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

Before the State Corporation Commission of Virginia

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

Application No. 332

Case No. PUR-2024-00032

Filed: March 7 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

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

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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 relieve identified violations of mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards beginning in the summer 2028 timeframe brought on by significant increases in electrical demand as well as expected demand growth projected for the future, and to maintain the structural integrity and reliability of its transmission system, Dominion Energy Virginia proposes in Loudoun County, Virginia, to:

(i) Construct a new 500-230 kilovolt ("kV") substation in Loudoun County, Virginia, entirely on Company-owned property ("Aspen Substation"). The 500 kV source to the Aspen Substation will be created by cutting the Company's existing overhead 500 kV Brambleton-Goose Creek Line #558 into the Aspen Substation between Structure #558/1857 and Structure #558/1856. The cut-in of Line #558 to the Aspen Substation will result in (i) 500 kV Aspen-Brambleton Line #558 and (ii) 500 kV Aspen-Goose Creek Line #597.

(ii) In addition to the 500 kV Aspen-Goose Creek Line #597 that results from the cut in for the Aspen Substation as described above, construct a new 500 kV line to connect the proposed Aspen Substation to the existing Goose Creek Substation. Specifically, the Company proposes to construct a new 500 kV single circuit transmission line extending approximately 0.2 mile from the proposed 500-230 kV Aspen Substation to the Company's existing 500 kV Goose Creek Substation in Loudoun County, Virginia, named Aspen-Goose Creek Line #5002 (or the "Aspen-Goose Creek Line"). The Aspen-Goose Creek Line will be constructed entirely on Company-owned property or within existing right-of-way supported by one 500 kV single circuit monopole structure and will utilize three-phase triple-bundled 1351.5 Aluminum Conductor Steel Reinforced ("ACSR") conductors with a summer transfer capability of 4,357 MVA. Substation line terminal upgrade work will be required at the 500 kV Goose Creek Substation in order to terminate the two proposed Aspen-Goose Creek Lines (*i.e.*, Line #597 and Line #5002), as discussed in Section II.C. Combined with the new 500 kV Aspen-Goose Creek Line #597, this new 500 kV Aspen-Goose Creek Line #5002 will bring two new sources to the area by connecting Goose Creek Substation to the area grid via the proposed Aspen Substation.

(iii) Construct a new approximately 9.4-mile overhead 500 kV single circuit transmission line and a new 230 kV single circuit transmission line almost entirely on new right-of-way.[1] The new transmission lines will originate at the 500 kV and

[1] The Aspen-Golden Lines will be entirely on new right-of-way except where the lines cross the existing 100-foot-wide transmission line right-of-way corridor containing Beaumeade-Belmont Line #227 and Beaumeade-Pleasant View Line #274, and where the lines cross the existing 130-foot-wide transmission line right-of-way corridor containing Beaumeade-BECO Line #2143, BECO-Paragon Park Line #2207, and BECO-Pacific Line #2165 near Broad Run. *See* Section I.F as to any impacts related to the crossing of these corridors.

230 kV buses of the proposed Aspen Substation[2] and continue to the proposed 500-230 kV Golden Substation,[3] where the new lines will terminate, resulting in (i) 500 kV Aspen-Golden Line #5001, and (ii) 230 kV Aspen-Golden Line #2333 (collectively, the "Aspen-Golden Lines"). The proposed Aspen-Golden Lines will be constructed on new right-of-way varying between 100 and 150 feet in width[4] in

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[2] At the proposed Aspen Substation, the proposed 230 kV Aspen-Golden Line #2333 and the proposed 500 kV Aspen-Golden Line #5001 originate at their respective buses on separate rights-of-way and converge approximately 0.2 mile east of the substation. Specifically, the new 230 kV Aspen-Golden Line #2333 will begin from the easternmost portion of the proposed Aspen Substation where the 230 kV bus is located and travel in a northeastern direction, crossing the existing Line #227/#274 right-of-way transmission corridor, and then converge with the new 500 kV Aspen-Golden Line #5001. For that approximately 0.2 mile, the new 230 kV line will be supported on single circuit 230 kV H-frame structures in a separate, new 100-foot-wide right-of way. The new 500 kV Aspen-Golden Line #5001 will begin from the northern portion of the Aspen Substation where the 500 kV bus is located and travel in a northeastern direction, crossing the existing Line #227/#274 right-of-way transmission corridor, and then converge with the new 230 kV Aspen-Golden Line #2333. For that approximately 0.2 mile, the new 500 kV line will be supported on single circuit 500 kV H-frame structures in a separate, new 150-foot-wide right-of way. After the 500 kV and 230 kV corridors converge approximately 0.1 mile east of the Line #227/#274 corridor, the Aspen-Golden Lines will continue together within a new varying 100- to 150-foot-wide right-of-way corridor, until they split again just before terminating at the proposed Golden Substation. *See* Attachment II.A.6 of the Appendix.

[3] Similar to how the lines exit the proposed Aspen Substation, the 230 kV Aspen-Golden Line #2333 will split from the converged corridor into a separate new right-of-way before terminating at the proposed Golden Substation. Specifically, in order to route the new 230 kV Aspen-Golden Line #2333 into the southern portion of the proposed Golden Substation where the 230 kV bus is located, the new 230 kV line will split into a separate corridor and travel in a southeastern direction along approximately 0.3 mile of new right-of-way before terminating at the 230 kV bus within the proposed Golden Substation. For that approximately 0.3 mile, the new 230 kV line will be supported on single circuit 230 kV monopole structures in a separate, new 100-foot-wide right-of way. Based on the placement of the 500 kV bus in the proposed Golden Substation, the new 500 kV Aspen-Golden Line #5001 will enter directly into the western portion of the proposed Golden Substation approximately 0.1 mile from the converged corridor and terminate at the proposed Golden Substation. For that approximately 0.1 mile, the new 500 kV line extends from a double circuit two-pole structure (supporting both the 500 kV and 230 kV lines) located in the converged corridor to the proposed Golden Substation. *See* Attachment II.A.6 of the Appendix.

[4] For approximately 0.9 mile of the 9.4-mile Proposed Route of the Aspen-Golden Lines (between Structures #5001/6 / #2333/6 and #5001/12 / #2333/12) as defined herein, the Company is seeking approval to acquire additional right-of-way with varying widths between 100 and 140 feet to accommodate construction of two future 230 kV double circuit lines along the same corridor, referred to herein as the future Twin Creeks Lines. The additional right-of-way widths are variable as the proposed Aspen-Golden Lines and future Twin Creeks Lines need wider rights-of-way to accommodate horizontal configurations (rather than vertical) for the crossing of Goose Creek and to accommodate the crossing of the future Twin Creeks Lines underneath the Aspen-Golden Lines in two locations. The Company anticipates filing an application for State Corporation Commission ("Commission") approval of the 230 kV double circuit Twin Creeks Lines and related transmission infrastructure later in March 2024, along with a motion to consolidate these two cases for purposes of judicial economy. *See* page 1 of Attachment II.A.6 of the Appendix for a map depicting the collocation of the Aspen-Golden Lines with the future Twin Creeks Lines where the Company seeks to voluntarily acquire additional right-of-way varying in widths between 100 and 140 feet (totaling between 200 to 260 feet, due to varying overlap of the two rights-of-way). This is consistent with Guideline #1 of Attachment 1 to the *Guidelines for Transmission Line Applications Filed Under Title 56 of the Code of Virginia*, which emphasizes that rights-of-way should be selected with the purpose of minimizing conflict between the rights-of-way and present and prospective uses of the land on which they are to be located and recommends that existing rights-of-way should

order to support a 5-2 configuration on a combination of dulled galvanized steel double circuit three-pole or two-pole H-frame structures (150-foot-wide right-of-way) or monopole or two-pole structures (100-foot-wide right-of-way), as well as to accommodate the routing of the lines to their respective buses in the proposed Aspen and Golden Substations. The new 500 kV line will utilize three-phase triple-bundled 1351.5 ACSR conductors with a summer transfer capability of 4,357 MVA; the new 230 kV line 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.

(iv) Construct a new 500-230 kV substation in Loudoun County, Virginia, on property to be obtained by the Company ("Golden Substation").

(v) Loop the Company's existing 230 kV overhead Paragon Park-Sterling Park Line #2081 and Paragon Park-Sterling Park Line #2150, which are currently collocated on double circuit lattice towers, into and out of the proposed Golden Substation in Loudoun County, Virginia. Specifically, the Company proposes to cut Line #2081 and Line #2150 between Structure #2081/124 / #2150/184 and Structure #2081/123 / #2150/183, and loop the existing lines into and out of the proposed Golden Substation, resulting in (i) Golden-Sterling Park #2081, (ii) Golden-Sterling Park #2150, (iii) Golden-Paragon Park #2348, and (iv) Golden-Paragon Park #2351 (collectively, the "Lines #2081/#2150 Loop" or "Line Loop"). To cut the lines into the proposed Golden Substation, the Company will remove one existing double circuit lattice tower (Structure #2081/123 / #2150/183) and replace it with four dulled galvanized steel single circuit monopoles (Structures #2081/122A, #2150/182A, #2348/123A, and #2351/183A). The Line Loop will be constructed entirely within the existing transmission corridor right-of-way or on property to be obtained by the Company for the proposed Golden Substation. Temporary infrastructure may be installed within the existing transmission corridor to keep Lines #2081 and #2150 in service during construction of the Line Loop. The Company proposes to utilize three-phase twin-bundled 768.2 ACSS/TW/HS type conductor with a summer transfer capability of 1,573 MVA for the Line Loop, the rating of which will be limited to the rating of the existing lines. As the closest existing 230 kV lines to the proposed Golden Substation site, the Lines #2081/#2150 Loop will provide a new 230 kV source from the Aspen/Goose Creek

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be given priority as the locations for additions to existing transmission facilities. Accordingly, as part of this Application, the Company asks that the Commission not prohibit the Company from voluntarily obtaining the additional 100- to 140-foot-wide right-of-way for the Project proposed herein, with the understanding that the Company could not condemn for more than what is needed for the Aspen-Golden Lines based upon Commission approval received in this proceeding. This approach is consistent with the approach approved by the Commission in multiple proceedings. To be clear, the Company is proposing only a varying 100- to 150-foot-wide right-of way for the proposed Aspen-Golden Lines as described herein, and only the proposed 100- to 150-foot-wide right-of way will be cleared and utilized for the proposed Project.

Substation area into Data Center Alley (or "DCA") via the proposed Golden Substation.

The Aspen Substation, Aspen-Goose Creek Line #5002 and related Goose Creek Substation work, Aspen-Golden Lines, Golden Substation, and the Lines #2081/#2150 Loop are collectively referred to as the "Aspen to Golden 500-230 kV Electric Transmission Project" or the "Project."

The Project is needed to maintain and improve electric service to customers in the eastern Loudoun load area ("Eastern Loudoun Load Area"), which is generally to the north and west of the Washington Dulles International Airport ("Dulles Airport") and is inclusive of the DCA; to address significant load growth in the Eastern Loudoun Load Area; and to resolve identified NERC reliability violations. If not relieved by this proposed Project combined with others proposed or planned in the near term, the identified reliability violations will severely impact the transmission system's ability to provide reliable service to Dominion Energy Virginia's customers in the Eastern Loudoun Load Area.

The proposed Aspen Substation initially will be constructed with twelve 500 kV 5000 ampere ("A") circuit breakers, four 230 kV 4000A circuit breakers, four 500 kV line terminals, one 230 kV line terminal, one 500-230 kV transformer bank (4-480 MVA, single-phase units, including a spare) and other associated equipment. The Aspen Substation will be designed to accommodate future growth in the area with a build-out of twenty-one 500 kV 5000A circuit breakers, twelve 230 kV 4000A circuit breakers, seven 500 kV line terminals, six 230 kV line terminals, two 500-230 kV transformer banks (7-480 MVA, single-phase units, including a spare), and one 500 kV capacitor bank. Due to space constraints, the 500 kV and 230 kV infrastructure will be Gas Insulated Substation. Additionally, two control enclosures will be installed to accommodate the protective relay, communications, and security cabinets. The total area of the proposed Aspen Substation is approximately 6.5 acres.

The proposed Golden Substation initially will be constructed with six 500 kV 5000A circuit breakers, twelve 230 kV 4000A circuit breakers, one 500 kV line terminal, five 230 kV line terminals, two 500-230 kV transformer banks (7-480 MVA, single-phase units, including a spare) and other associated equipment. The Golden Substation will be designed to accommodate future growth in the area with a build-out of fourteen 500 kV 5000A circuit breakers, seventeen 230 kV 4000A circuit breakers, three 500 kV line terminals, seven 230 kV line terminals, three 500-230 kV transformer banks (11-480 MVA, single-phase units, including two spares), two 500 kV capacitor banks and two 230 kV capacitor banks. Due to space constraints, the 500 kV and 230 kV infrastructure will be Gas Insulated Substation. Additionally, two control enclosures will also be installed to accommodate the protective relay, communications, and security cabinets. The total area of the proposed Golden Substation is approximately 8.5 acres.

At the existing 500 kV Goose Creek Substation, two 500 kV 4000A circuit breakers will be replaced with two 500 kV 5000A circuit breakers. One additional 500 kV 5000A circuit breaker

will be added as part of the two 500 kV line terminations to the proposed Aspen Substation. The total area of the existing Goose Creek Substation, as currently expanded, is approximately 7.5 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. Below is a description of the Proposed and Alternative Routes identified for the Aspen-Goose Creek Line, the Aspen-Golden Lines, and the Lines #2081/#2150 Loop, followed by an explanation of how impacts are discussed and analyzed for purposes of this DEQ Supplement.

Proposed and Alternative Routes

Aspen-Goose Creek Line

For the Aspen-Goose Creek Line #5002, the Company identified one 0.2-mile overhead proposed route ("Aspen-Goose Creek Proposed Route") that will be constructed entirely within existing right-of-way or on Company-owned property. Because the existing right-of-way and Company-owned property are adequate for the proposed Aspen-Goose Creek Line #5002, no new right-of-way is required. Given the availability of existing right-of-way and the statutory preference given to use of existing rights-of-way, and because additional costs and environmental impacts would be associated with the acquisition of and construction on new right-of-way, the Company did not consider any alternative routes requiring new right-of-way for the proposed Aspen-Goose Creek Line.

The Proposed Route of the Aspen-Goose Creek Line #5002 is approximately 0.2 mile in length. The route originates at the proposed Aspen Substation located between Crosstrail Boulevard and Cochran Mill Road. The route travels northwest for 0.1 mile and then northeast for 0.1 mile before terminating at the Company's existing 500 kV Goose Creek Substation.

Aspen-Golden Lines

For the Aspen-Golden Lines, the Company identified one overhead 9.4-mile proposed route ("Proposed Route (Route 1AA)") and three overhead alternative routes that are either 9.4 or 9.5 miles long ("Alternative Route 1AB" or "Route 1AB," "Alternative Route 1BA" or "Route 1BA," and "Alternative Route 1BB" or "Route 1BB"). The Proposed and Alternative Routes all are comprised of a combination of three overhead segments.

One segment extends along State Route 7 ("Rt. 7") adjacent to the Belmont Park planned development (the "Belmont Park Segment") and includes two 0.6-mile overhead variations ("Belmont Park Variation A" and "Belmont Park Variation B").

A second segment extends along Loudoun Water's Broad Run Water Reclamation Facility ("BRWRF") property and adjacent privately owned properties (the "Broad Run Segment")

and includes a 2.2-mile variation ("Broad Run Variation A")[5] and a 2.3-mile variation ("Broad Run Variation B").[6]

A third segment, which is common to all of the Aspen-Golden Lines route alternatives, extends from the proposed Aspen Substation to the proposed Golden Substation, excluding the Belmont Park Segment and the Broad Run Segment where route variations were identified, for a combined total of 6.6 miles ("Route 1 Segment" or "Route 1").

Accordingly, the Proposed and Alternative Routes are comprised of a combination of Route 1, plus Belmont Park Variation A or B, plus Broad Run Variation A or B, with total mileages shown below:

- Proposed Route (Route 1AA): Route 1 with Belmont Park Variation A and Broad Run Variation A (approximately 9.4 total miles);
- Alternative Route 1AB: Route 1 with Belmont Park Variation A and Broad Run Variation B (approximately 9.5 total miles);
- Alternative Route 1BA: Route 1 with Belmont Park Variation B and Broad Run Variation A (approximately 9.4 total miles); and
- Alternative Route 1BB: Route 1 with Belmont Park Variation B and Broad Run Variation B (approximately 9.5 total miles).

To be clear, the only difference between the Proposed Route (Route 1AA) and Alternative Routes 1AB, 1BA, and 1BB is the four potential combinations of Route 1 with one of the two Belmont Park Variations and one of the two Broad Run Variations.

Lines #2081/#2150 Loop

For the Lines #2081/#2150 Loop, the Company identified one approximately <0.1-mile (approximately 490 feet) overhead proposed route ("Line Loop Proposed Route") that will be constructed entirely on existing right-of-way or property to be obtained by the Company

[5] While Loudoun Water has expressed support for Broad Run Variation B where it crosses a small portion of the BRWRF property, the Company is continuing negotiations with Loudoun Water for easements for Broad Run Variation A where it runs along the BRWRF property. As discussed in detail in Section II.A.9 and in the Environmental Routing Study, Broad Run Variation A is shorter, is located entirely on industrial-zoned land, and has reduced environmental impacts in comparison to Broad Run Variation B. For these reasons, the Company is proposing to include Broad Run Variation A as a segment of the Proposed Route for the Aspen-Golden Lines. To the extent the Company is not able to successfully conclude negotiations with Loudoun Water for the necessary easements, the Company will file a motion with the Commission to withdraw Broad Run Variation A and will support Broad Run Variation B as part of the preferred route (*i.e.*, Alternative Route 1AB).

[6] Note that the four variations (Belmont Park Variations A and B and Broad Run Variations A and B) may be referred to in abbreviated format on maps and other documentation supporting this filing, such as "Belmont Park A and B" and "Broad Run A and B."

at the Golden Substation. Because the existing right-of-way and Company-owned property are adequate for the proposed Lines #2081/#2150 Loop, no new right-of-way is required. Given the availability of existing right-of-way and the statutory preference given to use of existing rights-of-way, and because additional costs and environmental impacts would be associated with the acquisition of and construction on new right-of-way, the Company did not consider any alternative routes requiring new right-of-way for the proposed Lines #2081/#2150 Loop.

The Proposed Route of the Lines #2081/#2150 Loop is approximately 0.1-mile in length. The Line Loop cuts into the Company's existing Paragon Park Sterling Park Line #2081 and Paragon Park-Sterling Park Line #2150 right-of-way (along the Washington & Old Dominion ("W&OD") Trail) and then crosses onto property to be acquired by the Company for the proposed Golden Substation.

Discussion and Analysis of Impacts

As all four Aspen-Golden Lines route alternatives are comprised of a combination of Route 1, a Belmont Park Variation, and a Broad Run Variation, the discussion and analysis of impacts of each segment of the route alternatives are described independently in this DEQ Supplement. Note that when discussing Route 1 impacts, such discussion includes impacts associated with the proposed Aspen and Golden Substations, Line #5002 (to the extent the route is located at Aspen Substation) and the Line Loop.[7]

For purposes of the discussion and analysis in this DEQ Supplement, please note the following:

- Route 1: Discussion and analysis of impacts of "Route 1" includes impacts of the Aspen Substation, the Golden Substation, Aspen-Goose Creek Line #5002 (to the

[7] Note, all impacts associated with the proposed Aspen Substation and the proposed Golden Substation are included in the Route 1 impacts discussion, unless otherwise noted.

As proposed, the approximately 0.2-mile Aspen-Goose Creek Line #5002 will be constructed entirely within Company-owned property or an existing transmission right-of-way corridor. Where Line #5002 is located within the Company's existing Goose Creek Substation or the Lines #558/#2180 right-of-way transmission corridor, any impacts resulting from the Line #5002 construction already were mitigated during permitting of the Goose Creek Substation expansion and Lines #558 and #2180. Where Line #5002 is located within the Company's proposed Aspen Substation, any impacts resulting from the Line #5002 construction are included in the Route 1 discussion, as Route 1 impacts are inclusive of impacts from the proposed Aspen and Golden Substations.

As proposed, the approximately <0.1-mile (490 feet) Lines #2081/#2150 Loop will be constructed entirely within property to-be-owned by the Company or an existing transmission right-of-way corridor. As the Line Loop is located contiguous with Aspen-Golden Line #2333 along the Route 1 right-of-way where Line #2333 and the Line Loop both enter the proposed Golden Substation, any impacts resulting from the Line Loop construction also are included in the Route 1 discussion.

Accordingly, impacts associated with construction of the Aspen Substation, the Golden Substation, the Aspen-Goose Creek Line #5002 (except as to those impacts mitigated already), and the Lines #2081/#2150 Loop are included within the discussion of Route 1 impacts in this DEQ Supplement, unless otherwise noted.

extent located at Aspen Substation), and the Lines #2081/#2150 Loop, unless otherwise noted. When not specifically discussing or analyzing impacts, references to Route 1 are simply to the alignment of Route 1, as described above.

- Variations: Discussion and analysis of impacts of the collective "Variations" includes impacts of Belmont Park Variations A and B and Broad Run Variations A and B.

- Route 1 and the Variations: Discussion and analysis of impacts of "Route 1 and the Variations" includes Route 1 impacts (including the Aspen and Golden Substations, Line #5002 (to the extent located at Aspen Substation), and the Line Loop, unless otherwise noted), Belmont Park Variations A and B impacts, and Broad Run Variations A and B impacts.

- Project: Discussion and analysis of impacts of the "Project" relates to the Project as proposed. This includes impacts of the Aspen Substation, Aspen-Goose Creek Line #5002 along the Proposed Route, the Aspen-Golden Lines along Proposed Route 1AA (Route 1 + Belmont Park Variation A + Broad Run Variation A), the Golden Substation, and the Lines #2081/#2150 Loop along the Proposed Route.

A description of the Aspen-Golden Lines segments—including Route 1, the Belmont Park Variations, and the Broad Run Variations—are provided below.

Route 1

Route 1 would construct an overhead 500 kV transmission line with a 230 kV transmission line entirely on new 100 to 150-foot-wide right-of-way in order to support a 5-2 configuration on a combination of dulled galvanized steel double circuit three-pole or two-pole H-frame structures (150-foot-wide right-of-way) or monopole or two-pole structures (100-foot-wide right-of-way). Route 1 is comprised of three segments separated by the Belmont Park Segment (Belmont Park Variation A and B) and Broad Run Segment (Broad Run Variation A and B). Route 1 begins at the proposed Aspen Substation and extends approximately 2.9 miles to the Belmont Park Segment, continues from the Belmont Park Segment approximately 3.3 miles to the Broad Run Segment and then continues for 0.4 mile from the Broad Segment where is terminates at Golden Substation. No alternatives to Route 1 were selected due to limits to constructability and significant impacts to one or more sensitive environmental or cultural resources. Discussion of the routes that the Company studied but ultimately rejected, is provided in Section II of the Appendix and in the Environmental Routing Study included with the Application.

Route 1 begins at the proposed Aspen Substation, located on a Company-owned parcel on the east side of the existing 500 kV Brambleton-Goose Creek Line #558, west of the intersection of Cochran Mill Road and Samuels Mill Court. Route 1 leaves the proposed Aspen Substation heading northeast along two separate new rights-of-way and then crosses the existing 230 kV Line #227/#274 transmission corridor, east of the proposed Aspen

Substation. After crossing existing Beaumeade-Belmont Line #227 and Beaumeade-Pleasant View Line #274, the rights-of-way merge into one new predominantly 100-foot-wide right-of-way. See Attachment II.A.6 of the Appendix. As Route 1 continues east along the north side of Cochran Mill Road for approximately 0.4 mile, it crosses the southern edge of the future Twin Creeks Substation. From there, Route 1 crosses Cochran Mill Road and Goose Creek as it turns southeast for approximately 0.6 mile crossing between proposed buildings on a planned data center campus. After crossing Goose Creek, Route 1 turns north for approximately 0.5 mile and passes the future Sycolin Creek and Starlight Substations. North of the future Starlight Substation, Route 1 turns east for 0.9 mile, crossing between two proposed data center campuses, over Belmont Ridge Road, then along the west side of a forested, undeveloped parcel, currently planned as a data center campus, whereupon it reaches the south side of Rt. 7. Route 1 then turns to the southeast to parallel Rt. 7 for approximately 0.6 mile where it reaches the Belmont Park Segment described below.

After the Belmont Park Segment, Route 1 continues southeast along the south side of Rt. 7 for approximately 2.4 miles as it crosses Ashburn Village Boulevard and Loudoun County Parkway. Before reaching George Washington Boulevard Bridge, Route 1 turns south for 0.3 mile, crossing Russell Branch Parkway, and then turns to the southwest for 0.3 mile toward Loudoun County Parkway south of an existing data center building, where it crosses portions of two parcels (approximately 0.4 mile total) dedicated to the Loudoun County Board of Supervisors ("BOS") as open space easements.

After crossing the BOS easements, Route 1 turns south for 0.3 mile and reaches the Broad Run Segment described below.

Resuming after the Broad Run Segment, Route 1 continues south for approximately 0.1 mile, crossing Pacific Boulevard. Route 1 then splits into two separate new rights-of-way, with the 500 kV Aspen-Golden Line #5001 heading east into the proposed Golden Substation and the 230 kV Aspen-Golden Line #2333 continuing south and east for 0.3 mile to enter the proposed Golden Substation from the south. In total, the 500 kV component of Route 1 measures approximately 6.4 miles in length, and the 230 kV component of Route 1 measures approximately 6.6 miles in length.

