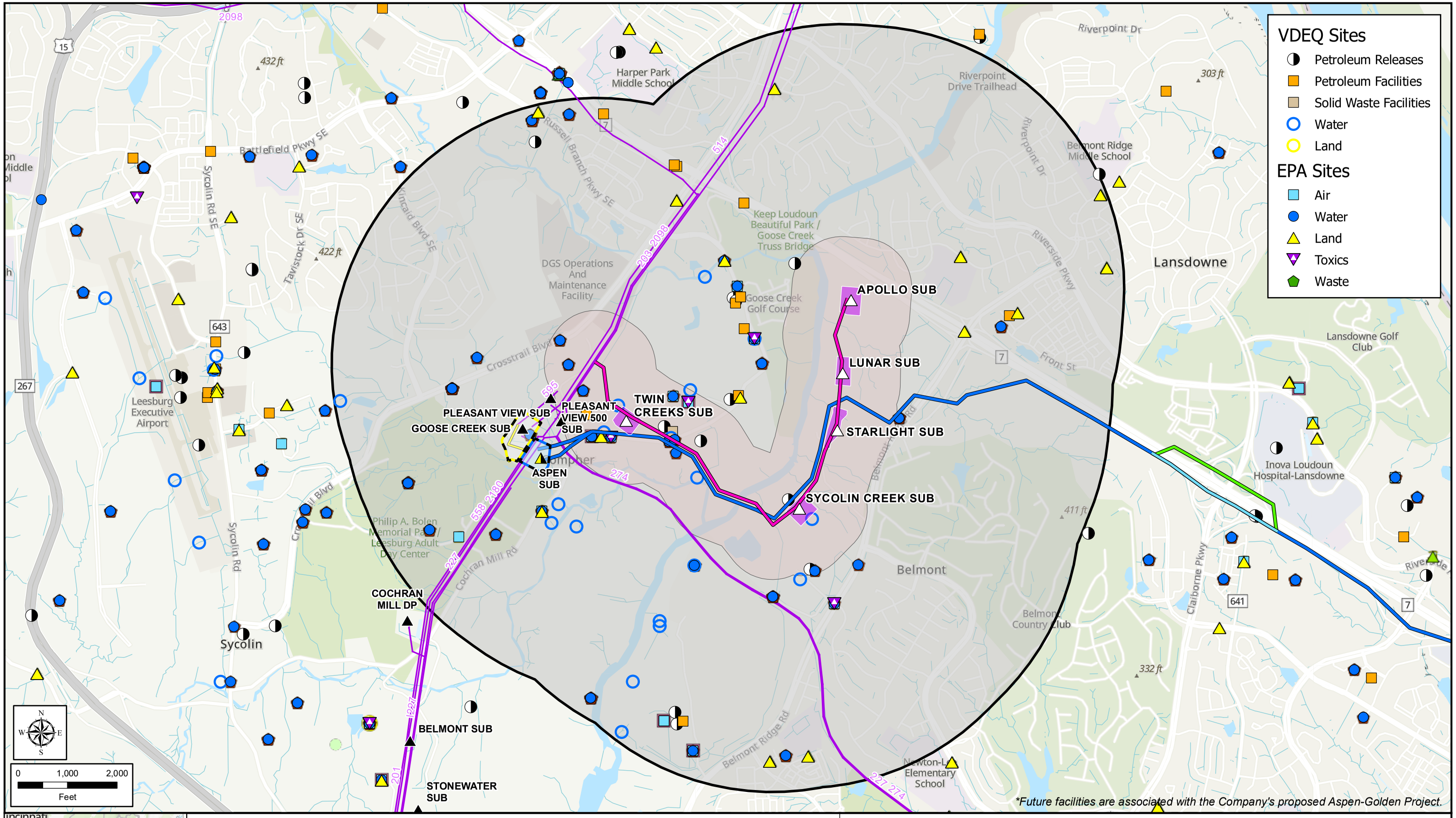
Should you have any questions, please don't hesitate to contact me at 804-965-4329 or at **michelle.henicheck@deq.virginia.gov**.

Sincerely,

Michelle Henicheck

Michelle Henicheck, PWS
Senior Wetland Ecologist
Office of Wetlands & Stream Protection

Cc: Natasha Nahas, DEQ-NRO
Bettina Rayfield, DEQ - Office of Environmental Review



*Future facilities are associated with the Company's proposed Aspen-Golden Project.

Attachment 2.F.1
Solid and Hazardous Waste Sites
230 kV Apollo-Twin Creeks Lines, Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo Substations
Dominion Energy Virginia
Loudoun County, Virginia

ERM

Dominion Energy

COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

February 15, 2024

Briana Cooney
Environmental Resource Management
222 South 9th Street, Suite 2900
Minneapolis, MN 55402

Re: 0655669, Twin Creeks to Apollo

Dear Ms. Cooney:

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 in our files, the Ashburn Quarry Conservation Site is located within the project area, 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 (B-rank) based on the rarity, quality, and number of element occurrences they contain; on a scale of 1-5, 1 being most significant. The Ashburn Quarry Conservation Site has been assigned a B-rank of B5, which represents a site of general interest/open space significance. The natural heritage resource associated with this site is:

Falco peregrinus	Peregrine Falcon	G4/S1B, S2N/NL/LT

The Peregrine Falcon nests on cliffs, bluffs, talus slopes, old tree hollows, and abandoned nests of other birds of prey (Byrd, 1991). The adult Peregrine Falcon has long and pointed wings, a dark blue or slate back, black on its head and cheeks and white on its throat and sides of its neck. Their belly is barred white and blackish brown, and its long, narrow tail is blue-grey with rounded narrow black bands and a white tipped end (Byrd, 1991). The Peregrine Falcon declined dramatically worldwide as a result of pesticide use in the mid-1900's and was once extirpated from east of the Mississippi, including Virginia (CCB, 2006). Once nesting took place in mountainous areas with sheer cliffs (CCB, 2006); currently, nesting pairs in Virginia predominately use artificial structures such as tall buildings, bridge supports, and towers primarily in the coastal plain (Byrd, 1991; CCB, 2006). Intensive reintroduction efforts have been applied in Virginia since the 1970s, and currently the population in Virginia still warrants protection and management.

Threats to the Peregrine falcon include continued exposure to pesticides and human disruption of nesting attempts (Byrd, 1991). Please note that this species is currently classified as threatened by the Virginia Department of Wildlife Resources (VDWR).

Due to the legal status of Peregrine falcon, DCR recommends coordination with Virginia's regulatory authority for the management and protection of this species, the VDWR, to ensure compliance with the Virginia Endangered Species Act **(**VA ST §§ 29.1-563 – 570).

Additionally, 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.

The proposed project will also impact multiple Ecological Cores **(C4 and C5)** as identified in the Virginia Natural Landscape Assessment (https://www.dcr.virginia.gov/natural-heritage/vaconvisvnla). Mapped cores in the project area can be viewed via the Virginia Natural Heritage Data Explorer, available here: http://vanhde.org/content/map.

Ecological Cores are areas of at least 100 acres of continuous interior, natural cover that provide habitat for a wide range of species, from interior-dependent forest species to habitat generalists, as well as species that utilize marsh, dune, and beach habitats. Interior core areas begin 100 meters inside core edges and continue to the deepest parts of cores. Cores also provide the natural, economic, and quality of life benefits of open space, recreation, thermal moderation, water quality (including drinking water recharge and protection, and erosion prevention), and air quality (including sequestration of carbon, absorption of gaseous pollutants, and production of oxygen). Cores are ranked from C1 to C5 (C5 being the least significant) using nine prioritization criteria, including the habitats of natural heritage resources they contain.

Impacts to cores occur when their natural cover is partially or completely converted permanently to developed land uses. Habitat conversion to development causes reductions in ecosystem processes, native biodiversity, and habitat quality due to habitat loss; less viable plant and animal populations; increased predation; and increased introduction and establishment of invasive species.

DCR recommends avoidance of impacts to cores. When avoidance cannot be achieved, DCR recommends minimizing the area of impacts overall and concentrating the impacted area at the edges of cores, so that the most interior remains intact.

Furthermore, 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 (http://www.dcr.virginia.gov/natural-heritage/document/nh-invasive-plant-list-2014.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. Please note this project is within Goose Creek, which has been designated as a scenic river in the state of Virginia. More information about scenic rivers can be found here: https://www.dcr.virginia.gov/recreational-planning/srmain.

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 $500.00 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 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 https://services.dwr.virginia.gov/fwis/ or contact Amy Martin at 804-367-2211 or amy.martin@dwr.virginia.gov. According to the information currently in our files, Goose Creek, which has been designated by the VDWR as a "Threatened and Endangered Species Water" for the Green Floater (*Lasmigona subviridis*) is within the submitted project boundary including a 100-foot buffer. Therefore, DCR recommends coordination with Virginia's regulatory authority for the management and protection of this species, the VDWR, to ensure compliance with the Virginia Endangered Species Act **(**VA ST §§ 29.1-563 – 570).

Should you have any questions or concerns, feel free to contact me at 804-371-2708. Thank you for the opportunity to comment on this project.

Sincerely,

S. René Hypes
Natural Heritage Project Review Coordinator

Cc: Amy Martin, VDWR

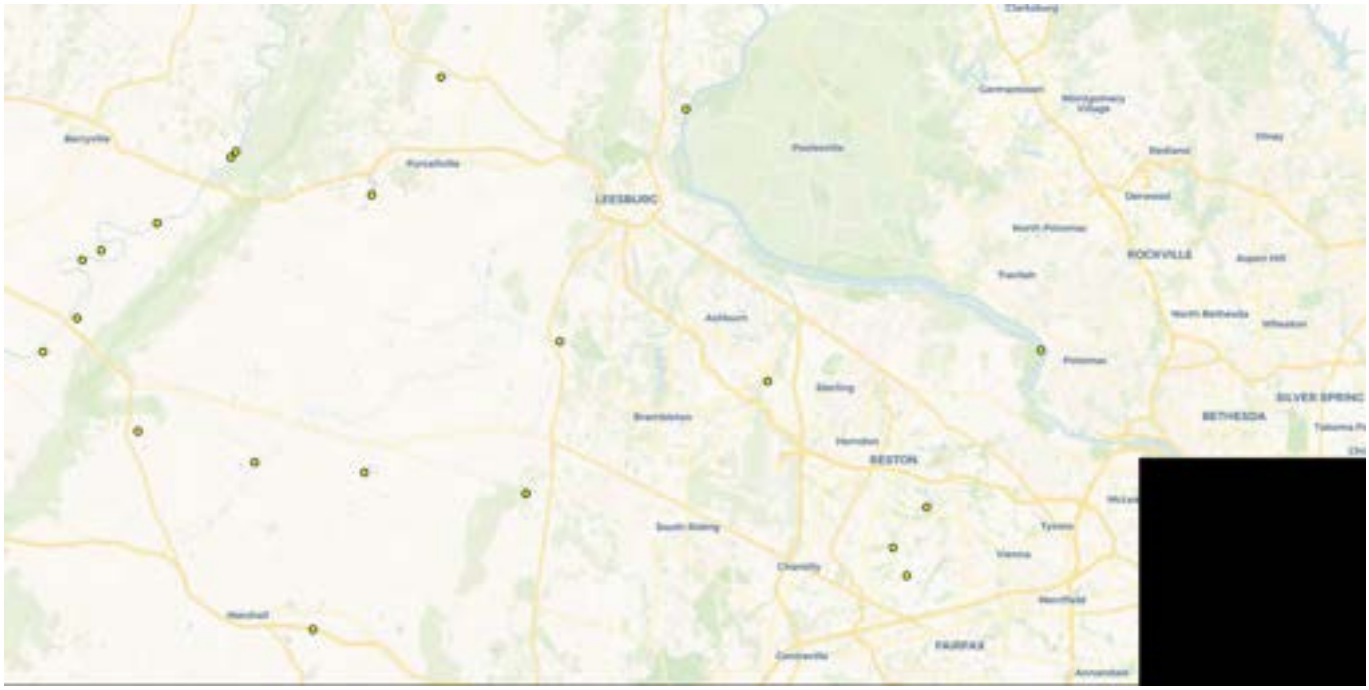
Literature Cited

Byrd, M.A. 1991. Peregrine Falcon. In Virginia's Endangered Species: Proceedings of a Symposium. K. Terwilliger ed. The McDonald and Woodward Publishing Company, Blacksburg, Virginia. p. 499-501.

Rawinski, T.J. 1995. Natural communities and ecosystems: Conservation priorities for the future. Unpublished report for DCR-DNH.

Watts, B. D. 2006. An investigation of cliffs and cliff-nesting birds in the southern Appalachians with an emphasis on the Peregrine Falcon. Center for Conservation Biology Technical Report Series, CCBTR-06-14. College of William and Mary, Williamsburg, VA. 43 pp.

CCB Mapping Portal



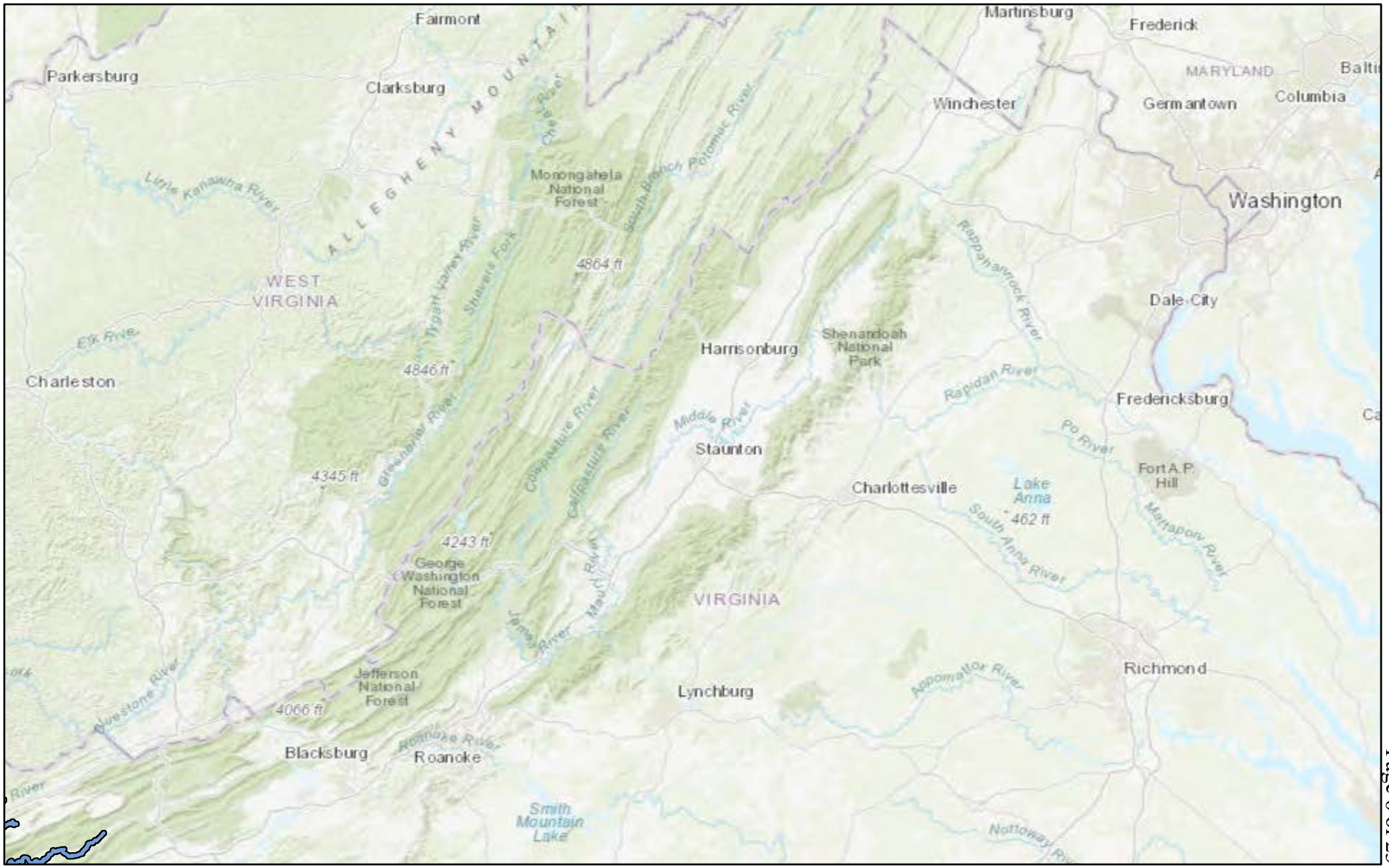
Layers: VA Eagle Nest Locator

Map Center [longitude, latitude]: [-77.53669738769531, 39.0738441478418]

Map Link:
https://ccbbirds.org/maps/#layer=VA+Eagle+Nest+Locator&zoom=11&lat=39.0738441478418&lng=-77.53669738769531&legend=legend_tab_7c321b7e-e523-11e4-aaa0-0e0c41326911&base=Street+Map+%28OSM%2FCarto%29

Report Generated On: 01/17/2024

Critical Habitat - Twin Creeks to Apollo



January 17, 2024

Virginia Critical Habitat (published)

1:2,311,162

0 15 30 60 mi

0 20 40 80 km

Esri, HERE, Garmin, FAO, USGS, EPA, NPS

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 Fax: (804) 693-9032

In Reply Refer To:
Project Code: 2024-0037412
Project Name: Twin Creeks to Apollo

January 17, 2024

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.*).

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 IPaC 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, intentional or unintentional, 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 Migratory Bird Permit | What We Do | U.S. Fish & Wildlife Service (fws.gov).

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. 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 Consultation 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

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: 2024-0037412
Project Name: Twin Creeks to Apollo
Project Type: Transmission Line - New Constr - Above Ground
Project Description: This request is a part of a pre-permitting effort to determine feasibility of overhead powerline routes.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@39.0758122,-77.51825748166914,14z

Counties: Loudoun County, Virginia

ENDANGERED SPECIES ACT SPECIES

There is a total of 5 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 Fisheries[1], 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 *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

CLAMS

NAME	STATUS
Dwarf Wedgemussel *Alasmidonta heterodon* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/784	Endangered
Green Floater *Lasmigona subviridis* 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 *Danaus plexippus*	Candidate

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

CRITICAL HABITATS

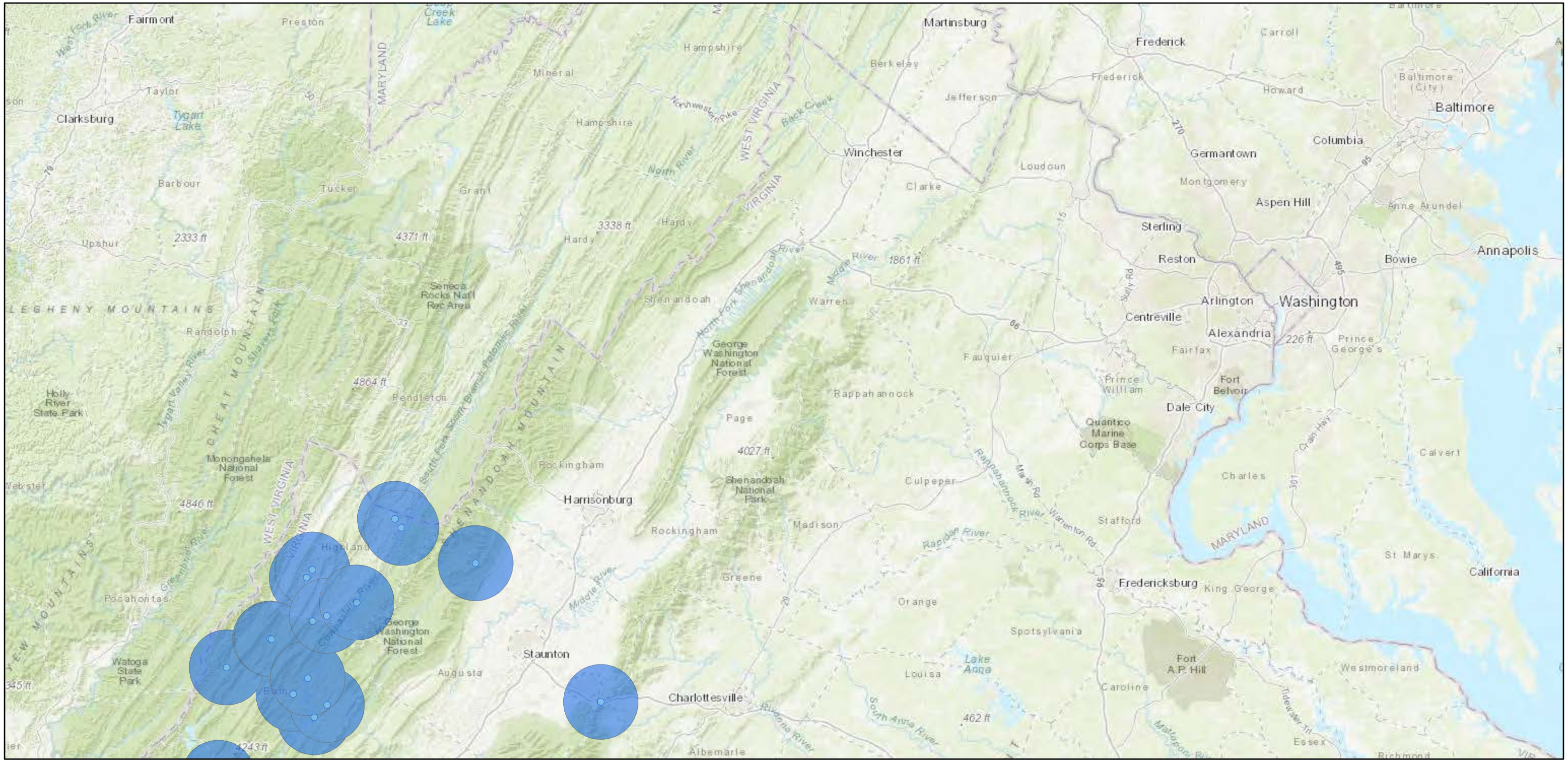
THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

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

IPAC USER CONTACT INFORMATION

Agency: Environmental Resources Management
Name: Briana Cooney
Address: 222 South 9th Street
Address Line 2: Suite 2900
City: Minneapolis
State: MN
Zip: 55402
Email briana.cooney@erm.com
Phone: 6123477114

MYLU-PESU Locations and Roost Trees - Twin Creeks to Apollo



1/17/2024

Tri-colored and Little Brown Hibernaculum Half Mile Buffer

Tri-colored and Little Brown Hibernaculum 5.5 Mile Buffer

1:1,155,581

0 10 20 40 mi

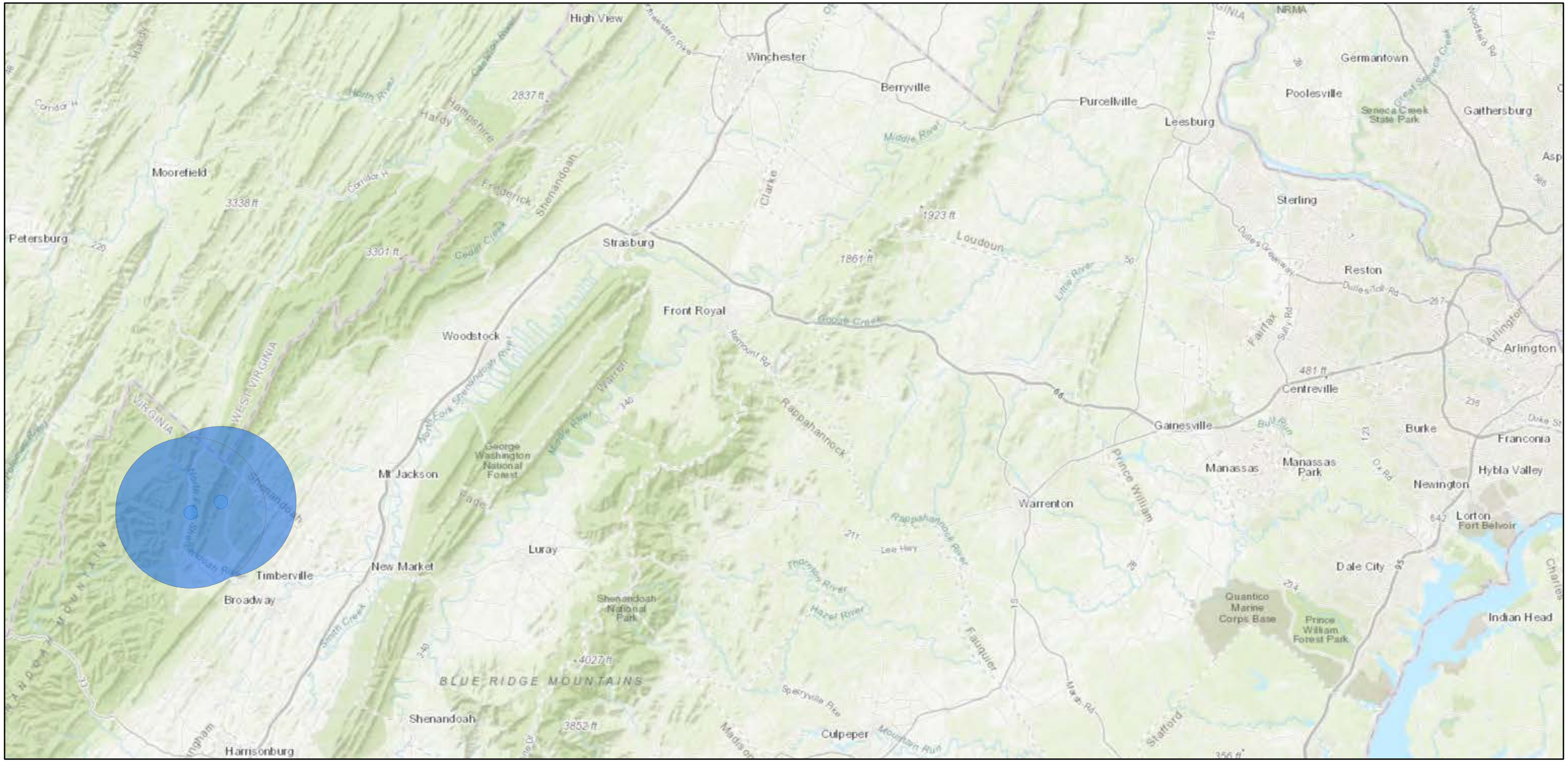
0 15 30 60 km

Esri, HERE, Garmin, FAO, USGS, NGA, EPA, NPS

Dept. Game and Inland Fisheries

Esri, HERE, Garmin, FAO, USGS, NGA, EPA, NPS |

NLEB Locations and Roost Trees - Twin Creeks to Apollo



1/17/2024

NLEB Hibernaculum 5.5 Mile Buffer

NLEB Hibernaculum Half Mile Buffer

1:577,791

0 5 10 20 mi

0 5 10 20 km

Esri, HERE, Garmin, USGS, NGA, EPA, USDA, NPS

VA Dept. Game & Inland Fisheries

Esri, HERE, Garmin, USGS, NGA, EPA, USDA, NPS |

VAFWIS - Department of Wildlife Resources

39.07663 -77.51721
is the Search Point
Submit Cancel

Search Point
- **Change** to "clicked" map point
- **Fixed** at 39.07663 -77.51721

Show Position Rings
Yes No
1/2 mile and 1/8 mile at the **Search Point**

Show Search Area
Yes No
2 Search distance miles radius

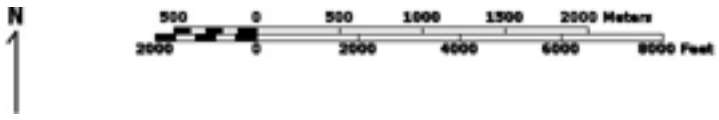
Search Point is at map center

Base Map Choices
Topography

Map Overlay Choices
Current List: Position, Search

Map Overlay Legend
Position Rings 1/2 mile and 1/8 mile at the Search Point
2 mile radius Search Area

back Refresh Browser Page
Map Click Pan Id M Map Scale In Zoom Out Screen Size Small Size Big Help



Point of Search 39.07663 -77.51721
Map Location 39.07663 -77.51721

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: Topographic maps from TOPO! copyright 2006 (see National Geographic Maps for details)

Map projection is UTM Zone 18 NAD 1983 with left 278253 and top 4332297. Pixel size is 8 meters . Coordinates displayed are decimal Degrees North and West. Map is currently displayed as 1000 columns by 1000 rows for a total of 1000000 pixles. The map display represents 8000 meters east to west by 8000 meters north to south for a total of 64.0 square kilometers. The map display represents 26251 feet east to west by 26251 feet north to south for a total of 24.7 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 2024-01-19 13:47:24 (qa/qc March 21, 2016 12:20 - tn=1624671 dist=3218 I)
$poi=39.0766380 -77.5172169

VaFWIS Search Report Compiled on 1/19/2024, 1:48:42 PM

Help

Known or likely to occur within a **2 mile radius around point 39.0766380 -77.5172168** in **107 Loudoun County, VA**

View Map of Site Location

490 Known or Likely Species ordered by Status Concern for Conservation (displaying first 28) (28 species with Status* or Tier I** or Tier II**)

BOVA Code	Status*	Tier**	Common Name	Scientific Name	Confirmed	Database(s)
050022	FEST	Ia	Bat, northern long-eared	Myotis septentrionalis		BOVA
060003	FESE	Ia	Wedgemussel, dwarf	Alasmidonta heterodon		BOVA
060029	FTST	IIa	Lance, yellow	Elliptio lanceolata		BOVA,HU6
050020	SE	Ia	Bat, little brown	Myotis lucifugus		BOVA
050027	FPSE	Ia	Bat, tri-colored	Perimyotis subflavus		BOVA
060006	SE	Ib	Floater, brook	Alasmidonta varicosa		BOVA
030062	ST	Ia	Turtle, wood	Glyptemys insculpta	Potential	BOVA,Habitat,HU6
040096	ST	Ia	Falcon, peregrine	Falco peregrinus		BOVA
040293	ST	Ia	Shrike, loggerhead	Lanius ludovicianus		BOVA,HU6
040379	ST	Ia	Sparrow, Henslow's	Centronyx henslowii		BOVA
060081	ST	IIa	Floater, green	Lasmigona subviridis	Yes	BOVA,TEWaters,Habitat,HU6
040292	ST		Shrike, migrant loggerhead	Lanius ludovicianus migrans		BOVA
100079	FC	IIIa	Butterfly, monarch	Danaus plexippus		BOVA
030063	CC	IIIa	Turtle, spotted	Clemmys guttata		BOVA
030012	CC	IVa	Rattlesnake, timber	Crotalus horridus		BOVA,HU6
040092		Ia	Eagle, golden	Aquila chrysaetos		BOVA
040040		Ia	Ibis, glossy	Plegadis falcinellus		HU6
040306		Ia	Warbler, golden-winged	Vermivora chrysoptera		BOVA
100248		Ia	Fritillary, regal	Speyeria idalia idalia		BOVA,HU6

040213		Ic	Owl, northern saw-whet	Aegolius acadicus		BOVA,HU6
040052		IIa	Duck, American black	Anas rubripes		BOVA,HU6
040036		IIa	Night-heron, yellow-crowned	Nyctanassa violacea violacea		BOVA
040320		IIa	Warbler, cerulean	Setophaga cerulea		BOVA,HU6
040140		IIa	Woodcock, American	Scolopax minor		BOVA,HU6
060071		IIa	Lampmussel, yellow	Lampsilis cariosa		BOVA,HU6
040203		IIb	Cuckoo, black-billed	Coccyzus erythropthalmus		BOVA
040105		IIb	Rail, king	Rallus elegans		BOVA
100166		IIc	Skipper, Dotted	Hesperia attalus slossonae		BOVA,HU6

To view **All 490 species** View 490

*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 - Moderate Conservation Need
Virginia Widlife 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 actions or research needs have been identified or all identified conservation opportunities have been exhausted.