Belmont Park Variations

Belmont Park Variation A

Belmont Park Variation A would construct an overhead 500 kV transmission line with a 230 kV transmission line on new 100-foot-wide right-of-way to support a 5-2 configuration on dulled galvanized steel monopole structures. Belmont Park Variation A extends approximately 0.6 mile between the adjacent segments of Route 1.

From the first segment of Route 1 (approximately 0.3 mile west of Claiborne Parkway), Belmont Park Variation A follows the south side of Rt. 7 for approximately 0.6 mile to the

southeast, crossing the Rt. 7-Claiborne Parkway interchange before rejoining Route 1 approximately 0.3 mile east of Claiborne Parkway.

Belmont Park Variation B

Belmont Park Variation B would construct an overhead 500 kV transmission line with a 230 kV transmission line on new 100-foot-wide right-of-way in order to support a 5-2 configuration primarily on dulled galvanized steel double circuit monopole and two-pole structures. Belmont Park Variation B extends approximately 0.6 mile between the adjacent segments of Route 1.

From Route 1 (approximately 0.3 mile west of Claiborne Parkway), Belmont Park Variation B turns northeast for 0.1 mile and crosses Rt. 7. The route then follows the north side of Rt. 7 for 0.4 mile, crossing Lansdowne Boulevard, where it crosses Rt. 7 and rejoins Route 1 (approximately 0.3 mile east of Claiborne Parkway). While the length of Belmont Park Variations A and B are similar, due to the crossing of Rt. 7 the Belmont Park Variation B will require four two-pole angle structures and three monopoles for seven total structures, while Belmont Park Variation A only requires four monopole structures, and no two-pole angle structures.

Broad Run Variations

Broad Run Variation A

Broad Run Variation A would construct an overhead 500 kV transmission line with a 230 kV transmission line on new 100 to 150-foot-wide right-of-way in order to support a 5-2 configuration on a combination of dulled galvanized steel double circuit three-pole or two-pole H-frame structures (150-foot-wide right-of-way) or monopole or two-pole structures (100-foot-wide right-of-way). Broad Run Variation A extends approximately 2.2 miles between the adjacent segments of Route 1.

From Route 1 (approximately 0.1 mile north of Beaverdam Run), Broad Run Variation A continues south for 0.2 mile then parallels Loudoun County Parkway for 1.3 miles, crossing Reuse Lane, Aquiary Way, Gloucester Parkway, and Coach Gibbs Drive. The route variation then turns southeast for 0.3 mile along the W&OD Trail and the Company's existing Beaumeade-Belmont Line #227 and Beaumeade-Pleasant View Line #274 right-of-way, where it crosses the existing Beaumeade-BECO Line #2143, BECO-Paragon Park Line #2207, and BECO-Pacific Line #2165 and then continues northeast for 0.2 mile and southeast for 0.2 mile before rejoining Route 1 near Pacific Boulevard.

Broad Run Variation B

Broad Run Variation B would construct an overhead 500 kV transmission line with a 230 kV transmission line on new 100 to 150-foot-wide right-of-way in order to support a 5-2 configuration on a combination of dulled galvanized steel double circuit three-pole or two-pole H-frame structures (150-foot-wide right-of-way) or monopole or two-pole structures

(100-foot-wide right-of-way). Broad Run Variation B extends approximately 2.3 miles between the adjacent segments of Route 1.

From Route 1 (approximately 0.1 mile north of Beaverdam Run), Broad Run Variation B turns east for 0.4 mile then south for 0.8 mile across Loudoun Water's BRWRF property following an existing Dominion Energy Virginia overhead distribution line and a buried sewer utility right-of-way and access road. Broad Run Variation B then crosses Broad Run and continues to the south for 0.2 mile before crossing Gloucester Parkway, then continues south for 0.6 mile, passing the existing BECO Substation and continuing south for 0.2 mile where it crosses Pacific Boulevard and rejoins Route 1.

2. Environmental Analysis

The Company solicited comments from all relevant state and local agencies about the proposed Project in letters sent on February 6, 2024. Copies of these letters are included as Attachment 2.[8] The DEQ responded to the Company's request for the proposed Project in an email dated February 6, 2024, attaching the agency's Scoping Response (see Attachment 2.1).

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 a significant portion of Route 1 and the Variations. The Company does not expect to burn cleared material, but, if 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). In addition, a field delineation was completed by Wetland Studies and Solutions Inc. in September 2020 and revised in January 2023 along the Aspen-Golden

[8] Note that, as described in Section 1 of this DEQ Supplement, the Project includes the proposed Lines #2081/#2150 Loop. While the Line Loop was not specifically identified in the agency letters or on the accompanying Project overview map (*see* Attachment 2), the Line Loop is contiguous with Route 1 of the proposed 230 kV Aspen-Golden Line #2333 as it enters the Golden Substation and any impacts of the Line Loop were correctly reported in the agency letters, to the extent relevant (*see* page 2 of Attachment 2), and in this DEQ Supplement. *See*, *e.g.*, maps provided as Attachments I.A.1, II.A.2, and II.A.6 to the Appendix for the location of the Line Loop Proposed Route.

Lines (between milepost ("MPs") 2.0 and 2.8)[9] southeast of the intersection of Belmont Ridge Road and Rt. 7, which was used to identify the extent of intermittent tributaries in the vicinity of the route. This field delineation was approved by the Corps in an Approved Jurisdictional Determination in April 2023, which is included as Attachment 2.B.1. The route crossing in this location was located south of the delineated tributary boundaries in order to minimize impacts to the waterbody.

Route 1 and the Variations all utilize an overhead configuration that would span waterbodies; no transmission structures are planned to be placed within waterbodies. Tree clearing would be required within forested riparian areas at waterbody crossing locations. The removal of forested riparian areas adjacent to waterbodies would reduce erosion control, stormwater filtration, and shading at these locations. Impacts to surface waters and riparian habitat would be reduced by minimizing rights-of-way at crossing to the extent possible, leaving roots and stumps in place, and implementing erosion control best management practices during construction.

Route 1 and the Variations cross perennial and intermittent waterbodies (rivers, streams, tributaries, and open water features). Named waterbody crossings include perennial streams Sycolin Creek, Goose Creek, Russell Branch, and Beaverdam Run (Route 1), Broad Run (Broad Run Variations A and B), and Cabin Branch (Broad Run Variation B). According to the U.S. Army Corps of Engineers ("Corps") documentation, no waters considered navigable under Section 10 of the Rivers and Harbors Act are crossed by Route 1 and the Variations for the Project.

Waterbodies in the vicinity of Route 1 and the Variations are shown on Attachment 2 of the Wetland and Waterbody Desktop Summary for the Project included in Attachment 2.D.1 described below.

Route 1

Route 1 (including the Aspen and Golden Substations, Line #5002 where located on Aspen Substation, and the Line Loop) would have a total of 32 waterbody crossings. Of these, 16 are NHD-mapped waterbody crossings, including three perennial streams (Sycolin Creek, Goose Creek, and Russell Branch), 12 unnamed, intermittent streams, and one lake/pond. There are 16 unmapped waterbodies, including 11 open waterbody features that appear to be stormwater control features and five unnamed, unclassified streams identified within the right-of-way using recent aerial imagery (spring 2023). Based on ERM's desktop wetland and waterbody analysis, Route 1 would encompass approximately 1.3 acres of riverine wetlands and 2.3 acres of palustrine unconsolidated bottom ("PUB") wetlands.

[9] *See* Attachment II.A.2 of the Appendix for a map with the MP for the Aspen-Golden Lines.

Belmont Park Variations

There are no waterbodies crossed by either of the Belmont Park Variations.

Broad Run Variations

Broad Run Variation A

Broad Run Variation A would have a total of five waterbody crossings. Of these, four are NHD-mapped waterbody crossings, including two perennial streams (Beaverdam Run and Broad Run) and two unnamed intermittent tributaries to Broad Run. There is one unmapped open waterbody feature identified within the right-of-way using recent aerial imagery (spring 2023). Based on ERM's desktop wetland and waterbody analysis, the Broad Run Variation A right-of-way would encompass approximately 0.4 acre of riverine wetlands and less than 0.1 acre of PUB wetlands.

Broad Run Variation B

Broad Run Variation B would have a total of six waterbody crossings. Of these, three are NHD- mapped perennial streams (Beaverdam Run, Broad Run, and Cabin Branch) and two are NHD-mapped unnamed intermittent tributaries to Broad Run. There is one unmapped open waterbody feature identified within the right-of-way using recent aerial imagery (spring 2023). Based on ERM's desktop wetland and waterbody analysis, the Broad Run Variation A right-of-way would encompass approximately 0.4 acre of riverine and 0.4 acre of 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 at or slightly above ground level, and stumps will not be grubbed. 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 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 would 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 6, 2024. According to a response letter dated February 14, 2024, the Project is located within the jurisdictional areas of the VMRC and may require a permit from the agency. See Attachment 2.B.2 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 channel ward of ordinary high water level 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 Route 1 and the Variations 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 (2023), National Agricultural Imagery Program Digital Ortho-Rectified Natural Color and Infrared Images, and recent (2022 and 2023) and historic digital aerial photography (Loudoun County Imagery, ESRI, and Google Earth). The Corps-approved field delineation was used to desktop delineate the boundaries of wetlands between MPs 2.0 and 2.8 of Route 1. A field delineation was completed in 2013 in association with a Loudoun Water Broad Run Water Reclamation Facility floodplain development permit and includes Broad Run Variation B between MPs 0.3 and 1.0, which was used to desktop delineation the boundaries of wetlands in this location. 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 Route 1 or the Variations. An infield wetland delineation will be completed for the approved route alignment selected by the Commission upon the Company receiving a final order on the Project.

Outside of the areas that have undergone previous field-delineations along Route 1 and Broad Run Variation B, ERM used a stepwise process to identify probable wetland and waterbody areas along the alternative transmission line routes 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 Route 1 and the Variations, 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.[10]

[10] Wetland acreages have been rounded to the tenths; as a result, the sum of the acreages may not equal the totals due to rounding.

Route 1

Route 1, including the Aspen and Golden Substations, Line #5002 where located at Aspen Substation, and the Line Loop, would cross 16.5 acres of wetlands, including:

- 6.5 acres of palustrine forested ("PFO") wetlands
- 1.6 acres of palustrine scrub-shrub ("PSS") wetlands
- 4.9 acres of palustrine emergent ("PEM") wetlands
- 2.3 acres of PUB wetlands
- 1.3 acres of riverine wetlands

Belmont Park Variations

Belmont Park Variation A would cross 0.8 acre of wetlands, including:

- 0.7 acre of PFO wetlands
- 0.2 acre of PEM wetlands

Belmont Park Variation B would cross 2.5 acres of wetlands, including:

- 1.8 acres of PFO wetlands
- 0.7 acre of PEM wetlands

Broad Run Variations

Broad Run Variation A would cross 6.6 acres of wetlands, including:

- 5.3 acres of PFO wetlands
- 1.0 acre of PEM wetlands
- < 0.1 acre of PUB wetlands
- 0.4 acre of riverine wetlands

Broad Run Variation B would cross 13.9 acres of wetlands, including:

- 10.3 acres of PFO wetlands
- 2.7 acres of PEM wetlands

- 0.4 acre of PUB wetlands
- 0.4 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 temporary construction impacts, permanent impacts would include any necessary structure placement within wetlands and clearing and conversion of forested wetlands to scrub-shrub or emergent types after construction is complete, reducing riparian buffer functions such as stream bank stabilization and erosion control, nutrient and sediment filtration, floodwater storage and peak flow reduction, and water temperature changes due to loss of shading. Forested wetlands will be cleared and converted to scrub-shrub or emergent wetlands within the right-of-way, which would provide some filtration and stabilization to protect waterbodies from runoff.

Prior to construction, the Company will delineate wetlands and other waters of the United States 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 6, 2024. Dominion Energy Virginia received a response from DEQ-OWSP on February 28, 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 24031C0280D (effective date 9/28/2006), 51059C0025E and 51059C0105E (effective dates 9/16/2010), and 51107C0244E, 24031C0260D, 51107C0245E, 51107C0261E, 51107C0265E, 51107C0268E, 51107C0263E (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 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 that were 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 Pollution Response Program ("PREP ") sites that are located within 1 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
Aspen-Golden 500-230 kV Electric Transmission Project

Environmental Regulated Facilities and Hazardous Waste / Petroleum Release Sites within 1.0 mile of the Project

Database	Route 1[a]	Belmont Park Variation A	Belmont Park Variation B	Broad Run Variation A	Broad Run Variation B
Waste	65	10	10	43	43
Toxics	6	0	0	2	2
Land	51	7	7	21	21
Air	46	4	4	31	25
Water	121	13	13	47	54
Solid Waste Facilities	4	1	1	1	1
Petroleum Facilities	30	4	4	25	18
Petroleum Releases	50	6	6	14	12
Total [b]	**373**	**45**	**45**	**184**	**176**

[a] Aspen and Golden Substations, Line #5002 where located on Aspen Substation, and the Line Loop are included in the Route 1 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)

Based on the EPA's "Cleanups in My Community" database, no Brownfield or Superfund sites are located within 1.0 mile of the Project.

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

TABLE F-2
Aspen-Golden 500-230 kV Electric Transmission Project

Environmental Regulated Facilities and Hazardous Waste / Petroleum Release Sites within 1,000 feet of the Project

Database	Route 1[a]	Belmont Park Variation A	Belmont Park Variation B	Broad Run Variation A	Broad Run Variation B
Waste	6	1	1	1	3
Toxics	2	0	0	0	0
Land	8	2	2	1	0
Air	7	1	1	3	1
Water	26	1	0	14	2
Solid Waste Facilities	1	0	0	0	0
Petroleum Facilities	6	1	1	1	0
Petroleum Releases	6	2	3	0	0
Total [b]	**62**	**8**	**8**	**20**	**6**

[a] Aspen and Golden Substations, Line #5002 where located on Aspen Substation, and the Line Loop are included in the Route 1 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 Route 1 or the Variations. Route 1 and Broad Run Variations A and B are collectively located within 1,000 feet of six active RCRA sites. The closest active site is the CPG Beyond Inc. site which is located approximately 550 feet west of Broad Run Variation A. Due to the distances from the Project area, the site is unlikely to have impacted soil and/or groundwater in the immediate area of the routes.

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 Route 1 or the Variations. There are six petroleum release sites collectively located within 1,000 feet of Route 1 and Belmont Park Variations A and B. Nine PREP sites are collectively located within 1,000 feet of Route 1, Belmont Park Variations A and B, and Broad Run Variation A. Based on available DEQ case files, three petroleum release cases and one PREP site are located within 200 feet of Belmont Park Variations A and B. Refer to the case summaries below for additional information.

EPA and DEQ Regulated Sites Within 200 Feet of the Routes

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 FOIA requests to the DEQ for further review of these sites, which are summarized below.

TABLE F-3
Aspen-Golden 500-230 kV Electric Transmission Project

Environmental Regulated Facilities and Hazardous Waste / Petroleum Release Sites within 200 feet of Aspen-Golden Lines the Project

Site Name	Site Type	Regulatory Authority	Most Proximate Route[a]	Distance from Route (feet)	Gradient from Project (up/down/side)	Agency Status
43971 Harry Flood Byrd Highway (PC Number 19901824)	Petroleum Release	DEQ	Route 1/Belmont Park Variation A	35	Downgradient	Closed (1995)
43971 Harry Flood Byrd Highway (PC Number 19910186)	Petroleum Release	DEQ	Route 1/Belmont Park Variation A	35	Downgradient	Closed (1994)
Wallace Dale and Ian Residence (PC Number 20223034)	Petroleum Release	DEQ	Route 1	20	Downgradient	Closed (2022)
Diesel Tanker TTA – Shine Transportation (IR Number 307343)	PREP	DEQ	Route 1/Belmont Park Variation A	0	N/A	Closed (2023)

[a] Aspen and Golden Substations, Line #5002 where located on Aspen Substation, and the Line Loop are included in the Route 1 analysis.

43971 Harry Flood Byrd Highway (PC Numbers 19901824 and 19910186)

The Harry Flood Byrd Highway Petroleum Release site is associated with two Petroleum Release cases (PC 19901824 and 19910186). Based on review of files provided by the DEQ, the first petroleum release case (PC 19901824) is located

approximately 35 feet from the edge of right-of-way of Route 1 and Belmont Park Variation A on the northwest corner of Rt. 7 and Ashburn Road. Based upon a review of the most recent USGS topographic maps and the location of nearby surface water bodies, the site would be hydraulically downgradient from Route 1 and Belmont Variations A and B. According to DEQ files, the petroleum release was reported in June 1990, where evidence of non-aqueous phase liquids was observed in the soil during a tank integrity test for two 3,000-gallon underground storage tanks ("USTs"). Contaminants were detected in the soil and groundwater surrounding the tank hold area, including concentrations of benzene, toluene, ethylbenzene, and xylenes (BTEX; 22 milligrams per kilogram [mg/kg], 16.2 milligrams per liter [mg/L]) and total petroleum hydrocarbons (TPH; 2,800 mg/kg, 5.0 mg/L).

The second petroleum release case (PC 19910186) also occurred approximately 35 feet from the edge of right-of-way of Route 1. According to DEQ files, the petroleum release occurred on August 8, 1990, when a UST ruptured during road construction activities. The contents of the ruptured tank were determined to be water with no presence of petroleum-based products. The remainder of the inactive USTs located on the northwestern edge of the property, underneath Ashburn Road, were removed. Contaminants were not detected from the soil samples collected during the excavation of the tank hold area and groundwater was not encountered during excavation activities. PC 19910186 and PC 19901824 were closed by the DEQ in 1994 and 1995, respectively.

In 2005, a supplementary site investigation was conducted at the former DEQ Petroleum Release sites after it was discovered that soils located to the east of the former gas station structure had an observable petroleum odor. Concentrations of total petroleum hydrocarbons – diesel range organics (TPH-DRO; 394 mg/kg) and total petroleum hydrocarbons – gasoline range organics (TPH-GRO; 90,400 mg/kg) were detected from soil samples collected from the base of the former tank pit location at a depth of approximately 10 feet below ground surface ("bgs"). An additional sample was collected from the residual water in the tank pit, which also detected concentrations of TPH-DRO (0.51 mg/L) and TPH-GRO (1,030 mg/L). According to available DEQ files regarding correspondence between site management and DEQ personnel, it was determined by the DEQ that excavation of the soil or additional remediation activities were not required.

The previously identified contamination being located downgradient and closed by DEQ, the Company does not anticipate identification of impacted soil and/or groundwater in the immediate area of the Route 1 or Belmont Park Variation A. If previously unidentified contamination is observed during project construction, the Company will follow proper safety and reporting procedures.

Wallace Dale and Ian Residence (PC Number 20223034)

The Wallace Dale and Ian Residence petroleum release site is located approximately 20 feet west of the edge of right-of-way of Route 1 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 Route 1. 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 TPH-DRO, volatile organics ("VOCs"), and semi-volatile organics ("SVOCs"). Concentrations of TPH-diesel range organics (TPH-DRO, 20,700 mg/kg) were detected in the soil. 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 listed as closed in DEQ files in March 2022.

The previously identified contamination being located downgradient and closed by DEQ, the Company does not anticipate identification of impacted soil and/or groundwater in the immediate area of Route 1. However, if previously unidentified contamination is observed during Project construction, the Company will follow proper safety and reporting procedures.

Diesel Tanker TTA – Shine Transportation (IR Number 307343)

The Diesel Tanker TTA – Shine Transportation PREP Report site is located adjacent to Belmont Park Variation A on the right shoulder of the off ramp of Rt. 7-East Bound near the intersection of Rt. 7 and Claiborne Parkway. The incident occurred in November 2022 when a petroleum tanker truck rolled-over off the roadway resulting in the spill of an estimated 300-350 gallons of off-road diesel and 10-20 gallons of on-road diesel. The DEQ issued a Request for Corrective Action while GEC Environmental responded to the accident and conducted a full spill cleanup and excavation of the impacted soil. According to DEQ files, confirmatory soil samples that were collected from the bottom extents of the excavation did not detect concentrations of TPH-DRO. A waste characterization sample was collected from the contaminated soil following excavation and detected concentrations of 459 mg/kg of TPH-DRO. It was confirmed that the spill did not impact any surface waterbody or come into contact with any storm drain inlet. Contamination to groundwater was not reported. Incident closure was granted in February 2023 following the completion of a spill response report by GEC.

Due to the reported extent of contamination, it is not anticipated that soil and/or groundwater is impacted in the immediate area of Route 1 or Belmont Park

Variation A. 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 previous unidentified contamination is observed during project construction, the Company will follow proper safety and reporting procedures.

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 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 federal- 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.

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.

Database queries of the above referenced sources identified multiple federal- 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. Six state-listed species that have not been federally listed were identified by queries as having potential to occur within the study area: the Wood turtle (*Glyptemys insculpta*), Henslow's sparrow (*Ammodramus henslowii*), 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.

According to the VaFWIS query, the state-listed Wood turtle and Green floater have been confirmed as present within a 3.9-mile radius of the geographic center of the study area. Only the Green floater species has the potential to be impacted by Route 1 or any Variation due to the crossing of Goose Creek at approximate MP 0.9 of Route 1. 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 6.2.3 of the Environmental Routing Study.

TABLE G-1
Aspen-Golden 500-230 kV Electric Transmission Project

Potential Federal and State-Listed Species in the Project Area

Species	Status	Database	Habitat	Results [a]
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 Route 1 or any of the Variations.
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 Route 1 or any of the Variations

TABLE G-1
Aspen-Golden 500-230 kV Electric Transmission Project

Potential Federal and State-Listed Species in the Project Area

Species	Status	Database	Habitat	Results [a]
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 3.9-mile radius of study area geographic center. No instream work would be performed; however, shading along streambank would be reduced due to tree clearing. Minimal impacts are anticipated at the intersection of Goose Creek and Route 1.
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 3.9-mile radius of study area geographic center. Route 1 and the Variations do not intersect the area of observation. No impacts are anticipated.
Henslow's sparrow (*Ammodramus henslowii)*	ST	VaFWIS	Open grasslands with few or no woody plants and tall dense grasses and litter layer.	VaFWIS Search Report listed as potentially present. Impacts to grassland habitats will be minimal. 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 Route 1 or any Variation.

TABLE G-1
Aspen-Golden 500-230 kV Electric Transmission Project

Potential Federal and State-Listed Species in the Project Area

Species	Status	Database	Habitat	Results [a]
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

[a] Aspen and Golden Substations, Line #5002 where located on Aspen Substation, and the Line Loop are included in the Route 1 analysis.

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 September 21, 2023, as discussed in detail below (see Attachment 2.G.1).

DCR indicated that two Conservation Sites are present within the study area – Ashburn Quarry Conservation Site and Murray's Ford Conservation Site.

Ashburn Quarry Conservation Site

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 for the Peregrine falcon nests. 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).[11] 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.[12] This Conservation Site is in the western portion of the study area, and the right-of-way of Route 1 spans the Quarry at approximate MP 0.9 for approximately 0.4 acre.

Murray's Ford Conservation Site

Murray's Ford Conservation Site encompasses approximately 35.6 acres of land and has a conservation rating of B2, which represents a site of very high significance. The natural heritage resource associated with this site is the Piedmont Mafic Barren, which consists of small-patch communities of sparse woodlands, scrub, and herbaceous vegetation. The communities can exist up to 3,200 feet in elevation, and most recorded communities are on mafic outcrops, including diabase outcrops. These communities have a high level of vascular plant cover growing among the exposed bedrock and organic soils. These communities are easily destroyed and overrun with invasive weeds by foot traffic near popular trails. This Conservation Site is in the western portion of the study area, and no routes cross the site.

There is one SCU located within the study area known as the Broad Run – Route 607 SCU. The Broad Run-Route 607 SCU has been given a biodiversity ranking of B5, which represents a site of general interest or open space significance. Neither Route 1 nor any of the Variations cross the Broad Run-Route 607 SCU. The natural heritage resource associated with this site is the Yellow lampmussel (*Lampsilis cariosa*). This species is not federally or state-listed; however, it is classified as Tier II in the Virginia Wildlife Action Plan, meaning that there is a very high conservation need for this species. The Yellow lampmussel inhabits the Roanoke, Chowan, James, York, and Potomac drainages and occurs in sand and gravel substrates within larger streams or rivers and in small creeks and ponds. Freshwater mussels depend on good water quality and environments that support host fish species, so the DCR recommends the implementation of and adherence to applicable state/local erosion and sediment control/storm water management laws and regulations.

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

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[11] 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.

[12] 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.

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 the documented resources. A discussion of the DCR-DNH recommendations follows.

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 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 the majority of these species, the Company concludes that DCR-DNH's recommendation for an inventory for rare plants associated with diabase glades in the Project area is not required. 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.[13] However, few electrocution records exist for the Peregrine falcon, and according to the data, Peregrine falcon electrocutions are rare.[14] 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 only Route 1 (and neither of the Route Variations) is

[13] 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.

[14] 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.

nearby suitable habitat for the Peregrine falcon, and furthermore, Route 1 avoids 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 within the Project area.

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 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 Route 1 and the route variations are presented in Table G-2.