View Map of All Query Results from All Observation Tables

Bat Colonies or Hibernacula: **Not Known**

Anadromous Fish Use Streams

N/A

Impediments to Fish Passage (1 records)

View Map of All Fish Impediments

ID	Name	River	View Map
1216	GOOSE CREEK DAM	GOOSE CREEK	Yes

Colonial Water Bird Survey

N/A

Threatened and Endangered Waters (13 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)	ST	060081	ST	IIa	Floater, green	Lasmigona subviridis	Yes
Goose Creek (023631)	ST	060081	ST	IIa	Floater, green	Lasmigona subviridis	Yes
Goose Creek (025464)	ST	060081	ST	IIa	Floater, green	Lasmigona subviridis	Yes
Goose Creek (026509)	ST	060081	ST	IIa	Floater, green	Lasmigona subviridis	Yes
Goose Creek (026550)	ST	060081	ST	IIa	Floater, green	Lasmigona subviridis	Yes
Goose Creek (028649)	ST	060081	ST	IIa	Floater, green	Lasmigona subviridis	Yes
Goose Creek (031573)	ST	060081	ST	IIa	Floater, green	Lasmigona subviridis	Yes
Goose Creek (032031)	ST	060081	ST	IIa	Floater, green	Lasmigona subviridis	Yes
Goose Creek (032084)	ST	060081	ST	IIa	Floater, green	Lasmigona subviridis	Yes
Goose Creek (034352)	ST	060081	ST	IIa	Floater, green	Lasmigona subviridis	Yes
Goose Creek (035653)	ST	060081	ST	IIa	Floater, green	Lasmigona subviridis	Yes
Goose Creek (036348)	ST	060081	ST	IIa	Floater, green	Lasmigona subviridis	Yes
Goose Creek (040279)	ST	060081	ST	IIa	Floater, green	Lasmigona subviridis	Yes

Managed Trout Streams

N/A

Bald Eagle Concentration Areas and Roosts

N/A

Bald Eagle Nests

N/A

Species Observations (29 records - displaying first 20)

View Map of All Query Results
Species Observations

obsID	class	Date Observed	Observer	N Species			View Map
				Different Species	Highest TE*	Highest Tier**	
633212	SppObs	Jun 17 2015	Rick Browder; Gabriel Darkwah	3		III	Yes
607875	SppObs	Jul 22 2009	Richard; Browder	7		III	Yes
308382	SppObs	Jun 2 2004	Alex Barron	4		III	Yes
67870	SppObs	Aug 7 2001	Rick Browder (Principle Permittee)	6		III	Yes
55952	SppObs	Oct 3 1998	PAUL ANGERMEIER (PRINCIPAL PERMITTEE), KEVIN R. GOODWIN, (COLLECTOR), VA COOPERATIVE FISH AND WILDLIFE UNIT	23		III	Yes
11559	SppObs	Oct 6 1989	ANGERMEIER ET AL	21		III	Yes
332215	SppObs	Jan 1 1956	VPI-VA. TECH	7		III	Yes
60818	SppObs	Oct 18 1964	HIGHTON, RICHARD, MADISON, DALE	1		IV	Yes
17019	SppObs	Jan 1 1900		1		IV	Yes
614305	SppObs	Jul 5 2008	William ; Robertson	1			Yes
614302	SppObs	Jun 28 2008	William ; Robertson	1			Yes
425207	SppObs	Aug 24 2005	VCU - INSTAR	5			Yes
67876	SppObs	Aug 7 2001	Rick Browder (Principle Permittee)	3			Yes
300635	SppObs	Jun 18 2001	ROGER B. CLAPP	1			Yes
300232	SppObs	May 15 2001	Mark F. Causey, Ken H. Bass, Liam J. McGranaghan	1			Yes
58864	SppObs	Apr 29 1998	Roger B. Clapp (PRINCIPLE PERMITTEE), MILENSKI, SCHMIDT, USGS/PWRC	1			Yes

			NATIONAL MUSEUM OF NATURAL HISTORY				
54543	SppObs	May 3 1997	R. B. CLAPP	1			Yes
51006	SppObs	Apr 19 1997	Mike Mulligan, Chesapeake Bay Foundation	4			Yes
16388	SppObs	Nov 24 1974	N & M BURKHEAD & M. T. MASNIK	13			Yes
334699	SppObs	Jan 1 1974	NMB-BURKHEAD	13			Yes

Displayed 20 Species Observations

Selected 29 Observations View all 29 Species Observations

Habitat Predicted for Aquatic WAP Tier I & II Species (6 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)	ST	060081	ST	IIa	Floater, green	Lasmigona subviridis	Yes
Russell Branch (20700081)	ST	030062	ST	Ia	Turtle, wood	Glyptemys insculpta	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	Ia	Turtle, wood	Glyptemys insculpta	Yes

Habitat Predicted for Terrestrial WAP Tier I & II Species

N/A

Virginia Breeding Bird Atlas Blocks (3 records)

View Map of All Query Results
Virginia Breeding Bird Atlas Blocks

BBA ID	Atlas Quadrangle Block Name	Breeding Bird Atlas Species			View Map
		Different Species	Highest TE*	Highest Tier**	

50214	Leesburg, CE	63		III	Yes
50212	Leesburg, NE	58		III	Yes
51213	Sterling, CW	64		III	Yes

Public Holdings:

N/A

Summary of BOVA Species Associated with Cities and Counties of the Commonwealth of Virginia:

FIPS Code	City and County Name	Different Species	Highest TE	Highest Tier
107	Loudoun	438	FESE	I

USGS 7.5' Quadrangles:
Leesburg
Sterling

USGS NRCS Watersheds in Virginia:

N/A

USGS National 6th Order Watersheds Summary of Wildlife Action Plan Tier I, II, III, and IV Species:

HU6 Code	USGS 6th Order Hydrologic Unit	Different Species	Highest TE	Highest Tier
PL14	Goose Creek-Big Branch	59	FTST	I
PL15	Sycolin Creek	54	ST	I
PL16	Goose Creek-Cattail Branch	56	ST	I
PL19	Broad Run-Beaverdam Run	53	ST	I
PL20	Potomac River-Selden Island	47	ST	I

Compiled on 1/19/2024, 1:48:42 PM I1624671.0 report=all searchType= R dist= 3218 poi= 39.0766380 -77.5172168

PixelSize=64; Anadromous=0.017811; BBA=0.032485; BECAR=0.018136; Bats=0.017657; Buffer=0.060058; County=0.053099; HU6=0.041941; Impediments=0.019094; Init=0.090675; PublicLands=0.018781; Quad=0.023573; SppObs=0.212325; TEWaters=0.027668; TierReaches=0.045013; TierTerrestrial=0.024624; Total=0.856555; Tracking_BOVA=0.170815; Trout=0.019146; huva=0.020431

Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

1111 E. Main Street, Suite 1400, Richmond, Virginia 23219
P.O. Box 1105, Richmond, Virginia 23218
(800) 592-5482
www.deq.virginia.gov

Travis A. Voyles
Secretary of Natural and Historic Resources

Michael S. Rolband, PE, PWD, PWS Emeritus
Director
(804) 698-4020

February 27, 2024

Dominion Energy
120 Tredegar Street
Richmond, VA 23219
Attn: Elizabeth L. Hester

Transmitted Via Email: (Elizabeth.l.hester@dominionenergy.com)

Re: Dominion Energy (Electric Transmission) - AS&S - Program Renewal – 2024/2025

Dear Ms. Hester:

The Virginia Department of Environmental Quality (DEQ) hereby approves the Annual Standards and Specifications for Erosion & Sediment Control and Stormwater Management for Construction and Maintenance of Linear Electric Transmission Facilities for Dominion Energy's document dated "February 2024". This coverage is effective from February 27, 2024, to February 26, 2025.

To ensure compliance with approved specifications, the Virginia Erosion and Sediment Control Law and the Virginia Stormwater Management Act, DEQ staff will conduct random site inspections, respond to complaints, and provide on-site technical assistance with specific erosion and sediment control and stormwater management measures and plan implementation.

Please note that your approved Annual Standards and Specifications include the following requirements:

1. Variance, exception, and deviation requests must be submitted to DEQ separately from this Annual Standards and Specifications' submission. DEQ may require project-specific plans associated with such requests to be submitted for review and approval.

2. The following information must be submitted to DEQ for each project at least two weeks in advance of the commencement of regulated land-disturbing activities. Notifications shall be sent by email to: StandardsandSpecs@deq.virginia.gov
    a. Project name or project number;
    b. Project location (including nearest intersection, latitude and longitude, access point);
    c. On-site project manager name and contact info;

d. Responsible Land Disturber (RLD) name and contact info;
e. Project description;
f. Acreage of disturbance for project;
g. Project start and finish date; and
h. Any variances/exceptions/deviations associated with this project.

3. Project tracking of all regulated land disturbing activities (LDA) must be submitted to DEQ once per 6-month period. Project tracking records shall contain the same information as required in the two week e-notifications for each regulated LDA.

4. Erosion & Sediment Control and Stormwater Management plans must be reviewed by DEQ-certified Plan Reviewers. Dominion Energy, as the AS&S holder, retains the authority to approve plans and must do so in writing. Should an AS&S holder contract out to a third-party to fulfill the plan review function, the third-party Plan Reviewer may recommend approval of the plan, but final approval must come from the AS&S holder.

To ensure an efficient information 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 Abigail Snider at 804-486-0365 or Abigail.Snider@deq.virginia.gov if you have any questions about this letter.

Respectfully,

Kyle Kennedy, Manager
Office of Stormwater Management

Cc: Larry Gavan, DEQ-CO
Antony Angueira, DEQ-CO

ERM

PREPARED FOR

Dominion Energy

Pre-Application Analysis

Apollo-Twin Creeks 230 kV Electric Transmission Project

DATE
26 March 2024

REFERENCE
0655669

SIGNATURE PAGE

Pre-Application Analysis

Apollo-Twin Creeks 230 kV Electric Transmission Project

0655669

Mary Beth Derrick
Senior Architectural Historian

Megan Wiginton
Senior Architectural Historian

Jeffrey L. Holland
Senior Historian

Jeremy Mastroianni
Data Analytics and Visualization Specialist

Emily Dodson
Architectural Historian

Larissa A. Thomas, Ph.D.
Senior Archaeologist/Reviewer

ERM
3300 Breckenridge Boulevard
Suite 300
Duluth, GA 30096

CONTENTS

LIST OF TABLES

LIST OF FIGURES

ACRONYMS AND ABBREVIATIONS

Acronyms	Description
3D	Three dimensional
ABPP	American Battlefield Protection Program
CMOS	Complementary Metal–Oxide–Semiconductor
ERM	Environmental Resources Management
ESRI	Environmental Systems Research Institute
GNSS	Global Navigation Satellite System
HABS	Historic American Buildings Survey
IBM	International Business Machines Corporation
ISO	International Organization for Standardization
JPEG	Joint Photographic Experts Group format
kV	kilovolt
MVA	Megavolt-amperes
NHL	National Historic Landmark
NPS	National Park Service
NRHP	National Register of Historic Places
PBR	Physically Based Rendering
PDF	Portable Document Format
Project	Apollo-Twin Creeks 230 kV Electric Transmission Project
RAW	an unprocessed image
ROW	Right-Of-Way
SCC	State Corporation Commission
SLR	Single-Lens Reflex
SP	Simulation Point
USGS	United States Geological Survey
UTM	Universal Transverse Mercator
VCRIS	Virginia Cultural Resource Information System
VDHR	Virginia Department of Historic Resources
VHLC	Virginia Historic Landmarks Commission
VLR	Virginia Landmarks Register
W&OD	Washington & Old Dominion

EXECUTIVE SUMMARY

This report presents the findings of the pre-application analysis prepared by Environmental Resources Management (ERM) for Virginia Electric and Power Company's (herein referred to as Dominion Energy Virginia, Dominion, or the Company) proposed overhead 230 kilovolt (kV) double circuit Apollo-Twin Creeks Lines, Twin Creeks Substation, Sycolin Creek Substation, Starlight Substation, Lunar Substation, and Apollo Substation (Apollo-Twin Creeks 230 kV Electric Transmission Project, or Project) in Loudoun County, Virginia. For this Project, the Company) is proposing to construct and operate:

- A new approximately 1.9 mile double circuit overhead 230 kV transmission line in entirely new right-of-way[1] by cutting the Company's existing 230 kV Edwards Ferry-Pleasant View Line #203 at Structure #203/2 and extending the lines to the proposed Apollo Substation (collectively, the Apollo-Twin Creeks Lines); and
- Five new 230-34.5 kV substations for service requested by three data center customers (individually, Customers A, B and C; collectively, the Customers) within planned data center developments on property to be obtained by the Company (i.e., the Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo Substation).

From the cut-in location within the existing right-of-way, the Apollo-Twin Creeks Lines will extend approximately 1.9 miles within a predominantly 100-foot-wide right-of-way, interconnecting the proposed Twin Creeks, Sycolin Creek, Starlight, and Lunar Substations and terminating at the proposed Apollo Substation. The new transmission lines would be supported primarily by double-circuit dulled galvanized steel monopoles and utilize three-phase twin-bundled 768.2 Aluminum Conductor Steel Supported/Trapezoidal Wire/High Strength (ACSS/TW/HS) type conductor with a summer transfer capability of 1,573 megavolt-amperes (MVA).

[1] On March 7, 2024, the Company filed an application for State Corporation Commission (SCC) approval of new single circuit 500 kV and 230 kV electric transmission lines located in a new right-of-way varying between 100 and 150 feet in width and extending for approximately 9.4 miles (the future Aspen-Golden Lines) between a new 500-230 kV Aspen Substation and a new 500-230 kV Golden Substation, as well as an approximately 0.2-mile line between the new 500-230 kV Aspen Substation and the existing 500 kV Goose Creek Substation, all located in Loudoun County, Virginia (collectively, the Aspen-Golden Project). *See Application of Virginia Electric and Power Company for approval and certification of electric transmission facilities: 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line #5002, 500 kV and 230 kV Aspen-Golden Lines #5001 and #2333, 500-230 kV Golden Substation and Lines# 2081/#2150 Loop*, Case No. PUR-2024-00032 (filed March 7, 2024) (referred to herein as the Aspen-Golden Application). For approximately 0.9 mile of the 9.4-mile proposed route of the future Aspen-Golden Lines, the Company noted as part of the Aspen-Golden Application that it would need additional right-of-way with varying widths between 100 and 140 feet to accommodate construction of two new 230 kV double circuit lines—namely, the Apollo-Twin Creeks Lines (as defined herein but referred to in the Aspen-Golden Application as the future Twin Creeks Lines). As noted in the Aspen-Golden Application, the Company understood that it could not condemn for more than what was needed for the Aspen-Golden Project until such time as the Company sought approval of this instant Project, as defined herein, consistent with the Commission's approach in recent proceedings. *See* the Aspen-Golden Application, Appendix at n. 6. The Company is now seeking such approval in this Application. A map depicting the total right-of-way where the Apollo-Twin Creeks Lines are proposed for collocation with the future Aspen-Golden Lines, which ranges from a total of 200 to 260 feet, is provided in Attachment II.A.6 to the Appendix. As clarification, the Company notes that the use of "collocation" in this context indicates where the rights-of-way are adjacent to and/or overlap one another as depicted in Attachment II.A.2 to the Appendix.

Dominion Energy Virginia determined that building a portion of the proposed Apollo-Twin Creeks Lines adjacent to a future Aspen-Golden Lines is preferred given that the facilities proposed for each project traverse the same area. Collocation of the future rights-of-way for proposed Apollo-Twin Creeks Lines and the future Aspen-Golden Lines minimizes the impacts of each project on communities and sensitive resources.

This pre-application analysis assesses and compares potential impacts on previously recorded historic and archaeological resources in relation to the proposed Apollo-Twin Creeks Lines (Route 1) and the proposed Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo Substations. ERM conducted the analysis on behalf of Dominion Energy Virginia to assist in the development of a feasible Project design that minimizes impacts to historic resources. The analysis is a required study for transmission line projects regulated by the SCC. The study was completed in accordance with the Virginia Department of Historic Resources' (VDHR's) *Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia* (VDHR 2008) (Guidelines).

Four known archaeological sites were located within what would be the right-of-way of Route 1 and/or substation boundaries. Of these, three are considered not eligible for listing in the National Register of Historic Places (NRHP) and one has not been evaluated for listing in the NRHP. [redacted] The archaeological sites and their current NRHP status are summarized in Table 1 below. The sites could be impacted by construction traffic or clearing within the right-of-way. A confident evaluation of the nature of archaeological deposits at each site and impacts on the sites from prior land use activities would require a field survey.

Six previously recorded historic architectural resources meeting criteria specified in the Guidelines fall within study tiers defined by the VDHR for identifying aboveground historic sites along and near Route 1. The likely impacts on individual historic resources associated with the proposed route and its associated substations are presented in Table 2 below. Among the six considered resources included in this analysis, ERM recommends that Route 1 would have no impact on three historic resources and a minimal impact on three resources.

TABLE 1 EXECUTIVE SUMMARY OF NATIONAL REGISTER STATUS OF CONSIDERED ARCHAEOLOGICAL RESOURCES IN THE STUDY AREA OF THE PROJECT

Considered Resource	Project Component	Proposed Project
44LD1999	[redacted]	Not Eligible
44LD2001	[redacted]	Not Eligible
44LD2002	[redacted]	Not Eligible
44LD2012	[redacted]	Unevaluated

TABLE 2 EXECUTIVE SUMMARY PROJECT IMPACTS TO CONSIDERED ABOVEGROUND RESOURCES IN THE STUDY AREA OF THE PROJECT

Considered Resource	Project Component	Recommended Impact
053-0106	Route 1, Sycolin Creek Substation, Starlight Substation, Lunar Substation, Apollo Substation	None
053-0276	Route 1, Twin Creeks Substation, Sycolin Creek Substation	Minimal
053-0336	Route 1, Twin Creeks Substation, Sycolin Creek Substation, Starlight Substation, Lunar Substation	Minimal
053-5058	Route 1, Apollo Substation	None
053-6238	Route 1, Sycolin Creek Substation, Starlight Substation, Lunar Substation, Apollo Substation	Minimal
253-5182	Route 1, Apollo Substation	None

1. INTRODUCTION

This report presents the findings of the pre-application analysis conducted for Dominion Energy Virginia's Apollo-Twin Creeks Lines, Twin Creeks Substation, Sycolin Creek Substation, Starlight Substation, Lunar Substation, and Apollo Substation (Apollo-Twin Creeks 230 kV Electric Transmission Project, or Project) in Loudoun County, Virginia. For this Project, the Company is proposing to construct and operate:

- A new approximately 1.9 mile double circuit overhead 230 kV transmission line in entirely new right-of-way by cutting the Company's existing 230 kV Edwards Ferry-Pleasant View Line #203 at Structure #203/2 and extending the line to the proposed Apollo Substation (collectively, the Apollo-Twin Creeks Lines); and
- Five new 230-34.5 kV substations for service requested by three data center customers (individually, Customers A, B and C; collectively, the Customers) within planned data center developments on property to be obtained by the Company (i.e., the Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo Substation).

From the cut-in location within the existing right-of-way, the Apollo-Twin Creeks Lines will extend approximately 1.9 miles within a predominantly 100-foot-wide right-of-way, interconnecting the proposed Twin Creeks, Sycolin Creek, Starlight, and Lunar Substations and terminating at the proposed Apollo Substation. The new transmission lines would be supported primarily by double-circuit dulled galvanized steel monopoles and utilize three-phase twin-bundled 768.2 ACSS/TW/HS type conductor with a summer transfer capability of 1,573 MVA.

Dominion Energy Virginia determined that building a portion of the proposed Apollo-Twin Creeks Lines adjacent to a future Aspen-Golden Lines is preferred given that the facilities proposed for each project traverse the same area. Collocation of the future rights-of-way for proposed Apollo-Twin Creeks Lines and the future Aspen-Golden Lines minimizes the impacts of each project on communities and sensitive resources.

The pre-application analysis assesses potential impacts on previously recorded historic and archeological resources relative to the proposed route and five proposed substations. ERM conducted the pre-application analysis on behalf of Dominion Energy Virginia to assist in the development of a feasible Project design that minimizes impacts on historic resources. The study was completed in accordance with VDHR's Guidelines.

1.1 OVERVIEW

Only one route option (Route 1) is under consideration for the new overhead transmission lines. A map depicting the proposed Project is provided as Figure 1.

1.1.1 PROPOSED APOLLO-TWIN CREEKS LINES (ROUTE 1)

From the cut-in location, the Proposed Route (Route 1) initially heads south for about 0.2 mile generally following the property line of an existing Luck Stone quarry and existing Loudoun Water utility lines to connect with the first substation, the proposed Twin Creeks Substation associated with Campus A. The site for the substation is within a parcel on the north side of Cochran Mill

Road and south of a Luck Stone quarry. Route 1 then continues southeast for about 0.2 mile along a property boundary to a point just north of Cochran Mill Road, where the route intersects and begins to parallel the Company's future Aspen-Golden Lines. From here, Route 1 crosses Cochran Mill Road and continues southeast across the Customer A parcels for about 0.4 mile. The route crosses Goose Creek collocated with the future Aspen-Golden Lines at a spot just north of a former quarry (now a reservoir), about 0.2 mile northeast of the Company's existing Lines #227 and #274. Still collocated with the future Aspen-Golden Lines, Route 1 continues south on the former quarry property for 0.1 mile then turns northeast. The route connects to the proposed Sycolin Creek Substation and continues northeast across Customer B's parcels for about 0.3 mile to the south side of the proposed Starlight Substation. From there, Route 1 of the Apollo-Twin Creeks Lines splits from the future Aspen-Golden-Lines for 0.2 mile before entering the proposed Starlight Substation, while the future Aspen-Golden Lines continue east along the north side of the substation. Route 1 then heads north for about 0.4 mile across the Customer C parcel connecting to the proposed Lunar Substation and terminating at the proposed Apollo Substation south of Rt. 7 and west of Belmont Ridge Road.

Route 1 measures 1.9 miles in length, including the portions of the line extending through the five proposed substation sites.

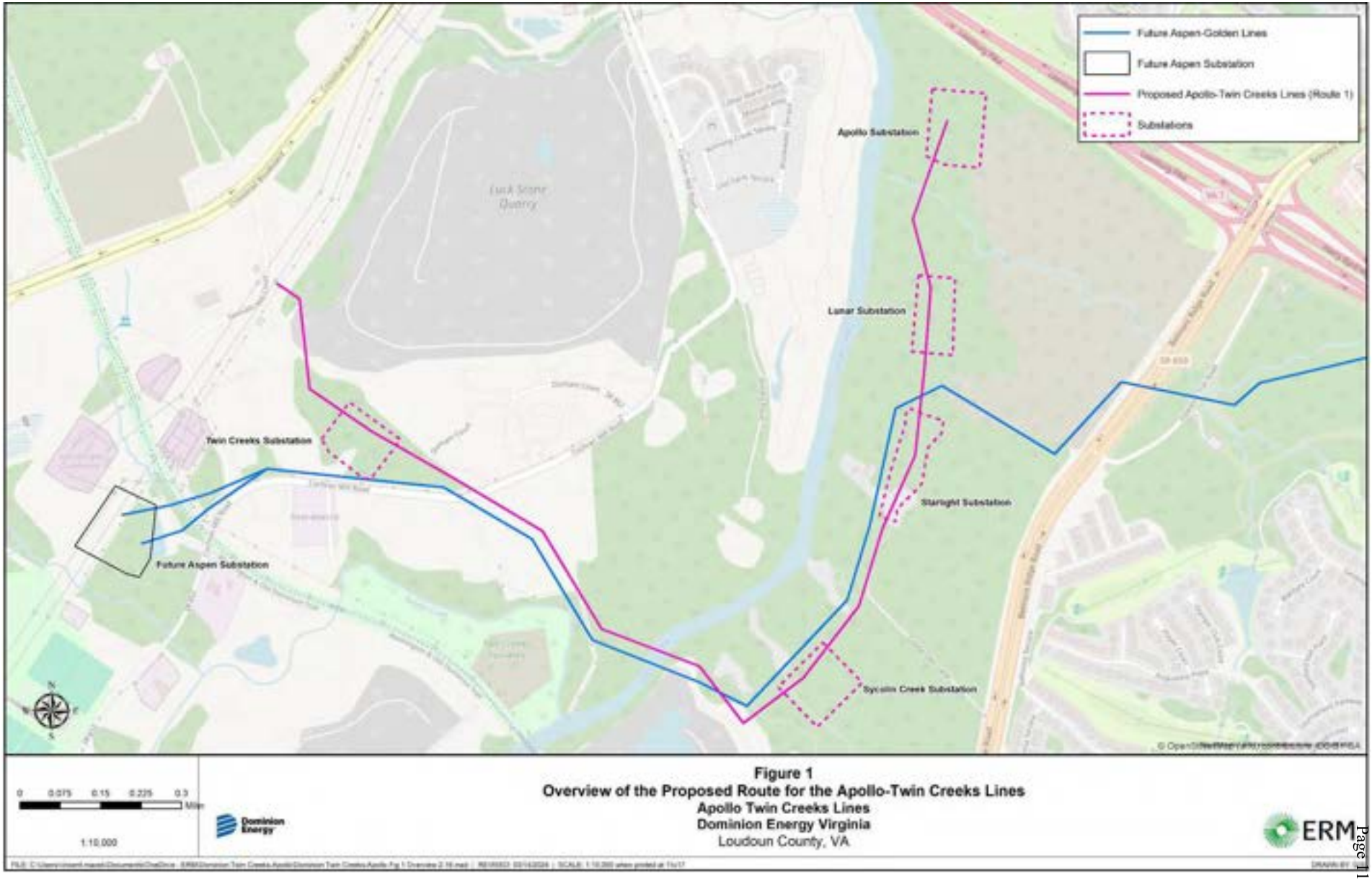
1.1.2 COLLOCATION WITH THE ASPEN-GOLDEN PROJECT

On March 7, 2024, the Company filed an application with the SCC in Case No. PUR-2024-00032 for approval of its Aspen-Golden 500-230kV Electric Transmission Project. In that case, Dominion sought SCC approval to construct the 500-230 kV Aspen Substation, the 500-230 kV Golden Substation, the 500 kV Aspen-Goose Creek Line #5002, the 500 kV Aspen-Golden Line #5001, the 230 kV Aspen-Golden Line #2333, and the Lines #2081/#2150 Loop in Loudoun County, Virginia (collectively, the Aspen-Golden Project).

Due to the proximity of the two Projects, Dominion determined that building a portion of the proposed Apollo-Twin Creeks Lines parallel and adjacent to the future Aspen-Golden Lines is preferred given that the facilities proposed for each project traverse the same area. Collocation of the future rights-of-way for the proposed Apollo-Twin Creeks Lines and the future Aspen-Golden Lines minimizes the impacts of each project on communities and sensitive resources, including Goose Creek, which is designated as a scenic river by the Commonwealth of Virginia.

Per VDHR guidance from a joint meeting on August 16, 2023, the simulations prepared for this study of proposed transmission infrastructure in the viewsheds from historic resources depict both Apollo-Twin Creeks 230 kV Electric Transmission Project and the Aspen-Golden Project to assess their cumulative effects. In the case of the resources addressed in this report, four resources in the proposed Project's study tiers would also have line of sight to the future Aspen-Golden Lines.

FIGURE 1 OVERVIEW OF THE PROPOSED ROUTE FOR THE APOLLO-TWIN CREEKS LINES



1.2 MANAGEMENT RECOMMENDATIONS

Four known archaeological sites were located within what would be the right-of-way of Route 1 and/or within substation boundaries. Of these, three are considered not eligible for listing in the NRHP and one has not been evaluated to determine its eligibility for listing in the NRHP. [redacted] The archaeological sites could be impacted by construction traffic or clearing within the right-of-way during Project construction. A confident evaluation of the nature of archaeological deposits at each site and impacts on the sites from prior land use activities would require a field survey.

Six previously recorded historic architectural resources meeting criteria specified in the Guidelines fall within study tiers defined by the VDHR for identifying aboveground historic sites along and near proposed transmission lines. Of these, ERM recommends Route 1 would have no impact on three historic resources and a minimal impact on three resources. More information about each resource and the nature of potential impacts from the proposed Project can be found in the sections that follow.

2. RECORDS REVIEW

2.1 DATA COLLECTION APPROACH

ERM conducted an analysis of potential cultural resource impacts for the alternative routes under consideration in accordance with the VDHR Guidelines. For each route, this analysis identified and considered the following previously recorded resources.

- National Historic Landmarks (NHLs) within a 1.5 mile-radius of the centerline;
- NRHP-listed properties, NHLs, battlefields, and historic landscapes within a 1.0-mile radius of the centerline;
- NRHP-eligible and NRHP-listed properties, NHLs, battlefields, and historic landscapes within a 0.5 mile radius of the centerline; and
- All of the above qualifying resources as well as archaeological sites within the right-of-way for the route.

These study tiers additionally encompassed the proposed Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo Substation sites.

Information on the considered resources in each study tier was collected from the Virginia Cultural Resource Information System (VCRIS). ERM also collected information from the Loudoun County Preservation Society (2023), Loudoun County Heritage Commission (2023), Loudoun County Preservation and Conservation Commission (2023), and the Loudoun County African-American Historic Architectural Resources Survey (2004) to find locally significant resources within a 1.0-mile radius of the centerline.