Table G-2
Aspen-Golden 500-230 kV Electric Transmission Project

Ecological Cores C4 (Moderate) through C5 (General) Crossed by the Project

Route	Ecological Core Crossed
Route 1[a]	○ C4 – Moderate ▪ Core ID 30885: Route 1 would cross this C4 core between MPs 1.4 and 2.0. 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. Route 1 would bisect the

Table G-2
Aspen-Golden 500-230 kV Electric Transmission Project

Ecological Cores C4 (Moderate) through C5 (General) Crossed by the Project

Route	Ecological Core Crossed
	core, spanning 0.6 mile through this ecological core; however, approximately 0.4 mile of this crossing is through the recently cleared land. o C5 – General ▪ Core ID 31054: Route 1 would cross this C5 core between MPs 0.6 and 0.9. This core is an approximately 64-acre forested and open space area around the convergence of Sycolin Creek with Goose Creek, northwest of the Ashburn Quarry Conservation Site, south of Cochran Mills Road, and on the north side of Goose and Sycolin Creeks. This core is bisected by an existing Dominion Energy Virginia distribution line and further fragmented by approximately 8 acres of a business lot and open field on the northern boundary of the core. Route 1 would bisect it in approximately half. ▪ Core ID 30975: Route 1 would cross this C5 core between MPs 2.1 and 2.5. It is adjacent to and southeast of the intersection of Rt. 7 and Belmont Ridge Road. An unmarked trail intersects the southern portion of the core for approximately 0.3 mile. There is no evidence of clear cutting within this core.
<u>Belmont Park Variations</u>	
Belmont Park Variation A	▪ No ecological cores are crossed by Belmont Park Variation A.
Belmont Park Variation B	▪ No ecological cores are crossed by Belmont Park Variation B.
<u>Broad Run Variations</u>	
Broad Run Variation A	o C5 – General ▪ Core ID 32138: Broad Run Variation B would cross this C5 core between MPs 8.2 and 8.5, along the southwestern boundary of the core, reducing it by approximately 4.1 acres but reducing further fragmentation. The core surrounds a segment of Broad Run and intermittent tributaries to Broad Run, south of Gloucester Parkway, east of Loudoun County Parkway, and west of Pacific Boulevard. The core is bisected by an existing Dominion Energy Virginia transmission line.
Broad Run Variation B	o C5 – General ▪ Core ID 31766: Broad Run Variation B would cross this C5 core between MPs 0.2 and 1.3. This core is a large, forested area (216 acres) surrounding a segment of Broad Run and is adjacent to the western side of Russell Branch Parkway, east of Loudoun County Parkway, and north of Gloucester Parkway. This core is bisected by an access road and an existing Dominion Energy Virginia distribution line. Broad Run Variation B would bisect the western half of the core, creating a new corridor within it. ▪ Core ID 32138: Broad Run Variation B would cross this C5 core between MPs 1.7 and 1.8, along a small segment on the northeastern boundary of the core (approximately 1.3

Table G-2 Aspen-Golden 500-230 kV Electric Transmission Project Ecological Cores C4 (Moderate) through C5 (General) Crossed by the Project	
Route	**Ecological Core Crossed**
	acres) and would not fragment the core. The core is approximately 93 acres of forested area around Broad Run and some intermittent tributaries to Broad Run. It is located south of Gloucester Parkway, east of Loudoun County Parkway, and west of Pacific Boulevard. The core is bisected by an existing Dominion Energy Virginia transmission line.

[a] *Aspen and Golden Substations, Line #5002 where located on Aspen Substation, and the Line Loop are included in the Route 1 analysis.*

Based on a review of recent aerial imagery (2023), all existing ecological cores crossed by Route 1 and the Variations are C4 (Moderate) or C5 (General). Most cores crossed are fragmented by either tree clearing or existing transmission or distribution lines. The selected route will segment portions of the cores crossed; however, it is unlikely the core rank will decrease significantly due to the presence of existing transmission/distribution lines or clearing within the cores.

The Company will work with the appropriate jurisdictional agencies to minimize any impacts on SCUs, ecological cores, and protected species during implementation of the Project.

Bald Eagles

Based on the CCB Virginia Eagle Nest Locator mapping portal, the study area is not located within an Eagle Concentration Area, and neither Route 1 nor any of the Variations 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 is one eagle nest (Nest ID LD1901) within the southern portion of the study area, approximately 1.1 miles southwest of Broad Run Variation A at MP 8.5 and is documented as occupied in 2023. Neither Route 1 nor any of the Variations are within the 660-foot management buffer for the nest. The Company will work with the appropriate jurisdictional agencies to minimize impacts on this species.

Great Blue Heron

Based on local conservation organizations and communications with the Company through the routing process, a large Great blue heron rookery was identified within proximity to the Project area. The Great blue heron (*Ardea herodias*) is a migratory bird species native to North America whose nesting site ("rookery") has been identified near Route 1 and the two Broad Run Variations. The Great blue heron is a wildlife resource in the area because it is protected by 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. According to data provided by the Loudoun Wildlife Conservancy, an existing Great blue heron rookery is located along Broad Run, with the nearest nest approximately 0.2 mile east of Route 1 (MP 6.6), 0.2 mile north of Broad Run Variation B (from MP 0.0 to 0.4) and 0.3 mile northeast of Broad Run Variation A (MP 0.0). While nest surveys have not been formally conducted, the rookery appears to contain approximately 30-40 active nests located within at least three mature American sycamore (*Platanus occidentalis*) trees located on the easternmost bank of Broad Run. The Loudoun Wildlife Conservancy has reported that the rookery has been increasing in the number of nests it contains within recent years.

Since Project activities would require removal of forested habitat within rights-of-way, the Great blue heron rookery is expected to be indirectly impacted by Broad Run Variation B. Mitigation measures to lessen the impacts on the rookery are possible in accordance with DWR guidance and recommendations. Logging and construction are established negative factors that directly and indirectly impact Great blue heron nesting behavior and could lead to nest abandonment. However, Great blue herons may not be sensitive to acute noise disturbances, and there is evidence that the species tolerates repeated mechanical disturbances more so than human foot-traffic. To mitigate these effects, DWR guidance recommends limiting disturbances to periods outside of the breeding season, which occurs from February 15 to July 31, when the species is most vulnerable to human disturbance. DWR further recommends maintaining a 500-foot buffer around the rookery. Broad Run Variation B is approximately 1,180 feet away from the nearest nest within the rookery, and thus complies with all DWR recommendations if work is done outside of the breeding season; however, Broad Run Variation B is approximately 205 feet closer to the nearest nest than Broad Run Variation A is to the nearest nest.

Summary of Impacts

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.

Route 1

Route 1, including Aspen and Golden Substations, Line #5002 where located on Aspen Substation, and the Line Loop, has potential to affect approximately:

- 56.5 acres of forested habitat, which could provide summer habitat for the NLEB and TCB
- Two perennial streams, which could provide habitat for the Wood turtle or Green floater
- 20.4 acres of open land, which could provide habitat for Henslow's sparrow

- 18.6 acres across two ecological cores with a DCR ranking of C4 (Moderate) to C5 (General)

Belmont Park Variations

Belmont Park Variation A has potential to affect approximately:

- 2.3 acres of forested land, which could provide summer habitat for the NLEB and TCB
- 0.8 acre of open land, which could provide habitat for Henslow's sparrow

Belmont Park Variation B has potential to affect approximately:

- 2.4 acres of forested land, which could provide summer habitat for the NLEB and TCB
- 0.9 acre of open land, which could provide habitat for Henslow's sparrow

Broad Run Variations

Broad Run Variation A has potential to affect approximately:

- 9.1 acres of forested land, which could provide summer habitat for the NLEB and TCB
- Two perennial streams, which could provide habitat for the Wood turtle or Green floater
- 12.8 acres of open land, which could provide habitat for Henslow's sparrow
- 4.1 acres across one ecological core with a DCR ranking of C5

Broad Run Variation B has potential to affect approximately:

- 19.5 acres of forested land, which could provide summer habitat for the NLEB and TCB
- Three perennial streams, which could provide habitat for the Wood turtle or Green floater
- 9.3 acres of open land, which could provide habitat for Henslow's sparrow
- 13.1 acres across two ecological cores with DCR rankings of C5

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. Activity within streams would be limited to temporary crossing methods where necessary, with permanent impacts limited to potential

disturbance associated with tree clearing at waterbody crossings and the elimination of riparian buffers at crossing locations, which would be minimized as discussed in Section 2.B. 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.[15]

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 Route 1, the Belmont Park Variations, and the Broad Run Variations 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 6, 2024, is included as Attachment 2.I.1. For each route, 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.

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

- NRHP-eligible and -listed properties, NHLs, battlefields, and historic landscapes within a 0.5-mile radius of each route centerline.

- 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 each centerline. Four locally significant resources were identified within the relevant study tiers for the various route options 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 were identified within the relevant study tiers for the various route options 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 Route 1and the Variations in accordance with the VDHR Guidelines. Digital photographs of each resource and views to 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 and relevant route and variation. 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 Route 1 and the Variations 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 Route 1 or the Variations 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 of Route 1 and the Variations, 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.

Correspondence from Dominion Energy Virginia to VDHR is included in Attachment 2.

Route 1

Ten aboveground historic resources were identified within the VDHR study tiers for Route 1, including the Aspen and Golden Substations, Line #5002 where located on Aspen Substation, and the Line Loop (Table I-1). Construction and operation of the facilities would have no impact on four resources (053-0110, 053-5223, 053-6406, and 253-5182), a minimal impact on three resources (053-0276, 053-0278, and 053-0336), and a moderate impact on three resources (053-0084, 053-0106, and 053-6238). Broad Run Bridge and Toll House (053-0110) is located approximately 0.5 mile to the southeast of Route 1 at MP 6.1 while Nokes House (053-5223) is located 0.8 mile to the northeast of Route 1 at MP 9.0. Tippet's Hill Cemetery (053-6406) is located approximately 0.9 mile to the south of Route 1 at MP 0.1 while the Ball's Bluff Battlefield and National Cemetery Historic District Boundary Increase (253-5182) is located approximately 1.5 miles to the north of Route 1 at MP 2.3. All four resources would not have any visibility towards Route 1 due to intervening vegetation and infrastructure, and distance. Thus, the route would have no impact on 053-0110, 053-5223, 053-6406, and 253-5182.

The Washington and Old Dominion Railroad Historic District (053-0276) is crossed by Route 1 at MP 0.1 (approximately 100 feet to the northeast of the proposed Aspen Substation) and is crossed by the Line Loop immediately south of the proposed Golden Substation. The resource is also located 0.1 mile to the east of the Aspen-Goose Creek Line in an area where the route connects from the proposed Aspen Substation to the existing Goose Creek Substation. The area around Aspen Substation is wooded and contains several existing Dominion Energy Virginia substations. The area around the proposed Golden Substation is partially wooded with commercial development to the south. An existing Dominion Energy Virginia transmission corridor (containing Lines #227 and #274) runs perpendicular to Route 1 near the proposed Aspen Substation, and the same corridor runs parallel to Route 1 and perpendicular to the Line Loop (containing existing Lines #2081 and #2150) near the proposed Golden Substation and along the Company's existing right-of-way. Route 1, the Line Loop, the Aspen-Goose Creek Line, and the proposed Golden and Aspen Substations would be visible from the resource when

in close proximity to the intersection of the resource with Route 1 and the Line Loop, respectively, but not visible otherwise. The Aspen-Goose Creek Line, Aspen Substation, and Golden Substation would be visible from vantage points within the resource only when in close proximity to these Project facilities. Only the cables and one structure of the Aspen-Goose Creek Line would be visible from the resource, as would portions of the Aspen and Golden Substations. Dominion Energy Virginia's existing lines are already conspicuous elements in the district's viewshed, as they share the district's right-of-way throughout the entire length of the resource through the Project study area. Additionally, multiple existing Company substations are visible and directly adjacent to the district. Although the district's historic landscape has been severely altered by comparable infrastructure, because Route 1, the Line Loop, the Aspen-Goose Creek Line, Aspen Substation, and Golden Substation would be visible, it constitutes a change. Thus, ERM recommends that Route 1, the Line Loop, the Aspen-Goose Creek Line, Aspen Substation, and Golden Substation would have a Minimal Impact on 053-0276.

Belmont Chapel and Cemetery (053-0278) is located 0.2 mile to the southeast of Route 1 at MP 2.9. By itself, Route 1 would not be visible from the resource due to distance and vegetation. However, Route 1 connects with both Belmont Park Variations in this area. Thus, both Route 1 and Belmont Park Variation A are analyzed (Belmont Park Variation B, like Belmont Park Variation A, would also be visible, but less obtrusively given that it is routed to the north). Belmont Park Variation A is only visible from the northern edge of the resource, and nowhere else within the cemetery due to screening tree cover. This view towards the route includes an existing overhead utility line, behind a modern residential development. Still, because the Aspen-Golden Lines would be visible and add additional modern elements to the northern viewshed, ERM recommends that there would be a Minimal Impact to this resource from Route 1, primarily because of its connection with both the Belmont Park Variations A and B.

Cooke's Mill (053-0336) is located 276 feet to the west of Route 1 at MP 1.3 and approximately 0.9 mile to the east of the Aspen-Goose Creek Line. There would be no view of the Aspen-Goose Creek Line from any vantage point at 053-0336 because of distance and dense intervening vegetation. However, the Aspen-Goose Creek Line would connect to the proposed Aspen Substation and Route 1. The area between the resource and Route 1 includes one residential property surrounded by dense vegetation consisting of mature trees. Route 1 would only be visible from the eastern portion of the resource through a clearing in the 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 Route 1, the construction of the route would add modern elements to the historic viewshed. However, the majority of the resource would have no view of the route. Thus, ERM recommends there would be a Minimal Impact to the resource from Route 1. The future Twin Creeks Lines is also minimally visible from the eastern portion of the resource, although none of the proposed substations associated with it would be visible from the resource. Only two of the transmission structures and associated conductors of the future Twin Creeks Lines are visible from the resource.

Janelia (053-0084) is located approximately 0.3 mile to the northeast of Route 1 at MP 3.9. The area between the resource and the route contains landscaped open space, Riverside Parkway, and Harry Byrd Highway. Construction of the new transmission line would introduce modern elements (structures and conductors) to the southwest viewshed. The resource would have an unobstructed view of the route when looking south from the southern boundary of the resource due to their close proximity and open land between the resource and the route. However, while this view from the periphery of the resource towards Route 1 is unobstructed, the view from the dwelling itself towards the new transmission line structures would be somewhat obstructed by the trees and other vegetation surrounding the dwelling. A small portion of the transmission line would be visible from the dwelling itself, but greater viewshed effects would be felt within the southernmost corner of the resource boundary, and to a lesser extent along the western portion of the parcel, which also features open lawn. Route 1 would add modern transmission infrastructure (structures and conductors) to a viewshed where it does not currently exist, but where other modern development, such as divided highways and commercial buildings already intrude. However, the scale of the new transmission line in relatively close proximity to the resource would represent a more obtrusive new element within the viewshed. Because the Project would add a highly visible modern element to Janelia's southern and western viewshed, ERM recommends that there would be a Moderate Impact on this resource from Route 1.

Belmont Manor (053-0106) is transected by Route 1 on its northeastern boundary from MP 2.7 to 2.9. The area that is transected consists of predominately open field with sparse tree coverage on the northwest corner. Minimal vegetation, primarily near the northwestern corner of the resource boundary, would be removed for the installation of the new transmission line. The resource would have an unobstructed view of the route when looking north from various parts of the resource due to the open expanse of land. However, modern infrastructure visible to the northwest past proposed Route 1 has already compromised its viewshed. More importantly, the construction of the golf course between November 2011 and October 2012 has significantly altered the landscape viewshed towards the northeast, which was historically undeveloped land. The construction of the new transmission line would be visible from each of the simulation locations and many vantage points across the resource. It would add additional, obtrusive modern infrastructure to the viewshed; however, the setting of the resource has already been compromised by the construction of a golf course and residential development within its boundaries. Although the resource has lost much of its historic setting, the Project would add a more substantial modern element to the northern viewshed. Thus, ERM recommends that there would be a Moderate Impact on this resource from Route 1.

The African American Burial Ground for the Enslaved at Belmont (053-6238) is located 408 feet to the north of Route 1 at MP 2.2. The area between the resource and the route consists of dense woodland to the southwest, south, and southeast. Areas to the west-southwest and east consist of strips of cleared land along the right-of-way for Harry Byrd Highway and Belmont Ridge Road. The Project would only be minimally visible from the southernmost point of the resource, where it is closest to Route 1. This is the extent of the

route visibility from the historic section of the cemetery. All other areas within the cemetery trail and inside the forested area would have no view of Route 1 due to the vegetative buffer, or least no more of a view. However, visitors at the northeastern boundary looking southeast, and from the northernmost point of the boundary looking to the southwest would have unobstructed sight lines to the route due to their locations outside of the historic forested area. Both locations have no vegetative barrier between the resource and the route to block the view. This would only be visible to visitors walking alongside the resource, outside of the cemetery and parallel to Harry Byrd Highway, or as they walk into the cemetery entrance from Belmont Ridge Road. The view 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 transmission line would constitute one more element of modern infrastructure within an altered landscape. Although the historic section of the cemetery has minimal views to the route, the portions of the resource outside of the tree line would have clear line of sight to the route. Thus, ERM recommends that there would be a Moderate Impact on this resource from Route 1.

TABLE I-1
Aspen-Golden 500-230 kV Electric Transmission Project

Resources in VDHR Tiers for Aspen-Golden Lines - Route 1[a]

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	NA	NA	NA
	Locally Significant	053-6406	Tippet's Hill Cemetery	None
		053-5223	Nokes House	None
	Battlefields	NA	NA	NA
	Historic Landscapes	NA	NA	NA
0.0- 0.5	National Register—Listed	053-0084	Janelia/Howard Hughes Research Center	Moderate
		053-0110	Broad Run Bridge and Toll House	None
	National Register—Eligible	053-0278	Belmont Chapel and Cemetery	Minimal
	Locally Significant	053-0336	Cooke's Mill	Minimal
		053-6238	African American Burial Ground for the Enslaved at Belmont	Moderate
0.0 (within right-of-way)	National Register—Listed	053-0106	Belmont Manor	Moderate
	National Register—Eligible	053-0276	Washington & Old Dominion Railroad Historic District	Minimal

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

[a] Aspen and Golden Substations, Line #5002 where located on Aspen Substation, and the Line Loop are included in the Route 1 analysis.

The Stage I Analysis also considered the potential effects to archaeological resources. Four archaeological sites are located within the right-of-way associated with Route 1:

44LD0213, 44LD0579, 44LD0581, and 44LD2010. 44LD0213 and 44LD0579 have been formally determined not eligible for listing in the NRHP while 44LD0581 has been determined potentially eligible for the NRHP and 44LD2010 has not been formally evaluated for the NRHP.

44LD0213 is a Pre-Contact (AD 1500–1606) Native American camp consisting of a surface artifact scatter. The site was originally identified in 1981 during a Phase I survey conducted by William Rust. The site was later revisited in 1997 by William and Mary Center for Archaeological Research (WMCAR) and again in 2005 by Thunderbird Archeology/Wetland Studies & Solutions. The site has been determined not eligible for listing in the NRHP. Approximately 110 feet of Route 1 intersects the site along Harry Byrd Highway. Given the site's proximity to the existing highway shoulder, it is unlikely that any intact cultural remains would be encountered within the Project area.

Site 44LD0579 consists of a farmstead and is interpreted as an early twentieth century domestic occupation that extended into the mid-twentieth century before the property was abandoned. The site was originally surveyed in 1998 by Cultural Resources, Inc. and subsequently surveyed in 2009 by WMCAR and again in 2020 by Thunderbird Archeology, a division of Wetland Studies and Solutions, Inc. Site 44LD0579 has been determined not eligible for listing in the NRHP. Approximately 0.2 mile of Route 1 intersects the site along Harry Byrd Highway. Given the findings of previous survey coverage and the site's proximity to the existing highway shoulder, it is unlikely that any intact cultural remains would be encountered within the Project area.

44LD0581 is a single dwelling farmstead. According to a deed from Ludwell Lee to John Waters, the area consisted of a building on a one-acre parcel since at least 1829. Specific occupants and use of the building are unclear, but it likely served a combined commercial and residential function. It appears to have remained in use until at least 1879, when a deed from Columbus Waters to Mary Ross Stanton notes Charles Keene as occupying the property. The site was originally surveyed in 1998 by Cultural Resources, Inc. and again in 2020 by Thunderbird Archeology, a division of Wetland Studies and Solutions, Inc. At the time of the 2020 survey an unknown portion of the site had been destroyed, but the remaining site area had been recommended potentially eligible for listing on the NRHP. Approximately 377 feet of Route 1 intersects 44LD0581 along Harry Byrd Highway. Given the complexity and history of the site as well as the artifact distribution observed across the site, it is possible intact cultural components could be encountered in the Project area. However, no transmission structures are currently planned within the site boundaries.

Site 44LD2010 is a multicomponent site consisting of a Pre-Contact lithic scatter and single Euro-American dwelling circa 1820 to 1877. The dwelling is situated on a terrace above a dam and lock and opposite the known location of Mavin's Mill (053-0336), which can be seen in a Yardley Taylor map and a 1937 aerial photograph. The site was originally surveyed in 2022 by Thunderbird Archaeology, a division of Wetland Studies and Solutions, Inc. At the time of the 2022 survey, 0-24% of the site had been destroyed. Approximately 104 feet of Route 1 intersects the site. Due to the lack of twentieth century land use impacts and the presence of a potential feature and historic fills identified in the

survey, it was recommended that the site has the potential to yield additional intact subsurface features and information. It has not been formally evaluated for NRHP eligibility. However, no transmission structures would be placed within the site boundaries.

Belmont Park Variations

Belmont Park Variation A

Four aboveground historic resources were identified within the VDHR study tiers for Belmont Park Variation A (Table I-2). The route would have a minimal impact on one resource (053-0278), and a moderate impact on three resources (053-0084, 053-0106, and 053-6238). The Belmont Chapel and Cemetery (053-0278) is located approximately 0.1 mile to the southwest of Belmont Park Variation A at MP 3.2. The area between the resource and the route consists of ramps to access Harry Byrd Highway, an open field, and scattered trees. The surrounding views to the west and south also include modern elements like a grocery store and office building. The view to the northwest from the northwestern point of the resource would include visibility to one structure and its associated conductors, while the view to the north from this same point would be entirely obstructed by a hill. However, the route variation is visible from the northeastern point of the resource. It is important to note that the historic view to the north from this location has already been diminished through the addition of modern residential development. This view is located outside of a group of trees that would screen the view from more significant areas of the resource (notably the cemetery) to the south. Still, Belmont Park Variation A would introduce additional modern elements that would be more prominent within the resource's viewshed, even if the visibility is only from the northern boundary. Thus, ERM recommends that Belmont Park Variation A would have a Minimal Impact to 053-0278.

Janelia/Howard Hughes Research Center (053-0084) is located approximately 0.6 mile to the east-northeast of Belmont Park Variation A at MP 3.5. The area between the resource and the route consists of a high traffic highway, parkway, additional areas associated with Janelia's Research Campus, and Shenandoah University's Northern Virginia Campus. By itself, Belmont Park Variation A would not be visible from the resource due to distance and intervening structures. However, Route 1 connects with Belmont Park Variation A in this area. Thus, both Route 1 and Belmont Park Variation A are analyzed together. The new transmission line structures for Route 1 would be visible from the public right-of-way and from the southern margin of the resource, which consists of open lawn. However, the view towards Belmont Park Variation A from the actual historic dwelling would be obstructed by a line of trees on the southern edge of the property that blocks most of the view to the south. Still, Route 1 would be visible from the dwelling's second story and from the edges of the resource boundary. While the southern viewshed already contains other modern development such as divided highways and commercial buildings, Belmont Park Variation A would introduce new large-scale modern infrastructure that would be prominent in the landscape. Thus, ERM recommends that there would be a Moderate

Impact to this resource from Belmont Park Variation A because of its connection with Route 1.

Belmont Manor's (053-0106) eastern corner is crossed by Belmont Park Variation A at MP 2.9. The surrounding area contains woodlands and large modern residential developments. Parts of these developments extend into Belmont Manor's boundary. Belmont Park Variation A connects to Route 1 in this area. Thus, both Route 1 and Belmont Park Variation A are analyzed together. Route 1 and Belmont Park Variation A would be visible from various locations inside the resource. However, it is important to note that modern infrastructure has already compromised the historic viewshed inside and outside of the resource. This includes a modern residential development and golf course constructed between November 2011 and October 2012, which is located inside of the resource boundary. In addition, modern utility lines are present in the landscape along Harry Byrd Highway, although they are much smaller in scale. All of these changes have significantly compromised the setting of the resource, which was historically undeveloped agricultural land. Furthermore, other than the northern and northeastern views, all other views would remain unchanged. Nevertheless, the construction of Belmont Park Variation A would directly impact the resource and would be visible from multiple points within the resource. Thus, ERM recommends that Belmont Park Variation A would have a Moderate Impact on 053-0106.

The African American Burial Ground for the Enslaved at Belmont (053-6238) is located approximately 0.7 mile to the northwest of Belmont Park Variation A at MP 2.9. The area between the resource and the route consists of dense vegetation and Harry Byrd Highway. Belmont Park Variation A connects to Route 1 in this area. Thus, both Route 1 and Belmont Park Variation A are analyzed together. Although Belmont Park Variation A is not visible from inside the resource itself, there would be minimal visibility towards Route 1 from the southernmost point of the resource, where it is closest to the route. This is the extent of the route visibility from the historic section of the cemetery. All other areas within the cemetery trail and inside the forested area would have no visibility or no more than the visibility. There would be a view of Route 1 and Belmont Park Variation A to visitors walking alongside the resource, outside of the cemetery and parallel to Harry Byrd Highway. This area has more visibility of the route due to its location outside of the historic forested area. Although the historic section of the cemetery has minimal views of Route 1, the portions of the resource outside of the tree line would have clear line of sight to both Route 1 and Belmont Park Variation A. Belmont Park Variation A would introduce modern elements to the southeastern viewshed when outside the tree line along Harry Byrd Highway, but no other locations in the resource boundary have visibility of Belmont Park Variation A. However, it is important to note that Route 1 is visible from inside the historic section of the cemetery regardless of which Belmont Park variation is chosen. It is also worth noting that 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 transmission line would constitute one more element of modern infrastructure within an altered landscape. Thus, ERM recommends that there would be a Moderate Impact on this resource from Belmont Park Variation A, mainly because of its connection to Route 1.

TABLE I-2
Aspen-Golden 500-230 kV Electric Transmission Project

Resources in VDHR Tiers for Aspen-Golden Lines – Belmont Park Variation A

Buffer (miles)	Considered Resources	VDHR #	Description	Impact
1.0-1.5	National Historic Landmarks	NA	NA	NA
0.5-1.0	National Register—Listed	053-0084	Janelia/Howard Hughes Research Center	Moderate
	Locally Significant	053-6238	African American Burial Ground for the Enslaved at Belmont	Moderate
	Battlefields	NA	NA	NA
	Historic Landscapes	NA	NA	NA
0.0- 0.5	National Register—Eligible	053-0278	Belmont Chapel and Cemetery	Minimal
0.0 (within right-of-way)	National Register—Listed	053-0106	Belmont Manor	Moderate

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

The Stage I Analysis also considered the potential effects to archaeological resources. However, no archaeological sites fall within the right-of-way for Belmont Park Variation A.

Belmont Park Variation B

Four aboveground historic resources were identified within the VDHR study tiers for Belmont Park Variation B (Table I-3). The route would have a minimal impact on one resource (053-0278), and a moderate impact on three resources (053-0084, 053-0106, and 053-6238).

The Belmont Chapel and Cemetery (053-0278) is located approximately 0.2 mile to the southwest of Belmont Park Variation B at MP 0.3. The area between the resource and Belmont Park Variation B consists of ramps to access Harry Byrd Highway, as well as the highway itself. The surrounding views to the west and south also include modern elements like a grocery store and office building. The view to the northwest from the northwestern point of the resource would include visibility to one structure and its associated conductors, while the view to the north from this same point would be entirely obstructed by a hill. However, the route variation is visible from the northeastern point of the resource. It is important to note that the historic view to the north from this location has already been diminished through the addition of modern residential development. This view is located outside of a group of trees that would screen the view from more significant areas of the resource (notably the cemetery) to the south. Still, Belmont Park Variation B would introduce additional modern elements that would be more prominent to the resource, even if the visibility is only from the northern boundary. Thus, ERM recommends that Belmont Park Variation B would have a Minimal Impact to 053-0278.

Janelia/Howard Hughes Research Center (053-0084) is located approximately 0.6 mile to the east-northeast of Belmont Park Variation B at MP 0.6. The area between the resource and the route consists of a high traffic highway, parkway, additional areas associated with Janelia's Research Campus, and Shenandoah University's Northern Virginia Campus. By itself, Belmont Park Variation B would not be visible from the resource due to distance and intervening structures. However, Route 1 connects with Belmont Park Variation B in this area. Thus, both Route 1 and Belmont Park Variation B are analyzed. The new transmission line structures for Route 1 would be visible from the public right-of-way from the southern margin of the resource, which consists of open lawn. However, the view towards Belmont Park Variation B from the actual historic dwelling would be obstructed by a line of trees on the southern edge of the property that blocks most of the view to the south. Still, Route 1 would be visible from the dwelling's second story and from the edges of the resource boundary. While the southern viewshed already contains other modern development such as divided highways and commercial buildings, Belmont Park Variation B would introduce new large-scale modern infrastructure that would be prominent in the landscape. Thus, ERM recommends that there would be a Moderate Impact to this resource from Belmont Park Variation B because of its connection with Route 1.

Belmont Manor's (053-0106) northeastern corner is crossed by Belmont Park Variation B at MP 0.0. The surrounding area contains woodlands and large modern residential developments. Parts of these developments extend into Belmont Manor's boundary. Belmont Park Variation B connects to Route 1 in this area. Thus, both Route 1 and Belmont Park Variation B are analyzed together. Route 1 and Belmont Park Variation B would be visible from various locations inside the resource. However, it is important to note that modern infrastructure has already compromised the historic viewshed inside and outside of the resource. This includes a modern residential development and golf course constructed between November 2011 and October 2012, which is located inside of the resource boundary. In addition, modern utility lines are present in the landscape along Harry Byrd Highway, although they are much smaller in scale. All of these have significantly compromised the setting of the resource, which was historically undeveloped agricultural land. Furthermore, other than the northern and northeastern views, all other views would remain unchanged. Nevertheless, the construction of Belmont Park Variation B would directly impact the resource and be visible from multiple points of the resource. Thus, ERM recommends that Belmont Park Variation B would have a Moderate Impact on 053-0106.

The African American Burial Ground for the Enslaved at Belmont (053-6238) is located approximately 0.7 mile to the northwest of Belmont Park Variation B at MP 0.0. The area between the resource and the route consists of dense vegetation and Harry Byrd Highway. Belmont Park Variation B connects to Route 1 on the south side of Harry Byrd Highway southeast of the resource. Thus, both Route 1 and Belmont Park Variation B are analyzed together. Although Belmont Park Variation B is not visible from inside the resource itself, there would be minimal visibility towards Route 1 from the southernmost point of the resource, where it is closest to the route. This is the extent of the route visibility from the historic section of the cemetery. All other areas within the cemetery trail and inside the

forested area would have no visibility or no more than the visibility. There would be a view of Route 1 and Belmont Park Variation B to visitors walking alongside the resource, outside of the cemetery and parallel to Harry Byrd Highway. This area has more visibility of the route due to its location outside of the historic forested area. Although the historic section of the cemetery has minimal views of Route 1, the portions of the resource outside of the tree line would have a clear line of sight of both Route 1 and Belmont Park Variation B. Belmont Park Variation B would introduce modern elements to the southeastern viewshed for viewers outside the tree line by Harry Byrd Highway, but no other locations in the resource boundary have a view of Belmont Park Variation B. However, it is important to note that Route 1 is visible from inside the historic section of the cemetery regardless of the Belmont Park variation chosen. It is also worth noting that 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 transmission line would constitute one more element of modern infrastructure within an altered landscape. Thus, ERM recommends that there would be a Moderate Impact on this resource from Belmont Park Variation B because of its connection to Route 1.

TABLE I-3
Aspen-Golden 500-230 kV Electric Transmission Project

Resources in VDHR Tiers for Aspen-Golden Lines - Belmont Park Variation B

Buffer (miles)	Considered Resources	VDHR #	Description	Impact
1.0-1.5	National Historic Landmarks	NA	NA	NA
	National Register—Listed	053-0084	Janelia/Howard Hughes Research Center	Moderate
0.5-1.0	Locally Significant	053-6238	African American Burial Ground for the Enslaved at Belmont	Moderate
	Battlefields	NA	NA	NA
	Historic Landscapes	NA	NA	NA
0.0- 0.5	National Register—Eligible	053-0278	Belmont Chapel and Cemetery	Minimal
0.0 (within right-of-way)	National Register—Listed	053-0106	Belmont Manor	Moderate

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

The Stage I Analysis also considered the potential effects to archaeological resources. However, no archaeological sites fall within the right-of-way for Belmont Park Variation B.

Broad Run Variations

Broad Run Variation A

Three aboveground historic resources were identified within the VDHR study tiers for the Broad Run Variation A (Table I-4). The route would have no impact on two resources (053-0110 and 053-5223) and a minimal impact on one resource (053-0276).

The Broad Run Bridge and Toll House (053-0110) is located approximately 0.6 mile to the northeast of Broad Run Variation A at MP 6.8 while the Nokes House (053-5223) is located 0.8 mile to the northeast of Broad Run Variation A at MP 8.9. The area between the resources and the route consists of dense vegetation and intervening infrastructure. There would be no view to the route from either resource due to distance and intervening infrastructure and vegetation. Thus, ERM recommends there would be No Impact on these resources from Broad Run Variation A

The Washington and Old Dominion Railroad Historic District (053-0276) is located approximately 20 feet to the southwest of Broad Run Variation A at MP 8.5. The route is directly adjacent to the Company's existing Line #227/274 corridor. The surrounding area is wooded and contains data centers. The majority of the district would have no visibility towards the route; however, the Project area in the closest proximity to the district would likely have some visibility. The portion of Broad Run Variation A in the closest proximity to the district would be visible paralleling the path for a distance of 0.3 mile. In addition, Route 1 would connect to Broad Run Variation A, which would be visible near the proposed Aspen Substation. Still, the Company's existing lines are more prevalent in the district, as they share the district's right-of-way. Although the historic landscape has been severely altered already by the construction of transmission lines and substations, because Broad Run Variation A would likely be visible in a small section of the district, it constitutes a change. Thus, ERM recommends that Broad Run Variation A would have a Minimal Impact on 053-0276.

TABLE I-4
Aspen-Golden 500-230 kV Electric Transmission Project
Resources in VDHR Tiers for Aspen-Golden Lines - Broad Run Variation A

Buffer (miles)	Considered Resources	VDHR #	Description	Impact
1.0-1.5	National Historic Landmarks	NA	NA	NA
0.5-1.0	National Register—Listed	053-0110	Broad Run Bridge and Toll House	None
	Locally Significant	053-5223	Nokes House	None
	Battlefields	NA	NA	NA
	Historic Landscapes	NA	NA	NA
0.0- 0.5	National Register—Eligible	053-0276	Washington & Old Dominion Railroad	Minimal
0.0 (within right-of-way)	NA	NA	NA	NA

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

The Stage I Analysis also considered the potential effects to archaeological resources. Five archaeological sites lie within the new right-of-way associated with Broad Run Variation A: 44LD0110, 44LD0142, 44LD0647, 44LD0649, 44LD0651. Four of the archaeological sites (44LD0110, 44LD0142, 44LD0647, and 44LD0651) have been formally determined not eligible for listing in the NRHP while 44LD0649 has been formally determined eligible for listing in the NRHP.

44LD0110 is a multicomponent artifact scatter dating from the Late Archaic (1201 BCE) to Early Woodland (AD 299) cultural periods. The site was surveyed, along with 44LD0107, in 1979, 1997, and most recently in 2008 by Dutton and Associates. The site has been determined not eligible for listing in the NRHP. Broad Run Variation A intersects 0.2 mile of the site. The overall integrity of the archaeological deposits at the site has likely been disturbed by the construction of the existing building. Given that Broad Run Variation A intersects the site in proximity to the existing building, it is unlikely that any intact cultural remains would be encountered there.

44LD0142 is a prehistoric surface artifact scatter from an unknown cultural period. The site was identified during a 1981 survey conducted by William F. Rust at which time an unknown portion of the site was identified as being destroyed. The site has been determined not eligible for listing in the NRHP. Additionally, the site is located within Broad Run Variation A, with 169 feet of the route running through the center of the site. Given the site's proximity to the existing building and graded road, it is unlikely that cultural remains would be encountered there.

44LD0647 consists of a Euro-American farmstead that dates from 1850 to 1899, and was identified in a surface survey of a plowed field at an unknown date. Approximately 76 feet of Broad Run Variation A intersects the site along Loudoun County Parkway. Based on the Broad Run Variation A's proximity to the existing highway and sidewalk that runs parallel to the Project area, it is unlikely that intact cultural remains would be encountered within the Project area. The site has been determined not eligible for listing on the NRHP.

44LD0649 consists of a Euro-American farmstead that dates from 1850 to 1899, and was identified in a surface survey of a plowed field at an unknown date and again by VDHR in 2001. The site is located across Loudoun County Parkway and within the Loudoun Water building complex. Broad Run Variation A intersects the site for a distance of 334 feet. The site has been determined eligible for listing in the NRHP. However, the integrity of the archaeological deposits in the western portion of the site has likely been disturbed by the construction of the existing utility complex and adjacent highway. Nonetheless, no transmission structures are planned within the site boundary.

Site 44LD0651 consists of a Euro-American farmstead that dates from 1800 to 1849, and was identified in a surface survey of a plowed field in 1999 by Archaeological & Cultural Solutions, Inc. The site has been determined not eligible for listing in the NRHP. Approximately 108 feet of Broad Run Variation A intersects the site. The overall integrity

of the archaeological deposits at the site has likely been disturbed by the construction of the existing highway, adjacent transmission line, and water utility complex.

Broad Run Variation B

Three aboveground historic resources were identified within the VDHR study tiers for the Broad Run Variation B (Table I-5). The route would have no impact on two resources (053-0110 and 053-5223) and a minimal impact on one resource (053-0276).

The Broad Run Bridge and Toll House (053-0110) is located approximately 0.9 mile to the northeast of Broad Run Variation B at MP 0.4 while the Nokes House (053-5223) is located 0.7 mile to the east of Broad Run Variation B at MP 1.7. The area between the resources and the route consists of dense vegetation and intervening infrastructure. There would be no view to the route from either resource due to distance and intervening infrastructure and vegetation. Thus, ERM recommends there would be No Impact on these resources from Broad Run Variation B.

The Washington and Old Dominion Railroad Historic District (053-0276) is located approximately 0.2 mile to the southwest of Broad Run Variation B at MP 2.2 in an area where the route uses a greenfield alignment but is directly adjacent to the Company's existing Lines #227/#274 corridor. The surrounding area is wooded and contains data centers. By itself, Broad Run Variation B would not be visible from the resource due to distance; however, Route 1 connects with Broad Run Variation B in this area, just north of the resource. Thus, both Route 1 and Broad Run Variation B are analyzed. The new transmission line structures for Route 1 and the proposed Golden Substation would be visible from the historic district. Nevertheless, this view towards the route is small in comparison to the resource as a whole. Likewise, the Company's existing transmission Lines (#227/#274) follow the length of the district, making it more in the viewscape than the proposed Project/Broad Run Variation B. This existing line has already introduced modern infrastructure to the resource itself and its historic viewshed. Thus, the addition of the route would constitute a very minor change to the existing view. ERM recommends that there would be a Minimal Impact to this resource from Broad Run Variation B because of its connection with Route 1.

TABLE I-5
Aspen-Golden 500-230 kV Electric Transmission Project

Resources in VDHR Tiers for Aspen-Golden Lines - Broad Run Variation B

Buffer (miles)	Considered Resources	VDHR #	Description	Impact
1.0-1.5	National Historic Landmarks	NA	NA	NA
	National Register—Listed	053-0110	Broad Run Bridge and Toll House	None
0.5-1.0	Locally Significant	053-5223	Nokes House	None
	Battlefields	NA	NA	NA
	Historic Landscapes	NA	NA	NA

0.0- 0.5	National Register—Eligible	053-0276	Washington & Old Dominion Railroad	Minimal
0.0 (within right-of-way)	NA	NA	NA	NA

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

The Stage I Analysis also considered the potential effects to archaeological resources. Five archaeological sites lie within the new right-of-way associated Broad Run Variation B: 44LD0021, 44LD0107, 44LD0109, 44LD0209, and 44LD0650. Three of the sites have been formally determined not eligible for listing in the NRHP (44LD0021, 44LD0107, and 44LD0109) while two are unevaluated (44LD0209 and 44LD0650).

44LD0021 is a multicomponent site that was surveyed in February 1970 and December 1979 by unknown parties, and in July 2022 by Dovetail Cultural Resources Group. It was defined as a multicomponent artifact scatter with Middle Archaic, Early Woodland, Middle Woodland, and Late Woodland components. Broad Run Variation B intersects the defined extent of 44LD0021 for a distance of 0.1 mile. The site has been determined not eligible for listing in the NRHP and was described as destroyed as of the 2022 survey. Given the current nature of the site, it is unlikely that any intact cultural remains would be encountered there.

44LD00107 is a multicomponent site dating from the Early Woodland (1200 BCE) to Late Woodland (AD 1606) cultural periods. The site was surveyed in 1979, 1997, and most recently in 2008 by Dutton and Associates. The site is located in an existing transmission corridor. Broad Run Variation B would intersect the site for a distance of 540 feet. The site has been determined not eligible for listing in the NRHP. The previous survey reports indicate that a portion of the site has been destroyed.

44LD0109 is a prehistoric lithic scatter of an indeterminate cultural period. The site was originally identified in a Phase I survey conducted by William Rust in 1979, and it was later revisited by WMCAR in 1997. The site was determined not eligible for listing on the NRHP. The site has been partially destroyed by the Company's existing BECO Substation to the west and Cyrus One Data Center to the east. Approximately 96 feet of Broad Run Variation B intersects the site. It is likely that the archaeological deposits within the Project area have been destroyed by the construction of the BECO Substation, and it is unlikely intact cultural remains would be encountered there.

Site 44LD0209 is a Pre-Contact temporary encampment. It was originally identified in a survey conducted by William Rust in 1981, and it was later revisited in 1997 by WMCAR. These surveys consisted of surface survey only with no subsurface testing conducted. The site has not been evaluated for NRHP eligibility. The site is in an open space east of an unnamed paved road. Approximately 239 feet of Broad Run Variation B intersects the site. No transmission structures are planned within the site boundary.

44LD0650 is an Early Archaic (8500-6501 BCE) temporary encampment. The site was originally identified during a Phase I surface survey in 2001 by VDHR. No subsurface

testing was conducted, and the site has not been evaluated for NRHP eligibility. The site is in an open space east of an unnamed paved road. Approximately 225 feet of Broad Run Variation B intersects the site. No transmission structures are planned within the site boundary.

J. Chesapeake Bay Preservation Areas

Loudoun County is a locality subject to the Chesapeake Bay Preservation Act, 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 Route 1 and the route variations, including Sycolin Creek, Goose Creek, Broad Run, Beaverdam Run, Russell Branch, Cabin Branch, other unnamed perennial tributaries, and their associated wetlands.

Construction, installation, operation, and maintenance of electric transmission lines are conditionally exempt from the Chesapeake Bay Act as stated in the exemption for public utilities, railroads, public roads and facilities in 9 VAC 25-830-150. 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 this 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, 2023. 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 Project is expected to have minimal, incremental impacts on recreational, agricultural, and forest resources. Opportunities for collocation with the rights-of-way, such as along Cochran Mill Road and the Rt. 7 corridor (Route 1 and Belmont Park Variation A) and Loudoun County Parkway (Broad Run Variation A), were considered where possible as a means of avoiding or minimizing impacts on these resources. Based on the USGS Land Use Land Cover database, no agricultural lands would be crossed by Route 1 or the Variations. If any agricultural lands are crossed, impacts would be limited to potential structure placement and agricultural activities could resume post construction. Where forested areas are crossed, trees would be removed and vegetation kept managed as an open meadow within the right-of-way.

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 Route 1 and the Variations.

The Virginia Scenic Rivers Program identifies and designates outstanding scenic, recreational, and historic waterbodies of statewide significance in order to conserve their natural corridors. Goose Creek has been designated as a State Scenic River within Loudoun County under the Virginia Scenic Rivers System and is crossed by Route 1 at approximate MP 0.9. In order to minimize effects to the resource, Route 1 would cross Goose Creek perpendicularly and not parallel Loudoun County's Scenic Creek Valley Buffers designated along this portion of Goose Creek. Company representatives met with the Goose Creek Scenic River Advisory Committee on February 20, 2024. At the meeting, the Committee asked questions about the Project generally and routing specifically, and requested that tree clearing be minimized within the proposed right-of-way at the Goose Creek crossing. The Committee closed the discussion with a motion acknowledging the need for a crossing—though not supporting the Project—and favoring the proposed alignment as the best option for mitigating impacts to the scenic resource.

A segment of Broad Run, from its confluence with Potomac River to the W&OD Trail, has been identified as being worthy of future study for scenic river designation. Broad Run Variations A and B cross Broad Run at approximate MPs 8.4 and 1.3, respectively. Broad Run Variation A crosses Broad Run adjacent to two existing overhead transmission line

corridors just north of the W&OD Trail. Broad Run Variation B crosses Broad Run 0.2 mile north of Gloucester Parkway near the Loudoun Water Broad Run Water Reclamation Facility parallel to the approved future BECO-DTC 230 kV Line Loop. Both Broad Run Variations cross Broad Run parallel to existing overhead transmission lines which helps mitigate potential impacts to this resource and avoid new, non-collocated crossings.

The Virginia Bird and Wildlife Trail, Foothill to Falls Loop is a trail within the study area that provides access to many parks and natural areas in the Piedmont Region. Wildlife is prevalent in this locally hilly region between the Blue Ridge to the west and the Fall Line to the east. The trail enters the study area on the northwest corner as it parallels Rt. 7. Because of the collocation of Route 1 with Rt.7, the trail also parallels along the north side of Route 1 from approximate MPs 2.4 to 5.8. At approximate MP 2.9, the Belmont Park Variations begin. Because Belmont Park Variation B crosses to the north side of Rt. 7, this variation also crosses the Foothills to Falls Loop twice at approximate MPs 0.1 and 0.6. Belmont Park Variation A parallels the trail for its entire length, but it does not cross the trail.

Under the Virginia Open-Space Land Act, any public body can acquire title or rights to real property to provide means of preservation of open space land. Most easements created under the Act are held by the Virginia Outdoors Foundation, 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 Route 1 or the Variations; however, between MPs 0.8 and 1.0, Route 1 crosses within about 830 to 1,100 feet northeast of a VOF easement adjacent to Goose Creek. Due to the distance and forested buffer between the right-of-way and the easement, the easement is not anticipated to be affected by Route 1.

Route 1 crosses two BOS-dedicated open space easement parcels between MPs 6.0 and 6.5. The parcels encumbered by the BOS easements are privately-owned and the easement dedication is related to open space proffers required by the BOS. The Company will work with Loudoun County to obtain necessary property rights based on prior commitments from the County Attorney and Administration staff.

Route 1 and Belmont Park Variations A and B cross the BOS-dedicated Belmont Viewshed easement between MPs 2.6 and 3.0. This crossing is immediately adjacent to Rt. 7 over open land adjacent to the highway and Belmont County Club driving range. New utility infrastructure is not a restricted use per the terms of the easement agreement.

Belmont Park Variation B crosses portions of the BOS-dedicated Lansdowne Scenic Easement which is located along the north side of Rt. 7. Due to the poor quality of the publicly available easement exhibit, it is difficult to determine the boundary of the easement; however, it is assumed Belmont Park Variation B crosses the easement in any location outside of Virginia Department of Transportation ("VDOT") right-of-way. New utility infrastructure is not a restricted use per the terms of the easement agreement.

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 work. The Project is expected to have minimal impacts on forest resources.

On February 6, 2024, the Company solicited DCR, VOF and Virginia Department of Forestry for comments on the proposed Projects. That same day, the VOF responded to the Company and indicated 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 Route 1, the Belmont Park Variations, and the Broad Run Variations are discussed below. An assessment of impacts on these resources is provided in the Environmental Routing Study.

Route 1

Route 1 crosses the W&OD Trail at approximate MP 0.1, Goose Creek State Scenic River at approximate MP 0.9, and parallels the W&OD Trail at between approximate MPs 0.0 and 0.2 of the 230 kV lines before entering Golden Substation.

Route 1 crosses BOS-dedicated open space easements between approximate MPs 6.0 and 6.5.

The Aspen-Goose Creek Line, the impacts of which are included with Route 1, does not cross any recreational resources.

The Line Loop, the impacts of which are included with Route 1, begins just south of the W&OD Trail and crosses the trail before entering the proposed Golden Substation.

The proposed Aspen and Golden Substations, the impacts of which are included with Route 1, are both located adjacent to the W&OD Trail.

NRCS soils data indicates approximately 25.3 acres are classified as prime farmland and 50.5 acres are classified as farmland of statewide importance, and approximately 56.5 acres of forested lands are crossed.

Belmont Park Variations

Belmont Park Variation A

No recreational resources are crossed by Belmont Park Variation A.

NRCS soils data indicates approximately 6.5 acres of the Belmont Park Variation A right-of-way are classified as prime farmland and no acres are classified as farmland of statewide importance. Belmont Park Variation A crosses approximately 2.3 acres of forested lands.

Belmont Park Variation B

Belmont Park Variation B crosses a segment of DWR birding trail located between MPs 0.0 and 0.1 and at approximate MP 0.6. This is part of the Foothill to Falls Loop, which follows Rt. 7 through Loudoun County. There is no pedestrian trail component associated with this section of the loop; the highway is the trail.

NRCS soils data indicates approximately 2.4 acres of the Belmont Park Variation B right-of-way are classified as prime farmland and no acres are classified as farmland of statewide importance. Belmont Park Variation B crosses approximately 2.4 acres of forested lands.

Broad Run Variations

Broad Run Variation A

No recreational resources or easements are crossed by Broad Variation Run A.

NRCS soils data indicates approximately 22.9 acres of the Broad Run Variation A right-of-way are classified as prime farmland and 4.1 acres are classified as farmland of statewide importance. Broad Run Variation A crosses approximately 9.1 acres of forested lands.

Broad Run Variation B

No recreational resources are crossed by Broad Run Variation B.

Broad Run Variation B crosses a BOS-dedicated open space easement between approximate MPs 1.3 and 1.8.

NRCS soils data indicates approximately 14.6 acres of the Broad Run Variation B right-of-way are classified as prime farmland and 1.2 acres are classified as farmland of statewide importance. Broad Run Variation B crosses approximately 19.5 acres of forested lands.