Along with the records review, ERM conducted field assessments of the considered aboveground resources along the route in accordance with the Guidelines. Digital photographs of each historic architectural resource and views to the proposed transmission line were taken. Photo simulations were then prepared to assess the potential for visual impacts from the new transmission infrastructure on the resources. For previously recorded archaeological sites under consideration, aerial photographs were examined to assess the current land condition and the spatial relationship between the sites and any existing or planned transmission line infrastructure.

2.2 ARCHAEOLOGICAL RESOURCES

Crossings of archaeological sites were considered a constraint in this study due to the potential for an electric transmission line to impact archaeological deposits in these areas (for example, due to transmission structure placement, tree clearing, or heavy equipment traffic within a site). The known archaeological sites in what would be the right-of-way for the proposed transmission line and within the associated substation sites are summarized in Table 3 and their locations are depicted in Figure 2.

Of the four previously recorded sites that could be impacted by the proposed Project, three are considered not eligible for listing in the NRHP and one has not been evaluated for listing on the NRHP. [redacted]

[redacted] A confident evaluation of the nature of the archaeological deposits at each site and impacts on the sites from prior land use activities would require a field survey.

FIGURE 2 LOCATIONS OF ARCHAEOLOGICAL RESOURCES WITHIN THE RIGHT-OF-WAY FOR THE PROJECT (REDACTED)

TABLE 3 ARCHAEOLOGICAL RESOURCES WITHIN THE RIGHT-OF-WAY FOR THE PROJECT

Project Component	Greenfield or Existing/Expanded Right-of-way?	Site Number	Description	NRHP Status
Route 1 Apollo Substation	Greenfield	44LD1999	Single dwelling (Reconstruction and Growth, World War I to World War II)	Not Eligible
Apollo Substation	Greenfield	44LD2001	Temporary camp (Pre-Contact) and Artifact scatter (Early National Period, Antebellum Period, Civil War, Reconstruction and Growth, World War I to World War II, The New Dominion, Post Cold War)	Not Eligible
Route 1	Greenfield	44LD2002	Temporary camp (Pre-Contact)	Not Eligible
Route 1 Starlight Substation	Greenfield	44LD2012	Artifact scatter (The New Dominion, Post Cold War)	Unevaluated

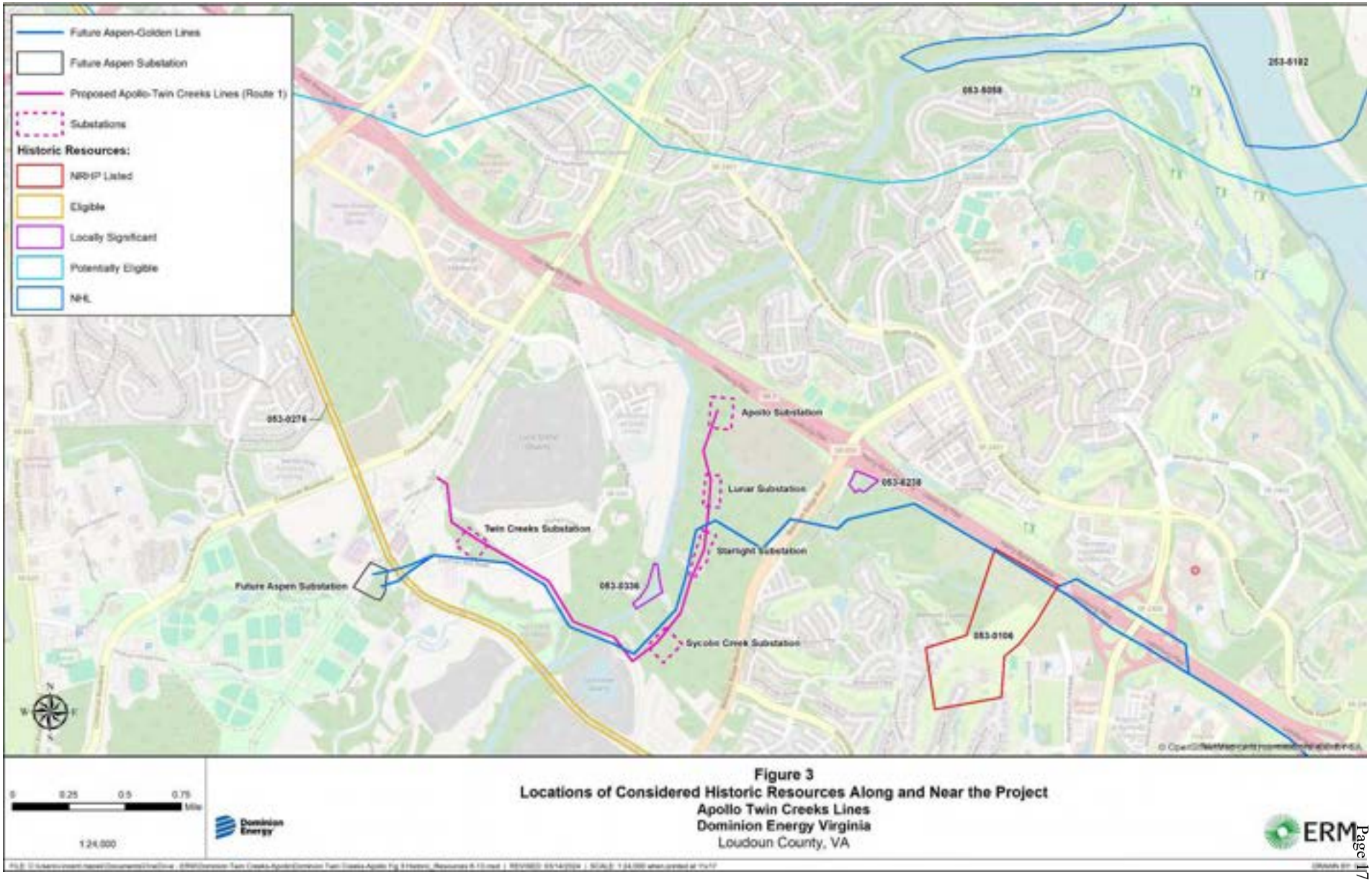
2.3 HISTORIC RESOURCES

The following discussion summarizes the known historic resources in the vicinity of the proposed Project based on the VDHR's tiered study model defined in the Guidelines. The locations of the considered historic architectural resources and the proposed Project are shown on Figure 3 as well as Attachment 1.

The resources located within the right-of-way of a proposed transmission line may be subject to both direct impacts from placement of the line across the property as well as visual impacts from changes to the viewshed introduced by the new transmission line structures and conductors. Resources in the 0.5-mile tier would not be directly impacted, but are likely to be visually impacted, unless topography, vegetation, or the built environment obscures the view to the transmission line. At a distance of over 0.5 mile, it becomes less likely that a resource would be within line-of-sight of the proposed transmission line. Beyond 1.0 mile, it becomes less likely that a given resource would be within line-of-sight of a transmission line.

The nature of the impacts to resources, while estimated in this study within the assistance of photo simulations, will depend on the final Project design in which the exact placement and height of transmission structures is determined. Moreover, a complete, identification-phase architectural survey would be completed along the route once the Project is approved by the SCC. The survey area for that investigation will be based on the height of the transmission line structures as well as topography, tree cover, and any other factors impacting the line-of-sight from historic resources to the route.

FIGURE 3 LOCATIONS OF CONSIDERED HISTORIC RESOURCES ALONG AND NEAR THE PROJECT



2.3.1 ROUTE 1

The considered resources that lie within the VDHR tiers for Route 1 are presented in Table 4 and depicted in the map provided as Attachment 1. ERM identified six aboveground historic resources within the VDHR tiers for Route 1. The considered resources were subjected to field reconnaissance and a preliminary assessment of impacts, discussed in the next chapter.

TABLE 4 HISTORIC RESOURCES IN VDHR TIERS FOR THE PROJECT

Buffer (miles)	Resource Category	Resource Number	Description
1.0 to 1.5	National Historic Landmark	253-5182 [5]	Ball's Bluff Battlefield & National Cemetery Historic District Boundary Increase
0.5 to 1.0	National Register Properties (Listed)	053-0106 [2, 3, 4, 5]	Belmont Manor
	Battlefields (Potentially Eligible)	053-5058 [5]	Ball's Bluff Battlefield
0.0 to 0.5	Locally Significant	053-0336 [2, 3, 4]	Cooke's Mill
		053-6238 [2, 3, 4, 5]	African American Burial Ground for the Enslaved at Belmont
	National Register – Eligible	053-0276 [1, 2]	Washington and Old Dominion Railroad Historic District

[1] Resource is also within the designated tiers for the proposed Twin Creeks Substation
[2] Resource is also within the designated tiers for the proposed Sycolin Creek Substation
[3] Resource is also within the designated tiers for the proposed Starlight Substation
[4] Resource is also within the designated tiers for the proposed Lunar Substation
[5] Resource is also within the designated tiers for the proposed Apollo Substation

3. PREVIOUS SURVEYS

Portions of Route 1 and the Sycolin Creek, Starlight, Lunar, and Apollo Substations have been previously surveyed for cultural resources. Eight previous cultural resource surveys intersect parts of the proposed Project. Information on these previous surveys—including VDHR survey number, report title, report authors, and report date—is provided in Table 5. The extent of the previous survey coverage is depicted in Attachment 2.

TABLE 5 CULTURAL RESOURCE SURVEYS COVERING PORTIONS OF THE PROPOSED PROJECT

VDHR Survey #	Title	Author(s)	Date
LD-065	Phase I Archaeological Survey of the Proposed Loudoun County Power Plant, Leesburg, Virginia	Jill Chappell	1991
LD-108	Cultural Resource Inventory and Phase I Archaeological Survey of Route 28 (Sully Road) from I-66 to Route 7, Fairfax and Loudoun Counties, Virginia	Douglas C. McLearen, Kimberly S. Zawacki, Matthew R. Laird, James G. Harrison III	1999
LD-140	Historical and Archaeological Survey of the Lansdowne Tract, Loudoun County, Virginia	Eugene M. Scheel	1991
LD-199	Archaeological Survey of Route 659, Belmont Ridge Road Improvements, Loudoun County, Virginia	Barbara Shaffer, Lily Richards, Richard White, Brenda Carr-Weller	2007
LD-290	Phase I Archeological Investigations of the Loudoun Water Proposed Pump Station and Water Transmission Line, Loudoun County, Virginia	Kimberly Snyder, David Carroll	2010
LD-320	Cultural Resources Survey of the Proposed Routes 7 and 659 Project, Loudoun County, Virginia	Elizabeth Monroe, Meg Malvasi	2010
LD-416	Phase IA and I Archeological Investigations of the +/- 106.56 Acre Goose Creek Golf Course Property, Loudoun County, Virginia	John Mullen, Edward Johnson, Kristen Deily	2008
LD-614	Phase I Cultural Resources Investigation, 19509 Belmont Ridge Road, Loudoun County, Virginia	David Carroll, Elizabeth Johnson, Daniel Baicy	2022

4. STAGE 1 PRE-APPLICATION ANALYSIS FINDINGS

4.1 METHODS OF ANALYSIS

Fieldwork for the pre-application analysis was conducted by Secretary of the Interior Qualified architectural historians Emily Dodson and Michael Langmyer between March 20–25, 2023, August 28–30, 2023, and December 6–7, 2023. The fieldwork involved photographing six resources requiring visual assessment according to the Guidelines and examining potential line-of-sight views from each resource toward the Project. For resources where property owner approval was granted for historic resource documentation, photographs were taken toward the proposed transmission line from the property at the most prominent view of the landscape. When such permission was not available, photographs were taken from the public right-of-way (typically a road) nearest to the resource facing toward the route and/or substation(s).

Panoramic photographs were taken from each resource, with an effort to capture the direction with the clearest, most unobstructed view toward the route. The precise location of the photograph was captured with a mobile tablet device connected to a sub-meter accurate Global Navigation Satellite System (GNSS) receiver, the Trimble R1. The locations where photographs were taken were noted as Simulation Points (SP). Site visits to the SPs were prioritized based on their location relative to the resource, so that viewpoints east of the resource were visited in the morning and viewpoints west of the resource were visited in the afternoon. This helped ensure, where possible, that the sun was behind the photographer at the time the viewpoint photography was captured. Additionally, minor adjustments to position were made to obtain as clear a view to the site center as possible, avoiding trees, landscaping, or built obstructions. Tablets recorded the center bearing, angle of view, altitude, and camera lens height. Upon receipt of the viewpoint location information, the viewpoints were plotted onto open source mapping from the Environmental Systems Research Institute (ESRI) using the Universal Transverse Mercator (UTM) 18N coordinate system.

The process of taking panoramas included setting up the tripod and camera. The camera was placed on the panoramic head in a landscape orientation where its lens height was confirmed and set at 1.5 meters (note: a portrait camera orientation was sometimes used in situations where the viewpoint is very close to a development so that the top of the development is not cut off by the image boundaries). The tripod head and camera combination were then leveled. With the camera's viewfinder centered on the perceived site center, exposure and focus settings were taken. These were then fixed manually on the camera so that they could not be inadvertently altered. The head was rotated 90 degrees to the left where the first frame of the 360-degree sequence was then taken. Each subsequent frame was taken using a 50 percent overlap of the previous frame until the full 360-degree sequence was captured. The camera was then removed from the tripod and a viewpoint location photograph was captured showing the tripod in its position.

The following camera and tripod configuration was used:

- Camera body: Nikon D800 professional specification digital SLR (full frame CMOS sensor)
- Camera lens: Nikkor AF 50mm f1.8 prime
- Tripod: Manfrotto 055MF4 with Manfrotto 438 ball leveller

- Panoramic head: Manfrotto 303SPH

The following camera settings were used for all photography:

- Camera mode: Manual Priority
- ISO: 100
- Aperture: f13
- Image format: RAW

After the photos were complete, they were uploaded to a server to begin the simulation/ visualization process. The single-frame photographs were opened in Adobe Photoshop CC 2022 where they were checked, and any camera sensor dust spots were removed before being saved as high-resolution JPEG images. If required, discrete color and tonal adjustments were made to each frame before they were saved. The single-frame photographs were stitched together in PTGui Pro version 12.11 professional photographic stitching software using cylindrical projection settings. The camera locations were plotted in Global Mapper version 23.1. Digital models of the transmission line structures were provided by Dominion, then cleaned up and textured in Autodesk 3DS Max 2021. The transmission structures along each route were rendered in Vray version 5.2 from each SP camera location. 3D imagery was produced at the field of view using camera matching. Renderings for each route and each tower combination were then exported for use as an overlay.

Detailed, correctly dimensioned 3D computer models of the transmission structures were generated using Autodesk 3DS Max 2021 and iToo RailClone. The virtual 3D model of the structures was created using real-world measurements and elevation drawings provided by the Company (see Attachment 3). These were textured using Vray PBR materials to simulate the weathering steel texture. The detailed, textured models were rendered to a digital image using a simulated physical camera and a sun and sky simulation lighting model in the computer software consistent with conditions within the original viewpoint photography.

Photomontages were produced by overlaying the rendered image on the photograph, using known control points and the wireline imagery showing the tower columns at the correct height and distance. Final adjustments were then made to the brightness and contrast of the rendered images to match them to the photograph. Final photomontages were prepared from each viewpoint for the route. These were then opened in Adobe Photoshop CC 2022 where minor changes were made such as placing relevant tree/building/hedge screening or telegraph wires over the proposed development renders where necessary. Finally, the final images were cropped to the proportions required for the visual simulation figures, and the visualization figures were prepared in Adobe InDesign CC2022 and exported in a PDF format.

4.2 ASSESSMENT OF POTENTIAL IMPACTS

The assessment of potential Project impacts on individual resources made use of the visual assessment findings and categorized the severity level of impacts according to the following scale devised by VDHR:

- **None**–Project is not visible from the resource.

- **Minima**l–Viewsheds have existing transmission lines, there would be only a minor change in height, and/or other views are partially obscured by topography or vegetation.
- **Moderate**–Viewsheds have more expansive views of the transmission line, more dramatic changes in height are proposed, and/or the overall visibility of the Project would be greater.
- **Severe**–Existing viewshed contains no transmission line, the view to the Project would be relatively unobstructed, the new transmission line would introduce a significant change to the setting of historic properties, and/or a dramatic change in the height of an existing transmission line would take place in close proximity to historic properties.

4.3 HISTORIC RESOURCE DESCRIPTIONS

4.3.1 053-0106, BELMONT MANOR

Belmont Manor (053-0106) is located at 19661 Belmont Manor Lane on 218 acres within the gated community called the Belmont Country Club and Golf Course. The property includes the main dwelling house, which was converted to a community club house and a golf course. Individual suburban-style lots with residences are located to the south, southeast, and west of the main dwelling. The gated community is accessed via the Russell Branch Parkway in Ashburn. The main dwelling is accessed by a paved curved drive and is flanked by two large parking lots to the east and west and the golf course to the south. Clusters of trees are scattered across the grassy lawn (Google Earth Pro 2023; Attachment 4, Figure 1).

The property was originally surveyed in 1937 by Elizabeth Morgan and recorded as the Belmont of Indian Plantation for the Works Progress Administration Virginia Historical Inventory Survey for the Historic American Buildings Survey (HABS). A second HABS Inventory was conducted in 1959 by George Worthington. A Phase II intensive survey in 1974 carried out by John G. Lewis for VDHR also covered the resource, followed by a NRHP nomination in 1976 prepared by Calder C. Loth, a staff member of the Virginia Historic Landmarks Commission (VHLC).

The 1976 survey, prepared by Loth, noted a main dwelling, a smoke/meat house, and a cemetery (Loth 1976a, 1976b). Loth described the main dwelling as a sophisticated five-part Federal mansion built circa 1799 for Ludwell Lee, the son of Richard Lee, who was a signer of the Declaration of Independence. The dwelling consisted of a central two-story five-bay section capped by a gable roof with modillion cornices and interior end chimneys. The dwelling was constructed of brick laid in a Flemish bond pattern with narrow tooled joints. The roof was described as sheathed in slate, though historic photographs showed a standing seam metal roof and it was noted that the original roof was clad with wood shingles. The central bay was a pedimented pavilion featuring a lunette underneath the pediment. This central bay included a Palladian window on the second story and a double door on the first floor flanked by side lights and topped by a fanlight. Sheltering the main entrance was a refined tetra-style portico with fluted Doric columns, a modillion cornice, and a frieze ornamented with alternating geometric patterns. Flanking this center section were three-bay hyphens with round-arch windows containing intersecting tracery. These hyphens originally had flat roofs but were converted to gable roofs during a 1907 renovation. During this same renovation, wings measuring three bays wide and capped by gable roofs were connected to the hyphens. The wings were also modified in the 1907 renovation to be the single-bay pavilion topped by an open-tympanum pediment

observed in 1976. Originally, the dwelling had a T-shaped floorplan, but in 1907, the rear wing was removed and replaced with an addition as wide as the original dwelling, featuring a hipped roof with dormers and a shallow pavilion topped by an open-tympanum pediment. Loth noted the windows consisted of six-over-six double-hung wood sash, as well as other types of wood sash double-hung windows. Details were not provided on the smokehouse. The survey noted a cemetery was enclosed by a wall and contained the grave of Ludwell Lee, who was born in 1760 and died in 1836 (Loth 1976a, 1976b). 053-0106 was surveyed again in 2009 by Meg Greene Malvasi, but due to limited access to the property, the surveyor was not able to assess the parcel containing the site (Malvasi 2009a).

The property had various owners throughout its history. Most recently, George Clarke sold the property to International Business Machines Corporation (IBM) in 1969, but it was never used. Clarke's widow vacated the dwelling in 1974 (Loth 1976b). In 1995, Toll Brothers, Inc. purchased and restored the property, and by 2001, the Belmont Country Club and Golf Course opened. The main dwelling was converted into an event space for the club (Belmont Country Club 2023). According to maps, the cemetery is located northwest of the dwelling (Google Earth Pro 2023).

053-0106 was listed in the VLR in 1976 and in the NRHP in 1980 (Loth 1976a). Belmont, a Northern Virginia estate established by the Lee family, is listed under Criteria A and C. The estate symbolizes the late eighteenth century resettlement of many of Virginia's prominent Tidewater families to the more fertile northern and western areas of the state (Criterion A) and it is a significant example of a Federal style dwelling (Criterion C; Loth 1976b). Resource 053-0106 lies within the one-mile study tier for Route 1 as well as the Sycolin, Starlight, Lunar, and Apollo Substations.

4.3.2 053-0276, WASHINGTON AND OLD DOMINION RAILROAD HISTORIC DISTRICT

The Washington & Old Dominion (W&OD) Railroad Historic District (053-0276) encompasses 547.45 acres in Arlington County, Fairfax County, the City of Falls Church, and Loudoun County, though this report only addresses the portion of the resource within the study tiers for this Project (Attachment 4, Figure 2). A trail, called the W&OD Trail, built on the former railroad bed, travels through the urban heartland and countryside of Northern Virginia, running from Shirlington in Arlington County to Purcellville in Loudoun County. This 45-mile long and 100-foot-wide corridor features a hard-surfaced pedestrian and bicycle trail as well as an adjacent 33-mile bluestone-surfaced bike path between Purcellville and Vienna. The park is owned by the Northern Virginia Regional Park Authority.

In 1999, Helen P. Ross surveyed the W&OD Railroad and its features, noting that the alignment, grading, bridges, culverts, six stone arches, and six depots and freight stations remained intact. The surveyor noted many of the original features such as the rolling stock, rails, ballast, fencing, repair shops, station houses, water stations, and woodsheds were no longer extant (Ross 1999). In 2000, Ashley M. Neville prepared an NRHP nomination form for the historic district (Neville 2000). Subsequent surveys of portions of the historic district occurred in 2006, 2008, 2010, 2012, 2013, 2014, 2016, 2018, and 2022 (Andre 2008; CCR, Inc. 2006; DeChard 2022; Derrick 2018; Dovetail CRG 2008, 2010; Hanbury 2012, 2013; Jacobe 2014; Schlupp 2016; Shiflett 2022;

Traum 2014). For the current Project in 2023, ERM observed portions of the trail and alignment near Cochran Mill Road in Leesburg, and it appeared in good condition.

Built as the Alexandria, Loudoun, and Hampshire Railroad in 1855, the resource was one of the region's major commercial and transportation arteries during the mid to late nineteenth century. The founders hoped to recapture Alexandria's past glory as a world trade center by constructing a rail line from the west over the Allegheny mountains to Alexandria's fading seaport. In 1858, a portion of the line was completed to Leesburg, 38 miles away from Alexandria, with passenger cars arriving in 1860. The Southern Railway purchased the line in 1900, merging it with its own rail network. By 1911, the line transitioned from steam to electric, making it Virginia's largest interurban system to date. As one of the nation's largest steam to electric conversion projects, it included 72 route miles, 17 of which were double tracked. Passenger and freight traffic declined with the advent of the automobile in the 1940s and 1950s (Ross 1999). The railroad was abandoned in 1968, and the right-of-way was purchased by Virginia Electric and Power Company to construct transmission lines. The tracks were removed in the 1970s. In 1982, the Northern Virginia Regional Park Authority, purchased 45 miles of the rail bed for use as a public park (Shiflett 2022).

VDHR determined 053-0276 eligible for the NRHP under Criterion A for its contribution to the broad patterns of Northern Virginia history in the areas of transportation and commerce. The railroad is historically significant as one of the major commercial and transportation arteries of the Northern Virginia area from the mid-nineteenth century through the mid-twentieth century. Although it never reached its goal as a trunk line from the Shenandoah Valley to Alexandria, it served as a local carrier facilitating local development. The line was crucial during the Civil War and Spanish American War, and it also enabled the development of the early Washington D.C. suburbs of Falls Church and Dunn Loring. The railroad carried vacationers to the Blue Ridge Mountains and hauled agricultural products from the surrounding countryside to Washington D.C. In its final years, it transported construction materials used in the construction of Dulles Airport and the Capital Beltway before its demise in 1968 (Neville 2000; Shiflett 2022). The historic district includes six contributing resources (053-0276-0001, 0002, 0003, 0004, 0005, and 0006); however, only 053-0276-001 (Washington & Old Dominion Railroad) is within the boundaries of the current Project.

The VDHR determined 053-0276-0001 as eligible for the NRHP in 1999. 053-0276 lies within the half-mile study tier for Route 1 as well as the Twin Creeks and Sycolin Creek Substation sites.

4.3.3 053-0336, COOKE'S MILL

Cooke's Mill (053-0336), also known as Marvin's Mill and Houghs Mill, is located at 42485 Cochran Mill Road/Route 653 in Leesburg Parkway (Attachment 4, Figure 3). This resource spans Goose Creek with the mill ruins located on the western banks (VDHR 053-0336). The immediate surrounding area is heavily wooded with mature trees. Residential parcels are located to the east and west, a former golf course is to the north, and a quarry lies farther to the southwest.

First surveyed in 1974 by John Lewis on behalf of VDHR (Lewis 1973), the resource was recorded as a circa 1763 mill ruin and lock and dam with datestone reading 'HI 1763'. It was surveyed again in 2022 by Daniel Baicy for Thunderbird Archaeology, a division of Wetland Studies and

Solutions, Inc. This survey was confined to the eastern bank of the resource's mill pond, which featured a stone wall associated with the dam of the mill. Baicy noted a similar wall appeared on the western bank.

In 2023, ERM observed the eastern and western bank walls, which appear to be unchanged since the 2022 survey. They consist of various sized stone blocks in a ruinous state. A reinforced concrete structure lies near Goose Creek. It features a stone block foundation, which has been skimmed in concrete. The upper portion of the structure had a clay brick wall. The roof has collapsed, and all further details have been lost. Vegetation has heavily overgrown a majority of the mill and lock and dam causing further deterioration.

053-0336 has not been given a formal NRHP determination. However, Loudoun County Archaeologist, Stephen Thompson, categorized the resource as locally significant, so it is included as a considered resource for this Project. 053-0336 lies within the half-mile study tier for Route 1 as well as the Sycolin Creek, Starlight, and Lunar Substation sites.

4.3.4 053-5058, BALL'S BLUFF BATTLEFIELD

Ball's Bluff Battlefield (053-5058) is located in Virginia and Maryland on both sides of the Potomac River near Leesburg, Virginia. The portion in Virginia is in northern Loudoun County between the Potomac River and U.S. Highway 15 to the north of the Project (Appendix 4, Figure 4). The resource represents the site of the Battle of Ball's Bluff, an early battle in the Civil War that took place on October 21, 1861. The boundaries of the resource are defined by the American Battlefield Protection Program (ABPP) Study Area and encompass approximately 5,783 acres, including a 2,621-acre Core Area where the principal action took place. Of the total study area acreage, 1,072 acres were believed to retain sufficient integrity for NRHP listing (Potential National Register Boundary).

The Battle of Ball's Bluff took place on October 21, 1861, during the beginning of the American Civil War. The battle was the result of Union exploratory efforts crossing the Potomac River from Maryland into Virginia. Union officer General Charles P. Stone received orders from General George B. McClellan on October 20, 1861, to send a scouting party across the Potomac River to identify the position of the Confederates under the command of Colonel Nathan B. Evans. A scouting party was sent and reported that they identified an unguarded Confederate campsite, which turned out to be a natural phenomenon. On the morning of October 21, 1861, General Stone decided to send an attacking party with the information provided to him from the night before. This enlarged operation was under the command of Colonel Charles Devens along with approximately 400 troops, who crossed the river at first light. After crossing the river, it was easy to see that what was thought of as an unprotected campsite was a cluster of trees. While the confusion was addressed between Colonel Devens and General Stone on what to do next, a force of Confederate infantry found the Union force and the two sides began to skirmish (American Battlefield Trust 2023; Morgan 2012).

Colonel Edward Baker, a United States Senator, decided to move his forces across the river to help Colonel Devens and take command of the situation. Confederate forces were allowed to organize in full while Union troops slowly crossed the river, resulting in the Confederates overpowering the Federal forces. Colonel Baker was killed in the action and the scattered Union troops retreated

across the Potomac River or surrendered. A total of 3,429 soldiers were engaged in the actions at Balls Bluff, with about equal numbers on both sides. The battle was a disaster for the Union, with about 1,000 men (nearly 60 percent of the total engaged) being killed, wounded, missing, or captured, compared to just 155 casualties for the Confederates (American Battlefield Trust 2023). The Confederate victory at Ball's Bluff was the third in the war's eastern campaign thus far, after First Manassas and Wilsons Creek. The Union defeat at Ball's Bluff, in combination with previous failures, resulted in the creation of the Joint Committee on the Conduct of the War and an increased level of involvement from the Federal Government in the progress of the war. General Stone was later arrested in early 1862, and his military career was ended (Morgan 2012).

Ball's Bluff Battlefield (053-5058) was determined potentially eligible for listing in the NRHP in 2007. A small portion of the resource boundary (VCRIS boundary) is located within the 1.0-mile study tier for Route 1 and the Apollo Substation. However, neither the ABPP Core Area or the Potential National Register Boundary are within the 1.0-mile study tier for the Project.

In 2016, a portion of 053-5058, the Ball's Bluff Battlefield and National Cemetery Historic District Boundary Increase (253-5182), was designated a National Historic Landmark. It lies within the 1.5-mile study tier for the Project and is discussed below.

4.3.5 053-6238, AFRICAN AMERICAN BURIAL GROUND FOR THE ENSLAVED AT BELMONT

The African American Burial Ground for the Enslaved at Belmont (053-6238) is located approximately 0.1 mile from the southeast corner of the intersection of Belmont Ridge Road/Route 659 and Harry Byrd Highway Route 7 (Attachment 4, Figure 5). The burial ground is on a slight rise above the road within a small, wooded area. Freedom Trail Road leads from Belmont Ridge Road/Route 659 to a paved parking area. A gravel pathway leads to the cemetery.

In 2009, the cemetery was surveyed by Meg Greene Malvasi who noted the mid-to-late-nineteenth century cemetery was previously recorded as archaeological site 44LD0578 (Malvasi 2009b). The surveyor identified approximately 24 gravesites, some of which were marked with fieldstone headstones and footstones. The headstones faced east. There was one small, dressed granite stone, but it was not engraved. The site measured approximately 37 meters north to south by 15 meters east to west. It was identified as possibly representing a burial ground for the enslaved at Belmont (053-0106), located approximately 0.5 mile to the northwest. At that time, the cemetery was considered abandoned. A subsequent survey in 2020 noted no changes to the architectural description of the aboveground components; however, the archaeological site and architectural borders of this resource were enlarged to encompass its complete known extent (Baicy 2020). In 2023, ERM surveyed the cemetery and noted recent improvements including signage, pathways, and an interment from 2020.