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.[16]

N. Geology and Mineral Resources

Route 1 (including Aspen and Golden Substations, Line #5002 where located on Aspen Substation, the Line Loop) and the Variations are located within the Piedmont geologic province, which is characterized by strongly weathered bedrock due to the humid climate, thick soils overlying saprolite (weathered bedrock), and rolling topography that becomes more rugged to the west near the Blue Ridge mountains. In general, the Piedmont province consists of several complex geologic terranes where faults separate rock units with differing igneous and metamorphic histories. Based on review of the Geologic Map of

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[16] *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)*.

Virginia, the Project area is located within a basin that formed as the Atlantic Ocean began opening during the early Mesozoic Era. Within this Mesozoic-age basin, the bedrock underlying the Project area comprises Triassic-age sandstones, shales, and siltstones that were deposited between approximately 225 and 190 million years ago and were subsequently intruded by fine-grained, dark-colored igneous dikes.

ERM reviewed publicly available Virginia Energy datasets (2023), 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 0.3 mile of Route 1. The closest active permitted mining site, the Goose Creek Plant site, is located on Luck Lane near Goose Creek, approximately 300 feet north of Route 1 MP 0.4. The closest mineral occurrence is a diabase prospect belonging to Quarry A (Milestone Reservoir), an abandoned quarry located approximately 150 feet southwest of Route 1 MP 1.0. According to Loudoun Water, adjacent to this quarry is an area commonly referred to as the Goose Creek Dike which contains a zone of potential embankment with slope stability issues located approximately 150 feet south of Route 1 (MP 0.9). This zone received a factor of safety (FS) rating below the Corps Levee Design requirement for long-term stability of 1.5 (Arcadis 2022). Route 1 intentionally bypasses Goose Creek Dike and places structures near the tops of the bluffs on either side of Goose Creek. By placing structures at high points, the conductors can safely span over Goose Creek and the adjacent steep banks where the Company would work to minimize vegetation and tree clearing within and adjacent to the right-of-way near the dike. If clearances are sufficient, minimizing vegetation clearing will help avoid exacerbating slope stability issues near the dike.

O. Transportation Infrastructure

Road and Railroad Crossings

No railroads are crossed by Route 1 (including Line #5002 and the Line Loop) or the Variations.

Route 1

Route 1 runs adjacent to Cochran Mill Road for approximately 0.4 mile and adjacent to Rt. 7 for approximately 2.9 miles between Belmont Ridge Road and Russell Branch Parkway and crosses the following nine roads:

- Samuels Mill Court
- Cochran Mill Road
- Goose Glen Lane
- Belmont Ridge Road
- Freedom Trail Road

- Ashburn Village Boulevard
- Loudoun County Parkway
- Russell Branch Parkway
- Pacific Boulevard

In addition to the nine road crossings, there are two planned road extensions identified in the Loudoun 2019 Countywide Transportation Roadway Plan: Gloucester Parkway and Russell Branch Parkway. Route 1 would cross the new extension of Gloucester Parkway once and the extension of Russell Branch Parkway three times.

Belmont Park Variations

Belmont Park Variation A

Belmont Park Variation A runs adjacent to Rt. 7 for 0.6 mile and crosses Claiborne Parkway on the south side of Rt. 7.

Belmont Park Variation B

Belmont Park Variation B runs adjacent to Rt. 7 for 0.4 mile and crosses two roads: Rt. 7 (twice) and Lansdowne Boulevard on the north side of Rt. 7.

Broad Run Variations

Broad Run Variation A

Broad Run Variation A parallels the east side of Loudoun County Parkway for approximately 1.2 miles and crosses five roads:

- Reuse Lane
- Aquiary Way
- Gloucester Parkway
- Coach Gibbs Drive
- Pacific Boulevard

Broad Run Variation B

Broad Run Variation B crosses two roads: Gloucester Parkway and Pacific Boulevard.

Temporary closures of roads and or traffic lanes would be required during construction of the Project. No long-term impacts on roads are anticipated. The Company will comply with the 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 the planned roads and proposed transmission facilities can co-exist.

On February 6, 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.

The Company 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 of the Project routes.

It was determined there are 11 airports, private airstrips, or heliports located within 10.0 nautical miles of the Project. Of those 11 facilities identified, nine are private and two are public use. The Leesburg Executive Airport (1.1 nm to the west) and Dulles International Airport (2.8 nm to the south) are public facilities, and are in close enough proximity to potentially impact navigable airspace. The Company 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. The Company hired ERM to conduct the review. 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 it was determined there would be no potential for penetration into any of the imaginary surfaces associated with either the Leesburg Executive Airport or the Dulles International Airport, and thus there would be no impacts to navigable airspace from the proposed Project.

In addition to evaluating impacts to public airports and heliports as required by the FAA and described above, the Company also reviewed potential impacts to non-FAA regulated private airports and helipads near the Project. The regulations that govern objects that may affect navigable airspace are codified in the Code of Federal Regulations, Title 14, Part 77. In these regulations it states that restrictions to structure heights only apply to public use airports and do not apply to privately owned airports or heliports that do not have at least one FAA-approved instrument procedure. While it is not granted the same height restrictions as a public-use heliport, the Inova Loudoun Hospital helipad is located approximately 0.2 nm north of the Belmont Park B Variation, and approximately 0.3 nm south of the Belmont Park A Variation.

The Company had a virtual meeting with representatives of Inova Loudoun Hospital on July 25, 2023, and discussed potential impacts to air navigation. They stated they would

contact the Company if they had any concerns to air navigation based on the proximity of the Project. A follow-up meeting with Inova Loudoun Hospital occurred on January 29, 2024, to discuss specific structure heights of the route variations. Inova Loudoun Hospital responded in an email to the Company on February 15, 2024, stating that the Belmont Park Variation B could affect helicopter navigation and therefore potentially impact hospital operations. However, the Belmont Park Variation A would not affect helicopter navigation or hospital operations but requested that the Belmont Park Variation A be appropriately marked. While the use of obstruction markings would not be required by the FAA, the Company will continue to coordinate with Inova Loudoun Hospital and intends to add obstruction markings to portions of the Belmont Park Variations that would comply with FAA standards.

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 6, 2024, the Company solicited comments from the Virginia Department of Aviation (the "DOAv") and the Metropolitan Washing Airports Authority ("MWAA") on the proposed Project. DOAv responded on February 6, 2024, indicating that the proposed Project appears to be located within 20,000 linear feet of the both the Dulles International Airport and the Leesburg Executive Airport, requiring the Company to submit a 7460 for to the FAA so they may conduct an airspace study to determine if the proposed Project will constitute a hazard to air navigation. Provided a "Determination of No Hazard" is issued by the FAA, the Department would not object to the project as it has been presented in your July 1, 2022 email. This response is included as Attachment 2.O.1. MWAA responded on February 27, 2024, indicating that the airspace analysis of the proposed Project did not present any problems. This response is included as Attachment 2.O.2.

P. Drinking Water Wells

In response to an agency letter sent on February 6, 2024, Dominion Energy Virginia received an email from the Virginia Department of Health ("VDH"), Office of Drinking Water ("ODW") dated February 15, 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. VDH-ODW recommended that water wells within a 1,000-foot radius from the Project site should be field marked and protected from accidental damage during construction.

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 the 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 6, 2024

RE: Dominion Energy Virginia's Proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation in Loudoun County, Virginia.

Dear Ms. Henicheck:

Dominion Energy Virginia (the "Company") is proposing to construct a new 500-230 kV substation (the "Aspen Substation"), a new overhead 500 kV single circuit transmission line that connects the proposed Aspen Substation to the existing Goose Creek Substation ("Aspen-Goose Creek Line"), a new overhead 500 kV single circuit transmission line and a new 230 kV single circuit transmission line (the "Aspen-Golden Lines"), and a new 500-230 kV substation (the "Golden Substation"), in Loudoun County, Virginia (collectively, the "Project").

The Project is needed to maintain and improve electric service to customers in the eastern Loudoun load area ("Eastern Loudoun Load Area"); to address significant load growth in the Eastern Loudoun Load Area; and to resolve identified North American Electric Reliability Corporation reliability violations.

The Company is 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.

A wetland delineation has not been conducted by the Company at this time. Environmental Resources Management ("ERM") conducted a wetland desktop study to identify probable wetlands based on a review of multiple data sources.[1] The table below provides a summary of the medium to high probability wetlands expected to be present within the proposed Aspen-Golden Lines right-of-way.[2]

In addition to the wetland desktop delineation method, the Company incorporated several existing field delineations into the Wetland Desktop Study. The Company identified previous field delineations which had been completed by external parties (developers and landowners) in association with unrelated development projects at various points along Route 1 and the route variations. When available, previous field delineations were used in lieu of the desktop method and incorporated into the wetland and waterbody probability table below.

[1] Note that ERM's wetland desktop study only identified the probability of wetlands and waterbodies newly impacted by the Project. To the extent there are any impacts resulting from construction of the 0.2-mile Aspen-Goose Creek Line, such impacts already were mitigated during permitting of the Goose Creek Substation expansion and the Lines #558/#2180/right-of-way transmission corridor, on which the proposed line is located, and therefore are not included in Table 1. Where the Aspen-Goose Creek Line is located within the Company's proposed Aspen Substation, any such impacts are included with Route 1 in Table 1, as Route 1 impacts are inclusive of the proposed Aspen and Golden Substations.

[2] As shown on the attached Project Overview Map, all four Aspen-Golden Lines route alternatives are comprised of a combination of three segments—Route 1 plus a Belmont Park Variation (A or B) plus a Broad Run Variation (A or B)—which, when combined, result in Route 1AA (Route 1 + Belmont Park Variation A + Broad Run Variation A), Route 1AB (Route 1 + Belmont Park Variation A + Broad Run Variation B), Route 1BA (Route 1 + Belmont Park Variation B + Broad Run Variation A), and Route 1BB (Route 1 + Belmont Park Variation B + Broad Run Variation B) for the Aspen Golden Lines. Accordingly, for comparison purposes, Table 1 provides the impacts of Route 1 (which is the same for all four route alternatives), the impacts of Belmont Park Variations A and B, and the impacts of Broad Run Variations A and B.

Table 1: Summary of the Probabilities of Wetland and Waterbody Occurrence along the Aspen-Golden Lines [a, b]

Probability	Total within right-of-way Acres [b]	Wetland and Waterbody type (acres)				
		PEM (Emergent)	PFO (Forested)	PSS (Scrub-shrub)	PUB (Freshwater pond)	Riverine (Stream)
Route 1 [c]						
High	1.8	0.7	1.0	0.0	0.0	0.1
Medium/High	8.2	3.2	3.6	0.0	0.6	0.8
Medium	6.5	1.0	1.9	1.5	1.6	0.4
Belmont Park Variations						
Belmont A						
High	NA	NA	NA	NA	NA	NA
Medium/High	0.4	0.0	0.4	NA	NA	NA
Medium	0.4	0.1	0.2	NA	NA	NA
Belmont B						
High	NA	NA	NA	NA	NA	NA
Medium/High	1.9	0.6	1.4	NA	NA	NA
Medium	0.6	0.2	0.4	NA	NA	NA
Broad Run Variations						
Broad Run A						
High	0.4	NA	0.3	NA	NA	0.0
Medium/High	2.6	0.6	1.7	NA	NA	0.3
Medium	3.7	0.4	3.2	NA	0.0	0.0
Broad Run B						
High	2.3	0.0	2.2	NA	NA	0.0
Medium/High	7.4	1.8	5.2	NA	0.0	0.4
Medium	4.2	0.9	2.8	NA	0.4	0.0

NA *Not applicable due to absence of wetland or waterbody type within the route segment.*
a *The numbers in this table have been rounded for presentation purposes; as a result, the totals may not reflect the sum of the addends.*
b *Total acres may not total the sum of wetland and waterbody types. 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 *Wetlands and waterbodies within the proposed Aspen and Golden Substation footprints are included within Route 1.*

The full Wetland Desktop Study will be submitted once finalized. Subsequently, a wetland delineation will be conducted and the limits 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 the Commission filing, 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 route alternatives for the Aspen-Golden Lines and for the Aspen-Goose Creek Line, as well as the general Project location. All final materials, including maps, will be available in the Company's application filing to the Commission.

Finally, attached is a GIS shapefile of the transmission line routes to assist in the project review. Please do not hesitate to contact James Young at (804) 750-6406 or james.p.young@dominionenergy.com and Rachel Studebaker at (804) 217-1847 or rachel.m.studebaker@dominionenergy.com if you have any additional questions.

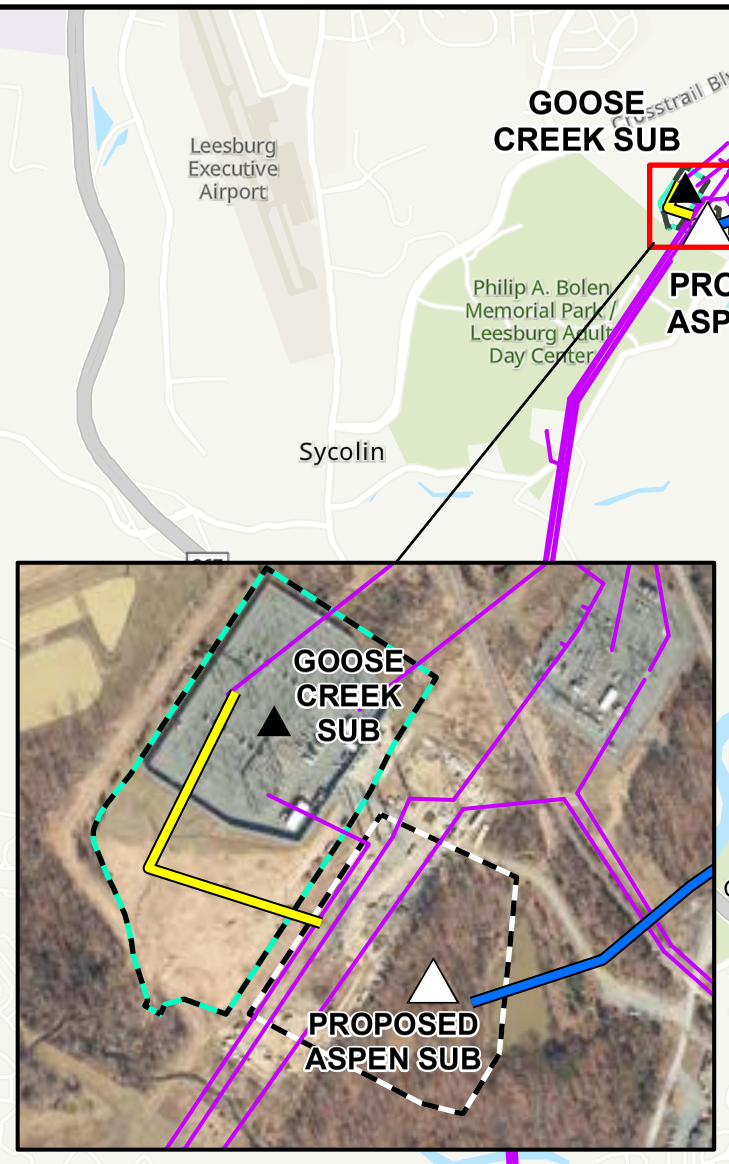
We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

Sincerely,

Dominion Energy Virginia

Elizabeth “Tibby” L. Hester
Manager, Environmental and Sustainability

Attachments: Project Overview Map
GIS Shapefiles



SCC Filing Noticed Routes:

Aspen-Golden Lines

- Route 1AA (Route 1, Belmont Park A, Broad Run A)
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- Route 1BA (Route 1, Belmont Park B, Broad Run A)
- Route 1BB (Route 1, Belmont Park B, Broad Run B)

Aspen-Goose Creek Line

This information is for environmental review purposes only.

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Miles

- Existing Substation
- Proposed Substation
- Existing Dominion Transmission Lines
- Route 1
- Belmont Park Variation A
- Belmont Park Variation B
- Broad Run Variation A
- Broad Run Variation B
- Aspen-Goose Creek Line
- Proposed Aspen Substation Footprint
- Existing Goose Creek Substation Footprint

ERM

Project Overview Map

Aspen-Golden 500-230 kV Electric Transmission Project

Dominion Energy Virginia

Loudoun County, Virginia

Dominion Energy

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

February 6, 2024

RE: Dominion Energy Virginia's Proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation in Loudoun County, Virginia.

To Whom It May Concern:

Dominion Energy Virginia (the "Company") is proposing to construct a new 500-230 kV substation (the "Aspen Substation"), a new overhead 500 kV single circuit transmission line that connects the proposed Aspen Substation to the existing Goose Creek Substation ("Aspen-Goose Creek Line"), a new overhead 500 kV single circuit transmission line and a new 230 kV single circuit transmission line (the "Aspen-Golden Lines"), and a new 500-230 kV substation (the "Golden Substation"), in Loudoun County, Virginia (collectively, the "Project").

The Project is needed to maintain and improve electric service to customers in the eastern Loudoun load area ("Eastern Loudoun Load Area"); to address significant load growth in the Eastern Loudoun Load Area; and to resolve identified North American Electric Reliability Corporation reliability violations.

The Company is 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 route alternatives for the Aspen-Golden Lines and for the Aspen-Goose Creek Line, as well as the general Project location. All final materials, including maps, will be available in the Company's application filing to the Commission.

Finally, attached is a GIS shapefile of the transmission line routes to assist in the project review. Please do not hesitate to contact James Young at (804) 750-6406 or james.p.young@dominionenergy.com and Rachel Studebaker at (804) 217-1847 or Rachel.m.studebaker@dominionenergy.com if you have any additional questions.

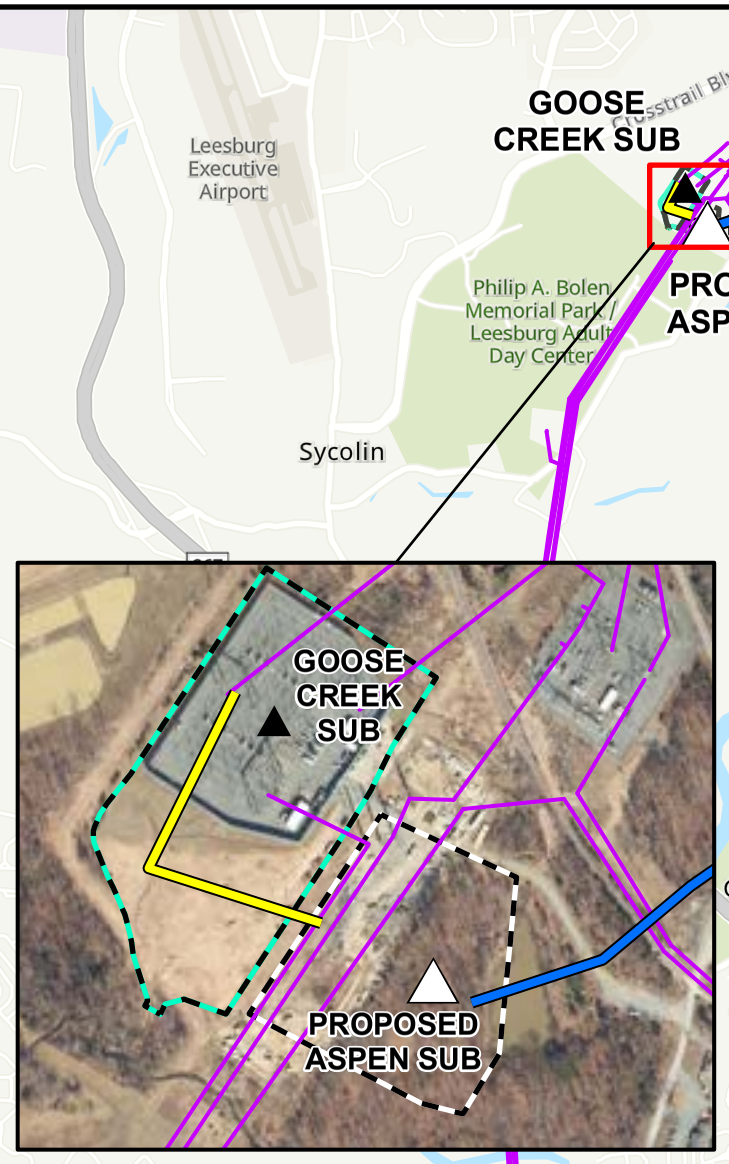
We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

Sincerely,

Dominion Energy Virginia

Elizabeth "Tibby" L. Hester
Manager, Environmental and Sustainability

Attachments: Project Overview Map
GIS Shapefiles



SCC Filing Noticed Routes:

Aspen-Golden Lines

- Route 1AA (Route 1, Belmont Park A, Broad Run A)
- Route 1AB (Route 1, Belmont Park A, Broad Run B)
- Route 1BA (Route 1, Belmont Park B, Broad Run A)
- Route 1BB (Route 1, Belmont Park B, Broad Run B)

Aspen-Goose Creek Line

This information is for environmental review purposes only.

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Miles

- Existing Substation
- Proposed Substation
- Existing Dominion Transmission Lines
- Route 1
- Belmont Park Variation A
- Belmont Park Variation B
- Broad Run Variation A
- Broad Run Variation B
- Aspen-Goose Creek Line
- Proposed Aspen Substation Footprint
- Existing Goose Creek Substation Footprint

Project Overview Map

Aspen-Golden 500-230 kV Electric Transmission Project

Dominion Energy Virginia

Loudoun County, Virginia

ERM

Dominion Energy

Dominion Energy Virginia
5000 Dominion Boulevard, 3rd Floor SW
Glen Allen, VA 23060

February 6, 2024

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

RE: Dominion Energy Virginia's Proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation in Loudoun County, Virginia.

Dear Mr. Kirchen,

Dominion Energy Virginia (the "Company") is proposing to construct a new 500-230 kV substation (the "Aspen Substation"), a new overhead 500 kV single circuit transmission line that connects the proposed Aspen Substation to the existing Goose Creek Substation ("Aspen-Goose Creek Line"), a new overhead 500 kV single circuit transmission line and a new 230 kV single circuit transmission line (the "Aspen-Golden Lines"), and a new 500-230 kV substation (the "Golden Substation"), in Loudoun County, Virginia (collectively, the "Project").

The Project is needed to maintain and improve electric service to customers in the eastern Loudoun load area ("Eastern Loudoun Load Area"); to address significant load growth in the Eastern Loudoun Load Area; and to resolve identified North American Electric Reliability Corporation reliability violations.

The Company is in 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.

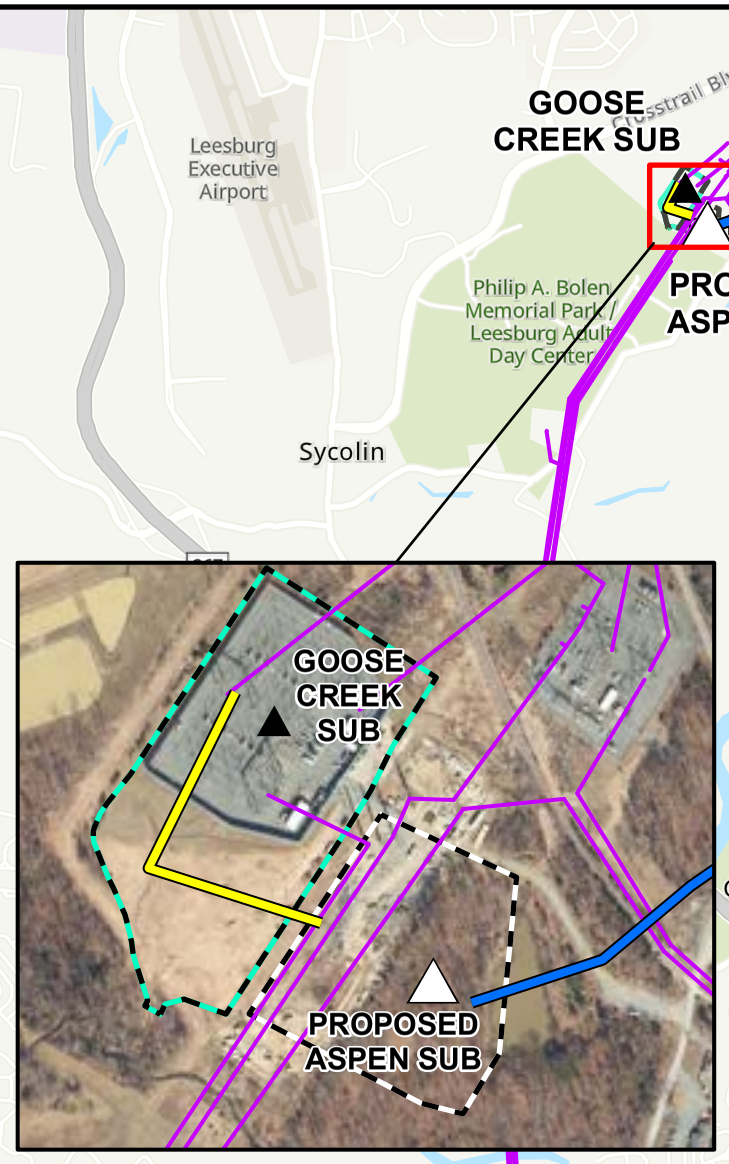
Enclosed is a Project Overview Map depicting the route alternatives for the Aspen-Golden Lines and for the Aspen-Goose Creek Line, as well as the general Project location. All final materials, including maps, will be available in the Company's application filing to the Commission.

If you would like to receive a GIS shapefile of the transmission line routes to assist in the project review or if there are any questions, please do not hesitate to contact Laura Meadows at (804) 239-8246 or laura.p.meadows@dominionenergy.com. We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

Regards,

Laura Meadows
Supervisor, Electric Transmission Siting and Permitting

Attachment: Project Overview Map



SCC Filing Noticed Routes:

Aspen-Golden Lines

- Route 1AA (Route 1, Belmont Park A, Broad Run A)
- Route 1AB (Route 1, Belmont Park A, Broad Run B)
- Route 1BA (Route 1, Belmont Park B, Broad Run A)
- Route 1BB (Route 1, Belmont Park B, Broad Run B)

Aspen-Goose Creek Line

This information is for environmental review purposes only.

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Miles

- Existing Substation
- Proposed Substation
- Existing Dominion Transmission Lines
- Route 1
- Belmont Park Variation A
- Belmont Park Variation B
- Broad Run Variation A
- Broad Run Variation B
- Aspen-Goose Creek Line
- Proposed Aspen Substation Footprint
- Existing Goose Creek Substation Footprint

ERM

Project Overview Map

Aspen-Golden 500-230 kV Electric Transmission Project

Dominion Energy Virginia

Loudoun County, Virginia

Dominion Energy

Dominion Energy Virginia
5000 Dominion Boulevard, 3rd Floor SW
Glen Allen, VA 23060

February 6, 2024

Mr. Sunil Rabindranath
Project Manager, Engineering Division
Metropolitan Washington Airports Authority
P.O. Box 17045, MA-224
Washington, DC 20041

RE: Dominion Energy Virginia's Proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation in Loudoun County, Virginia.

Dear Mr. Rabindranath,

Dominion Energy Virginia (the "Company") is proposing to construct a new 500-230 kV substation (the "Aspen Substation"), a new overhead 500 kV single circuit transmission line that connects the proposed Aspen Substation to the existing Goose Creek Substation ("Aspen-Goose Creek Line"), a new overhead 500 kV single circuit transmission line and a new 230 kV single circuit transmission line (the "Aspen-Golden Lines"), and a new 500-230 kV substation (the "Golden Substation"), in Loudoun County, Virginia (collectively, the "Project").

The Project is needed to maintain and improve electric service to customers in the eastern Loudoun load area ("Eastern Loudoun Load Area"); to address significant load growth in the Eastern Loudoun Load Area; and to resolve identified North American Electric Reliability Corporation reliability violations.

The Company is in 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 route alternatives for the Aspen-Golden Lines and for the Aspen-Goose Creek Line, as well as the general Project location. All final materials, including maps, will be available in the Company's application filing to the Commission.

If you would like to receive a GIS shapefile of the transmission line routes to assist in the project review or if there are any questions, please do not hesitate to contact Laura Meadows at (804) 239-8246 or laura.p.meadows@dominionenergy.com. We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

Regards,

Laura Meadows
Supervisor, Electric Transmission Siting and Permitting

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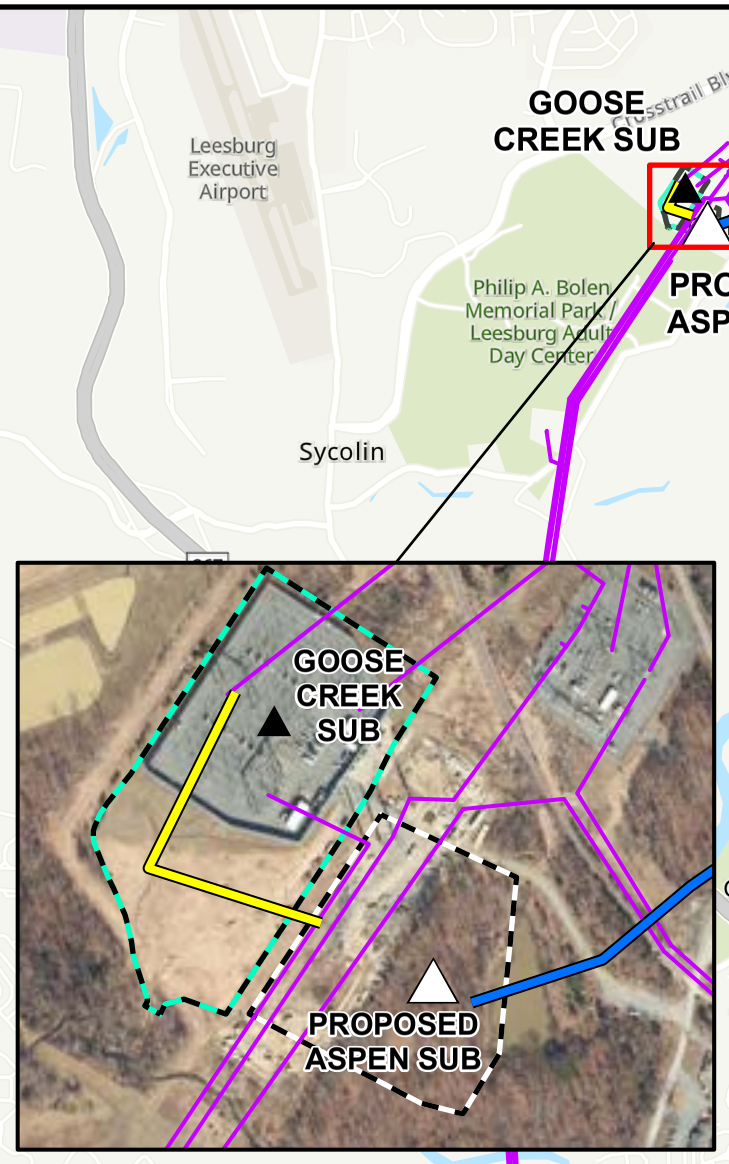

SCC Filing Noticed Routes:

Aspen-Golden Lines

- Route 1AA (Route 1, Belmont Park A, Broad Run A)
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Aspen-Goose Creek Line

This information is for environmental review purposes only.

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Miles

- Existing Substation
- Proposed Substation
- Existing Dominion Transmission Lines
- Route 1
- Belmont Park Variation A
- Belmont Park Variation B
- Broad Run Variation A
- Broad Run Variation B
- Aspen-Goose Creek Line
- Proposed Aspen Substation Footprint
- Existing Goose Creek Substation Footprint

Project Overview Map

Aspen-Golden 500-230 kV Electric Transmission Project

Dominion Energy Virginia

Loudoun County, Virginia

ERM

Dominion Energy

Dominion Energy Virginia
5000 Dominion Boulevard, 3rd Floor SW
Glen Allen, VA 23060

February 6, 2024

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

RE: Dominion Energy Virginia's Proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation in Loudoun County, Virginia.

Dear Mr. Denny,

Dominion Energy Virginia (the "Company") is proposing to construct a new 500-230 kV substation (the "Aspen Substation"), a new overhead 500 kV single circuit transmission line that connects the proposed Aspen Substation to the existing Goose Creek Substation ("Aspen-Goose Creek Line"), a new overhead 500 kV single circuit transmission line and a new 230 kV single circuit transmission line (the "Aspen-Golden Lines"), and a new 500-230 kV substation (the "Golden Substation"), in Loudoun County, Virginia (collectively, the "Project").

The Project is needed to maintain and improve electric service to customers in the eastern Loudoun load area ("Eastern Loudoun Load Area"); to address significant load growth in the Eastern Loudoun Load Area; and to resolve identified North American Electric Reliability Corporation reliability violations.

The Company is in 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 route alternatives for the Aspen-Golden Lines and for the Aspen-Goose Creek Line, as well as the general Project location. All final materials, including maps, will be available in the Company's application filing to the Commission.

If you would like to receive a GIS shapefile of the transmission line routes to assist in the project review or if there are any questions, please do not hesitate to contact Laura Meadows at (804) 239-8246 or laura.p.meadows@dominionenergy.com. We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

Regards,

Laura Meadows

Laura Meadows
Supervisor, Electric Transmission Siting and Permitting

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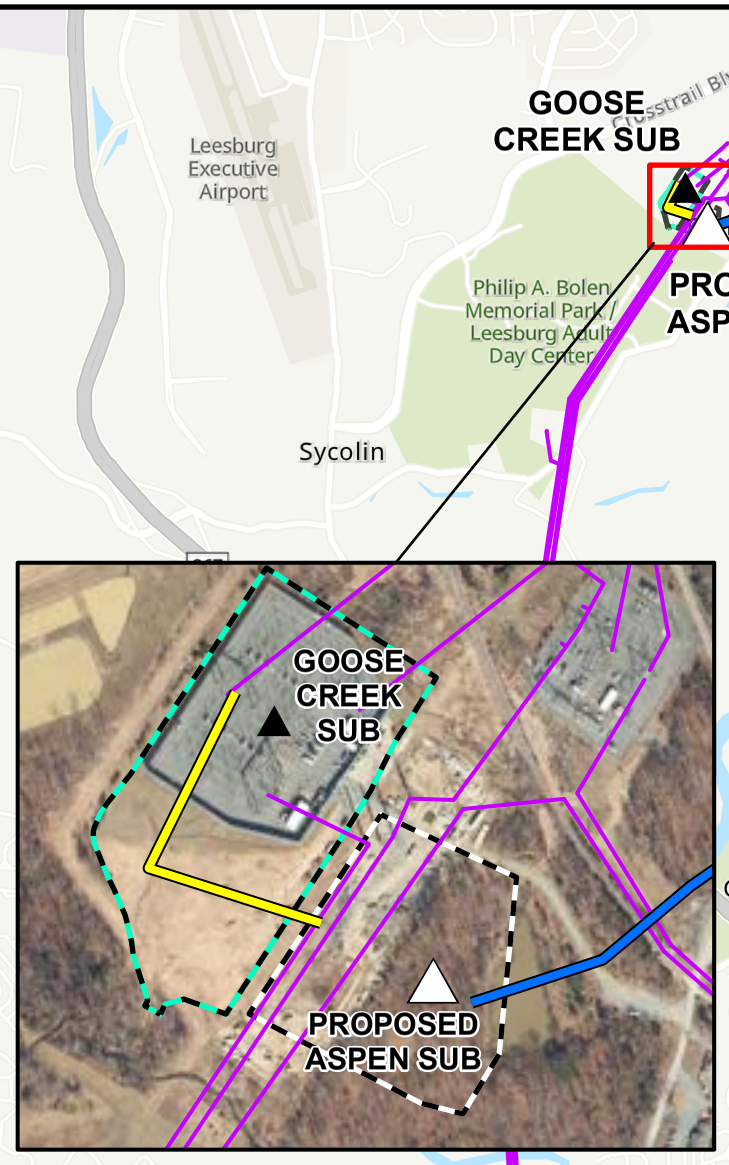

SCC Filing Noticed Routes:

Aspen-Golden Lines

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- Route 1BB (Route 1, Belmont Park B, Broad Run B)

Aspen-Goose Creek Line

This information is for environmental review purposes only.

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Miles

- Existing Substation
- Proposed Substation
- Existing Dominion Transmission Lines
- Route 1
- Belmont Park Variation A
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- Aspen-Goose Creek Line
- Proposed Aspen Substation Footprint
- Existing Goose Creek Substation Footprint

Project Overview Map

Aspen-Golden 500-230 kV Electric Transmission Project

Dominion Energy Virginia

Loudoun County, Virginia

ERM

Dominion Energy

Dominion Energy Virginia
5000 Dominion Boulevard, 3rd Floor SW
Glen Allen, VA 23060

February 6, 2024

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

RE: Dominion Energy Virginia's Proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation in Loudoun County, Virginia.

Dear Ms. Little,

Dominion Energy Virginia (the "Company") is proposing to construct a new 500-230 kV substation (the "Aspen Substation"), a new overhead 500 kV single circuit transmission line that connects the proposed Aspen Substation to the existing Goose Creek Substation ("Aspen-Goose Creek Line"), a new overhead 500 kV single circuit transmission line and a new 230 kV single circuit transmission line (the "Aspen-Golden Lines"), and a new 500-230 kV substation (the "Golden Substation"), in Loudoun County, Virginia (collectively, the "Project").

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The Company is in 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.

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Regards,

Laura Meadows
Supervisor, Electric Transmission Siting and Permitting

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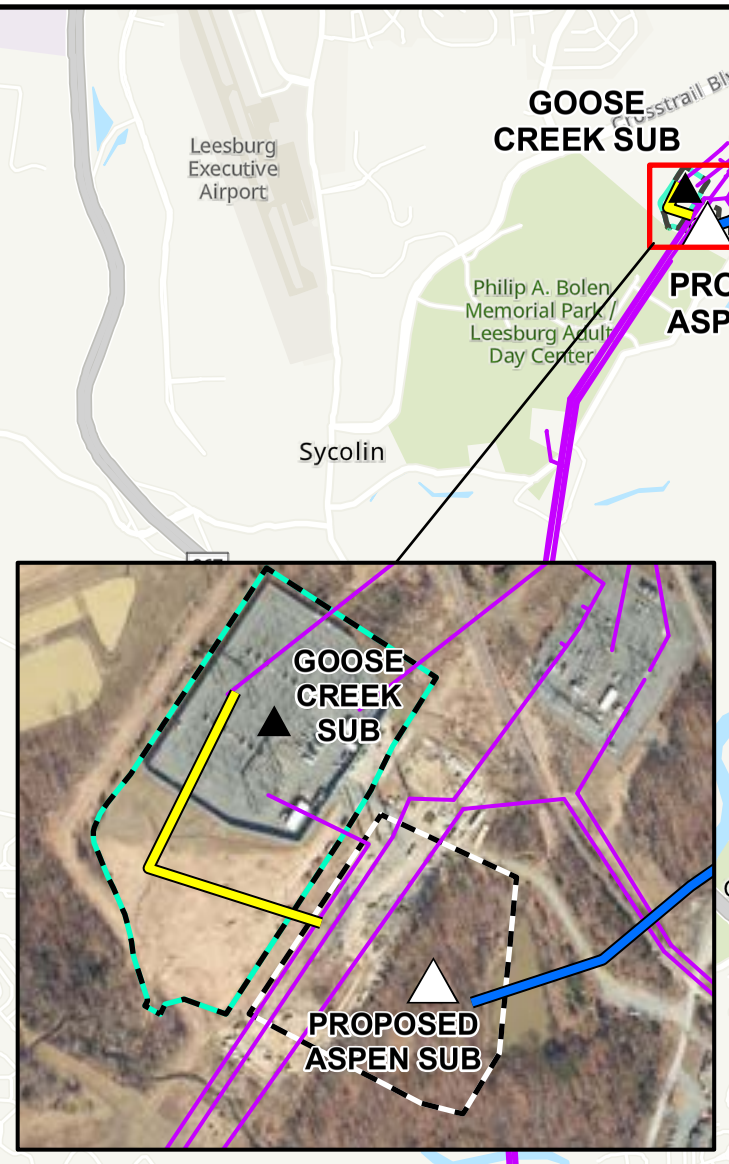

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Aspen-Goose Creek Line

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Miles

- Existing Substation
- Proposed Substation
- Existing Dominion Transmission Lines
- Route 1
- Belmont Park Variation A
- Belmont Park Variation B
- Broad Run Variation A
- Broad Run Variation B
- Aspen-Goose Creek Line
- Proposed Aspen Substation Footprint
- Existing Goose Creek Substation Footprint

Project Overview Map

Aspen-Golden 500-230 kV Electric Transmission Project

Dominion Energy Virginia

Loudoun County, Virginia

ERM

Dominion Energy

Dominion Energy Virginia
5000 Dominion Boulevard, 3rd Floor SW
Glen Allen, VA 23060

February 6, 2024

Mr. John D. Lynch
Northern Virginia District Engineer
Virginia Department of Transportation, Northern Virginia District Office
4975 Alliance Drive
Fairfax, Virginia 22030

RE: Dominion Energy Virginia's Proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation in Loudoun County, Virginia.

Dear Mr. Lynch,

Dominion Energy Virginia (the "Company") is proposing to construct a new 500-230 kV substation (the "Aspen Substation"), a new overhead 500 kV single circuit transmission line that connects the proposed Aspen Substation to the existing Goose Creek Substation ("Aspen-Goose Creek Line"), a new overhead 500 kV single circuit transmission line and a new 230 kV single circuit transmission line (the "Aspen-Golden Lines"), and a new 500-230 kV substation (the "Golden Substation"), in Loudoun County, Virginia (collectively, the "Project").

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Regards,

Laura Meadows
Supervisor, Electric Transmission Siting and Permitting

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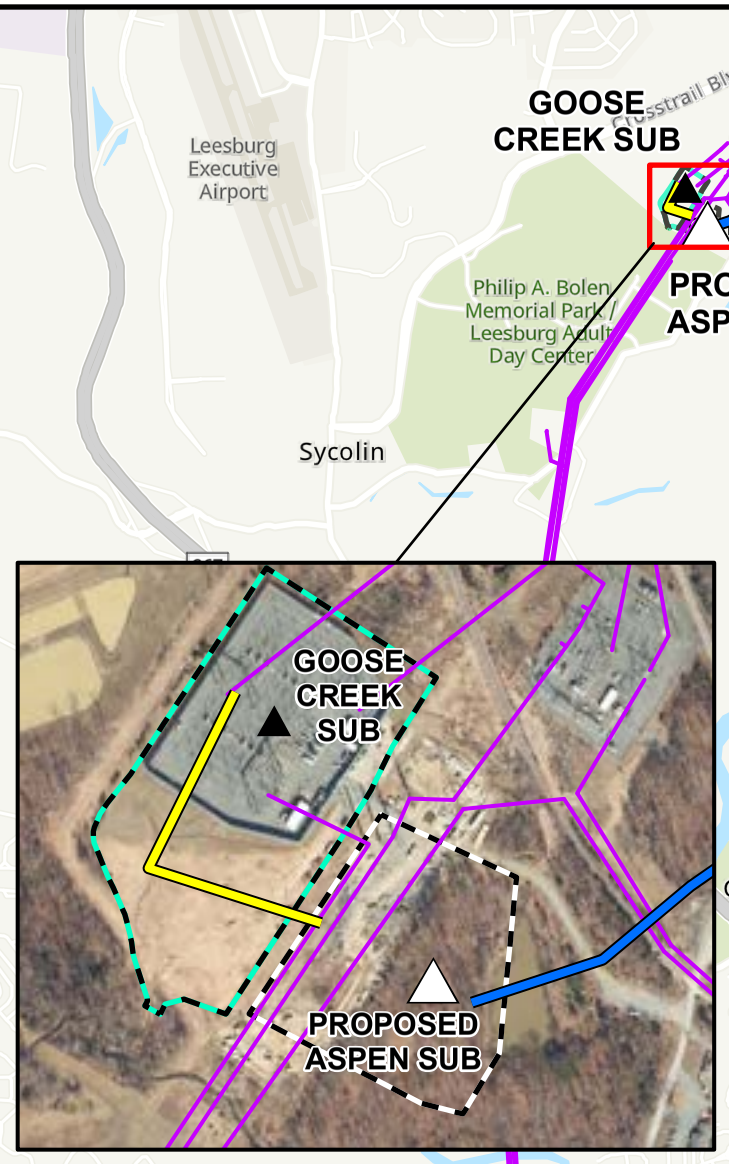

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Aspen-Golden Lines

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- Route 1BB (Route 1, Belmont Park B, Broad Run B)

Aspen-Goose Creek Line

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Miles

- Existing Substation
- Proposed Substation
- Existing Dominion Transmission Lines
- Route 1
- Belmont Park Variation A
- Belmont Park Variation B
- Broad Run Variation A
- Broad Run Variation B
- Aspen-Goose Creek Line
- Proposed Aspen Substation Footprint
- Existing Goose Creek Substation Footprint

ERM

Project Overview Map

Aspen-Golden 500-230 kV Electric Transmission Project

Dominion Energy Virginia

Loudoun County, Virginia

Dominion Energy

Dominion Energy Virginia
5000 Dominion Boulevard, 3rd Floor SW
Glen Allen, VA 23060

February 6, 2024

Mr. Kamal Suliman
Regional Operations Director
Virginia Department of Transportation, Northern Virginia District Office
4975 Alliance Drive
Fairfax, Virginia 22030

RE: Dominion Energy Virginia's Proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation in Loudoun County, Virginia.

Dear Mr. Suliman,

Dominion Energy Virginia (the "Company") is proposing to construct a new 500-230 kV substation (the "Aspen Substation"), a new overhead 500 kV single circuit transmission line that connects the proposed Aspen Substation to the existing Goose Creek Substation ("Aspen-Goose Creek Line"), a new overhead 500 kV single circuit transmission line and a new 230 kV single circuit transmission line (the "Aspen-Golden Lines"), and a new 500-230 kV substation (the "Golden Substation"), in Loudoun County, Virginia (collectively, the "Project").

The Project is needed to maintain and improve electric service to customers in the eastern Loudoun load area ("Eastern Loudoun Load Area"); to address significant load growth in the Eastern Loudoun Load Area; and to resolve identified North American Electric Reliability Corporation reliability violations.

The Company is in 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.

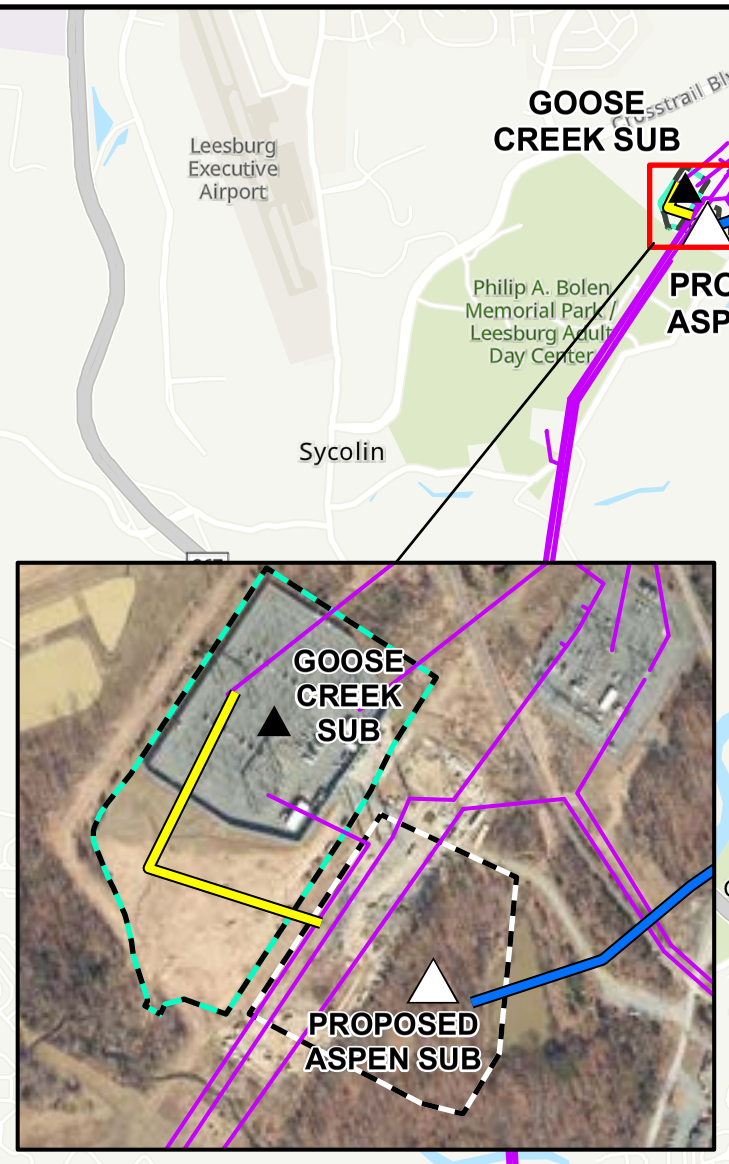
Enclosed is a Project Overview Map depicting the route alternatives for the Aspen-Golden Lines and for the Aspen-Goose Creek Line, as well as the general Project location. All final materials, including maps, will be available in the Company's application filing to the Commission.

If you would like to receive a GIS shapefile of the transmission line routes to assist in the project review or if there are any questions, please do not hesitate to contact Laura Meadows at (804) 239-8246 or laura.p.meadows@dominionenergy.com. We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

Regards,

Laura Meadows
Supervisor, Electric Transmission Siting and Permitting

Attachment: Project Overview Map



SCC Filing Noticed Routes:

Aspen-Golden Lines

- Route 1AA (Route 1, Belmont Park A, Broad Run A)
- Route 1AB (Route 1, Belmont Park A, Broad Run B)
- Route 1BA (Route 1, Belmont Park B, Broad Run A)
- Route 1BB (Route 1, Belmont Park B, Broad Run B)

Aspen-Goose Creek Line

This information is for environmental review purposes only.

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Miles

- Existing Substation
- Proposed Substation
- Existing Dominion Transmission Lines
- Route 1
- Belmont Park Variation A
- Belmont Park Variation B
- Broad Run Variation A
- Broad Run Variation B
- Aspen-Goose Creek Line
- Proposed Aspen Substation Footprint
- Existing Goose Creek Substation Footprint

ERM

Project Overview Map

Aspen-Golden 500-230 kV Electric Transmission Project

Dominion Energy Virginia

Loudoun County, Virginia

Dominion Energy

Dominion Energy Virginia
5000 Dominion Boulevard, 3rd Floor SW
Glen Allen, VA 23060

February 6, 2024

Mr. Tim Hemstreet
Loudoun County Administrator
PO Box 7000
Leesburg, Virginia 20177

RE: Dominion Energy Virginia's Proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation in Loudoun County, Virginia.
Notice Pursuant to Va. Code § 15.2-2202 E

Dear Mr. Hemstreet,

Dominion Energy Virginia (the "Company") is proposing to construct a new 500-230 kV substation (the "Aspen Substation"), a new overhead 500 kV single circuit transmission line that connects the proposed Aspen Substation to the existing Goose Creek Substation, a new overhead 500 kV single circuit transmission line and 230 kV single circuit transmission line (the "Aspen-Golden Lines"), and a new 500-230 kV substation (the "Golden Substation"), in Loudoun County, Virginia (collectively, the "Project").