053-6238 has not been formally evaluated by VDHR, but ERM has categorized it as locally significant for the purposes of this Project due to its ties to the African American community. 053-6238 lies within the half-mile study tier for Route 1 as well as the Sycolin Creek, Starlight, Lunar, and Apollo Substation sites.

4.3.6 253-5182, BALL'S BLUFF BATTLEFIELD & NATIONAL CEMETERY HISTORIC DISTRICT BOUNDARY INCREASE

Ball's Bluff Battlefield & National Cemetery Historic District (the District) represents the site of the Battle of Ball's Bluff, an early battle in the Civil War. The battlefield is located in eastern Loudoun County, Virginia, and western Mongomery County, Maryland on either side of the Potomac River east of Leesburg, Virginia. The boundaries of the resource are roughly defined by the ABPP Core Area and encompass approximately 3,301 acres in two noncontiguous parcels. The southern end of the District is located around Edward's Ferry, the Virginia side of which is at the mouth of Goose Creek. The resource lies well north of the Project, with only a small portion of the District on Goose Creek located within the 1.5-mile study tier for the Project (Appendix 4, Figure 6).

The Battle of Ball's Bluff took place on October 21, 1861. The District encompasses places associated with events both preceding, during, and following the battle between October 20 and October 24, 1861. The battle was the result of Union exploratory efforts crossing the Potomac River into Virginia from Maryland. Union General Charles P. Stone received orders from General George B. McClellan on October 20, 1861, to send a scouting party across the Potomac River to identify the position of the Confederates under the command of Colonel Nathan B. Evans. A scouting party was sent and reported that they identified an unguarded Confederate campsite, which turned out to be a cluster of trees. Based on the information provided to him from the night before, General Stone decided to send an attacking party against the camp on the morning of October 21, 1861. A party of approximately 400 troops under the command of Colonel Charles Devens crossed the river at first light, only to discover the error of the reconnaissance report. While the confusion was addressed between Colonel Devens and General Stone on what to do next, a force of Confederate infantry found the Union force and the two sides began to skirmish (American Battlefield Trust 2023; Morgan 2012).

Colonel Edward Baker, a United States Senator, decided to move his forces across the river to help Colonel Devens and take command of the situation. Confederate forces were allowed to organize in full while Union troops slowly crossed the river, resulting in the Confederates overpowering the Federal forces. Colonel Baker was killed in the action and the scattered Union troops retreated across the Potomac River or surrendered. A total of 3,429 soldiers were engaged in the actions at Balls Bluff, with about equal numbers on both sides. The battle was a disaster for the Union, with about 1,000 men (nearly 60 percent of the total engaged) being killed, wounded, missing, or captured, compared to just 155 casualties for the Confederates (American Battlefield Trust 2023). The Confederate victory at Ball's Bluff was the third in the war's eastern campaign thus far, after First Manassas and Wilsons Creek. The Union defeat at Ball's Bluff, in combination with previous failures, resulted in the creation of the Joint Committee on the Conduct of the War and an increased level of involvement from the Federal Government in the progress of the war. General Stone was later arrested in early 1862, and his military career ended (Morgan 2012).

The portion of the District within the 1.5-mile study tier for NHL properties is at the western end of an extension up Goose Creek that includes the site of Kephart's Bridge, which marked the southwestern limits of the military engagement of October 20–24, 1861. Brigadier General Gorman's Federal troops crossed the Potomac River at Edwards Ferry on October 20, 1861, and camped at the Goose Creek Landing while attacking the Confederate line from entrenchments

along the bluffs to the west of Edwards Ferry. However, the Union advance was stymied by the position of the Richmond Howitzers astride the Edwards Ferry road at what is now Battlefield Parkway, and Gorman was unable to assist the troops engaged at Ball's Bluff to the northwest. He retreated across the river at Edwards Ferry on the night of October 23 (Ford and Thompson 2015).

The Ball's Bluff Battlefield & National Cemetery Historic District Boundary Increase (253-5182) is an expansion of the 85-acre Ball's Bluff Battlefield and National Cemetery (253-5021) located northeast of Leesburg, which was listed on the NRHP and NHL in 1984. The boundary increase was listed as a NHL and on the NRHP in 2016. It is located within the 1.5-mile study tier for Route 1 and the Apollo Substation.

4.4 HISTORIC RESOURCE FINDINGS

4.4.1 053-0106, BELMONT MANOR

Belmont Manor is located approximately 0.8 mile to the southeast of Route 1 in an area where the route uses a greenfield alignment. The resource is also 0.8 mile southeast of the proposed Starlight Substation site, 0.9 mile east of the proposed Sycolin Creek Substation site, 1.0 mile to the southeast of the proposed Lunar Substation site, and 1.0 mile southeast of the proposed Apollo Substation site (Attachment 5, Figure 1). The area between the resource and the new transmission line consists of a dense residential development and forest. 053-0106 would have no view to Route 1 nor any of the proposed substations due to distance, as shown by the simulation from SP 3, where Route 1 (indicated in yellow) is hidden from the view (Attachment 5, Figure 2). Because the view towards the Project from Belmont Manor would be entirely screened, there would be **No Impact** on this resource from Route 1.

As indicated in the simulation, the future Aspen-Golden Lines would be visible from this resource (shown in gray). Infrastructure from thus project is moderately visible from SP 3 as discussed in another report (Derrick et al. 2024). As depicted in the simulation (Attachment 5, Figure 2), even with the removal of vegetation for construction of the Aspen-Golden Lines, transmission infrastructure installed along Route 1 for the Apollo-Twin Creeks Lines would not be visible from vantage points at Belmont Manor.

4.4.2 053-0276, WASHINGTON AND OLD DOMINION RAILROAD HISTORIC DISTRICT

The W&OD Railroad Historic District is approximately 0.2 mile to the southwest of Route 1 and the proposed Twin Creeks and Sycolin Creek Substation sites, in an area where the route uses a greenfield alignment (Attachment 5, Figure 3). The area between the resource and the new transmission line consists of existing substations and Dominion's existing Lines #203 and #2098. The historic district itself shares a right-of-way with Dominion's existing Lines #227 and #274. Two simulations were prepared from the resource, both from the historic district's right-of-way. As shown by SP 7, four transmission structures associated with Route 1 would be minimally visible where the route connects to Dominion's existing Lines #203 and #2098 (Attachment 5, Figure 4), but the Project would not be visible from other vantage points, as shown by SP 5 (Attachment 5,

Figure 5). Although Route 1 is closer to the resource from SP 5, transmission infrastructure installed along this alignment would not be visible due to dense vegetation.

It is important to note that Dominion's existing lines are already a conspicuous element in the district's viewshed, as they share the district's right-of-way. In addition, multiple existing Dominion substations are visible and directly adjacent to the district. Although the district's historic landscape has been severely by comparable infrastructure, because the installation of new transmission infrastructure installed along Route 1 would be visible, it constitutes a change. Thus, ERM recommends that Route 1 would have a **Minimal Impact** on 053-0276.

The Aspen-Golden Lines, once built, also would be minimally visible from various locations in the district, including from SP 7, when looking to the west (Attachment 5, Figure 6). The impact from the Aspen-Golden Project is discussed in a separate report (Derrick et al. 2024), but in terms of its relevance for assessing impacts from Apollo-Twin Creeks Route 1, the Aspen-Golden Lines would not alter the viewshed of 053-0276 in a way that would increase the visibility of infrastructure installed along Route 1.

4.4.3 053-0336, COOKE'S MILL

Cooke's Mill is approximately 0.1 mile northwest of Route 1, 0.1 mile west of the proposed Starlight Substation, 0.1 mile north of the proposed Sycolin Creek Substation, 0.3 mile southwest of the proposed Lunar Substation, and 0.6 mile southeast of the proposed Twin Creeks Substation (Attachment 5, Figure 7). The resource is located in an area where the route is collocated with the future Aspen-Golden Lines. The area between the resource and the proposed new transmission line includes one residential property surrounded by dense vegetation consisting of mature trees.

Four simulations (SP 27, SP 28, SP 29, and SP 30) were prepared from various potential vantage points within the resource boundary towards Route 1. SP 27 was taken from the northernmost edge of the resource boundary, approximately 0.1 mile west of the route, while SP 29 was taken from the southwestern boundary of the resource, approximately 0.1 mile to the northwest of the route (Attachment 5, Figures 8 and 9). Route 1 would not be visible from SP 27 or SP 29 due to the dense intervening vegetation. The two other SPs (SP 28 and SP 30) would have a view of transmission infrastructure installed the route (highlighted in purple in the simulations). SP 28 was taken at the easternmost resource boundary, closest to the route, approximately 0.1 mile west of what would be the right-of-way, and SP 30 was taken on the west bank of Goose Creek, closest to the mill (Attachment 5, Figures 10 and 11). From SP 28, one transmission line structure and associated conductors would be visible through a clearing in the trees. SP 30 was taken approximately 180 feet to the southwest of SP 28 and also shows that conductors would be visible through another clearing in the trees.

Because discrete locations within the resource would have limited views of transmission infrastructure installed along Route 1, the Project would add modern elements to the historic viewshed. The majority of the resource would have no view of the new transmission line, however, and no view to any of the proposed substations. Thus, ERM recommends there would be a **Minimal Impact** to the resource from Route 1.

The future Aspen-Golden Lines (shown in pink in the simulations) would also be minimally visible from vantage points at SPs 28 and 30. Only three of the Aspen-Golden Lines transmission structures and associated conductors would be visible. As illustrated in the simulations, the combined view of the Aspen-Golden Lines and Apollo-Twin Creeks Route 1 would not appreciably increase the impact to the viewshed.

4.4.4 053-5058, BALL'S BLUFF BATTLEFIELD

Ball's Bluff Battlefield is located approximately 0.8 mile to the north of the proposed Apollo Substation and 0.9 mile to the north of Route 1, in an area where the route uses a greenfield alignment (Attachment 5, Figure 12). The area between the resource and the proposed new transmission line consists of a large residential development. Due to distance from the route, the change in elevation, and the presence of intervening densely-packed residential development, 053-5058 would have no view to infrastructure installed along Route 1 or equipment installed at the proposed Apollo Substation, as shown by the viewpoint from SP 10 (Attachment 5, Figure 13). Because the view towards the Project from Ball's Bluff Battlefield would be entirely screened, there would be **No Impact** on this resource from Route 1.

4.4.5 053-6238, AFRICAN AMERICAN BURIAL GROUND FOR THE ENSLAVED AT BELMONT

The African American Burial Ground for the Enslaved at Belmont is approximately 0.5 mile to the east of Route 1. It is also 0.4 mile southeast of the proposed Apollo Substation site, 0.4 mile to the east of the proposed Lunar Substation site, 0.5 mile northeast of the proposed Starlight Substation site, and 0.8 mile to the northeast of the proposed Sycolin Creek Substation site (Attachment 5, Figure 14). The area between the resource and the proposed new transmission line and substations consists of dense forest and Belmont Ridge Road.

Three simulations were prepared from the resource: SP 41, located inside of the cemetery; SP 37, located at the entrance of the cemetery (about 235 feet outside of the VDHR boundary); and SP 308, located on Freedom Trail Road (about 100 feet outside of the VDHR boundary). SP 41 shows that no structures would be visible from inside of the resource boundary due to dense vegetation (Attachment 5, Figure 15). All other areas within the cemetery trail and inside the forested area would have no view of Route 1. The simulation from SP 37 shows that only the tip of one transmission structure would be visible from the entrance of the cemetery where it is closest to the route (Attachment 5, Figure 16). The simulation from SP 308 shows both the future Aspen-Golden Lines (pink) and Route 1 (purple) would be visible, with an unobstructed sight line to the Aspen-Golden Lines due to its location outside the forested area (Attachment 5, Figure 17), though the proposed Starlight Substation and the tips of two of transmission structures along Route 1 would also be visible. The proposed Starlight Substation appears in the distance. These views from outside of the resource boundary would quickly be screened upon entering the wooded interior of the resource.

The area surrounding the resource has already lost its historic feeling as a result of the construction of divided highways to the north and west. The new transmission line would constitute one more element of modern infrastructure within an altered landscape. The Aspen-Golden Project, discussed in a separate report (Derrick et al 2024), would be more prominent in

the landscape. Although the historic section of the cemetery has no view to the route, the cemetery entrance and areas outside of the tree line would have some visibility to the transmission infrastructure installed along the route and the proposed substation. Thus, ERM recommends that there would be a **Minimal Impact** on this resource from Route 1 and the proposed Starlight Substation.

4.4.6 253-5182, BALL'S BLUFF BATTLEFIELD & NATIONAL CEMETERY HISTORIC DISTRICT BOUNDARY INCREASE

Ball's Bluff Battlefield and National Cemetery Historic District Boundary Increase is approximately 1.3 miles to the north-northeast of the proposed Apollo Substation site and 1.4 miles to the north-northeast of Route 1 in an area where the route uses a greenfield alignment (Attachment 5, Figure 18). The area between the resource and the new transmission line consists of a large residential development. Due to distance from the route and the densely-packed residential development, 253-5182 would have no view to transmission infrastructure installed along Route 1 or to the proposed Apollo Substation, as shown by the viewpoint from SP 12 (Attachment 5, Figure 19). Because the view towards the Project from Ball's Bluff Battlefield and National Cemetery Historic District Boundary Increase would be entirely screened, there would be **No Impact** on this resource from Route 1.

4.5 ARCHAEOLOGY FINDINGS

Four known archaeological sites are located in the right-of-way of Route 1 and/or the proposed substations (Table 6). Of these:

- 44LD1999 is within what would be the right-of-way of Route 1 and within the boundary of the proposed [redacted].
- 44LD2001 is within the boundary of the proposed [redacted].
- 44LD2002 is within what would be the right-of-way of Route 1.
- 44LD2012 is within what would be the right-of-way of Route 1 and within the boundary of the proposed [redacted].

The archaeological sites crossed by Route 1 and/or within the proposed substation sites are described below. The descriptions include information on the eligibility of each site for listing in the NRHP as well as an assessment of each site's condition based on desktop review. A confident evaluation of the nature of archaeological deposits at each site and impacts from prior land use activities would require a field survey to verify the desktop analysis.

TABLE 6 ARCHAEOLOGICAL RESOURCES WITHIN THE RIGHT-OF-WAY FOR THE PROJECT

Considered Resource	Project Component					
	Route 1	Twin Creeks Substation	Sycolin Creek Substation	Starlight Substation	Lunar Substation	Apollo Substation
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

"X" indicates that the resource is within the right-of-way of the route and/or proposed substation footprint.

44LD1999 is a domestic artifact scatter associated with a single dwelling dating from the Reconstruction and Growth to World War II periods. The site was originally identified in 2022 by Thunderbird Archeology during a Phase I survey. Based on this work, the site was determined not eligible for listing on the NRHP. [redacted] The current site setting appears to be undisturbed based on a review of recent aerial photographs.

44LD2001 is a multicomponent site consisting of a Pre-Contact temporary encampment and a historic artifact scatter from an undetermined cultural period. The site was originally identified in 2022 by Thunderbird Archeology. Portions of the site have been disturbed by historic-era plowing, likely affecting the integrity of the site. The site was determined not eligible for listing on the NRHP. [redacted]

44LD2002 is interpreted as small lithic scatter representing a short-term temporary camp during an unknown period prior to European contact. The site was originally identified in a 2022 during a Phase I survey conducted by Thunderbird Archeology. It was assessed as not eligible for listing on the NRHP. [redacted] The current site setting appears to be undisturbed based on a review of recent aerial photographs.

44LD2012 consists of a historic artifact scatter dating from the Post Cold War to the New Dominion cultural periods. The site is interpreted as a refuse area associated with a nearby mid-twentieth century dwelling [redacted]. In their 2022 survey, Thunderbird Archaeology determined that up to a quarter of the site had been destroyed, though the site was not evaluated for listing on the NRHP. [redacted]

5. CONCLUSION AND RECOMMENDATIONS

The pre-application analysis gathered information on archaeological and historic architectural resources that qualify for consideration according to the VDHR Guidelines for transmission line projects.

Four known archaeological sites are located in the right-of-way of the proposed transmission line and/or associated substations. An assessment of the condition and research potential of those sites is contingent upon archaeological field investigations, which will be conducted at relevant sites once the Project is certificated by the SCC. Potential impacts to sites along the preferred route will be assessed as part of the field survey.

Six previously recorded aboveground resources meeting criteria established under the Guidelines fall within the VDHR study tiers associated with the proposed Project. A summary of the number of resources impacted and the degree of impact is presented in Table 7.

TABLE 7 COMPARISON OF PROJECT IMPACTS ON HISTORIC RESOURCES IN THE STUDY AREAS OF THE PROJECT

Route Alternative	Number of Considered Resources in Each Impact Category				
	None	Minimal	Moderate	Severe	Totals
Route 1	3	3	0	0	6

Final assessments of Project impacts will be dependent on the completion of identification-phase archaeological and historic structure surveys to be completed after the Project is certificated by the SCC and subsequent review of survey results by VDHR and other consulting parties. For any resources where the agencies concur in a finding of moderate or severe impact, the Company will propose treatments to avoid, minimize, or mitigate those impacts. Treatment options for archaeological sites could include selective structure placement to avoid direct impacts on sites, minor route adjustments to avoid crossing sites, or archaeological data recovery. Treatment options for aboveground historic resources could include detailed site documentation, historic research, and historic preservation studies; preparation of digital media or museum-type exhibits on sites for public interpretation; installation of historic markers of signs; installation of vegetative screening; or contributions to historical preservation organizations or specific preservation projects. Additional mitigations could be identified through consultation with VDHR and other consulting parties.

5.1 ROUTE 1 AND PROPOSED SUBSTATIONS

Six previously recorded historic architectural resources meet the criteria specified in the Guidelines within the VDHR study tiers for Route 1 and/or the five proposed substation sites (Table 8). The Project would have no impact on three resources and a minimal impact on three resources.

TABLE 8 IMPACTS TO HISTORIC RESOURCES IN THE VDHR STUDY TIERS FOR THE PROJECT

Buffer (miles)	Resource Category	Resource Number	Description	Impact
1.0 to 1.5	National Historic Landmark	253-5182 [5]	Ball's Bluff Battlefield & National Cemetery Historic District Boundary Increase	None
0.5 to 1.0	National Register Properties (Listed)	053-0106 [2, 3, 4, 5]	Belmont Manor	None
	Battlefields (Potentially Eligible)	053-5058 [5]	Ball's Bluff Battlefield	None
0.0 to 0.5	Locally Significant	053-0336 [2, 3, 4]	Cooke's Mill	Minimal
		053-6238 [2, 3, 4, 5]	African American Burial Ground for the Enslaved at Belmont	Minimal
	National Register – Eligible	053-0276 [1, 2]	Washington and Old Dominion Railroad Historic District	Minimal
0.0 (Within ROW)	National Register – Eligible	-	-	-

ROW= right-of-way
[1] Resource is within the designated tiers for the proposed Twin Creeks Substation
[2] Resource is within the designated tiers for the proposed Sycolin Creek Substation
[3] Resource is within the designated tiers for the proposed Starlight Substation
[4] Resource is within the designated tiers for the proposed Lunar Substation
[5] Resource is within the designated tiers for the proposed Apollo Substation

5.2 FUTURE INVESTIGATIONS

The next stage of assessing impacts on historic resources will be to conduct an identification-phase field survey to identify and assess resources after the Project is certificated by the SCC. Survey will be conducted in accordance with the Guidelines as well as:

- Guidelines for Conducting Historic Resources Survey in Virginia (VDHR 2017);
- National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation (NPS 1995).

The survey teams will be led by individuals meeting the Secretary of the Interior's professional qualifications standards for archaeology and architectural history, respectively. Teams will traverse the length of the Project corridor, revisiting previously recorded archaeological and historic architectural resources and documenting as-of-yet unrecorded resources, if present, in the survey area as defined in the Guidelines and based on the final Project design. The archaeological survey will adhere to VDHR survey standards (VDHR 2017) and will entail systematic coverage of the approved route. All material culture, including artifacts and features, that could be 50 years old or older will be recorded. Sites will be delineated within the proposed right-of-way and/or substation

sites, and investigations will include subsurface testing sufficient to inform recommendations of potential eligibility for the NRHP under Criterion D. Each site will be fully documented with appropriate mapping, digital photography, and artifact collection/analysis. Site forms will be prepared for VCRIS submittal along with full site descriptions provided in a technical report.

During the course of the historic architectural survey, all structures determined to be of age will be photographed and marked on the applicable U.S. Geological Survey (USGS) quadrangle map. While the NPS Bulletin 15 (NPS 1995) defines a historic property as a resource that is 50 years or older, for the purposes of this Project, survey will include those 45 years or older to accommodate the length of time needed to complete the permitting phase for the Project. Furthermore, the survey will also record those resources that may have reached significance prior to the 50 (45) year age threshold, in accordance with NPS guidance, if they are integral parts of districts, or have sufficient merit to be considered eligible for the NRHP on their own.

Digital photographs will be taken to record the historic resources' overall appearance and details. Sketch maps will be drawn depicting the relationship of dwellings to outbuildings and associated landscape features. Additional information on the structures' appearance and integrity will be recorded to assist in making recommendations of NRHP eligibility. Historic maps, aerial photographs, and tax assessor data will be consulted to assist in dating the resources. Resources identified in the field effort will be reported to the VDHR, VCRIS numbers will be obtained, and shapefiles and database information will be provided. Sufficient information will be collected to make recommendations for each identified historic resource regarding eligibility for listing on the NRHP and to assess Project impacts.

6. REFERENCES

American Battlefield Trust
2023 Ball's Bluff: Harrison's Landing. Electronic document, https://www.battlefields.org/learn/civil-war/battles/balls-bluff. Accessed September 26, 2023.

Andre, Elizabeth
2008 VCRIS Architecture Form, 053-0276. On file, Virginia Department of Historic Resources.

Baicy, Dan
2020 VCRIS Architecture Form, 053-6238. On file, Virginia Department of Historic Resources.

Belmont Country Club
2023 Belmont Country Club. https://www.invitedclubs.com/clubs/belmont-country-club. Accessed March 2023.

CCR, Inc.
2006 VCRIS Architecture Form, 053-0276. On file, Virginia Department of Historic Resources.

DeChard, Sandra
2022 VCRIS Architecture Form, 053-0276. On file, Virginia Department of Historic Resources.

Derrick, Mary Beth
2018 VCRIS Architecture Form, 053-0276. On file, Virginia Department of Historic Resources.

Derrick, Mary Beth, Megan Wiginton, Jeffrey Holland, and Jeremy Mastroianni
2024 Aspen to Golden 500-230 kV Electric Transmission Project, Pre Application Analysis. Prepared by Environmental Resources Management, Duluth, Georgia. Report submitted to Dominion Energy Virginia.

Dovetail CRG
2008 VCRIS Architecture Form, 053-0276. On file, Virginia Department of Historic Resources.

2010 VCRIS Architecture Form, 053-0276. On file, Virginia Department of Historic Resources.

Ford, Benjamin P., and Stephen M. Thompson
2015 National Historic Landmark Nomination: Ball's Bluff Battlefield Historic District (boundary change). Rivanna Archaeological Services, Charlottesville, Virginia.

Google Earth Pro
2023 Aerial Imagery. https://www.google.com/earth/. Accessed February 2024.

Hanbury, Mary Ruffin
2012 VCRIS Architecture Form, 053-0276. On file, Virginia Department of Historic Resources.

2013 VCRIS Architecture Form, 053-0276. On file, Virginia Department of Historic Resources.

History Matters, LLC
2004 Loudoun County African-American Historic Architectural Resources Survey. https://www.loudoun.gov/DocumentCenter/View/6978/Loudoun-County-African-American-Architectural-Res?bidId=. Accessed January 24, 2024.

Jacobe, Stephanie
2014 VCRIS Architecture Form, 053-0276. On file, Virginia Department of Historic Resources.

Lewis, John G.
1973 VCRIS Architecture Form, 053-0278. On file, Virginia Department of Historic Resources.

Loth, Calder C.
1976a VCRIS Architecture Form, 053-0106. On file, Virginia Department of Historic Resources.

1976b NRHP nomination form, Belmont. 80004198. On file, National Archives.

Loudoun County Heritage Commission
2024 Boards and Commissions - Heritage Commission. https://loudouncoalition.org/. Accessed January 24, 2024.

Loudoun County Preservation and Conservation Coalition (LCPCC)
2024 Loudoun County Preservation and Conservation Coalition. https://loudouncoalition.org/. Accessed January 24, 2024.

Loudoun Preservation Society
2024 Loudoun Preservation Society. https://preserveloudoun.org/. Accessed January 24, 2024.

Malvasi, Meg Greene
2009a VCRIS Architecture Form, 053-0106. On file, Virginia Department of Historic Resources.

2009b VCRIS Architecture Form, 053-6238. On file, Virginia Department of Historic Resources.

Morgan, James A., III
2012 Ball's Bluff: A Very nice Little Military Chance. *Essential Civil War Curriculum.* Electronic document, chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/ https://www.essentialcivilwarcurriculum.com/assets/files/pdf/ECWC%20TOPIC%20Balls%20Bluff%20Essay%20Revised%203.pdf. Accessed September 26, 2023.

Neville, Ashley M.
2000 VCRIS Architecture Form, 053-0276. On file, Virginia Department of Historic Resources.

National Park Service (NPS)
1995 National Register Bulletin: *How to Apply the National Register Criteria for Evaluation* (NRB 15). Revised for Internet 1995. Accessed: March 21, 2023. Retrieved from: https://www.nps.gov.

Ross, Helen P.
1999 VCRIS Architecture Form, 053-0969. On file, Virginia Department of Historic Resources.

Schlupp, Carrie
2016 VCRIS Architecture Form, 053-0276. On file, Virginia Department of Historic Resources.

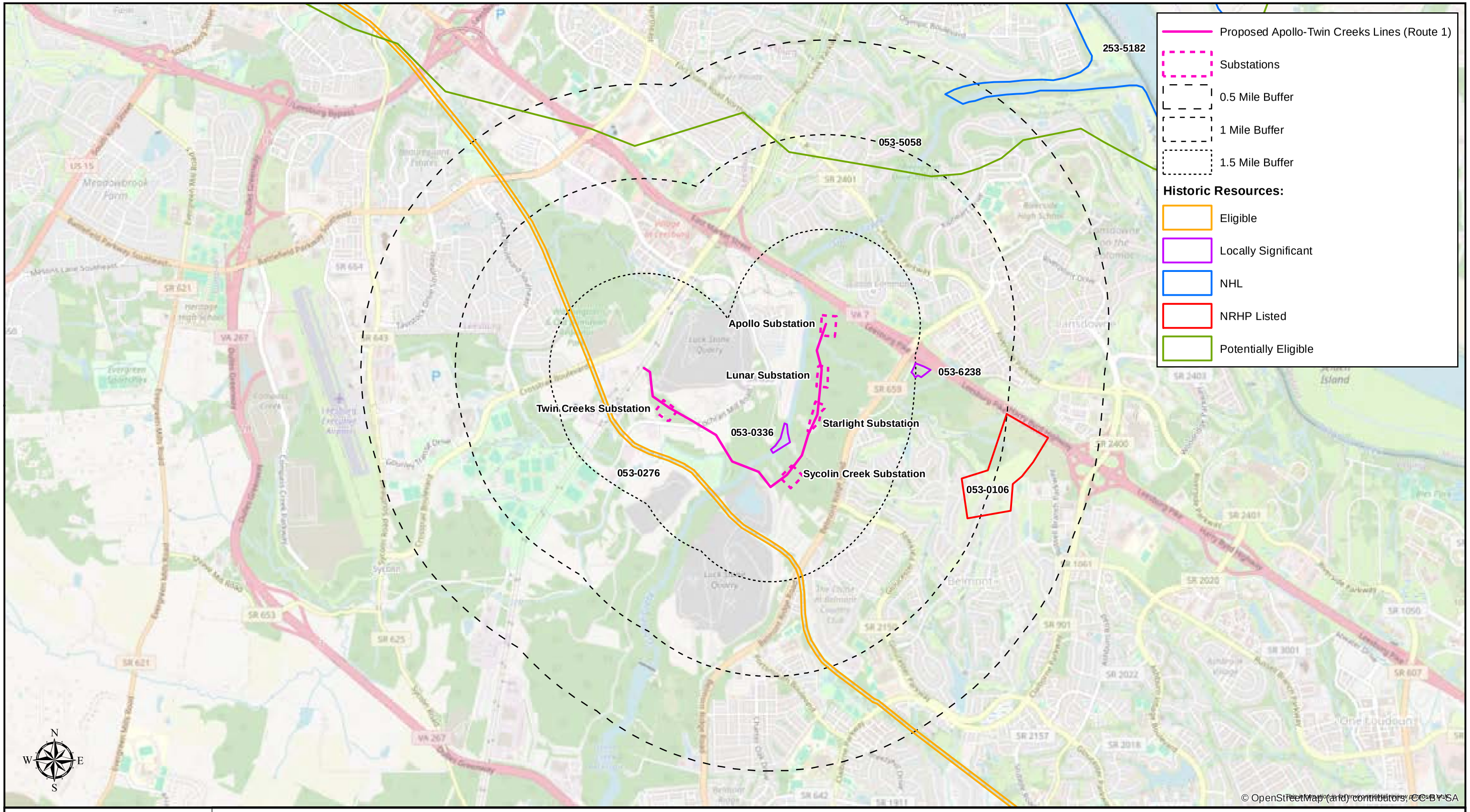
Shiflett, Maddie
2022 VCRIS Architecture Form, 053-0276. On file, Virginia Department of Historic Resources.

Traum, Sarah
2014 VCRIS Architecture Form, 053-0276. On file, Virginia Department of Historic Resources.

Virginia Department of Historic Resources (VDHR)
2008 Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia. Accessed June 2022. Retrieved from: https://www.dhr.virginia.gov/wp-content/uploads/2018/08/DHR_Guidelines_for_Transmission_Line_Assessment.pdf.

2017 Guidelines for Conducting Historic Resources Survey in Virginia. Accessed February 2024. Retrieved from: https://www.dhr.virginia.gov/wp-content/uploads/2023/05/SurveyManual_2017.pdfeyManual_2017.pdf (virginia.gov).