The Project is needed to maintain and improve electric service to customers in the eastern Loudoun load area ("Eastern Loudoun Load Area"); to address significant load growth in the Eastern Loudoun Load Area; and to resolve identified North American Electric Reliability Corporation reliability violations.

The Company is in 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 route alternatives for the Aspen-Golden Lines and for the Aspen-Goose Creek Line, as well as the general Project location. All final materials, including maps, will be available in the Company's application filing to the Commission.

If you would like to receive a GIS shapefile of the transmission line routes to assist in the project review or if there are any questions, please do not hesitate to contact Laura Meadows at (804) 239-8246 or laura.p.meadows@dominionenergy.com. We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

Regards,

Laura Meadows
Supervisor, Electric Transmission Siting and Permitting

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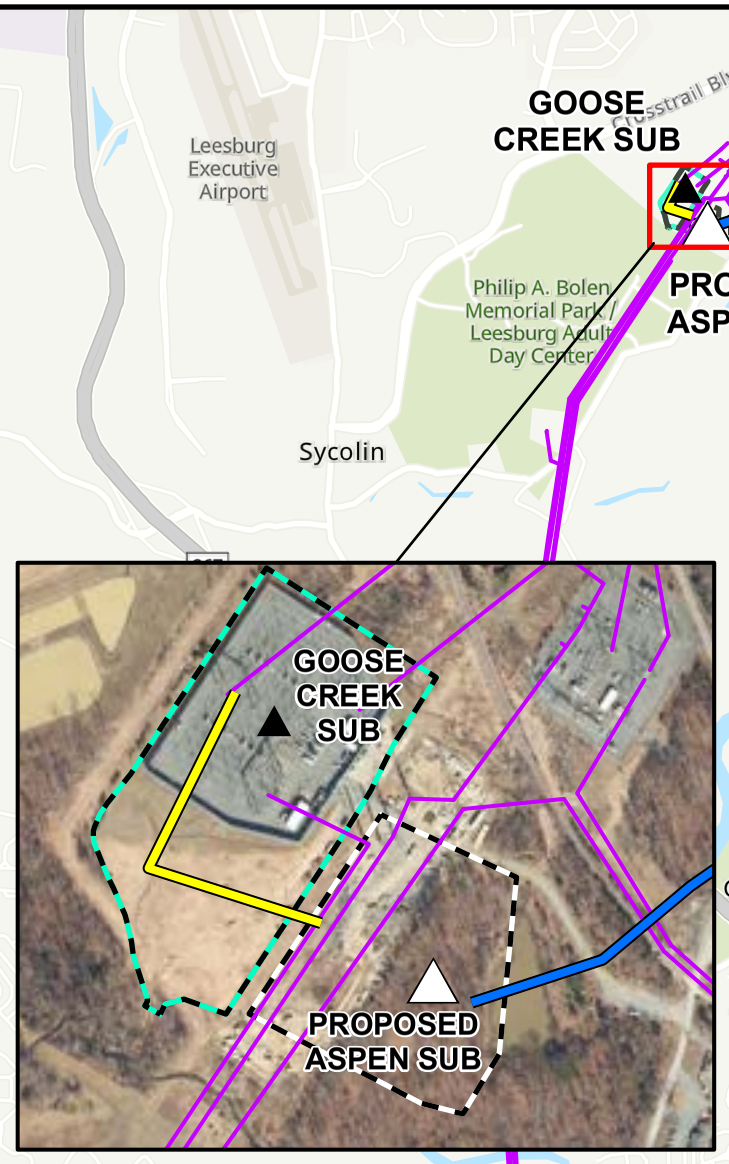

SCC Filing Noticed Routes:

Aspen-Golden Lines

- Route 1AA (Route 1, Belmont Park A, Broad Run A)
- Route 1AB (Route 1, Belmont Park A, Broad Run B)
- Route 1BA (Route 1, Belmont Park B, Broad Run A)
- Route 1BB (Route 1, Belmont Park B, Broad Run B)

Aspen-Goose Creek Line

This information is for environmental review purposes only.

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Miles

- Existing Substation
- Proposed Substation
- Existing Dominion Transmission Lines
- Route 1
- Belmont Park Variation A
- Belmont Park Variation B
- Broad Run Variation A
- Broad Run Variation B
- Aspen-Goose Creek Line
- Proposed Aspen Substation Footprint
- Existing Goose Creek Substation Footprint

Project Overview Map

Aspen-Golden 500-230 kV Electric Transmission Project

Dominion Energy Virginia

Loudoun County, Virginia

ERM

Dominion Energy

Dominion Energy Virginia
5000 Dominion Boulevard, 3rd Floor SW
Glen Allen, VA 23060

February 6, 2024

Vice Chair Juli Briskman
Algonkian District Supervisor
PO Box 7000
Leesburg, Virginia 20177

RE: Dominion Energy Virginia's Proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation in Loudoun County, Virginia.

Dear Vice Chair Briskman,

Dominion Energy Virginia (the "Company") is proposing to construct a new 500-230 kV substation (the "Aspen Substation"), a new overhead 500 kV single circuit transmission line that connects the proposed Aspen Substation to the existing Goose Creek Substation ("Aspen-Goose Creek Line"), a new overhead 500 kV single circuit transmission line and a new 230 kV single circuit transmission line (the "Aspen-Golden Lines"), and a new 500-230 kV substation (the "Golden Substation"), in Loudoun County, Virginia (collectively, the "Project").

The Project is needed to maintain and improve electric service to customers in the eastern Loudoun load area ("Eastern Loudoun Load Area"); to address significant load growth in the Eastern Loudoun Load Area; and to resolve identified North American Electric Reliability Corporation reliability violations.

The Company is in 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 route alternatives for the Aspen-Golden Lines and for the Aspen-Goose Creek Line, as well as the general Project location. All final materials, including maps, will be available in the Company's application filing to the Commission.

If you would like to receive a GIS shapefile of the transmission line routes to assist in the project review or if there are any questions, please do not hesitate to contact Laura Meadows at (804) 239-8246 or laura.p.meadows@dominionenergy.com. We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

Regards,

Laura Meadows
Supervisor, Electric Transmission Siting and Permitting

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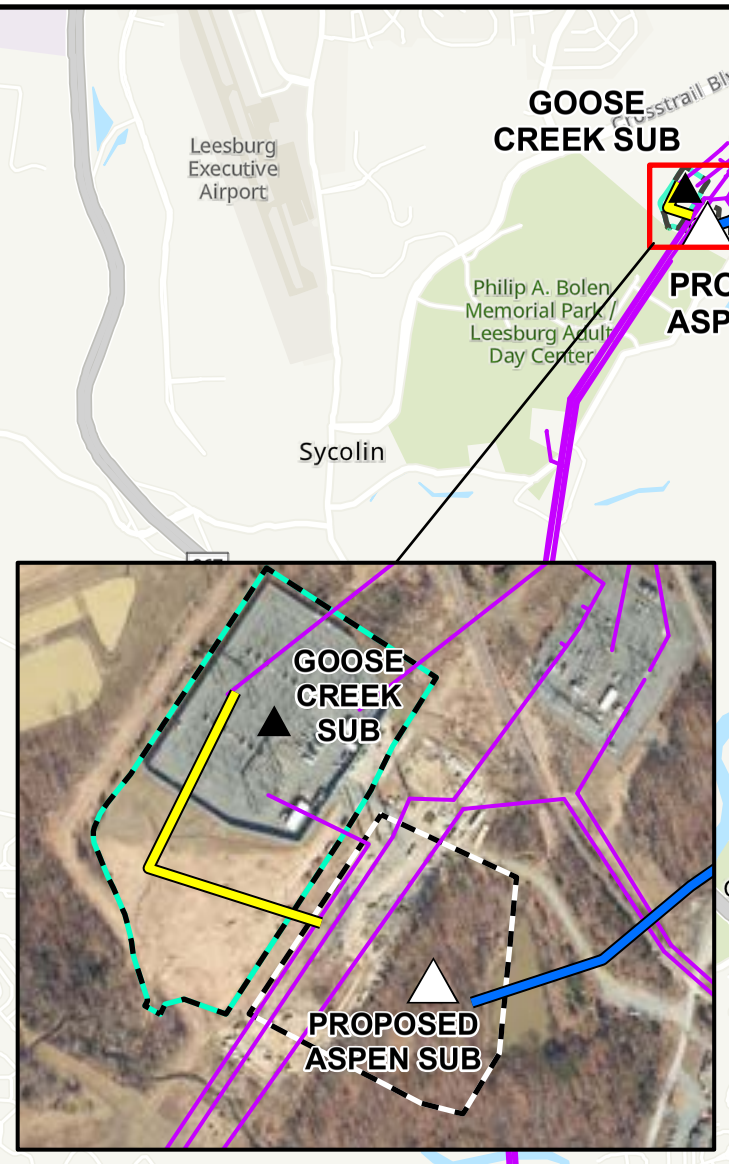

SCC Filing Noticed Routes:

Aspen-Golden Lines

- Route 1AA (Route 1, Belmont Park A, Broad Run A)
- Route 1AB (Route 1, Belmont Park A, Broad Run B)
- Route 1BA (Route 1, Belmont Park B, Broad Run A)
- Route 1BB (Route 1, Belmont Park B, Broad Run B)

Aspen-Goose Creek Line

This information is for environmental review purposes only.

N
W E
S

0 0.5 1

Miles

- Existing Substation
- Proposed Substation
- Existing Dominion Transmission Lines
- Route 1
- Belmont Park Variation A
- Belmont Park Variation B
- Broad Run Variation A
- Broad Run Variation B
- Aspen-Goose Creek Line
- Proposed Aspen Substation Footprint
- Existing Goose Creek Substation Footprint

Project Overview Map

Aspen-Golden 500-230 kV Electric Transmission Project

Dominion Energy Virginia

Loudoun County, Virginia

ERM

Dominion Energy

Dominion Energy Virginia
5000 Dominion Boulevard, 3rd Floor SW
Glen Allen, VA 23060

February 6, 2024

Supervisor Michael Turner
Ashburn District Supervisor
PO Box 7000
Leesburg, Virginia 20177

RE: Dominion Energy Virginia's Proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation in Loudoun County, Virginia.

Dear Supervisor Turner,

Dominion Energy Virginia (the "Company") is proposing to construct a new 500-230 kV substation (the "Aspen Substation"), a new overhead 500 kV single circuit transmission line that connects the proposed Aspen Substation to the existing Goose Creek Substation ("Aspen-Goose Creek Line"), a new overhead 500 kV single circuit transmission line and a new 230 kV single circuit transmission line (the "Aspen-Golden Lines"), and a new 500-230 kV substation (the "Golden Substation"), in Loudoun County, Virginia (collectively, the "Project").

The Project is needed to maintain and improve electric service to customers in the eastern Loudoun load area ("Eastern Loudoun Load Area"); to address significant load growth in the Eastern Loudoun Load Area; and to resolve identified North American Electric Reliability Corporation reliability violations.

The Company is in 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.

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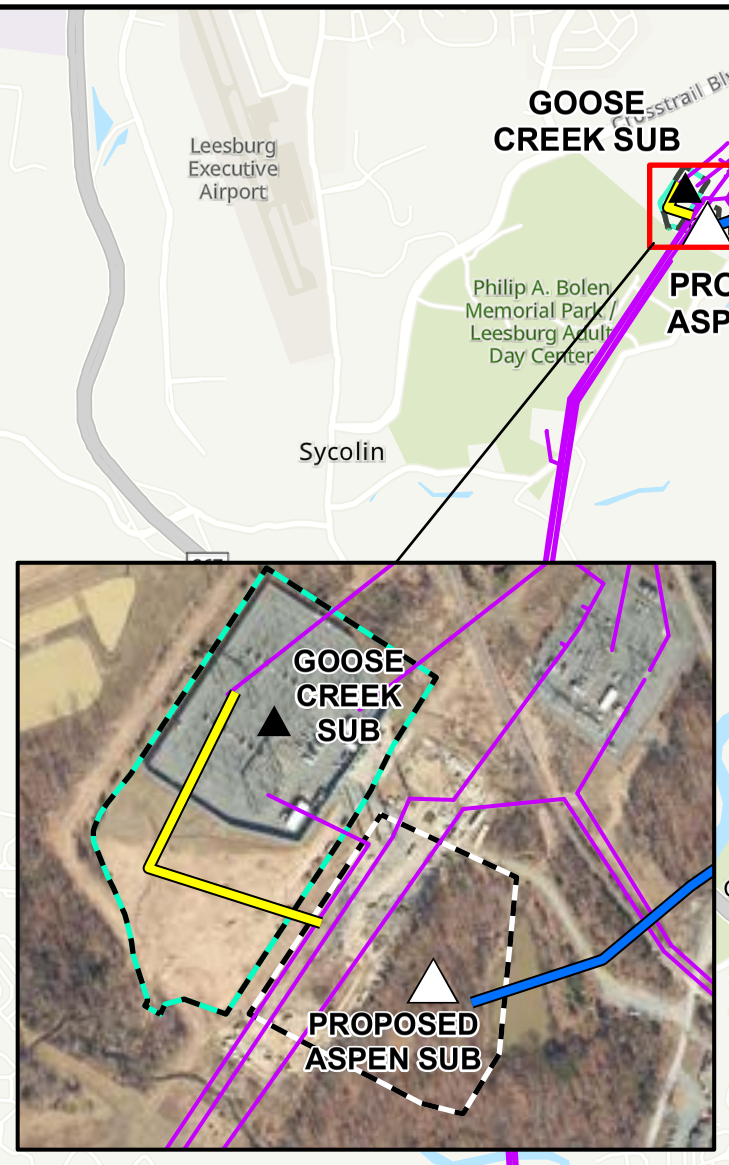
If you would like to receive a GIS shapefile of the transmission line routes to assist in the project review or if there are any questions, please do not hesitate to contact Laura Meadows at (804) 239-8246 or laura.p.meadows@dominionenergy.com. We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

Regards,

Laura Meadows
Supervisor, Electric Transmission Siting and Permitting

Attachment: Project Overview Map



SCC Filing Noticed Routes:

Aspen-Golden Lines

- Route 1AA (Route 1, Belmont Park A, Broad Run A)
- Route 1AB (Route 1, Belmont Park A, Broad Run B)
- Route 1BA (Route 1, Belmont Park B, Broad Run A)
- Route 1BB (Route 1, Belmont Park B, Broad Run B)

Aspen-Goose Creek Line

This information is for environmental review purposes only.

N
W E
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Miles

- Existing Substation
- Proposed Substation
- Existing Dominion Transmission Lines
- Route 1
- Belmont Park Variation A
- Belmont Park Variation B
- Broad Run Variation A
- Broad Run Variation B
- Aspen-Goose Creek Line
- Proposed Aspen Substation Footprint
- Existing Goose Creek Substation Footprint

Project Overview Map

Aspen-Golden 500-230 kV Electric Transmission Project

Dominion Energy Virginia

Loudoun County, Virginia

ERM

Dominion Energy

Dominion Energy Virginia
5000 Dominion Boulevard, 3rd Floor SW
Glen Allen, VA 23060

February 6, 2024

Supervisor Sylvia Glass
Broad Run District Supervisor
PO Box 7000
Leesburg, Virginia 20177

RE: Dominion Energy Virginia's Proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation in Loudoun County, Virginia.

Dear Supervisor Glass,

Dominion Energy Virginia (the "Company") is proposing to construct a new 500-230 kV substation (the "Aspen Substation"), a new overhead 500 kV single circuit transmission line that connects the proposed Aspen Substation to the existing Goose Creek Substation ("Aspen-Goose Creek Line"), a new overhead 500 kV single circuit transmission line and a new 230 kV single circuit transmission line (the "Aspen-Golden Lines"), and a new 500-230 kV substation (the "Golden Substation"), in Loudoun County, Virginia (collectively, the "Project").

The Project is needed to maintain and improve electric service to customers in the eastern Loudoun load area ("Eastern Loudoun Load Area"); to address significant load growth in the Eastern Loudoun Load Area; and to resolve identified North American Electric Reliability Corporation reliability violations.

The Company is in 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.

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Regards,

Laura Meadows
Supervisor, Electric Transmission Siting and Permitting

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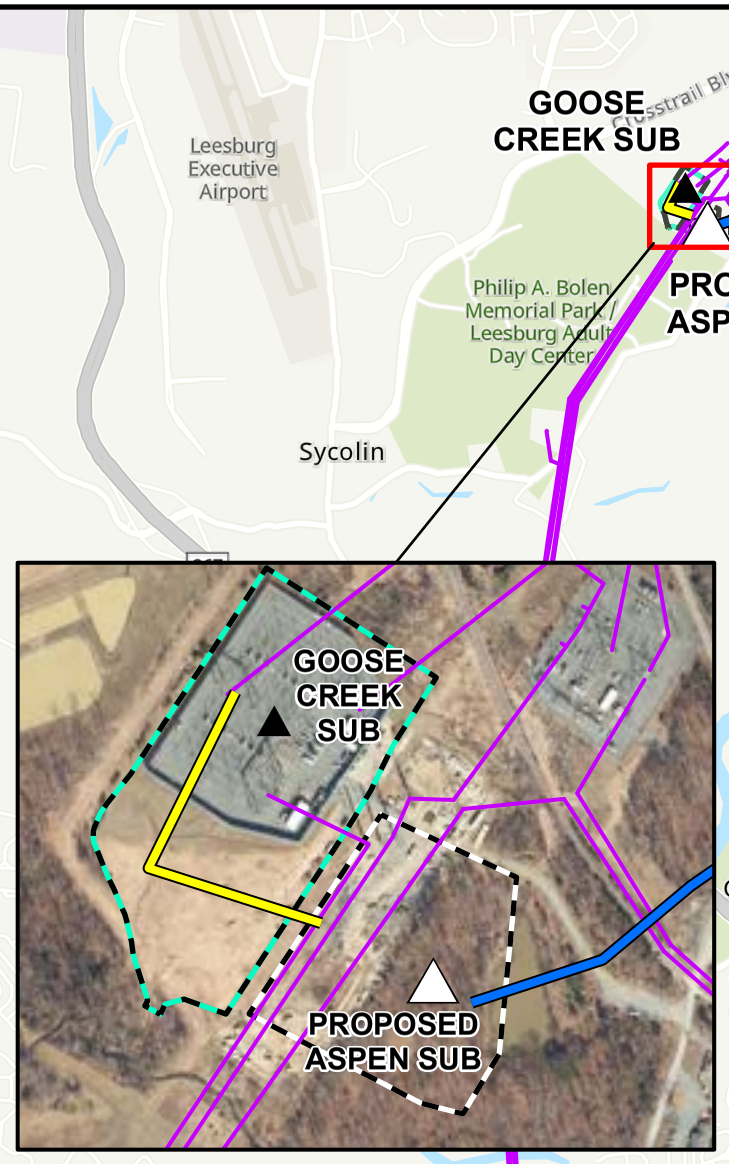

SCC Filing Noticed Routes:

Aspen-Golden Lines

- Route 1AA (Route 1, Belmont Park A, Broad Run A)
- Route 1AB (Route 1, Belmont Park A, Broad Run B)
- Route 1BA (Route 1, Belmont Park B, Broad Run A)
- Route 1BB (Route 1, Belmont Park B, Broad Run B)

Aspen-Goose Creek Line

This information is for environmental review purposes only.

N
W E
S

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Miles

- Existing Substation
- Proposed Substation
- Existing Dominion Transmission Lines
- Route 1
- Belmont Park Variation A
- Belmont Park Variation B
- Broad Run Variation A
- Broad Run Variation B
- Aspen-Goose Creek Line
- Proposed Aspen Substation Footprint
- Existing Goose Creek Substation Footprint

Project Overview Map

Aspen-Golden 500-230 kV Electric Transmission Project

Dominion Energy Virginia

Loudoun County, Virginia

ERM

Dominion Energy

Dominion Energy Virginia
5000 Dominion Boulevard, 3rd Floor SW
Glen Allen, VA 23060

February 6, 2024

Supervisor Koran Saines
Sterling District Supervisor
PO Box 7000
Leesburg, Virginia 20177

RE: Dominion Energy Virginia's Proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation in Loudoun County, Virginia.

Dear Supervisor Saines,

Dominion Energy Virginia (the "Company") is proposing to construct a new 500-230 kV substation (the "Aspen Substation"), a new overhead 500 kV single circuit transmission line that connects the proposed Aspen Substation to the existing Goose Creek Substation ("Aspen-Goose Creek Line"), a new overhead 500 kV single circuit transmission line and a new 230 kV single circuit transmission line (the "Aspen-Golden Lines"), and a new 500-230 kV substation (the "Golden Substation"), in Loudoun County, Virginia (collectively, the "Project").

The Project is needed to maintain and improve electric service to customers in the eastern Loudoun load area ("Eastern Loudoun Load Area"); to address significant load growth in the Eastern Loudoun Load Area; and to resolve identified North American Electric Reliability Corporation reliability violations.

The Company is in 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.

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Regards,

Laura Meadows
Supervisor, Electric Transmission Siting and Permitting

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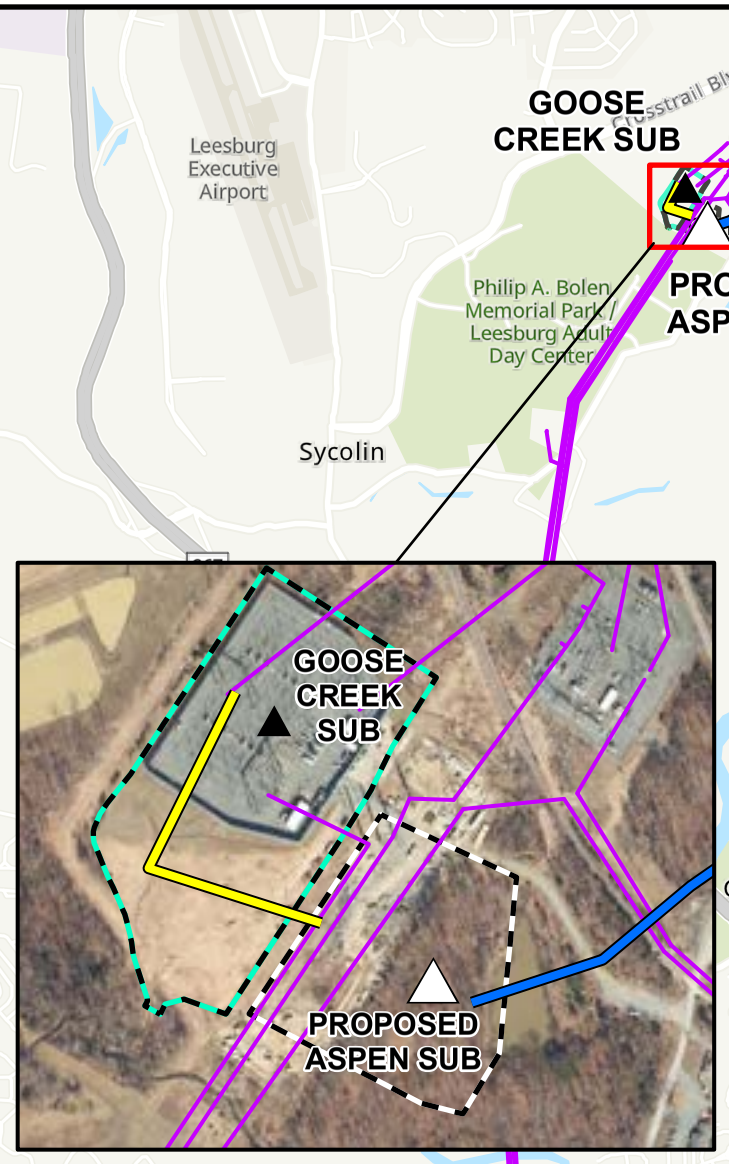

SCC Filing Noticed Routes:

Aspen-Golden Lines

- Route 1AA (Route 1, Belmont Park A, Broad Run A)
- Route 1AB (Route 1, Belmont Park A, Broad Run B)
- Route 1BA (Route 1, Belmont Park B, Broad Run A)
- Route 1BB (Route 1, Belmont Park B, Broad Run B)

Aspen-Goose Creek Line

This information is for environmental review purposes only.

N, W, E, S

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Miles

- Existing Substation
- Proposed Substation
- Existing Dominion Transmission Lines
- Route 1
- Belmont Park Variation A
- Belmont Park Variation B
- Broad Run Variation A
- Broad Run Variation B
- Aspen-Goose Creek Line
- Proposed Aspen Substation Footprint
- Existing Goose Creek Substation Footprint

Project Overview Map

Aspen-Golden 500-230 kV Electric Transmission Project

Dominion Energy Virginia

Loudoun County, Virginia

ERM

Dominion Energy

Dominion Energy Virginia
5000 Dominion Boulevard, 3rd Floor SW
Glen Allen, VA 23060

February 6, 2024

Supervisor Kristen Umstattd
Leesburg District Supervisor
PO Box 7000
Leesburg, Virginia 20177

RE: Dominion Energy Virginia's Proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation in Loudoun County, Virginia.

Dear Supervisor Umstattd,

Dominion Energy Virginia (the "Company") is proposing to construct a new 500-230 kV substation (the "Aspen Substation"), a new overhead 500 kV single circuit transmission line that connects the proposed Aspen Substation to the existing Goose Creek Substation ("Aspen-Goose Creek Line"), a new overhead 500 kV single circuit transmission line and a new 230 kV single circuit transmission line (the "Aspen-Golden Lines"), and a new 500-230 kV substation (the "Golden Substation"), in Loudoun County, Virginia (collectively, the "Project").