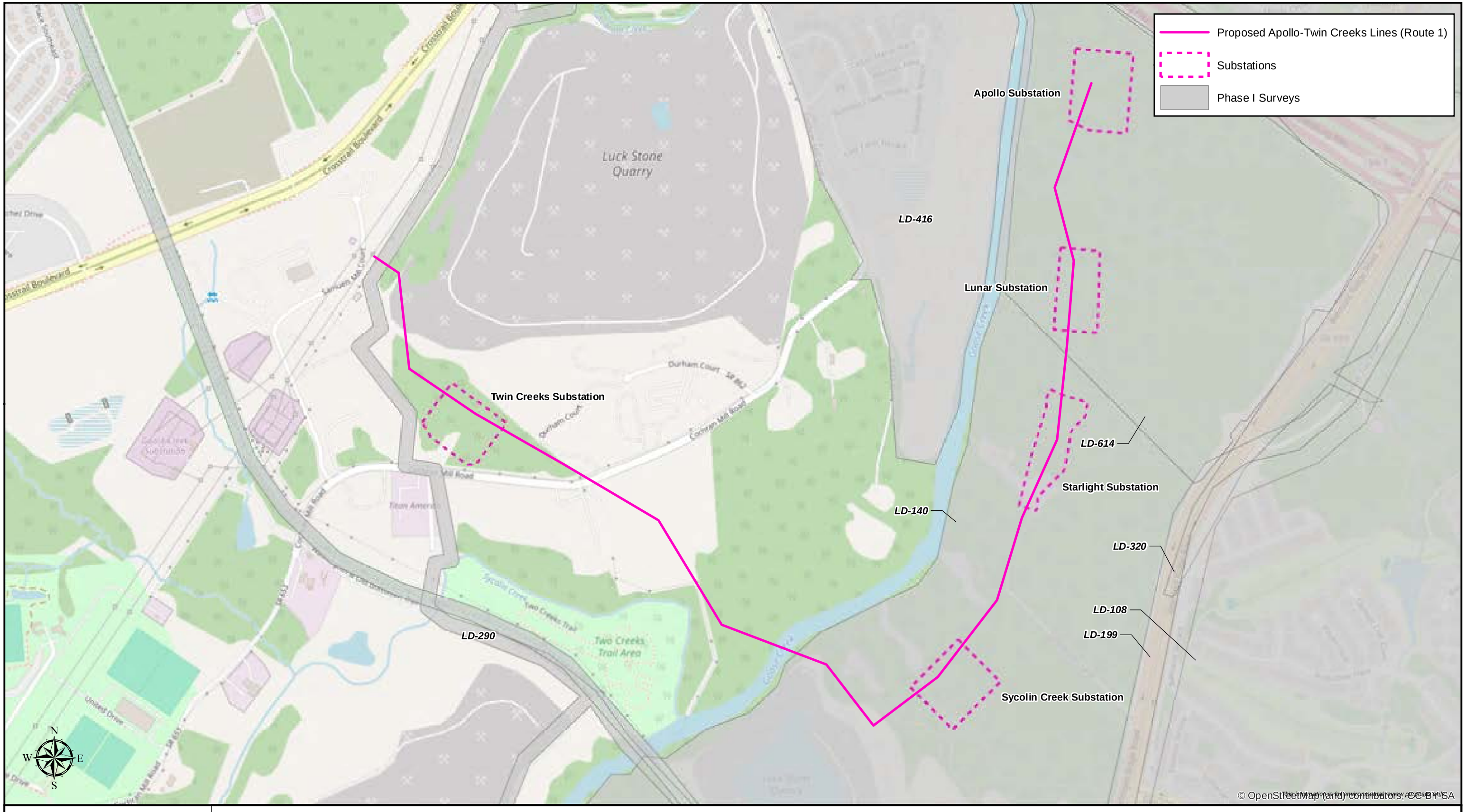
ATTACHMENT 1 LOCATIONS OF CONSIDERED HISTORIC RESOURCES ASSOCIATED WITH PROJECT



Attachment 1
Locations of Considered Resources Associated with the Project
Apollo-Twin Creeks 230 kV Electric Transmission Project
Dominion Energy Virginia
Loudoun County, VA

FILE: C:\Users\vincent.macek\Documents\OneDrive - ERM\Dominion Twin Creeks-Apollo\Dominion Twin Creeks-Apollo Attachment 1 HS.mxd | REVISED: 02/21/2024 | SCALE: 1:39,457 when printed at 11x17 DRAWN BY: GIS

ATTACHMENT 2 PREVIOUS CULTURAL RESOURCES SURVEYS COVERING PORTIONS OF PROJECT



Attachment 2
Cultural Resource Surveys Covering Portions of the Project
Apollo-Twin Creeks 230 kV Electric Transmission Project
Dominion Energy Virginia
Loudoun County, VA

FILE: C:\Users\vincent.macek\Documents\OneDrive - ERM\Dominion Twin Creeks-Apollo\Dominion Twin Creeks-Apollo Attachment 2 PH 1.mxd | REVISED: 02/21/2024 | SCALE: 1:10,000 when printed at 11x17 DRAWN BY: GIS

ATTACHMENT 3 TYPICAL DESIGN AND LAYOUT

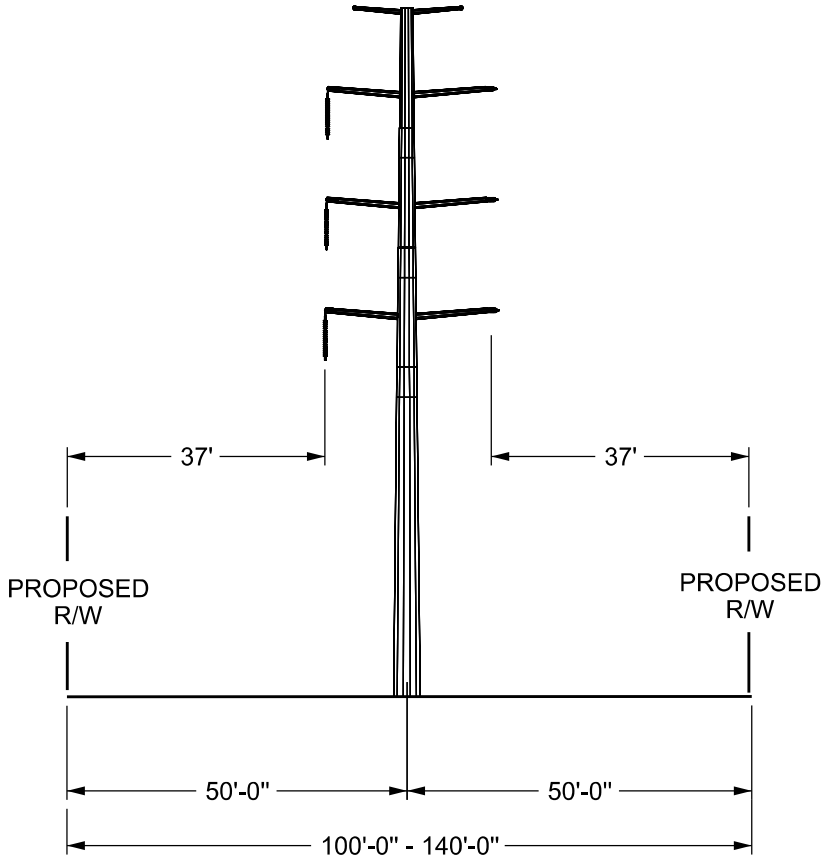
ATTACHMENT 3 TYPICAL DESIGN AND LAYOUT - Apollo-Twin Creeks Lines

$SYTIME$
$DATE$

PRELIMINARY PROPOSED
APOLLO - TWIN CREEKS

STRUCTURES #203/2, 2320/5 - #203/1A, 2320/2
STRUCTURE #2340/2, 2341/2
STRUCTURE #2342/2, 2343/2

PROPOSED
230KV CIRCUIT



PROPOSED CONFIGURATION

TYPICAL RIGHT OF WAY LOOKING TOWARD APOLLO

NOTE:

1. PROPOSED STRUCTURE SHOWN WITH APPROXIMATE AVERAGE HEIGHT OF 112' FOR THE 230 KV STRUCTURES. THIS DOES NOT INCLUDE FOUNDATION REVEAL.

2. APPROXIMATE AVERAGE HEIGHT IS MEASURED FROM GROUNDLINE AT STRUCTURE CENTERLINE.

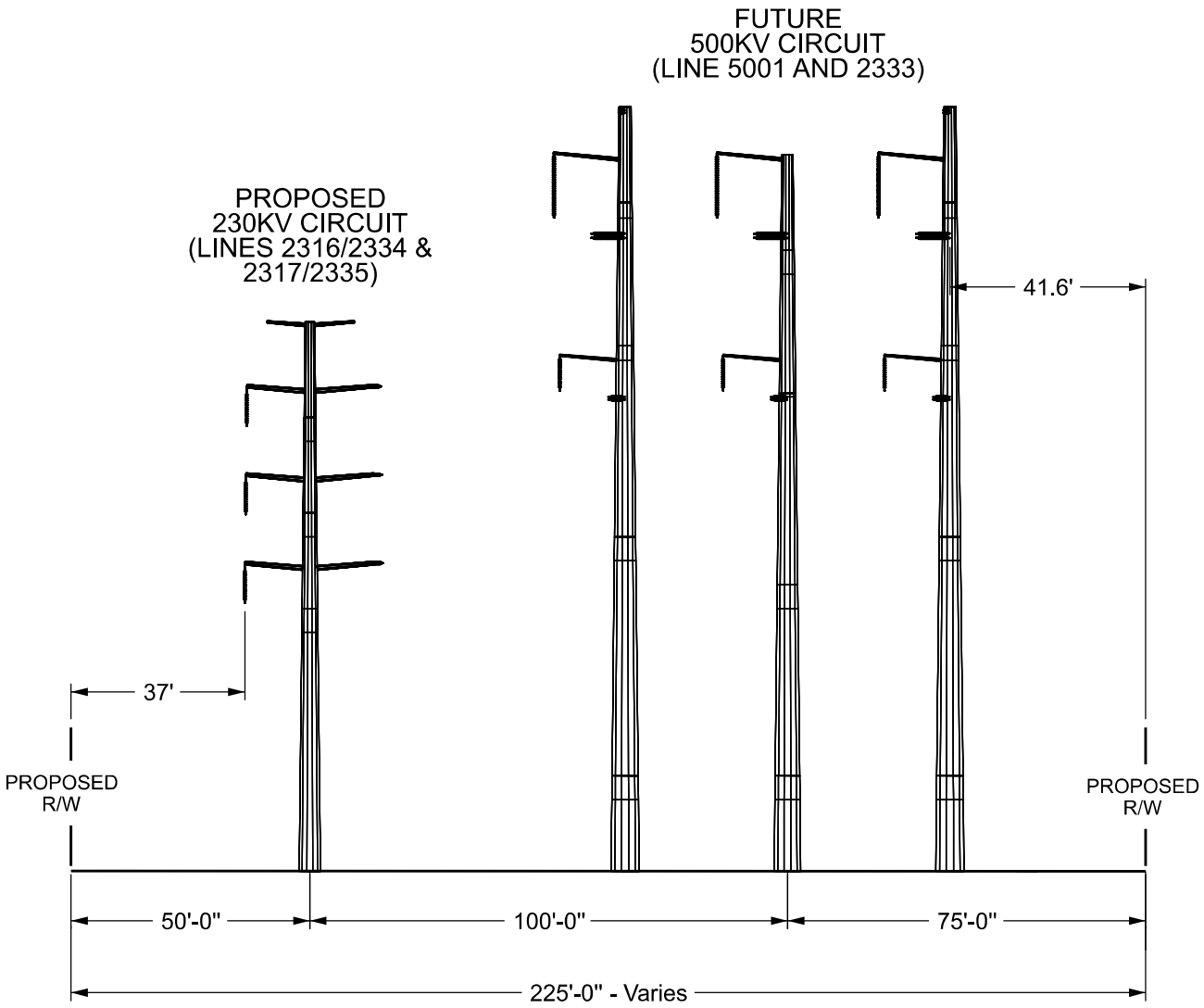
3. INFORMATION CONTAINED ON DRAWING IS TO BE CONSIDERED PRELIMINARY IN NATURE AND SUBJECT TO CHANGE BASED ON FINAL DESIGN.

TDBDIAG $DGNSPEC$

$SYTIME$
$DATE$
$DGNSPEC$
TDBDIAG

PRELIMINARY PROPOSED
APOLLO - TWIN CREEKS

STRUCTURES #2316/2, 2317/2 - #2334/3, 2335/3



PROPOSED CONFIGURATION

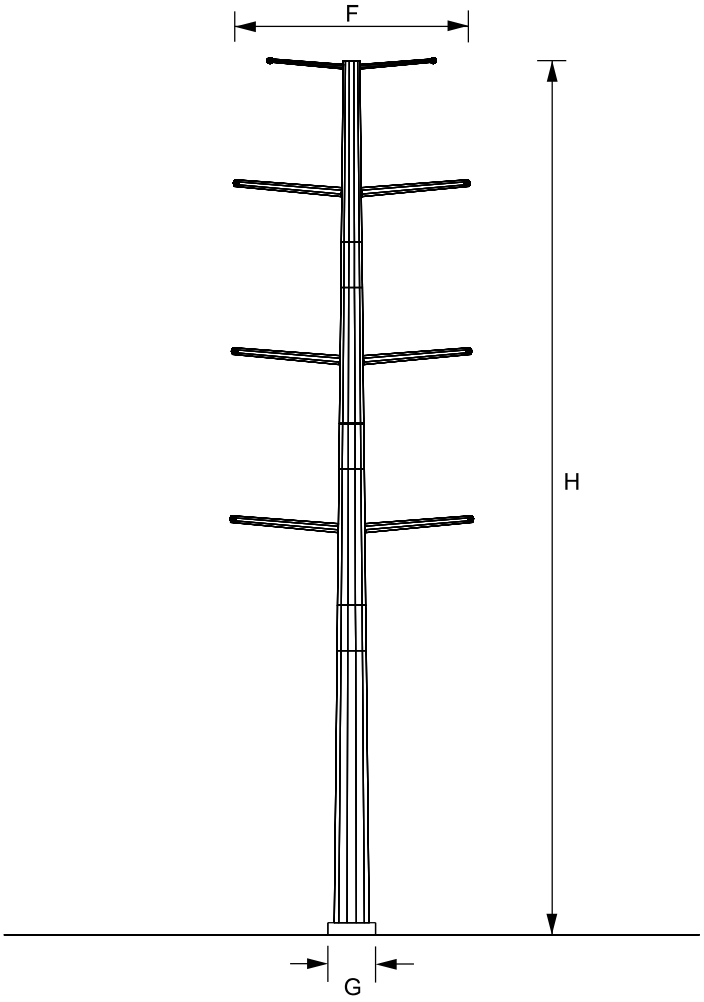
TYPICAL RIGHT OF WAY LOOKING TOWARD APOLLO

NOTE:

1. PROPOSED STRUCTURE SHOWN WITH APPROXIMATE AVERAGE HEIGHT OF 158' FOR THE 5-2 STRUCTURES AND 113' FOR THE 230 KV STRUCTURES. THIS DOES NOT INCLUDE FOUNDATION REVEAL.

2. APPROXIMATE AVERAGE HEIGHT IS MEASURED FROM GROUNDLINE AT STRUCTURECENTERLINE.

3. INFORMATION CONTAINED ON DRAWING IS TO BE CONSIDERED PRELIMINARYIN NATURE AND SUBJECT TO CHANGE BASED ON FINAL DESIGN.



TYPICAL DC ENGINEERED MONOPOLE DOUBLE DEADEND STRUCTURE

A. STRUCTURE MAPPING	SEE ATTACHMENT II.B.3.d
B. RATIONALE FOR STRUCTURE TYPE:	MORE COMPACT STRUCTURES FOR DOUBLE CIRCUIT CONFIGURATION
C. LENGTH OF R/W (STRUCTURE QTY):	1.9 MILES (9)
D. STRUCTURE MATERIAL:	DULLED GALVANIZED STEEL
RATIONALE FOR STRUCTURE MATERIAL:	DULLED GALVANIZED STEEL TO MINIMIZE VISUAL IMPACT BY REDUCING THE GLARE ON THE NEW STRUCTURES
E. FOUNDATION MATERIAL: AVERAGE FOUNDATION REVEAL:	CONCRETE SEE NOTE 1
F. AVERAGE WIDTH AT CROSSARM:	26'
G. AVERAGE WIDTH AT BASE:	9' DIAMETER FOUNDATION - SEE NOTE 2
H. MINIMUM STRUCTURE HEIGHT: MAXIMUM STRUCTURE HEIGHT: AVERAGE STRUCTURE HEIGHT:	110' 135' 121'
I. AVERAGE SPAN LENGTH:	*630' - SEE NOTE 3*
J. MINIMUM CONDUCTOR-TO-GROUND:	22.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTES:
1. MINIMUM FOUNDATION REVEAL SHALL BE 1.5', MAX REVEAL IS SUBJECT TO FINAL DESIGN
2. FINAL FOUNDATION DIAMETER SHALL BE BASED ON GEOTECHNICAL FINDINGS DURING FINAL DESIGN
3. SPAN LENGTHS ARE INCLUSIVE OF THE ROW LENGTH LISTED IN LINE (C)
4. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING

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

Dominion Energy
Dominion Energy
10900 Nuckols Road
Glen Allen, VA 23060

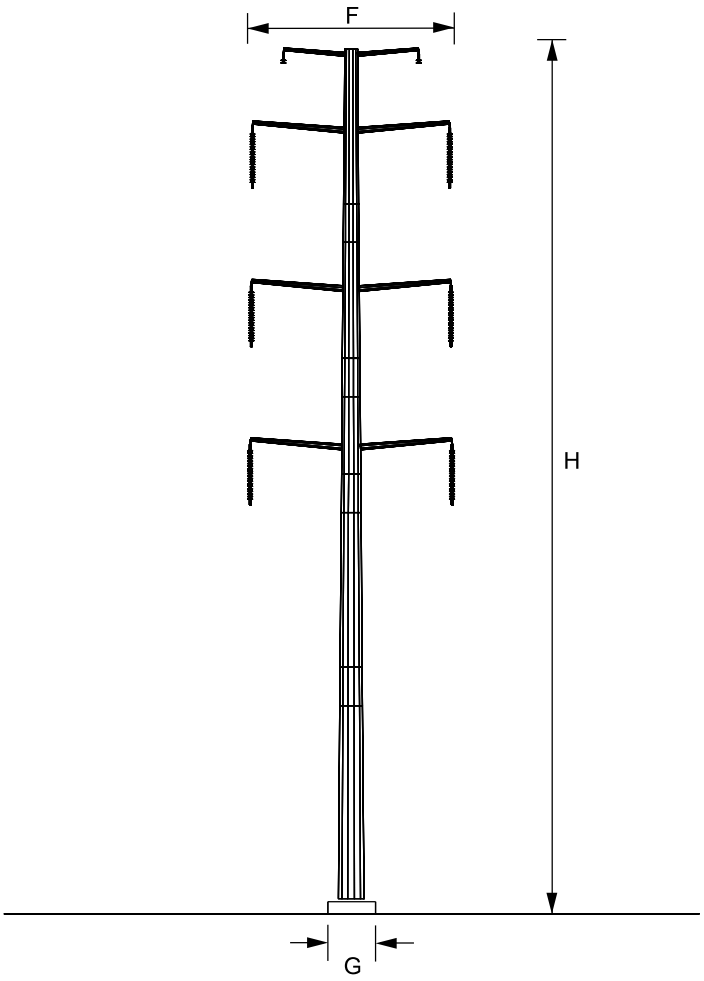
STRUCTURE: 203/2 (2320/5), 203/1C (2320/4), 203/1A (2320/2), 2316/2 (2317/2), 2316/3 (2317/3), 2316/4 (2317/4), 2334/2 (2335/2), 2334/3 (2335/3), 2342/2 (2343/2)

TYPICAL DC ENGINEERED MONOPOLE DOUBLE DEADEND STRUCTURE

ATTACHMENT NO.

II.B.3.a

DRAWN BY: SLS



TYPICAL DC ENGINEERED MONOPOLE SUSPENSION STRUCTURE

A. STRUCTURE MAPPING	SEE ATTACHMENT II.B.3.d
B. RATIONALE FOR STRUCTURE TYPE:	MORE COMPACT STRUCTURES FOR DOUBLE CIRCUIT CONFIGURATION
C. LENGTH OF R/W (STRUCTURE QTY):	1.9 MILES (1)
D. STRUCTURE MATERIAL:	DULLED GALVANIZED STEEL
RATIONALE FOR STRUCTURE MATERIAL:	DULLED GALVANIZED STEEL TO MINIMIZE VISUAL IMPACT BY REDUCING THE GLARE ON THE NEW STRUCTURES
E. FOUNDATION MATERIAL: AVERAGE FOUNDATION REVEAL:	CONCRETE SEE NOTE 1
F. AVERAGE WIDTH AT CROSSARM:	26'
G. AVERAGE WIDTH AT BASE:	6' DIAMETER FOUNDATION - SEE NOTE 2
H. MINIMUM STRUCTURE HEIGHT : MAXIMUM STRUCTURE HEIGHT : AVERAGE STRUCTURE HEIGHT :	110' 110' 110'
I. AVERAGE SPAN LENGTH:	*630' - SEE NOTE 3*
J. MINIMUM CONDUCTOR-TO-GROUND:	22.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTES:
1. MINIMUM FOUNDATION REVEAL SHALL BE 1.5', MAX REVEAL IS SUBJECT TO FINAL DESIGN
2. FINAL FOUNDATION DIAMETER SHALL BE BASED ON GEOTECHNICAL FINDINGS DURING FINAL DESIGN
3. SPAN LENGTHS ARE INCLUSIVE OF THE ROW LENGTH LISTED IN LINE (C)
4. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING

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

Dominion Energy
Dominion Energy
10900 Nuckols Road
Glen Allen, VA 23060

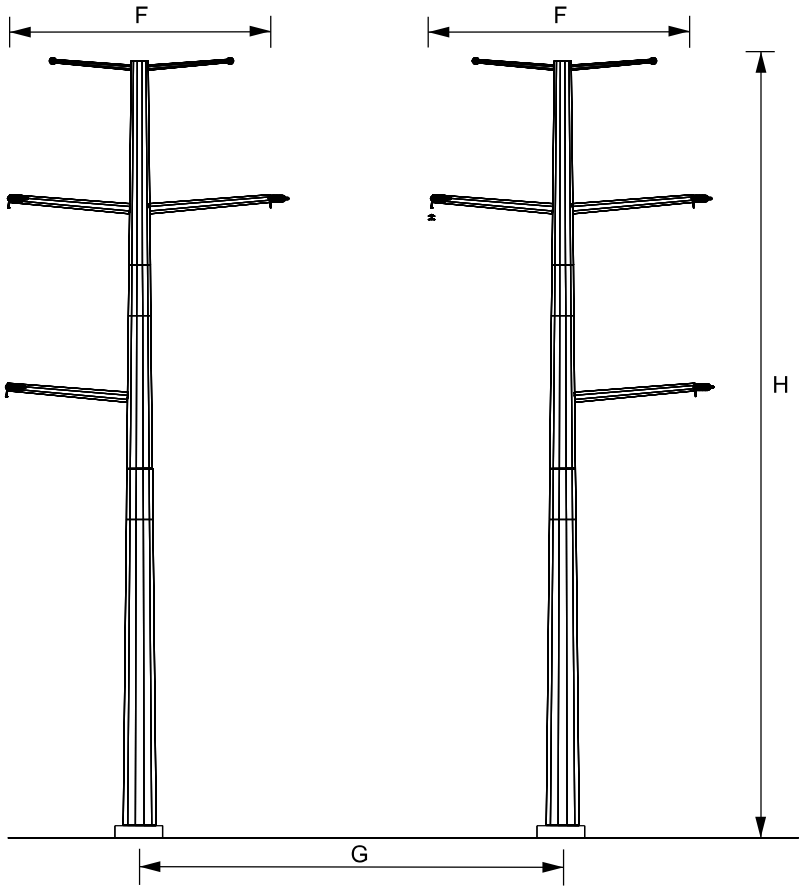
STRUCTURE: 203/1B (2320/3)

TYPICAL DC ENGINEERED MONOPOLE SUSPENSION STRUCTURE

ATTACHMENT NO.

II.B.3.b

DRAWN BY: SLS



TYPICAL DC ENGINEERED 2-POLE DOUBLE DEADEND STRUCTURE

A. STRUCTURE MAPPING	SEE ATTACHMENT II.B.3.d
B. RATIONALE FOR STRUCTURE TYPE:	SHORTER STRUCTURES FOR DOUBLE CIRCUIT CONFIGURATION NEEDED FOR CROSSING UNDER TRANSMISSION LINE.
C. LENGTH OF R/W (STRUCTURE QTY):	1.9 MILES (3)
D. STRUCTURE MATERIAL:	DULLED GALVANIZED STEEL
RATIONALE FOR STRUCTURE MATERIAL:	DULLED GALVANIZED STEEL TO MINIMIZE VISUAL IMPACT BY REDUCING THE GLARE ON THE NEW STRUCTURES
E. FOUNDATION MATERIAL: AVERAGE FOUNDATION REVEAL:	CONCRETE SEE NOTE 1
F. AVERAGE WIDTH AT CROSSARM:	26'
G. AVERAGE WIDTH AT BASE:	41.5' POLE SPACING, 7' DIAMETER FOUNDATION - SEE NOTE 2
H. MINIMUM STRUCTURE HEIGHT : MAXIMUM STRUCTURE HEIGHT : AVERAGE STRUCTURE HEIGHT :	85' 90' 88'
I. AVERAGE SPAN LENGTH:	*630' - SEE NOTE 3*
J. MINIMUM CONDUCTOR-TO-GROUND:	22.5' (AT MAXIMUM OPERATING TEMPERATURE)

NOTES:
1. MINIMUM FOUNDATION REVEAL SHALL BE 1.5', MAX REVEAL IS SUBJECT TO FINAL DESIGN
2. FINAL FOUNDATION DIAMETER SHALL BE BASED ON GEOTECHNICAL FINDINGS DURING FINAL DESIGN
3. SPAN LENGTHS ARE INCLUSIVE OF THE ROW LENGTH LISTED IN LINE (C)
4. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING

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

Dominion Energy
Dominion Energy
10900 Nuckols Road
Glen Allen, VA 23060

STRUCTURE: 2316/5 (2317/5), 2316/6 (2317/6), 2340/2 (2341/2)

TYPICAL DC ENGINEERED 2-POLE DOUBLE DEADEND STRUCTURE

ATTACHMENT NO.

II.B.3.c

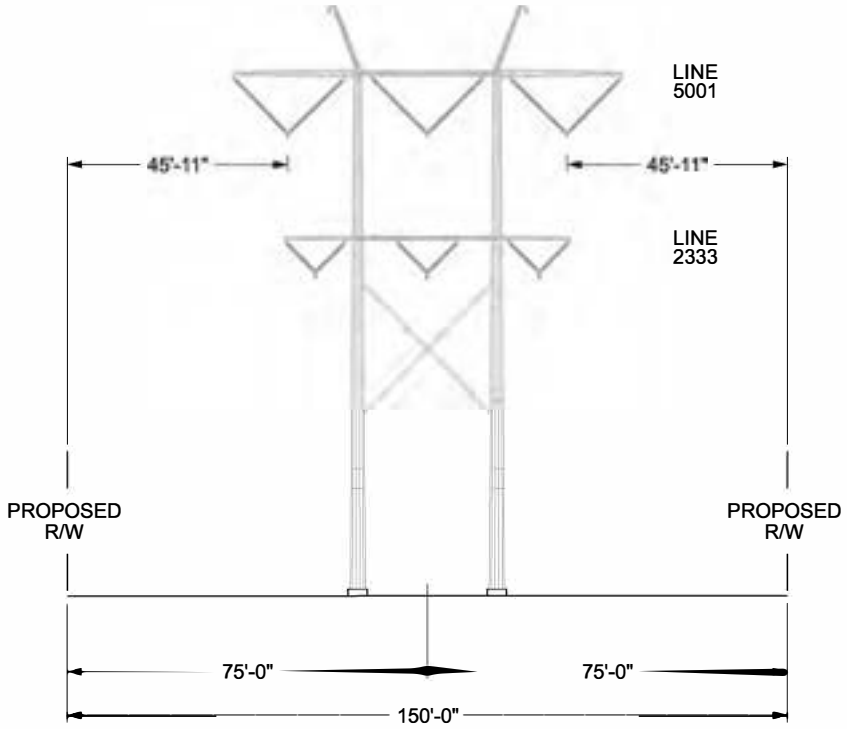
DRAWN BY: SLS

ATTACHMENT 3 TYPICAL DESIGN AND LAYOUT - Aspen-Golden Lines

PRELIMINARY PROPOSED
ASPEN - GOLDEN

STRUCTURES: *5001/2,*5001/3, 5001/4, 2333/4, 5001/13, 2333/13 - 5001/16, 2333/16, 5001/63, 2333/63 - 5001/68, 2333/68

PROPOSED
500 KV & 230 KV CIRCUITS



PROPOSED CONFIGURATION

TYPICAL RIGHT OF WAY LOOKING TOWARD GOLDEN

NOTE:

1. PROPOSED STRUCTURE SHOWN WITH APPROXIMATE AVERAGE HEIGHT OF 170' FOR THE 5-2 STRUCTURES. THIS DOES NOT INCLUDE FOUNDATION REVEAL.

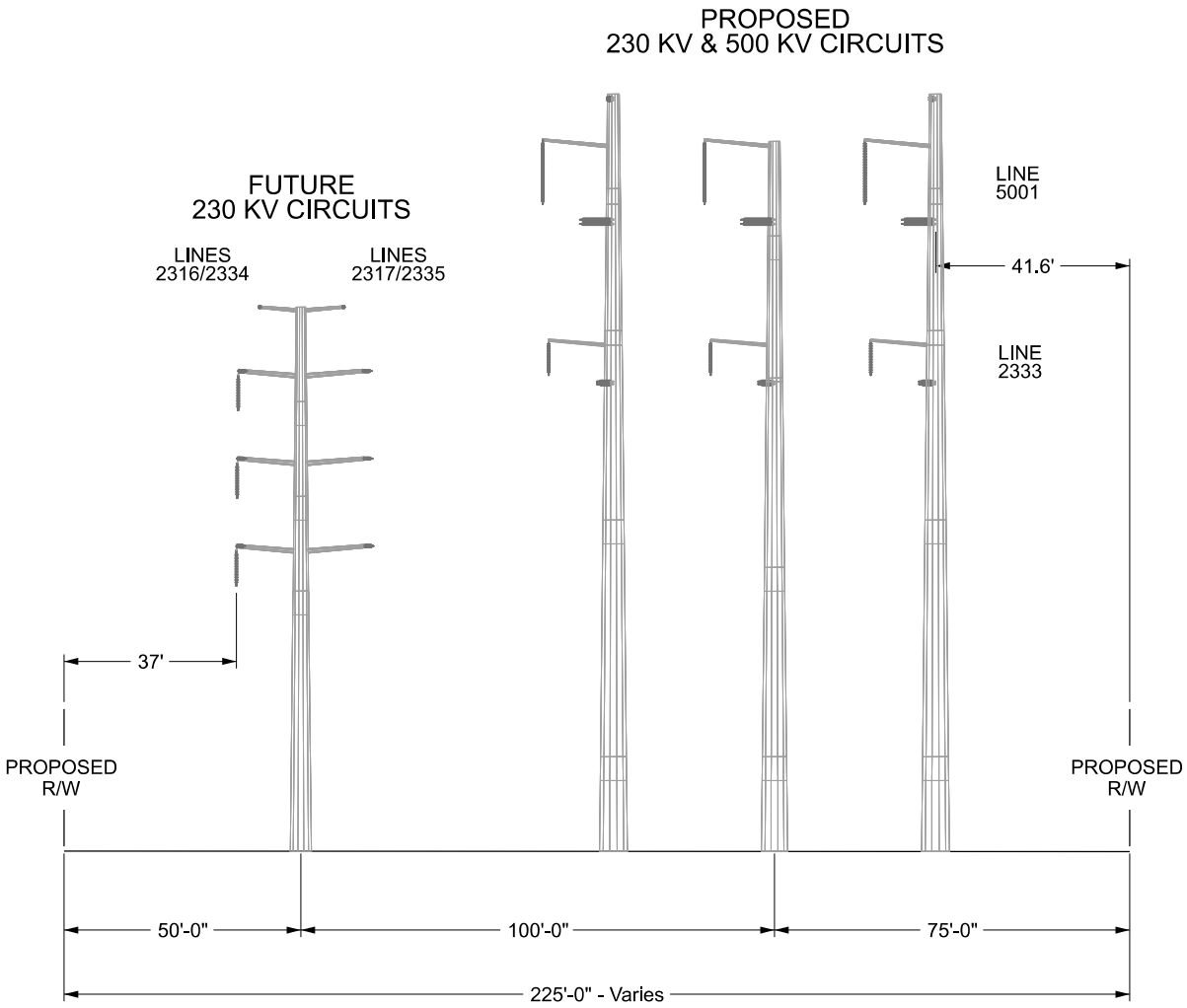
2. APPROXIMATE AVERAGE HEIGHT IS MEASURED FROM GROUNDLINE AT STRUCTURE CENTERLINE.

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

* STRUCTURES 5001/2 AND 5001/3 ARE SINGLE CIRCUIT 500KV H-FRAME STRUCTURES WITH SIMILAR HEIGHT SAME ROW WIDTH.

PRELIMINARY PROPOSED
ASPEN - GOLDEN

STRUCTURES: 5001/6, 2333/6 - 5001/12, 2333/12



PROPOSED CONFIGURATION

TYPICAL RIGHT OF WAY LOOKING TOWARD GOLDEN

NOTE:

1. PROPOSED STRUCTURE SHOWN WITH APPROXIMATE AVERAGE HEIGHT OF 158' FOR THE 5-2 STRUCTURES AND 113' FOR THE 230 KV STRUCTURES. THIS DOES NOT INCLUDE FOUNDATION REVEAL.

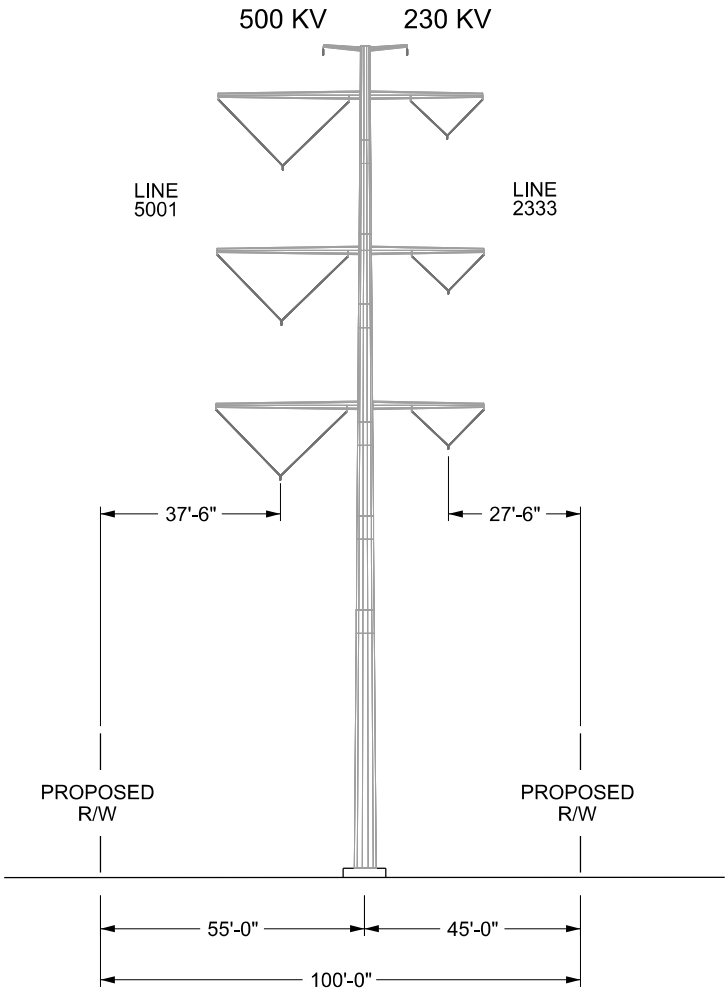
2. APPROXIMATE AVERAGE HEIGHT IS MEASURED FROM GROUNDLINE AT STRUCTURE CENTERLINE.

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

PRELIMINARY PROPOSED
ASPEN - GOLDEN

STRUCTURES: 5001/5, 2333/5, 5001/17, 2333/17 - 5001/62, 2333/62, 5001/69, 2333/69 - 5001/71, 2333/71

PROPOSED CIRCUITS



PROPOSED CONFIGURATION

TYPICAL RIGHT OF WAY LOOKING TOWARD GOLDEN

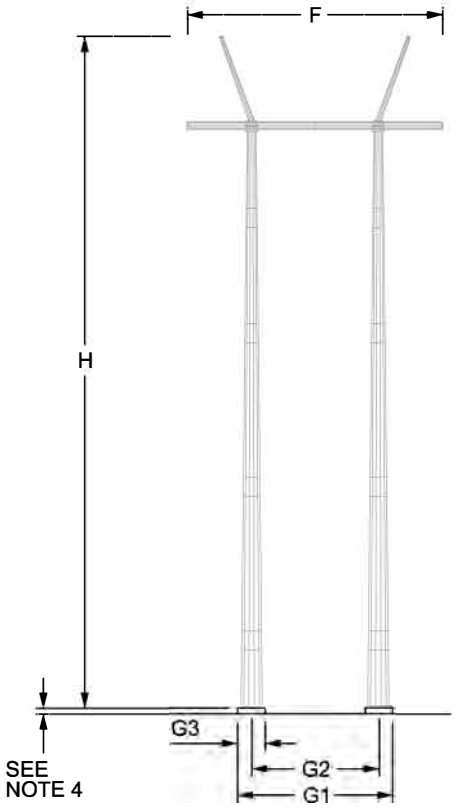
NOTE:

1. PROPOSED STRUCTURE SHOWN WITH APPROXIMATE AVERAGE HEIGHT OF 176' FOR THE 5-2 STRUCTURES. THIS DOES NOT INCLUDE FOUNDATION REVEAL.

2. APPROXIMATE AVERAGE HEIGHT IS MEASURED FROM GROUNDLINE AT STRUCTURE CENTERLINE.

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

STRUCTURE: 5001/2, 5001/3



SC 500 KV H-FRAME STRUCTURE

B. RATIONALE FOR STRUCTURE TYPE:	HORIZONTAL CONFIGURATION TO REDUCE HEIGHT FOR LINE CROSSING, PREFERRED BY PUBLIC OVER LATTICE
C. LENGTH OF R/W (STRUCTURE QUANTITY):	9.4 MILES (2 STRUCTURES)
D. STRUCTURE MATERIAL:	DULLED GALVANIZED STEEL
RATIONALE FOR STRUCTURE MATERIAL:	DULLED GALVANIZED STEEL TO MINIMIZE VISUAL IMPACT BY REDUCING THE GLARE ON THE NEW STRUCTURES
E. FOUNDATION MATERIAL: AVERAGE FOUNDATION REVEAL:	CONCRETE SEE NOTE 4
F. AVERAGE WIDTH AT CROSSARM:	66.5'
G1:AVERAGE WIDTH AT BASE\G2: POLE SPACING G3: BASE WIDTH:	G1: 41'\G2: 33'\G3: 8' (SEE NOTE 2)
H. MINIMUM STRUCTURE HEIGHT: MAXIMUM STRUCTURE HEIGHT: AVERAGE STRUCTURE HEIGHT:	160' 170' 165'
I. AVERAGE SPAN LENGTH:	670' (257'-1108')
J. MINIMUM CONDUCTOR-TO-GROUND AT MAXIMUM OPERATING TEMPERATURE:	27.5' (500 KV) PER THE NATIONAL ELECTRICAL SAFETY CODE

NOTES
1. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING
2. FINAL FOUNDATION DIAMETER SHALL BE BASED UPON FINAL ENGINEERING
3. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE
4. MINIMUM FOUNDATION REVEAL SHALL BE 1.5', MAX REVEAL SUBJECT TO FINAL LOCATION AND TERRAIN

Electric Transmission

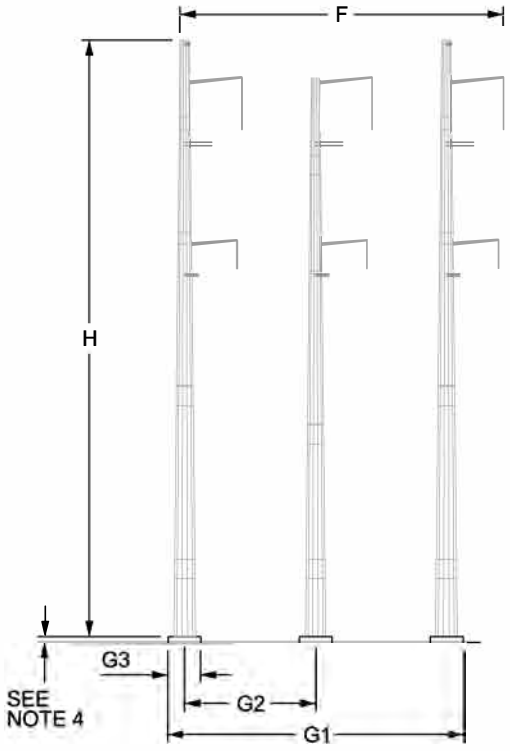
Dominion Energy
5000 Dominion Blvd
Glen Allen, VA 23060

STRUCTURE: 5001/2, 5001/3

DRAWING NO.
ATTACHMENT II.B.3.i

DRAWN: MBV

STRUCTURE: 5001/4, 2333/4, 5001/8, 2333/8, 5001/10, 2333/10, 5001/11, 2333/11, 5001/13, 2333/13 - 5001/15, 2333/15, 5001/64, 2333/64, 5001/67, 2333/67



DOUBLE CIRCUIT 3-POLE STRUCTURE

B. RATIONALE FOR STRUCTURE TYPE:	SHORTER STRUCTURES FOR DOUBLE CIRCUIT CONFIGURATION, PREFERRED BY PUBLIC OVER LATTICE
C. LENGTH OF R/W (STRUCTURE QUANTITY):	9.4 MILES (9 STRUCTURES)
D. STRUCTURE MATERIAL:	DULLED GALVANIZED STEEL
RATIONALE FOR STRUCTURE MATERIAL:	DULLED GALVANIZED STEEL TO MINIMIZE VISUAL IMPACT BY REDUCING THE GLARE ON THE NEW STRUCTURES
E. FOUNDATION MATERIAL: AVERAGE FOUNDATION REVEAL:	CONCRETE SEE NOTE 4
F. AVERAGE WIDTH AT CROSSARM:	84.3'
G1:AVERAGE WIDTH AT BASE\G2: POLE SPACING G3: BASE WIDTH:	G1: 77'\G2: 34'\G3: 8' (SEE NOTE 2)
H. MINIMUM STRUCTURE HEIGHT: MAXIMUM STRUCTURE HEIGHT: AVERAGE STRUCTURE HEIGHT:	130' 180' 153'
I. AVERAGE SPAN LENGTH:	670' (257'-1108')
J. MINIMUM CONDUCTOR-TO-GROUND AT MAXIMUM OPERATING TEMPERATURE:	22.5'/27.5' (230/500 KV) PER THE NATIONAL ELECTRICAL SAFETY CODE

NOTES
1. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING
2. FINAL FOUNDATION DIAMETER SHALL BE BASED UPON FINAL ENGINEERING
3. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE
4. MINIMUM FOUNDATION REVEAL SHALL BE 1.5', MAX REVEAL SUBJECT TO FINAL LOCATION AND TERRAIN

Electric Transmission

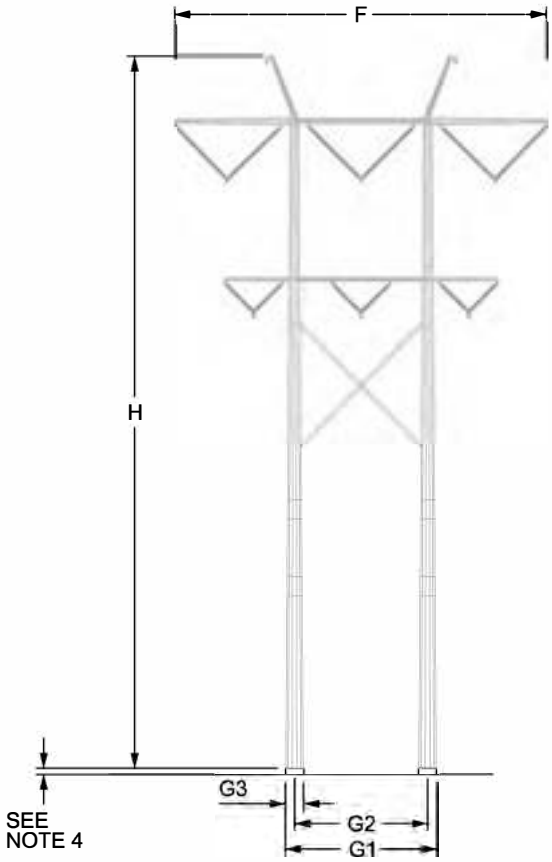
Dominion Energy
Dominion Energy
5000 Dominion Blvd
Glen Allen, VA 23060

STRUCTURE:
5001/4, 2333/4, 5001/8, 2333/8, 5001/10, 2333/10, 5001/11, 2333/11,
5001/13, 2333/13 - 5001/15, 2333/15, 5001/64, 2333/64, 5001/67, 2333/67

DRAWING NO.
ATTACHMENT II.B.3.ii

DRAWN: MBV

STRUCTURE: 5001/9, 2333/9, 5001/65, 2333/65, 5001/66, 2333/66



DOUBLE CIRCUIT H-FRAME SUSPENSION

B. RATIONALE FOR STRUCTURE TYPE:	SHORTER STRUCTURES FOR DOUBLE CIRCUIT CONFIGURATION, PREFERRED BY PUBLIC OVER LATTICE
C. LENGTH OF R/W (STRUCTURE QUANTITY):	9.4 MILES (3 STRUCTURE)
D. STRUCTURE MATERIAL:	DULLED GALVANIZED STEEL
RATIONALE FOR STRUCTURE MATERIAL:	DULLED GALVANIZED STEEL TO MINIMIZE VISUAL IMPACT BY REDUCING THE GLARE ON THE NEW STRUCTURES
E. FOUNDATION MATERIAL: AVERAGE FOUNDATION REVEAL:	CONCRETE SEE NOTE 4
F. AVERAGE WIDTH AT CROSSARM:	96.9'
G1:AVERAGE WIDTH AT BASE\G2: POLE SPACING G3: BASE WIDTH:	G1: 40.2'\G2: 34.7'\G3: 5.5' (SEE NOTE 2)
H. MINIMUM STRUCTURE HEIGHT: MAXIMUM STRUCTURE HEIGHT: AVERAGE STRUCTURE HEIGHT:	161' 196' 184'
I. AVERAGE SPAN LENGTH:	670' (257'-1108')
J. MINIMUM CONDUCTOR-TO-GROUND AT MAXIMUM OPERATING TEMPERATURE:	22.5'/27.5' (230/500 KV) PER THE NATIONAL ELECTRICAL SAFETY CODE

NOTES
1. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING
2. FINAL FOUNDATION DIAMETER SHALL BE BASED UPON FINAL ENGINEERING
3. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE
4. MINIMUM FOUNDATION REVEAL SHALL BE 1.5', MAX REVEAL SUBJECT TO FINAL LOCATION AND TERRAIN

Electric Transmission

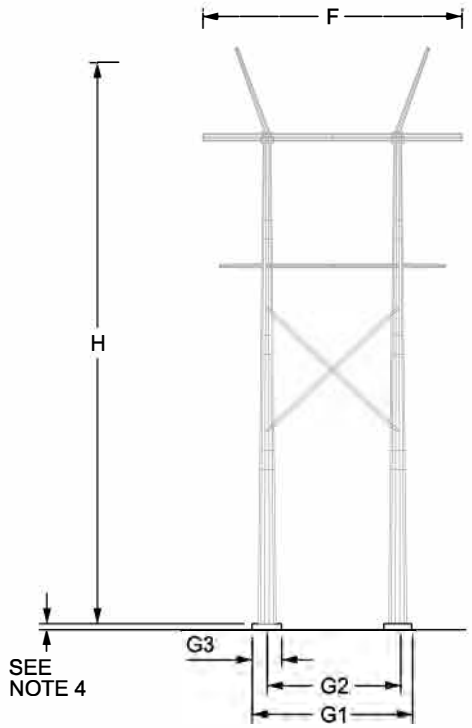
Dominion Energy
Dominion Energy
5000 Dominion Blvd
Glen Allen, VA 23060

STRUCTURE: 5001/9, 2333/9, 5001/65, 2333/65, 5001/66, 2333/66

DRAWING NO.
ATTACHMENT II.B.3.iii

DRAWN: MBV

STRUCTURE: 5001/12, 2333/12



DOUBLE CIRCUIT H-FRAME DDE STRUCTURE

B. RATIONALE FOR STRUCTURE TYPE:	SHORTER STRUCTURES FOR DOUBLE CIRCUIT CONFIGURATION, PREFERRED BY PUBLIC OVER LATTICE
C. LENGTH OF R/W (STRUCTURE QUANTITY):	9.4 MILES (1 STRUCTURE)
D. STRUCTURE MATERIAL:	DULLED GALVANIZED STEEL
RATIONALE FOR STRUCTURE MATERIAL:	DULLED GALVANIZED STEEL TO MINIMIZE VISUAL IMPACT BY REDUCING THE GLARE ON THE NEW STRUCTURES
E. FOUNDATION MATERIAL: AVERAGE FOUNDATION REVEAL:	CONCRETE SEE NOTE 4
F. AVERAGE WIDTH AT CROSSARM:	67.5'
G1:AVERAGE WIDTH AT BASE\G2: POLE SPACING G3: BASE WIDTH:	G1: 43'\G2: 34'\G3: 9' (SEE NOTE 2)
H. MINIMUM STRUCTURE HEIGHT: MAXIMUM STRUCTURE HEIGHT: AVERAGE STRUCTURE HEIGHT:	145' 145' 145'
I. AVERAGE SPAN LENGTH:	670' (257'-1108')
J. MINIMUM CONDUCTOR-TO-GROUND AT MAXIMUM OPERATING TEMPERATURE:	22.5'/27.5' (230/500 KV) PER THE NATIONAL ELECTRICAL SAFETY CODE

NOTES
1. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING
2. FINAL FOUNDATION DIAMETER SHALL BE BASED UPON FINAL ENGINEERING
3. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE
4. MINIMUM FOUNDATION REVEAL SHALL BE 1.5', MAX REVEAL SUBJECT TO FINAL LOCATION AND TERRAIN

Electric Transmission

Dominion Energy®

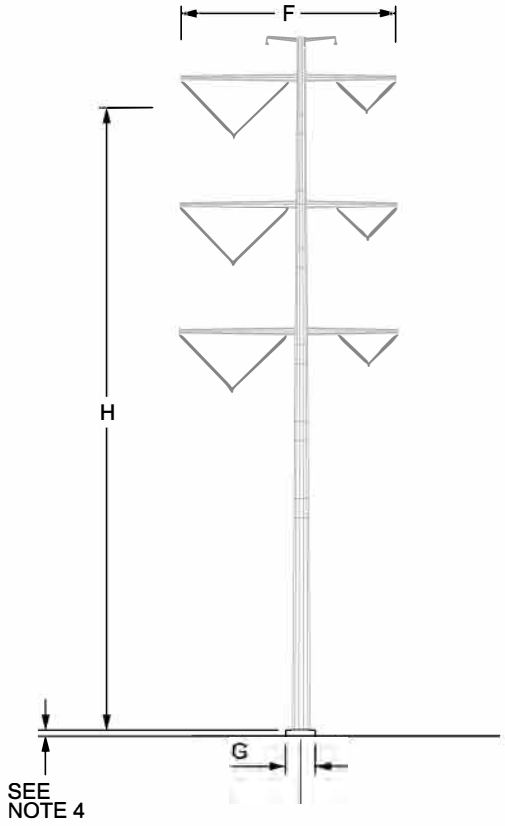
Dominion Energy
5000 Dominion Blvd
Glen Allen, VA 23060

STRUCTURE: 5001/12, 2333/12

DRAWING NO.
ATTACHMENT II.B.3.iv

DRAWN: MBV

STRUCTURE: 5001/19, 2333/19, 5001/21, 2333/21 - 5001/24, 2333/24, 5001/26, 2333/26, 5001/28, 2333/28, 5001/29, 2333/29, 5001/31, 2333/31, 5001/34, 2333/34 - 5001/39, 2333/39, 5001/41, 2333/41, 5001/43, 2333/43, 5001/52, 2333/52, 5001/60, 2333/60, 5001/62, 2333/62



DOUBLE CIRCUIT 1-POLE SUS STRUCTURE

B. RATIONALE FOR STRUCTURE TYPE:	500KV AND 230KV VERTICALLY ARRANGED TO REDUCE ROW REQUIREMENTS
C. LENGTH OF R/W (STRUCTURE QUANTITY):	9.4 MILES (20 STRUCTURES)
D. STRUCTURE MATERIAL:	DULLED GALVANIZED STEEL
RATIONALE FOR STRUCTURE MATERIAL:	DULLED GALVANIZED STEEL TO MINIMIZE VISUAL IMPACT BY REDUCING THE GLARE ON THE NEW STRUCTURES
E. FOUNDATION MATERIAL: AVERAGE FOUNDATION REVEAL:	CONCRETE SEE NOTE 4
F. AVERAGE WIDTH AT CROSSARM:	56.3'
G. AVERAGE WIDTH AT BASE:	8' (SEE NOTE 2)
H. MINIMUM STRUCTURE HEIGHT: MAXIMUM STRUCTURE HEIGHT: AVERAGE STRUCTURE HEIGHT:	160' 195' 178'
I. AVERAGE SPAN LENGTH:	670' (257'-1108')
J. MINIMUM CONDUCTOR-TO-GROUND AT MAXIMUM OPERATING TEMPERATURE:	22.5'/27.5' (230/500 KV) PER THE NATIONAL ELECTRICAL SAFETY CODE

NOTES
1. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING
2. FINAL FOUNDATION DIAMETER SHALL BE BASED UPON FINAL ENGINEERING
3. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE
4. MINIMUM FOUNDATION REVEAL SHALL BE 1.5', MAX REVEAL SUBJECT TO FINAL LOCATION AND TERRAIN

Electric Transmission

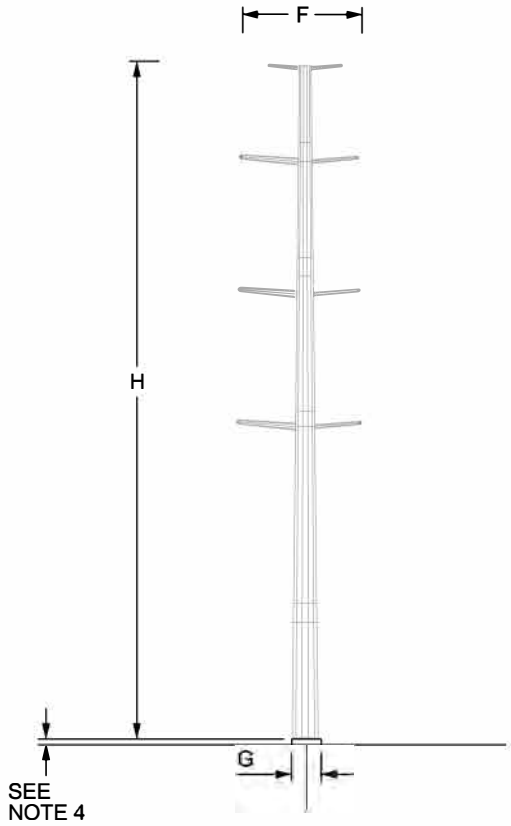
Dominion Energy
Dominion Energy
5000 Dominion Blvd
Glen Allen, VA 23060

STRUCTURE: 5001/19, 2333/19, 5001/21, 2333/21 - 5001/24, 2333/24, 5001/26, 2333/26, 5001/28, 2333/28, 5001/29, 2333/29, 5001/31, 2333/31, 5001/34, 2333/34 - 5001/39, 2333/39, 5001/41, 2333/41, 5001/43, 2333/43, 5001/52, 2333/52, 5001/60, 2333/60, 5001/62, 2333/62

DRAWING NO.
ATTACHMENT II.B.3.v

DRAWN: MBV

STRUCTURE: 5001/5, 2333/5, 5001/18, 2333/18, 5001/25, 2333/25, 5001/27, 2333/27, 5001/30, 2333/30, 5001/33, 2333/33, 5001/40, 2333/40, 5001/42, 2333/42, 5001/44, 2333/44, 5001/46, 2333/46, 5001/51, 2333/51, 5001/53, 2333/53, 5001/55, 2333/55 - 5001/59, 2333/59, 5001/61, 2333/61



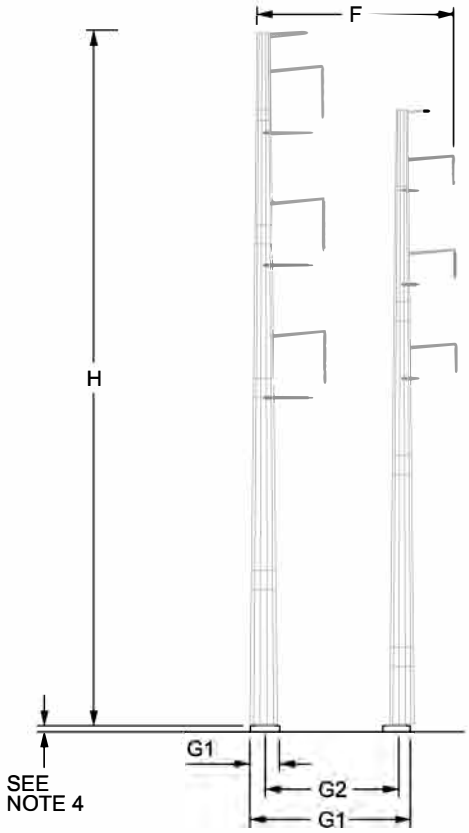
DOUBLE CIRCUIT 1-POLE DDE STRUCTURE

B. RATIONALE FOR STRUCTURE TYPE:	500KV AND 230KV VERTICALLY ARRANGED TO REDUCE ROW REQUIREMENTS
C. LENGTH OF R/W (STRUCTURE QUANTITY):	9.4 MILES (18 STRUCTURES)
D. STRUCTURE MATERIAL:	DULLED GALVANIZED STEEL
RATIONALE FOR STRUCTURE MATERIAL:	DULLED GALVANIZED STEEL TO MINIMIZE VISUAL IMPACT BY REDUCING THE GLARE ON THE NEW STRUCTURES
E. FOUNDATION MATERIAL: AVERAGE FOUNDATION REVEAL:	CONCRETE SEE NOTE 4
F. AVERAGE WIDTH AT CROSSARM:	31.1'
G. AVERAGE WIDTH AT BASE:	10' (SEE NOTE 2)
H. MINIMUM STRUCTURE HEIGHT: MAXIMUM STRUCTURE HEIGHT: AVERAGE STRUCTURE HEIGHT:	160' 195' 174'
I. AVERAGE SPAN LENGTH:	670' (257'-1108')
J. MINIMUM CONDUCTOR-TO-GROUND AT MAXIMUM OPERATING TEMPERATURE:	22.5'/27.5' (230/500 KV) PER THE NATIONAL ELECTRICAL SAFETY CODE

NOTES
1. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING
2. FINAL FOUNDATION DIAMETER SHALL BE BASED UPON FINAL ENGINEERING
3. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE
4. MINIMUM FOUNDATION REVEAL SHALL BE 1.5', MAX REVEAL SUBJECT TO FINAL LOCATION AND TERRAIN

Electric Transmission	STRUCTURE: 5001/5, 2333/5, 5001/18, 2333/18, 5001/25, 2333/25, 5001/27, 2333/27, 5001/30, 2333/30 5001/33, 2333/33, 5001/40, 2333/40, 5001/42, 2333/42, 5001/44, 2333/44, 5001/46, 2333/46, 5001/51, 2333/51, 5001/53, 2333/53, 5001/55, 2333/55 - 5001/59, 2333/59, 5001/61, 2333/61	DRAWING NO. ATTACHMENT II.B.3.vi
Dominion Energy® Dominion Energy 5000 Dominion Blvd Glen Allen, VA 23060		DRAWN: MBV

STRUCTURE: 5001/6, 2333/6, 5001/7, 2333/7, 5001/16, 2333/16, 5001/17, 2333/17, 5001/20, 2333/20, 5001/32, 2333/32, 5001/45, 2333/45, 5001/47, 2333/47 - 5001/50, 2333/50, 5001/54, 2333/54, 5001/63, 2333/63, 5001/68, 2333/68 - 5001/71, 2333/71



DOUBLE CIRCUIT 2-POLE STRUCTURE

B. RATIONALE FOR STRUCTURE TYPE:	500KV AND 230KV VERTICALLY ARRANGED TO REDUCE ROW REQUIREMENTS. TWO SEPARATE POLES TO REDUCE LOADING FOR FOUNDATIONS.
C. LENGTH OF R/W (STRUCTURE QUANTITY):	9.4 MILES (17 STRUCTURES)
D. STRUCTURE MATERIAL:	DULLED GALVANIZED STEEL
RATIONALE FOR STRUCTURE MATERIAL:	DULLED GALVANIZED STEEL TO MINIMIZE VISUAL IMPACT BY REDUCING THE GLARE ON THE NEW STRUCTURES
E. FOUNDATION MATERIAL: AVERAGE FOUNDATION REVEAL:	CONCRETE SEE NOTE 4
F. AVERAGE WIDTH AT CROSSARM:	52.1'
G1:AVERAGE WIDTH AT BASE\G2: POLE SPACING G3: BASE WIDTH:	G1: 43'\G2: 34'\G3: 9' (SEE NOTE 2)
H. MINIMUM STRUCTURE HEIGHT: MAXIMUM STRUCTURE HEIGHT: AVERAGE STRUCTURE HEIGHT:	160' 190' 179'
I. AVERAGE SPAN LENGTH:	670' (257'-1108')
J. MINIMUM CONDUCTOR-TO-GROUND AT MAXIMUM OPERATING TEMPERATURE:	22.5'/27.5' (230/500 KV) PER THE NATIONAL ELECTRICAL SAFETY CODE

NOTES
1. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING
2. FINAL FOUNDATION DIAMETER SHALL BE BASED UPON FINAL ENGINEERING
3. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE
4. MINIMUM FOUNDATION REVEAL SHALL BE 1.5', MAX REVEAL SUBJECT TO FINAL LOCATION AND TERRAIN

Electric Transmission

Dominion Energy®

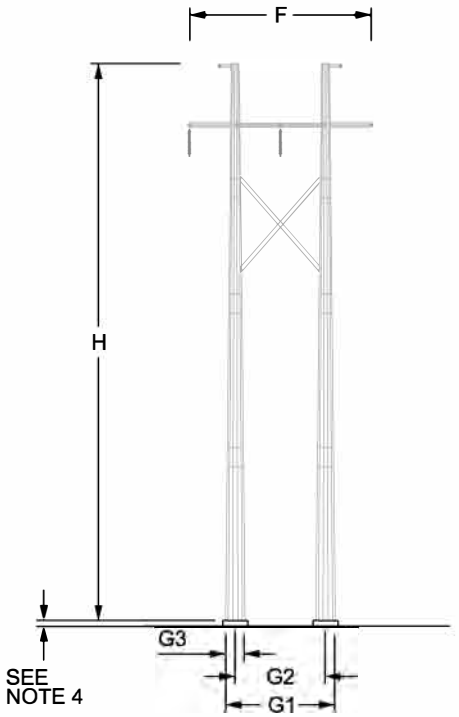
Dominion Energy
5000 Dominion Blvd
Glen Allen, VA 23060

STRUCTURE: 5001/6, 2333/6, 5001/7, 2333/7, 5001/16, 2333/16, 5001/17, 2333/17, 5001/20, 2333/20, 5001/32, 2333/32, 5001/45, 2333/45, 5001/47, 2333/47 - 5001/50, 2333/50, 5001/54, 2333/54, 5001/63, 2333/63, 5001/68, 2333/68 - 5001/71, 2333/71

DRAWING NO.
ATTACHMENT II.B.3.vii

DRAWN: MBV

STRUCTURE: 2333/2, 2333/3



SC 230 KV H-FRAME STRUCTURE

B. RATIONALE FOR STRUCTURE TYPE:	HORIZONTAL CONFIGURATION TO REDUCE HEIGHT FOR LINE CROSSING. STRUCTURES FOR SINGLE CIRCUIT 230KV CONFIGURATION
C. LENGTH OF R/W (STRUCTURE QUANTITY):	9.4 MILES (2 STRUCTURE)
D. STRUCTURE MATERIAL:	DULLED GALVANIZED STEEL
RATIONALE FOR STRUCTURE MATERIAL:	DULLED GALVANIZED STEEL TO MINIMIZE VISUAL IMPACT BY REDUCING THE GLARE ON THE NEW STRUCTURES
E. FOUNDATION MATERIAL: AVERAGE FOUNDATION REVEAL:	CONCRETE SEE NOTE 4
F. AVERAGE WIDTH AT CROSSARM:	47.4'
G1:AVERAGE WIDTH AT BASE\G2: POLE SPACING G3: BASE WIDTH:	G1: 29'\G2: 23.5'\G3: 5.5' (SEE NOTE 2)
H. MINIMUM STRUCTURE HEIGHT: MAXIMUM STRUCTURE HEIGHT: AVERAGE STRUCTURE HEIGHT:	140' 145' 143'
I. AVERAGE SPAN LENGTH:	670' (257'-1108')
J. MINIMUM CONDUCTOR-TO-GROUND AT MAXIMUM OPERATING TEMPERATURE:	22.5' (230 KV) PER THE NATIONAL ELECTRICAL SAFETY CODE

NOTES
1. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING
2. FINAL FOUNDATION DIAMETER SHALL BE BASED UPON FINAL ENGINEERING
3. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE
4. MINIMUM FOUNDATION REVEAL SHALL BE 1.5', MAX REVEAL SUBJECT TO FINAL LOCATION AND TERRAIN

Electric Transmission

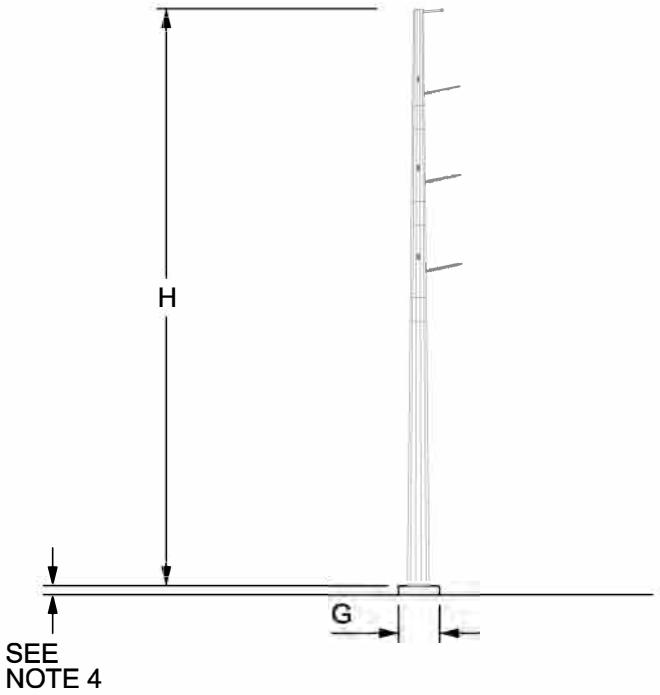
Dominion Energy
Dominion Energy
5000 Dominion Blvd
Glen Allen, VA 23060

STRUCTURE: 2333/2, 2333/3

DRAWING NO.
ATTACHMENT II.B.3.viii

DRAWN: MBV

STRUCTURE: 2333/72, 2333/73, 2351/183A, 2150/182A, 2348/123A, 2081/122A



SC 230 KV 1-POLE STRUCTURE

B. RATIONALE FOR STRUCTURE TYPE:	MORE COMPACT STRUCTURES FOR SINGLE CIRCUIT 230KV CONFIGURATION
C. LENGTH OF R/W (STRUCTURE QUANTITY):	9.4 MILES (6 STRUCTURES)
D. STRUCTURE MATERIAL:	DULLED GALVANIZED STEEL
RATIONALE FOR STRUCTURE MATERIAL:	DULLED GALVANIZED STEEL TO MINIMIZE VISUAL IMPACT BY REDUCING THE GLARE ON THE NEW STRUCTURES
E. FOUNDATION MATERIAL: AVERAGE FOUNDATION REVEAL:	CONCRETE SEE NOTE 4
F. AVERAGE WIDTH AT CROSSARM:	3'
G. AVERAGE WIDTH AT BASE:	8.5' (SEE NOTE 2)
H. MINIMUM STRUCTURE HEIGHT: MAXIMUM STRUCTURE HEIGHT: AVERAGE STRUCTURE HEIGHT:	105' 120' 113'
I. AVERAGE SPAN LENGTH:	670' (257'-1108')
J. MINIMUM CONDUCTOR-TO-GROUND AT MAXIMUM OPERATING TEMPERATURE:	22.5' (230 KV) PER THE NATIONAL ELECTRICAL SAFETY CODE

NOTES
1. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING
2. FINAL FOUNDATION DIAMETER SHALL BE BASED UPON FINAL ENGINEERING
3. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE
4. MINIMUM FOUNDATION REVEAL SHALL BE 1.5', MAX REVEAL SUBJECT TO FINAL LOCATION AND TERRAIN

Electric Transmission

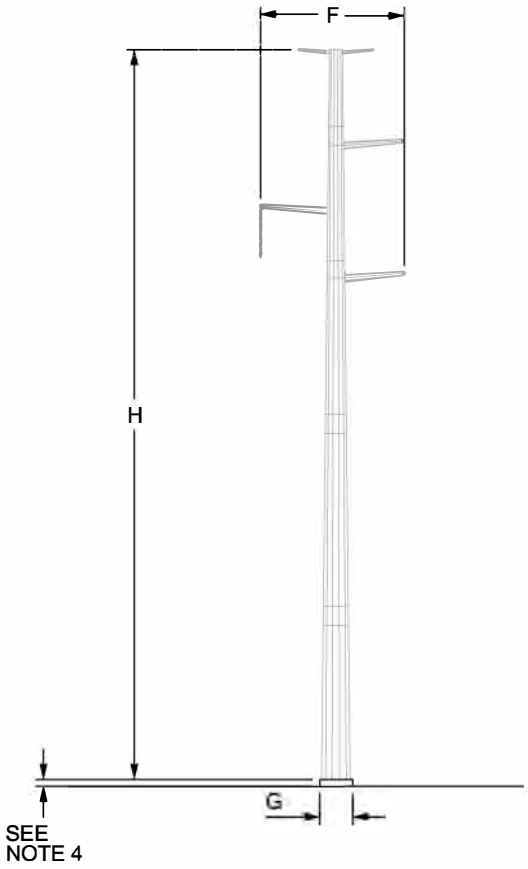
Dominion Energy
Dominion Energy
5000 Dominion Blvd
Glen Allen, VA 23060

STRUCTURE: 2333/72, 2333/73, 2150/183A, 2150X/182A, 2081/123A, 2081X/122A

DRAWING NO.
ATTACHMENT II.B.3.ix

DRAWN: MBV

STRUCTURE: 5002/2



SC 500 KV 1-POLE DDE STRUCTURE

B. RATIONALE FOR STRUCTURE TYPE:	COMPACT SINGLE CIRCUIT 500KV DESIGN FOR MINIMAL FOOTPRINT
C. LENGTH OF R/W (STRUCTURE QUANTITY):	0.2 MILES (1 STRUCTURE)
D. STRUCTURE MATERIAL:	GALVANIZED STEEL
RATIONALE FOR STRUCTURE MATERIAL:	GALVANIZED STEEL TO MATCH SUBSTATION STRUCTURES, SINCE INSIDE SUBSTATION FENCE
E. FOUNDATION MATERIAL: AVERAGE FOUNDATION REVEAL:	CONCRETE SEE NOTE 4
F. AVERAGE WIDTH AT CROSSARM:	37.4'
G. AVERAGE WIDTH AT BASE:	10' (SEE NOTE 2)
H. MINIMUM STRUCTURE HEIGHT: MAXIMUM STRUCTURE HEIGHT: AVERAGE STRUCTURE HEIGHT:	190' 190' 190'
I. AVERAGE SPAN LENGTH:	432' (405'-460')
J. MINIMUM CONDUCTOR-TO-GROUND AT MAXIMUM OPERATING TEMPERATURE:	27.5' (500 KV) PER THE NATIONAL ELECTRICAL SAFETY CODE

NOTES
1. INFORMATION ON DRAWING IS PRELIMINARY AND SUBJECT TO CHANGE DURING FINAL ENGINEERING
2. FINAL FOUNDATION DIAMETER SHALL BE BASED UPON FINAL ENGINEERING
3. STRUCTURE HEIGHTS ARE MEASURED FROM STRUCTURE CENTERLINE
4. MINIMUM FOUNDATION REVEAL SHALL BE 1.5', MAX REVEAL SUBJECT TO FINAL LOCATION AND TERRAIN

Electric Transmission

Dominion Energy®

Dominion Energy
5000 Dominion Blvd
Glen Allen, VA 23060

STRUCTURE: 5002/2

DRAWING NO.
ATTACHMENT II.B.3.x

DRAWN: MBV

ATTACHMENT 4 HISTORIC RESOURCE PHOTOS

Figure 1. 053-0106, Belmont Manor, dwelling, North and East Elevations, View to the Southwest.

Figure 2. 053-0276, Washington & Old Dominion Railroad Historic District, Intersection at Cochran Mill Rd, View to the Southeast.

Figure 3. 053-0336, Cooke's Mill, View to the Southwest.

Figure 4. 053-5058, Ball's Bluff Battlefield, View to the Northwest.

Figure 5. 053-6238, African American Burial Ground for the Enslaved at Belmont, View to the North.

Figure 6. 253-5182, Ball's Bluff Battlefield & National Cemetery Historic District Boundary Increase, View to the Northeast.

ATTACHMENT 5 PHOTO SIMULATIONS

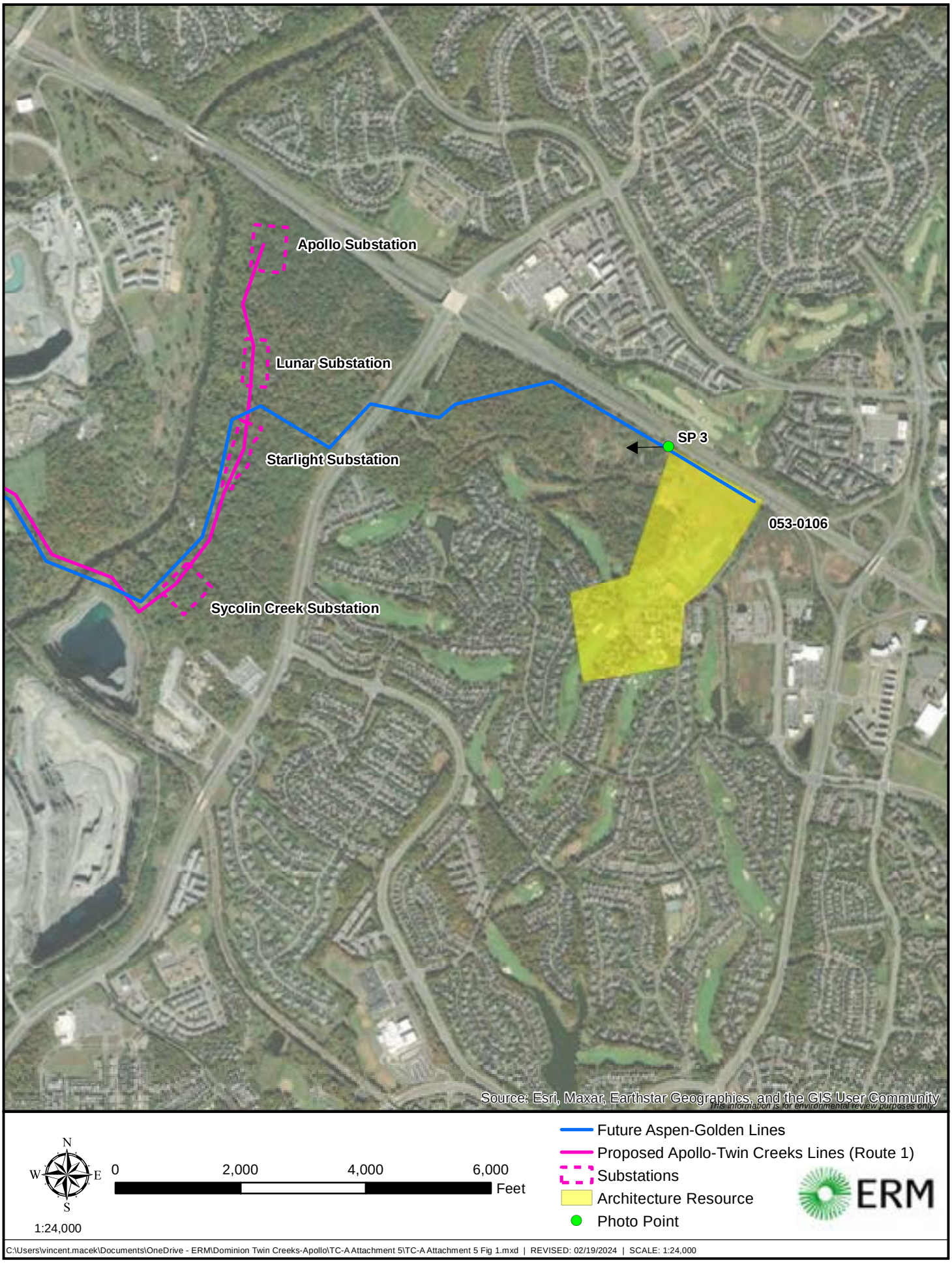


Figure 1. Aerial photograph depicting land use and photo view for 053-0106.

Existing View

Proposed view showing Route 1's hidden transmission line structures (highlighted in yellow) and Aspen-Golden

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	284552E 4328128N
View Direction:	269 degrees
Viewpoint Elevation:	244 feet
Distance to Development:	5259 feet
Horizontal Field of View:	90 degrees

Date of Photography:	22nd March 2023 15:05
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	62 inches

VIEWPOINT CONTEXT

Figure 2
Viewpoint SP 03
Leesburg Pike NW of Ridge Rd
053-0106

Pre-Application Analysis
Apollo-Twin Creeks 230 kV Electric Transmission Project

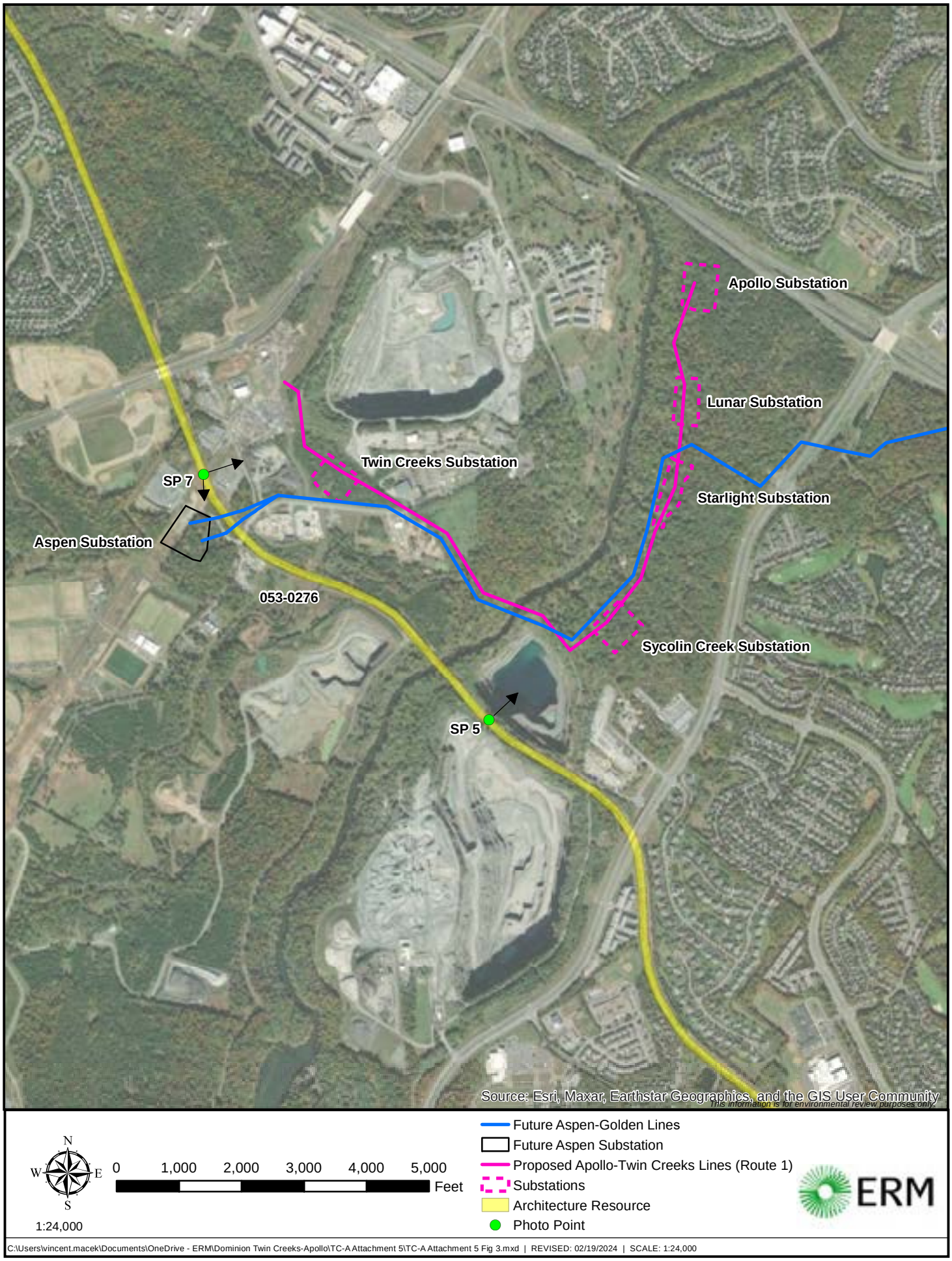


Figure 3. Aerial photograph depicting land use and photo view for 053-0276.

Existing View

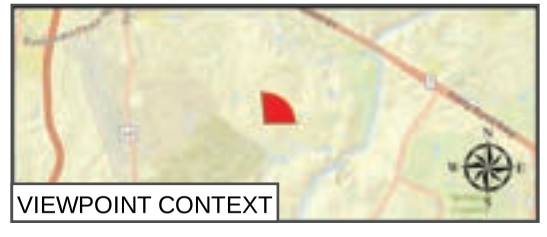
Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	281156E 4328250N
View Direction:	70 degrees
Viewpoint Elevation:	185 feet
Distance to Development:	1292 feet
Horizontal Field of View:	92 degrees

Date of Photography:	22nd March 2023 12:04
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	64 inches



VIEWPOINT CONTEXT

Figure 4
Viewpoint SP 07 East
Trail NW of Cochran Mill Rd
053-0276

Pre-Application Analysis
Apollo-Twin Creeks 230 kV Electric Transmission Project

Existing View

Proposed view showing hidden transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	282204E 4327293N
View Direction:	45 degrees
Viewpoint Elevation:	185 feet
Distance to Development:	1340 feet
Horizontal Field of View:	91 degrees

Date of Photography:	22nd March 2023 13:26
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	63 inches

VIEWPOINT CONTEXT

Figure 5
Viewpoint SP 05
Trail NW of Belmont Ridge Rd
053-0276

Pre-Application Analysis
Apollo-Twin Creeks 230 kV Electric Transmission Project

Existing View

Proposed view showing location of transmission line structures associated with Aspen-Golden (no view to Apollo-Twin Creeks Route 1)

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	281156E 4328250N
View Direction:	179 degrees
Viewpoint Elevation:	185 feet
Distance to Development:	728 feet
Horizontal Field of View:	84 degrees

Date of Photography:	22nd March 2023 12:04
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	64 inches

VIEWPOINT CONTEXT

Figure 6
Viewpoint SP 07
Trail NW of Cochran Mill Rd & Samuels Mill Rd
053-0276

Pre-Application Analysis
Apollo-Twin Creeks 230 kV Electric Transmission Project

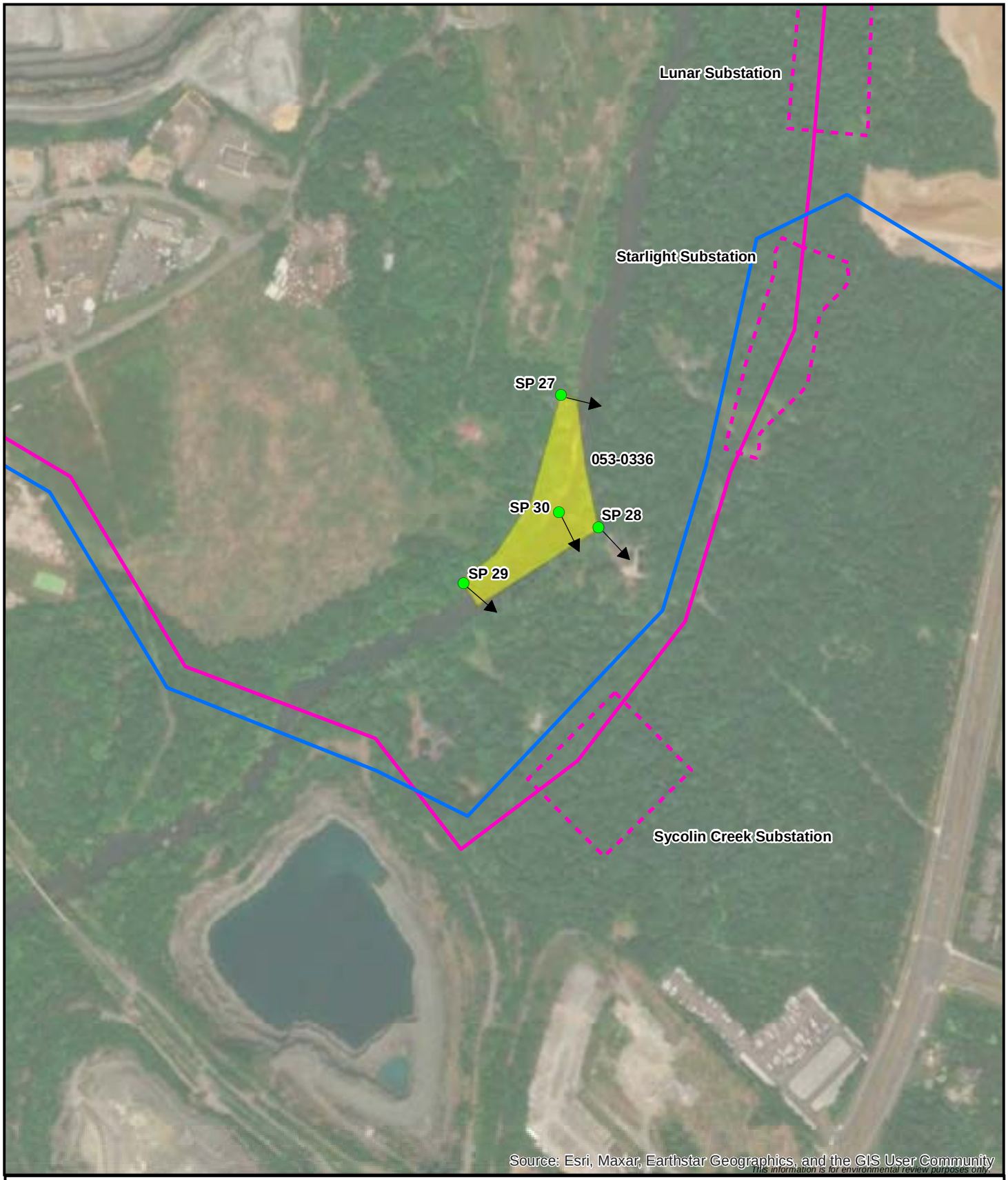


Figure 7. Aerial photograph depicting land use and photo view for 053-0336.

Existing View

Proposed view showing hidden transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	282661E 4328083N
View Direction:	100 degrees
Viewpoint Elevation:	120 feet
Distance to Development:	715 feet
Horizontal Field of View:	90 degrees

Date of Photography:	29th August 2023 12:05
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	59 inches

VIEWPOINT CONTEXT

Figure 8
Viewpoint SP 27
W Bank of Goose Creek W of Goose Glen Ln
053-0336

Pre-Application Analysis
Apollo-Twin Creeks 230 kV Electric Transmission Project

Existing View

Proposed view showing hidden transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	282530E 4327865N
View Direction:	126 degrees
Viewpoint Elevation:	215 feet
Distance to Development:	648 feet
Horizontal Field of View:	90 degrees

Date of Photography:	29th August 2023 13:29
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	61 inches

VIEWPOINT CONTEXT

Figure 9
Viewpoint SP 29
W Bank of Goose Creek W of Goose Glen Ln
053-0336

Pre-Application Analysis
Apollo-Twin Creeks 230 kV Electric Transmission Project

Existing View

Proposed view showing location of transmission line structures for Route 1 (highlighted in purple) and Aspen-Golden Lines (highlighted in pink)

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	282686E 4327920N
View Direction:	133 degrees
Viewpoint Elevation:	210 feet
Distance to Development:	5432 feet
Horizontal Field of View:	90 degrees

Date of Photography:	29th August 2023 14:51
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	61 inches

VIEWPOINT CONTEXT

Figure 10
Viewpoint SP 28
E Bank of Goose Creek W of Goose Glen Ln
053-0336

Pre-Application Analysis
Apollo-Twin Creeks 230 kV Electric Transmission Project

Existing View

Proposed view showing location of transmission line structures for Route 1 (highlighted in purple) and Aspen-Golden Lines (highlighted in pink)

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	282646E 4327956N
View Direction:	153 degrees
Viewpoint Elevation:	202 feet
Distance to Development:	524 feet
Horizontal Field of View:	94 degrees

Date of Photography:	29th August 2023 12:58
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	58 inches

VIEWPOINT CONTEXT

Figure 11
Viewpoint SP 30
W Bank of Goose Creek W of Goose Glen Ln
053-0336

Pre-Application Analysis
Apollo-Twin Creeks 230 kV Electric Transmission Project

Figure 12. Aerial photograph depicting land use and photo view for 053-5058.

Existing View

Proposed view showing hidden transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	282611E 4330524N
View Direction:	191 degrees
Viewpoint Elevation:	209 feet
Distance to Development:	5433 feet
Horizontal Field of View:	90 degrees

Date of Photography:	22nd March 2023 11:20
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	63 inches

VIEWPOINT CONTEXT

Figure 13
Viewpoint SP 10
River Creek Pkwy S of Riverside Pkwy
053-5058

Pre-Application Analysis
Apollo-Twin Creeks 230 kV Electric Transmission Project

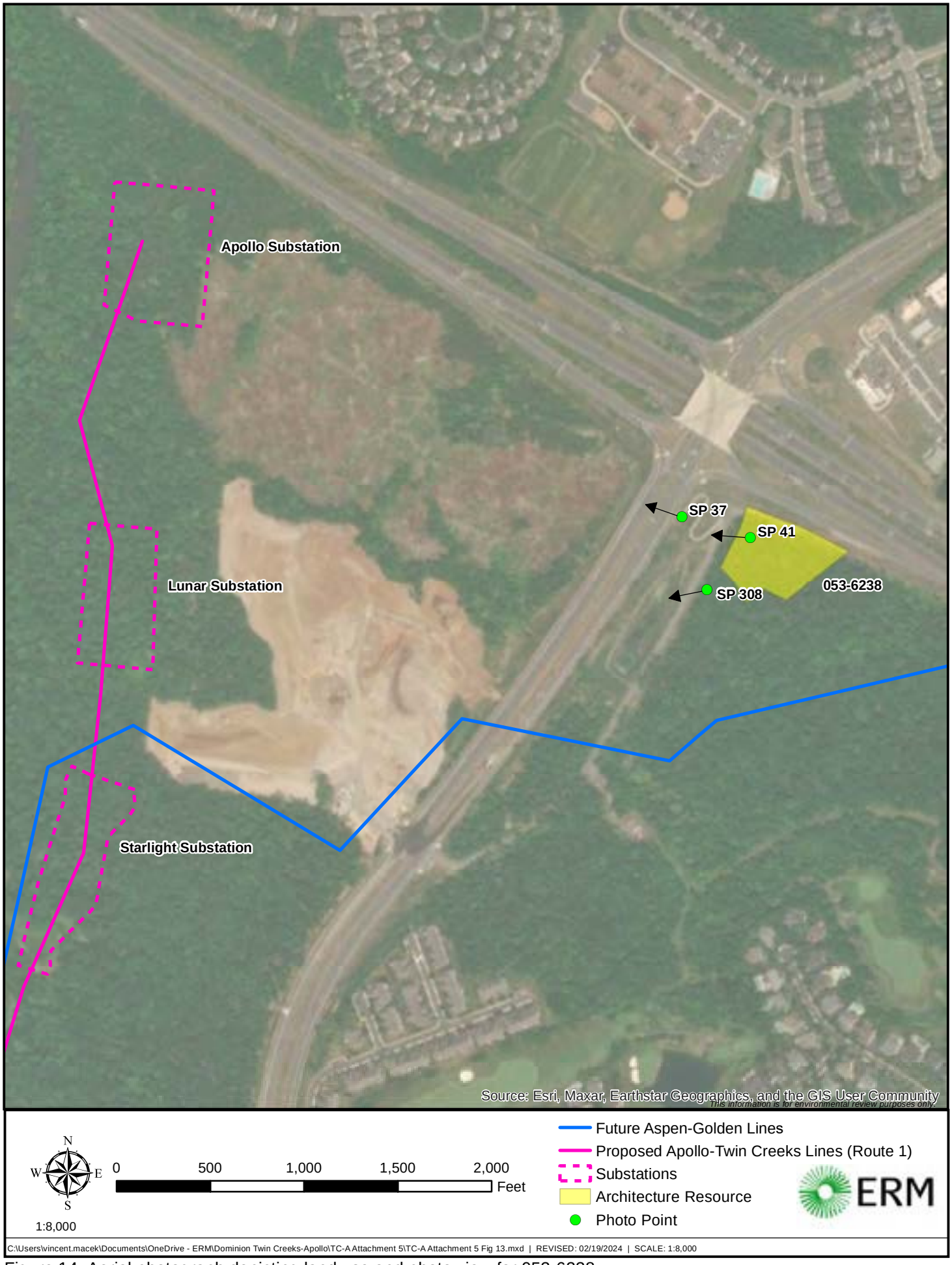


Figure 14. Aerial photograph depicting land use and photo view for 053-6238.

Existing View

Proposed view showing hidden transmission line structures

Viewpoint Location UTM Zone 18N:	283793E 4328527N
View Direction:	272 degrees
Viewpoint Elevation:	216 feet
Distance to Development:	2808 feet
Horizontal Field of View:	83 degrees

Date of Photography:	30th August 2023 09:59
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	63 inches

VIEWPOINT CONTEXT

Figure 15
Viewpoint SP 41
Cemetery Trail E of Freedom Trail Rd.
053-6238

Pre-Application Analysis
Apollo-Twin Creeks 230 kV Electric Transmission Project

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	283701E 4328556N
View Direction:	293 degrees
Viewpoint Elevation:	199 feet
Distance to Development:	2350 feet
Horizontal Field of View:	85 degrees

Date of Photography:	28th August 2023 14:42
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	59 inches

VIEWPOINT CONTEXT

Figure 16
Viewpoint SP 37
Belmont Ridge Rd at Leesburg Pike
053-6238

Pre-Application Analysis
Apollo-Twin Creeks 230 kV Electric Transmission Project

Existing View

Proposed view showing location of Route 1 transmission line structures (highlighted in purple) and Aspen-Golden Lines (highlighted in pink)

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	283730E 4328468N
View Direction:	257 degrees
Viewpoint Elevation:	281 feet
Distance to Development:	2456 feet
Horizontal Field of View:	91 degrees

Date of Photography:	7th December 2023 12:04
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	65 inches

VIEWPOINT CONTEXT

Figure 17
Viewpoint SP 308
Freedom Trail Rd SW of Leesburg Pike
053-6238

Pre-Application Analysis
Apollo-Twin Creeks 230 kV Electric Transmission Project

Figure 18. Aerial photograph depicting land use and photo view for 253-5182.

Existing View

Proposed view showing hidden transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	284305E 4330199N
View Direction:	217 degrees
Viewpoint Elevation:	216 feet
Distance to Development:	5908 feet
Horizontal Field of View:	90 degrees

Date of Photography:	22nd March 2023 10:46
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	62 inches

VIEWPOINT CONTEXT

Figure 19
Viewpoint SP 12
Calphams Mill Ct at Riverpoint Dr
053-5058

Pre-Application Analysis
Apollo-Twin Creeks 230 kV Electric Transmission Project


ERM

LOUDOUN COUNTY VIRGINIA | Planning and Zoning

1 Harrison Street, SE, PO Box 7000, Leesburg, VA 20177-7000
703-777-0246 O | 703-777-0441 F | dpz@loudoun.gov
loudoun.gov/planningandzoning

March 13, 2024

Mr. Craig Hurd, Siting and Permitting
Dominion Energy Services, Inc.
120 Tredegar Street
Richmond, VA 23219

Re: **Dominion Energy Virginia's Proposed 230kV Apollo-Twin Creeks Transmission Line, and Twin Creeks, Sycolin Road, Starlight, Lunar, and Apollo Substations, Loudoun County, Virginia. Notice Pursuant to VA Code 15.2-2202 E.**

Mr. Hurd,

Enclosed are Loudoun County's Department of Planning and Zoning (DPZ) comments regarding Dominion Energy Virginia's proposed 230kV Apollo-Twin Creeks Transmission Line.

Our understanding is that the proposed electrical transmission line and five new substations are necessary to ensure that Dominion Energy Virginia can provide electric service requested to support data center uses, to meet current and future electrical demand for the area, and to comply with mandatory North American Electric Reliability Corporation Standards (Figure 1). County staff reviewed the proposed route for the Apollo-Twin Creeks transmission lines provided with your letter dated February 15, 2024. The proposed Twin Creeks, Sycolin Road, Starlight, Lunar, and Apollo substations will be reviewed separately by the Loudoun County (County) through the legislative process. County policies support the establishment of the proposed 230kV Apollo-Twins Creek transmission lines to meet electric demand for the area while ensuring the structural integrity and reliability of the transmission system. The County offers the following comments on the project pertaining to land use and potential impacts to environmental and heritage resources.

COMPREHENSIVE PLAN CONFORMANCE

The proposed transmission line project bisects properties that are governed under the policies of the *Loudoun County 2019 General Plan* (2019 GP). The proposed transmission line bisects areas identified in the 2019 GP as the Leesburg Joint Land Management Area (JLMA) and the Suburban Policy Area which have developed with mineral extractive industries, industrial parks, and existing and developing data center campuses. The County views electrical service as an essential component of daily life and supports the construction of necessary electrical transmission infrastructure to ensure the structural integrity and reliability of the electrical transmission system to support existing and future business and residential uses.[1] Specifically, energy policies call for the County to work with electrical providers to identify potential high voltage transmission/distribution lines and substation locations to minimize impacts on key travel corridors, sensitive cultural and historic resources, and existing residential communities; and where possible, use

[1] 2019 GP, Chapter 6, Energy and Communication, text

existing transmission corridors to expand capacity.[2]

As the demand for electrical power continues, the County seeks to minimize the negative visual impacts of substations and power lines on the community. While Loudoun County supports the safe grouping and burying of utility lines, in this case the County recognizes that the majority of high voltage transmission lines that are 230kV and 500kV throughout the County have been constructed above-ground in the past.[3] The proposed Apollo-Twin Creeks Transmission Line will be constructed with single-shaft galvanized steel monopoles that will be up to 120 feet in height and located within a 100-foot transmission corridor. The proposed transmission poles will be the tallest structures in the vicinity and have a significant visual impact on all roadways and properties within the viewshed of the proposed transmission route, including Goose Creek, a designated State Scenic River.

The proposed 230kV Apollo to Twin Creeks transmission corridor originates at its western terminus at an existing 500kV Transmission Corrdor adjacent to Samuels Mill Court within the Leesburg JLMA in an area developed with mineral extractive, industrial, and future data center uses. The proposed transmission corridor crosses the major and minor floodplain and stream channel of Goose Creek north of its confluence with Sycolin Creek and north of the Luckstone Quarry pit. The transmission corridor then proceeds north on the upland slope above the Goose Creek floodplain within a forested area before terminating at the proposed Apollo substation located south of Leesburg Pike (Route 7). The property occupied by the proposed Apollo and Lunar substation is currently being developed with data center uses. The location of the transmission corridor within an area that has developed and/or is planned for mineral extractive, industrial, and employment uses is in keeping with the land use and energy policies of the 2019 GP.

River and Stream Corridor Resources

County policies limit development and uses in river and stream corridors that support or enhance the biological integrity and health of the river and stream corridor. Permitted uses are intended to have minimal adverse effects on wildlife, aquatic life, and their habitats; riparian forests, wetlands, and historic and archaeological sites; and will complement the hydrologic processes of the river and stream corridors, including flood protection and water quality.[4] The proposed 230kV Apollo to Twin Creeks transmission corridor will impact river and stream corridor resources associated with Goose Creek. Impacts to existing riparian forest, streams, drainage ways, very steep slopes (slopes greater than 25%) and moderately steep slopes (slopes 15%-25%), wetlands, and major and minor floodplain are anticipated with the construction of the proposed transmission corridor. Coordination with the Federal Emergency Management Agency (FEMA) and the Virginia Department of Conservation and Recreation (DCR) are recommended regarding compliance with federal and state floodplain regulations.

The overall health and quality of the Goose Creek, which is listed as impaired for aquatic life by the Virginia Department of Environmentally Quality (DEQ), is dependent upon the protection and buffering of the drainages and intermittent streams which feed the Goose Creek, along with the forested and vegetated areas that surround the corridor and comprise the floodplain. The 230kV Apollo to Twin Creeks transmission corridor proposes a direct east/west crossing of Goose Creek north of the confluence of Sycolin Creek on its western side and north of Luck Stone Quarry pit on the eastern side. The proposed transmission

[2] 2019 GP, Chapter 6, Electrical, Action 6.1.C
[3] 2019 GP, Chapter 6, Energy and Communication, Action 6.1.B
[4] 2019 GP, Chapter 3, River and Stream Resources, Strategy 2.2 and Permitted Uses in the RSCR

corridor then proceeds along the western side of Goose Creek on a forested upland area located outside of the County's 300-foot no build buffer adjoining both sides of Goose Creek. Construction of the proposed 100-foot transmission corridor will require clearing and ground disturbing activities that will impact forest cover, vegetation, wildlife habitats, and river and stream corridor resources.

County staff recommends further coordination with Dominion Energy Virginia as potential routes and construction plans are refined to ensure protection of environmental resources, consistent with policy goals outlined above. New transmission poles should be sited outside the limits of the floodplain where possible to mitigate impact to the river and stream corridor resources. Areas impacted and disturbed by the proposed construction should be replanted and/or reforested with native species to support wildlife habitat and protect the water quality of the Goose Creek from the harmful effects of increased stormwater runoff and sediment.

Forests, Vegetation, and Wildlife Habitat

County policies encourage the preservation, protection and management of existing forests, vegetation, and wildlife habitat for their economic and environmental benefits, such as improved air and water quality, offering important wildlife habitat, providing buffers between communities, reducing wind speeds and redirecting wind flow, and reducing stormwater runoff and soil erosion.[5] Additionally, the County promotes the protection of wildlife habitats, wildlife travel corridors, and access to streams and water resources through the preservation of native vegetation, forest cover, woodlands, floodplains, streams, and stream corridors.[6] The proposed establishment of the 230kV Apollo to Twin Creeks transmission corridor will impact existing forests, vegetation, and wildlife habitat. County staff recommends that the transmission corridor rights-of-way be managed as natural habitat with actions to promote the growth of native vegetation to support wildlife habitat in keeping with the policies of the 2019 GP.

Heritage Resources

The 2019 GP calls for the conservation and preservation of the County's cultural and scenic resources. Land development applications are expected to provide an archaeological and historic resources survey to identify resources, and if warranted, measures for recordation, preservation, mitigation, and adaptive reuse.[7]

The County's Archaeologist reviewed the proposed 230kV Apollo to Twin Creeks transmission corridor and provided comments dated March 5, 2024 (Figure 2). The proposed route has potential impacts on archaeological features and identified above ground historic resources. Much of the route has been the subject of Phase I cultural resources surveys as part of land development application process, however some undeveloped parcels and areas within the Goose Creek floodplain remain unsurveyed. Phase I cultural resources surveys of these previously unsurvey areas are recommended. Additionally, previously identified archaeological sites deemed of significance should be avoided as construction and engineering plans are developed by Dominion Energy Virginia.

The proposed route is within the viewshed of three historic resources listed on the National Register of Historic Places and/or are deemed to have state or local significance. The proposed route will have a visual

[5] 2019 GP, Chapter 3 , Forests, Trees, and Vegetation, Policy 4
[6] 2019 GP, Chapter 3 , Wildlife Habitats, Strategy 6.2
[7] 2019 GP, Chapter 3, Historic, Archaeologic, and Scenic Resources, Action 5.1.C

impact on segments of the W&OD Trail (053-0276) located to the south of the proposed transmission corridor, the remains of Houghs/Cook Mavins Mill (053-0339) located on the western bank of Goose Creek and the Belmont Cemetery for the Enslaved (44LD9578/053-6238) located up slope and to east of the proposed transmission corridor. Future coordination between the County and Dominion Energy Virginia is recommended to evaluate and develop mitigation strategies for any potential impacts to archaeological sites and historic resources.

SUMMARY RECOMMENDATION

Loudoun County policies support the establishment of the proposed 230kV Apollo to Twin Creeks transmission corridor to provide requested electric service and to meet electric demand for the area while ensuring the structural integrity and reliability of the transmission system. County staff recommends that Dominion Energy Virginia continue to work with the County to achieve policy goals regarding the protection of environmental and heritage resources as outlined in the 2019 GP and discussed in this correspondence.

If you have any questions regarding these comments, please contact Pat Giglio, Senior Planner, Loudoun County Department of Planning and Zoning, at 703-737-8563 or patrick.giglio@loudoun.gov.

Thank you for the opportunity to provide comments.

Sincerely,

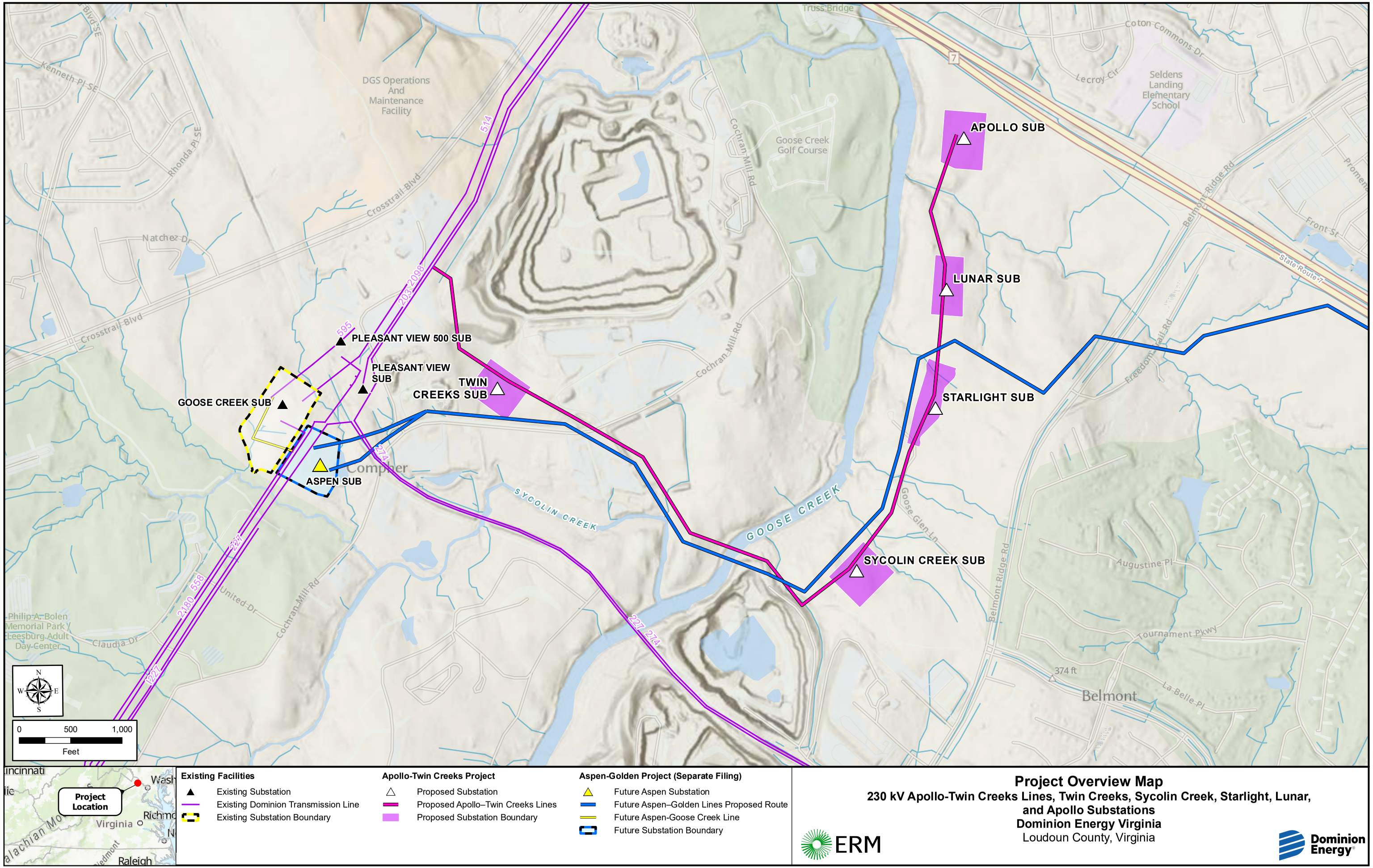
Daniel Galindo, Director
Department of Planning and Zoning

cc: *via email only*
Tim Hemstreet, County Administrator
Joe Kroboth, III, PE, Deputy County Administrator
Leo Rogers, County Attorney
Buddy Rizer, Director, Economic Development
Betsy Smith, Director, Building and Development

Enclosure: Figure 1. Vicinity map depicting proposed Transmission Routes and Substation, provided by Dominion Energy Virginia.

Figure 2. County Archaeologist Memorandum, Apollo to Twin Creeks

Figure 1.



Project Overview Map

230 kV Apollo-Twin Creeks Lines, Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo Substations

Dominion Energy Virginia

Loudoun County, Virginia

ERM

Dominion Energy

Figure 2.

LOUDOUN COUNTY VIRGINIA | Planning and Zoning
1 Harrison Street, SE, PO Box 7000, Leesburg, VA 20177-7000
703-777-0246 O | 703-777-0441 F | dpz@loudoun.gov
loudoun.gov/planningandzoning

MEMORANDUM

To: Laura Meadows, Dominion Energy

From: Steve Thompson, County Archaeologist, Community Planning

Date: March 5, 2024

Re: Dominion Energy's Twin Creeks to Apollo projects

Twin Creeks to Apollo

Dominion Energy proposes construction of a new double circuit 230 kV transmission line entirely in new right-of-way and to construct five new 230-34.5 kV substations on property to be obtained by the Company (Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo substations), in Loudoun County. Comments follow regarding this project's potential to impact both known and unknown significant historic resources.

Existing Dominion Transmission Line, Luck Stone Leesburg Quarry to Cochrans Mill Road

- This section of the corridor has not received Phase I archaeological survey and direct impacts to potentially significant historic resources cannot be evaluated.

Twin Creeks Substation Footprint

- The footprint of this facility has not received Phase I cultural resources survey and direct impacts to potentially significant historic resources cannot be evaluated.

Cochrans Mill Road to Goose Creek

- No anticipated impacts to cultural resources.

Goose Creek to Apollo Substation and Footprints of the Sycolin Creek, Starlight, Lunar, and Apollo Substations

- The corridor passes approximately 550 feet from the remains of Houghs/Cookes/Mavins Mill (053-0339), a site that contains elements of the mid-nineteenth-century Goose Creek and Little River Navigation system and of the early twentieth-century Leesburg Electric Company plant. The NRHP-eligibility of this site should be evaluated and potential visual effects upon the resource considered.

- Archaeological resources (44LD2012, 44LD2002, 44LD1999, 44LD2000, 44LD2001) and one architectural resource (053-6512) identified by Phase I cultural resources survey along this section of the corridor and within the footprints of the

Sycolin Creek, Starlight, Lunar, and Apollo substations are not considered historically significance; therefore, no direct adverse impacts to historic resources are anticipated.

cc: Heidi Siebentritt, Principal Planner, Community Planning (via e-mail)

Heather E Kennedy (Services - 6)

From: ImpactReview <impactreview@vof.org>
Sent: Friday, February 16, 2024 4:26 PM
To: Fulcher, Valerie (DEQ); Heather E Kennedy (Services - 6)
Subject: [EXTERNAL] RE: NEW SCOPING Dominion Apollo-Twin Creeks Lines, Loudoun County, Virginia

Hi Heather,

The Virginia Outdoors Foundation has reviewed the project referenced below. As of February 16, 2024, this project will not encroach on any existing nor proposed VOF open-space easements.

Please contact VOF again for further review if the project area changes or if this project does not begin within 24 months. Thank you for considering conservation easements.

Best,
Baron

Baron Lin (*he/they*)
GIS Specialist
Virginia Outdoors Foundation [vof.org]
cell: 540-935-3163
other work #: 844-863-9800, ext. 355
email: blin@vof.org

From: Fulcher, Valerie (DEQ) <Valerie.Fulcher@deq.virginia.gov>
Sent: Friday, February 16, 2024 2:13 PM
To: dgif-ESS Projects (DWR) <ESSProjects@dwr.virginia.gov>; Tignor, Keith (VDACS) <Keith.Tignor@vdacs.virginia.gov>; DCR-PRR Environmental Review (DCR) <envreview@dcr.virginia.gov>; odwreview (VDH) <odwreview@vdh.virginia.gov>; Gavan, Larry (DEQ) <Larry.Gavan@deq.virginia.gov>; Miller, Mark (DEQ) <Mark.Miller@deq.virginia.gov>; Kirchen, Roger (DHR) <Roger.Kirchen@dhr.virginia.gov>; Lasher, Terrance J. (DOF) <Terry.Lasher@dof.virginia.gov>; Folks, Clint (DOF) <Clint.Folks@dof.virginia.gov>; Lovain, Anna (DEQ) <Anna.Lovain@deq.virginia.gov>; Ballou, Thomas (DEQ) <Thomas.Ballou@deq.virginia.gov>; Churchill, Nikolas (DEQ) <Nikolas.Churchill@deq.virginia.gov>; Heller, Matthew (Energy) <matt.heller@energy.virginia.gov>; EIR Coordination (VDOT) <EIR.Coordination@vdot.virginia.gov>; ImpactReview <impactreview@vof.org>; Lazaro, Robert (VDOT) <rlazaro@novaregion.org>
Cc: heather.e.kennedy@dominionenergy.com (heather.e.kennedy@dominionenergy.com) <heather.e.kennedy@dominionenergy.com>
Subject: NEW SCOPING Dominion Apollo-Twin Creeks Lines, Loudoun County, Virginia

Alert: This email originated from outside VOF
Good afternoon—attached is a request for scoping comments on the following:

Dominion Energy Virginia's Proposed 230 kV Apollo-Twin Creeks Lines and Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo Substations in Loudoun County, Virginia

If you choose to make comments, please send them directly to the project sponsor (Heather.E.Kennedy@Dominionenergy.com) and copy the DEQ Office of Environmental Impact Review: eir@deq.virginia.gov. We will coordinate a review when the environmental document is completed.

DEQ-OEIR's scoping response is also attached.

Valerie

Valerie A. Fulcher, CAP, OM, Admin/Data Coordinator Senior

Department of Environmental Quality

Environmental Enhancement - Office of Environmental Impact Review

1111 East Main Street

Richmond, VA 23219

NEW PHONE NUMBER: 804-659-1550

Email: Valerie.Fulcher@deq.virginia.gov

https://www.deq.virginia.gov/permits-regulations/environmental-impact-review [deq.virginia.gov]

For program updates and public notices please subscribe to Constant Contact:
https://lp.constantcontact.com/su/MVcCump/EIR [lp.constantcontact.com]

Heather E Kennedy (Services - 6)

From: Warren, Arlene (VDH) <Arlene.Warren@vdh.virginia.gov>
Sent: Thursday, February 29, 2024 7:24 AM
To: Heather E Kennedy (Services - 6)
Cc: Environmental Impact Review (DEQ)
Subject: [EXTERNAL] RE: NEW SCOPING Dominion Apollo-Twin Creeks Lines, Loudoun County, Virginia Project Response

Project #: N/A
Project Name: Dominion Energy Proposed Apollo-Twin Creeks Lines Project
UPC #: N/A
Location: Loudoun County

VDH – Office of Drinking Water has reviewed the above project. Below are our comments as they relate to proximity to **public drinking water sources** (groundwater wells, springs and surface water intakes). Potential impacts to public water distribution systems or sanitary sewage collection systems **must be verified by the local utility.**

There are no public groundwater wells within a 1-mile radius of the project site.

The following surface water intakes are located within a 5-mile radius of the project site:

PWS ID Number	System Name	Facility Name
6107300	LEESBURG, TOWN OF	POTOMAC INTAKE
6107350	LOUDOUN WATER - CENTRAL SYSTEM	POTOMAC RIVER INTAKE
6107350	LOUDOUN WATER - CENTRAL SYSTEM	GOOSE CREEK

The project is within the watershed of the following public surface water sources:

PWS ID Number	System Name	Facility Name
6059501	FAIRFAX COUNTY WATER AUTHORITY	INTAKE (POTOMAC RIVER)

Best Management Practices should be employed, including Erosion & Sedimentation Controls and Spill Prevention Controls & Countermeasures on the project site.

Materials should be managed while on site and during transport to prevent impacts to nearby surface water.

The Virginia Department of Health – Office of Drinking Water appreciates the opportunity to provide comments. If you have any questions, please let me know.

Best Regards,

Arlene F. Warren
GIS Program Support Technician

Mobile 804-389-2167 (office/cell/text)
Email arlene.warren@vdh.virginia.gov
VDH, Office of Drinking Water
109 Governor Street, 6th Floor
Richmond, VA 23219

From: Fulcher, Valerie (DEQ) <Valerie.Fulcher@deq.virginia.gov>
Sent: Friday, February 16, 2024 2:13 PM
To: dgif-ESS Projects (DWR) <ESSProjects@dwr.virginia.gov>; Tignor, Keith (VDACS) <Keith.Tignor@vdacs.virginia.gov>; DCR-PRR Environmental Review (DCR) <envreview@dcr.virginia.gov>; odwreview (VDH) <odwreview@vdh.virginia.gov>; Gavan, Larry (DEQ) <Larry.Gavan@deq.virginia.gov>; Miller, Mark (DEQ) <Mark.Miller@deq.virginia.gov>; Kirchen, Roger (DHR) <Roger.Kirchen@dhr.virginia.gov>; Lasher, Terrance J. (DOF) <Terry.Lasher@dof.virginia.gov>; Folks, Clint (DOF) <Clint.Folks@dof.virginia.gov>; Lovain, Anna (DEQ) <Anna.Lovain@deq.virginia.gov>; Ballou, Thomas (DEQ) <Thomas.Ballou@deq.virginia.gov>; Churchill, Nikolas (DEQ) <Nikolas.Churchill@deq.virginia.gov>; Heller, Matthew (Energy) <matt.heller@energy.virginia.gov>; EIR Coordination (VDOT) <EIR.Coordination@vdot.virginia.gov>; ImpactReview (impactreview@vof.org) <impactreview@vof.org>; Lazaro, Robert (VDOT) <rlazaro@novaregion.org>
Cc: heather.e.kennedy@dominionenergy.com (heather.e.kennedy@dominionenergy.com) <heather.e.kennedy@dominionenergy.com>
Subject: NEW SCOPING Dominion Apollo-Twin Creeks Lines, Loudoun County, Virginia

Good afternoon—attached is a request for scoping comments on the following:

Dominion Energy Virginia's Proposed 230 kV Apollo-Twin Creeks Lines and Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo Substations in Loudoun County, Virginia

If you choose to make comments, please send them directly to the project sponsor (Heather.E.Kennedy@Dominionenergy.com) and copy the DEQ Office of Environmental Impact Review: eir@deq.virginia.gov. We will coordinate a review when the environmental document is completed.

DEQ-OEIR's scoping response is also attached.

Valerie

Valerie A. Fulcher, CAP, OM, Admin/Data Coordinator Senior

Department of Environmental Quality

Environmental Enhancement - Office of Environmental Impact Review

1111 East Main Street

Richmond, VA 23219

NEW PHONE NUMBER: 804-659-1550

Email: Valerie.Fulcher@deq.virginia.gov

https://www.deq.virginia.gov/permits-regulations/environmental-impact-review [deq.virginia.gov]

For program updates and public notices please subscribe to Constant Contact:
https://lp.constantcontact.com/su/MVcCump/EIR [lp.constantcontact.com]

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

#