The Project is needed to maintain and improve electric service to customers in the eastern Loudoun load area ("Eastern Loudoun Load Area"); to address significant load growth in the Eastern Loudoun Load Area; and to resolve identified North American Electric Reliability Corporation reliability violations.

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Regards,

Laura Meadows
Supervisor, Electric Transmission Siting and Permitting

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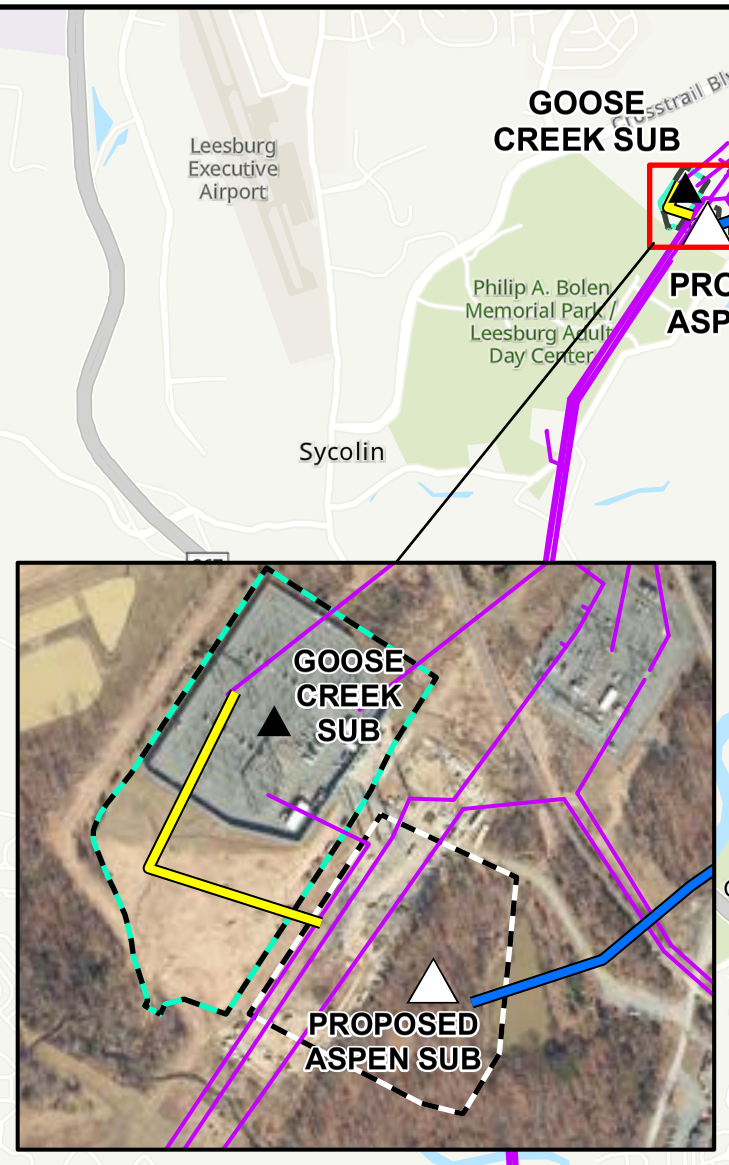

SCC Filing Noticed Routes:

Aspen-Golden Lines

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- Route 1BB (Route 1, Belmont Park B, Broad Run B)

Aspen-Goose Creek Line

This information is for environmental review purposes only.

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Miles

- Existing Substation
- Proposed Substation
- Existing Dominion Transmission Lines
- Route 1
- Belmont Park Variation A
- Belmont Park Variation B
- Broad Run Variation A
- Broad Run Variation B
- Aspen-Goose Creek Line
- Proposed Aspen Substation Footprint
- Existing Goose Creek Substation Footprint

ERM

Project Overview Map

Aspen-Golden 500-230 kV Electric Transmission Project

Dominion Energy Virginia

Loudoun County, Virginia

Dominion Energy

Dominion Energy Virginia
5000 Dominion Boulevard, 3rd Floor SW
Glen Allen, VA 23060

February 6, 2024

Chair Phyllis Randall
Chair At-Large – Loudoun Board of Supervisors
PO Box 7000
Leesburg, Virginia 20177

RE: Dominion Energy Virginia's Proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation in Loudoun County, Virginia.

Dear Chair Randall,

Dominion Energy Virginia (the "Company") is proposing to construct a new 500-230 kV substation (the "Aspen Substation"), a new overhead 500 kV single circuit transmission line that connects the proposed Aspen Substation to the existing Goose Creek Substation ("Aspen-Goose Creek Line"), a new overhead 500 kV single circuit transmission line and a new 230 kV single circuit transmission line (the "Aspen-Golden Lines"), and a new 500-230 kV substation (the "Golden Substation"), in Loudoun County, Virginia (collectively, the "Project").

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Regards,

Laura Meadows
Supervisor, Electric Transmission Siting and Permitting

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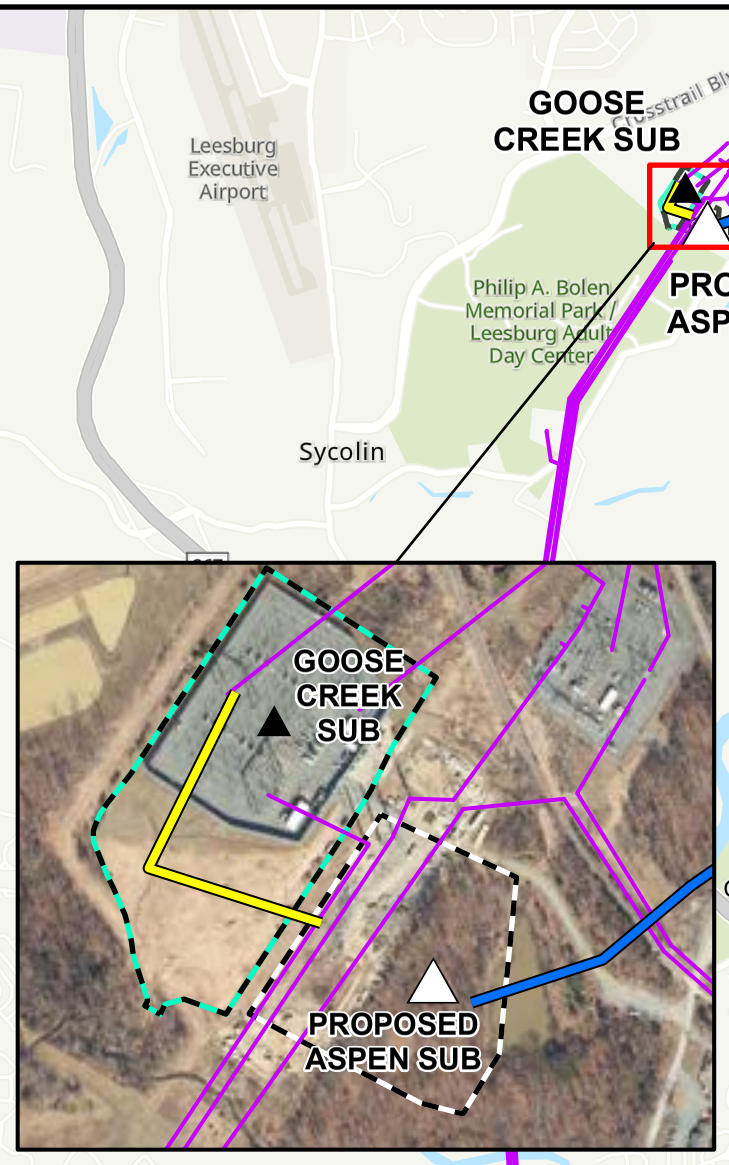

SCC Filing Noticed Routes:

Aspen-Golden Lines

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- Route 1BB (Route 1, Belmont Park B, Broad Run B)

Aspen-Goose Creek Line

This information is for environmental review purposes only.

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Miles

- Existing Substation
- Proposed Substation
- Existing Dominion Transmission Lines
- Route 1
- Belmont Park Variation A
- Belmont Park Variation B
- Broad Run Variation A
- Broad Run Variation B
- Aspen-Goose Creek Line
- Proposed Aspen Substation Footprint
- Existing Goose Creek Substation Footprint

Project Overview Map

Aspen-Golden 500-230 kV Electric Transmission Project

Dominion Energy Virginia

Loudoun County, Virginia

ERM

Dominion Energy

Dominion Energy Virginia
5000 Dominion Boulevard, 3rd Floor SW
Glen Allen, VA 23060

February 6, 2024

Mr. Stephen Thompson
Archaeologist, Loudoun County
PO Box 7000
Leesburg, Virginia 20177

RE: Dominion Energy Virginia's Proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation in Loudoun County, Virginia.

Dear Mr. Thompson,

Dominion Energy Virginia (the "Company") is proposing to construct a new 500-230 kV substation (the "Aspen Substation"), a new overhead 500 kV single circuit transmission line that connects the proposed Aspen Substation to the existing Goose Creek Substation ("Aspen-Goose Creek Line"), a new overhead 500 kV single circuit transmission line and a new 230 kV single circuit transmission line (the "Aspen-Golden Lines"), and a new 500-230 kV substation (the "Golden Substation"), in Loudoun County, Virginia (collectively, the "Project").

The Project is needed to maintain and improve electric service to customers in the eastern Loudoun load area ("Eastern Loudoun Load Area"); to address significant load growth in the Eastern Loudoun Load Area; and to resolve identified North American Electric Reliability Corporation reliability violations.

The Company is in 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.

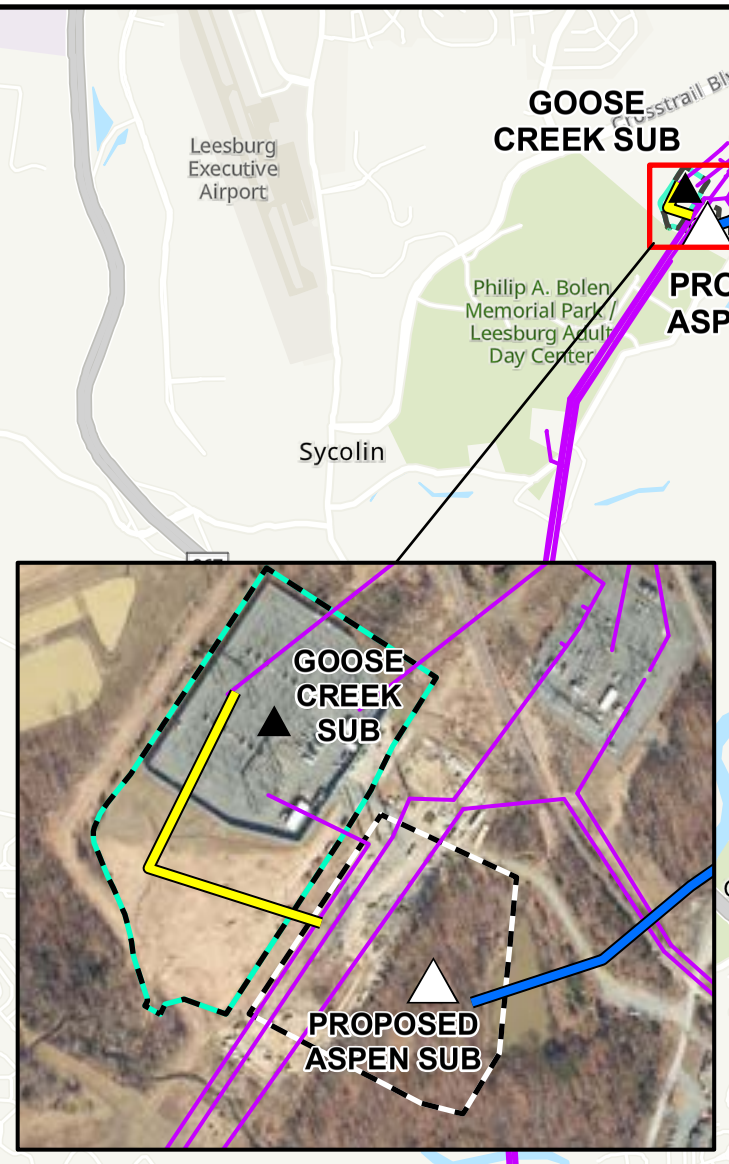
Enclosed is a Project Overview Map depicting the route alternatives for the Aspen-Golden Lines and for the Aspen-Goose Creek Line, as well as the general Project location. All final materials, including maps, will be available in the Company's application filing to the Commission.

If you would like to receive a GIS shapefile of the transmission line routes to assist in the project review or if there are any questions, please do not hesitate to contact Laura Meadows at (804) 239-8246 or laura.p.meadows@dominionenergy.com. We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

Regards,

Laura Meadows
Supervisor, Electric Transmission Siting and Permitting

Attachment: Project Overview Map



SCC Filing Noticed Routes:

Aspen-Golden Lines

- Route 1AA (Route 1, Belmont Park A, Broad Run A)
- Route 1AB (Route 1, Belmont Park A, Broad Run B)
- Route 1BA (Route 1, Belmont Park B, Broad Run A)
- Route 1BB (Route 1, Belmont Park B, Broad Run B)

Aspen-Goose Creek Line

This information is for environmental review purposes only.

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Miles

- Existing Substation
- Proposed Substation
- Existing Dominion Transmission Lines
- Route 1
- Belmont Park Variation A
- Belmont Park Variation B
- Broad Run Variation A
- Broad Run Variation B
- Aspen-Goose Creek Line
- Proposed Aspen Substation Footprint
- Existing Goose Creek Substation Footprint

Project Overview Map

Aspen-Golden 500-230 kV Electric Transmission Project

Dominion Energy Virginia

Loudoun County, Virginia

ERM

Dominion Energy

Dominion Energy Virginia
5000 Dominion Boulevard, 3rd Floor SW
Glen Allen, VA 23060

February 6, 2024

Mr. Mike DePue
Land Manager
Northern Virginia Regional Park Authority
5400 Ox Road
Fairfax Station, Virginia 22039

RE: Dominion Energy Virginia's Proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation in Loudoun County, Virginia.

Dear Mr. DePue,

Dominion Energy Virginia (the "Company") is proposing to construct a new 500-230 kV substation (the "Aspen Substation"), a new overhead 500 kV single circuit transmission line that connects the proposed Aspen Substation to the existing Goose Creek Substation ("Aspen-Goose Creek Line"), a new overhead 500 kV single circuit transmission line and a new 230 kV single circuit transmission line (the "Aspen-Golden Lines"), and a new 500-230 kV substation (the "Golden Substation"), in Loudoun County, Virginia (collectively, the "Project").

The Project is needed to maintain and improve electric service to customers in the eastern Loudoun load area ("Eastern Loudoun Load Area"); to address significant load growth in the Eastern Loudoun Load Area; and to resolve identified North American Electric Reliability Corporation reliability violations.

The Company is in 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.

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Regards,

Laura Meadows
Supervisor, Electric Transmission Siting and Permitting

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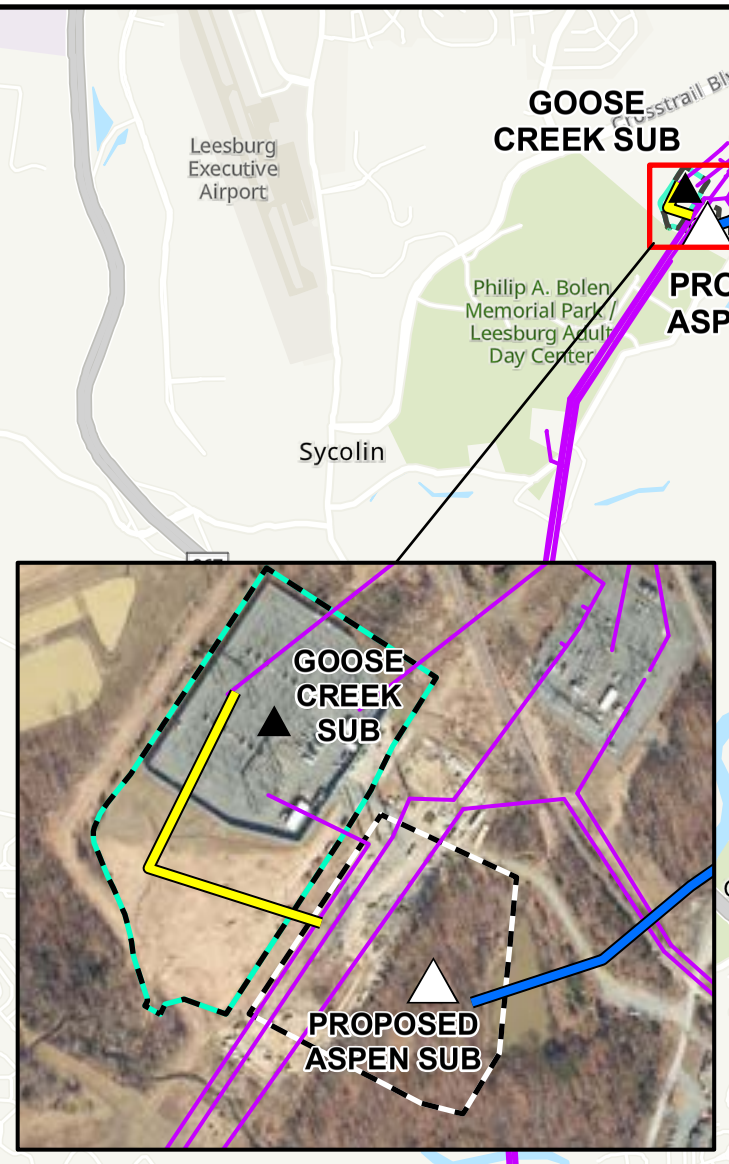

SCC Filing Noticed Routes:

Aspen-Golden Lines

- Route 1AA (Route 1, Belmont Park A, Broad Run A)
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- Route 1BA (Route 1, Belmont Park B, Broad Run A)
- Route 1BB (Route 1, Belmont Park B, Broad Run B)

Aspen-Goose Creek Line

This information is for environmental review purposes only.

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- Existing Substation
- Proposed Substation
- Existing Dominion Transmission Lines
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- Broad Run Variation B
- Aspen-Goose Creek Line
- Proposed Aspen Substation Footprint
- Existing Goose Creek Substation Footprint

Project Overview Map

Aspen-Golden 500-230 kV Electric Transmission Project

Dominion Energy Virginia

Loudoun County, Virginia

ERM

Dominion Energy

Dominion Energy Virginia
5000 Dominion Boulevard, 3rd Floor SW
Glen Allen, VA 23060

February 6, 2024

Mr. Brian Nolan
Planning & Development Director
Northern Virginia Regional Park Authority
5400 Ox Road
Fairfax Station, Virginia 22039

RE: Dominion Energy Virginia's Proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation in Loudoun County, Virginia.

Dear Mr. Nolan,

Dominion Energy Virginia (the "Company") is proposing to construct a new 500-230 kV substation (the "Aspen Substation"), a new overhead 500 kV single circuit transmission line that connects the proposed Aspen Substation to the existing Goose Creek Substation ("Aspen-Goose Creek Line"), a new overhead 500 kV single circuit transmission line and a new 230 kV single circuit transmission line (the "Aspen-Golden Lines"), and a new 500-230 kV substation (the "Golden Substation"), in Loudoun County, Virginia (collectively, the "Project").

The Project is needed to maintain and improve electric service to customers in the eastern Loudoun load area ("Eastern Loudoun Load Area"); to address significant load growth in the Eastern Loudoun Load Area; and to resolve identified North American Electric Reliability Corporation reliability violations.

The Company is in 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.

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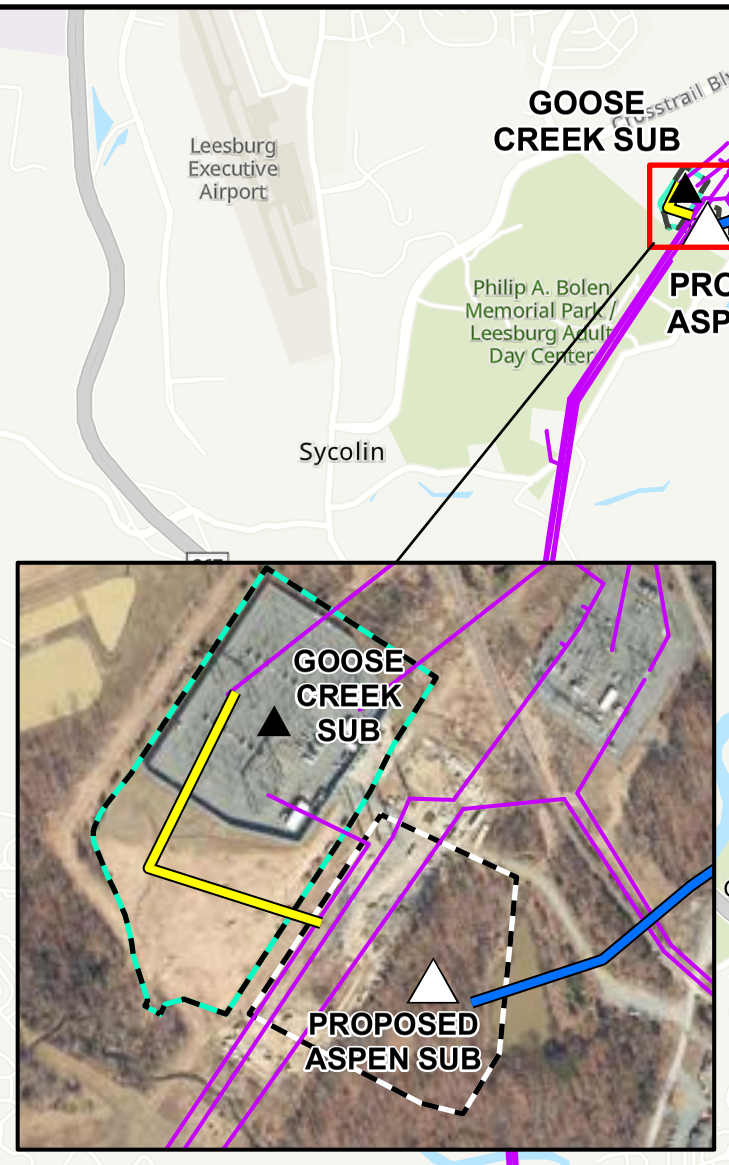
Regards,

Laura Meadows
Supervisor, Electric Transmission Siting and Permitting

Attachment: Project Overview Map



SCC Filing Noticed Routes:

Aspen-Golden Lines

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Aspen-Goose Creek Line

This information is for environmental review purposes only.

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- Existing Substation
- Proposed Substation
- Existing Dominion Transmission Lines
- Route 1
- Belmont Park Variation A
- Belmont Park Variation B
- Broad Run Variation A
- Broad Run Variation B
- Aspen-Goose Creek Line
- Proposed Aspen Substation Footprint
- Existing Goose Creek Substation Footprint

Project Overview Map

Aspen-Golden 500-230 kV Electric Transmission Project

Dominion Energy Virginia

Loudoun County, Virginia

ERM

Dominion Energy

James P Young (Services - 6)

From: Fulcher, Valerie (DEQ) <Valerie.Fulcher@deq.virginia.gov>
Sent: Tuesday, February 6, 2024 3:41 PM
To: dgif-ESS Projects (DWR); Tignor, Keith (VDACS); DCR-PRR Environmental Review (DCR); odwreview (VDH); Churchill, Nikolas (DEQ); Ballou, Thomas (DEQ); Lovain, Anna (DEQ); Gavan, Larry (DEQ); Miller, Mark (DEQ); Kirchen, Roger (DHR); Lasher, Terrance J. (DOF); Folks, Clint (DOF); ImpactReview (impactreview@vof.org); EIR Coordination (VDOT); Lazaro, Robert (VDOT); coadmin@loudoun.gov (coadmin@loudoun.gov)
Cc: James P Young (Services - 6)
Subject: [EXTERNAL] NEW SCOPING Aspen Substation
Attachments: Aspen to Golden EIR Scoping Response.pdf; Aspen to Golden Project Overview Map (February 6, 2024).pdf; Aspen to Golden Agency Letter.pdf

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

Dominion Energy Virginia's Proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation in Loudoun County, Virginia.

If you choose to make comments, please send them directly to the project sponsor (james.p.young@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.

If you have any questions regarding this request, please email our office at eir@deq.virginia.gov.

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 6, 2024

James Young
Dominion Energy Virginia
120 Tredegar Street
Richmond, VA 23219
Via email: stacey.t.ellis@dominionenergy.com

RE: Dominion Energy Virginia's Proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation in Loudoun County, Virginia, Scoping Response

Dear Mr. Young:

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

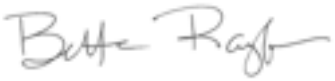
- EPA NEPAssist Database

  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

DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
FORT NORFOLK
803 FRONT STREET
NORFOLK VA 23510-1011

April 25, 2023

NOTIFICATION OF APPROVED JURISDICTIONAL DETERMINATION

Northern Virginia Regulatory Section
NAO-2020-02065 (Russell Branch)

Toll Brothers, Inc.
Attn. Greg Leygraaf
24323 Marrwood Drive, Suite B
Aldie, Virginia 20105

Dear Mr. Leygraaf:

This letter is in regard to your request for an approved jurisdictional determination for the waters of the U.S. (including wetlands) on the 113-acre property, known as Northstar Square (AKA Russell Branch Parkway Extension). The site is located at 500 feet southeast of the Belmont Ridge Road and Harry Byrd Highway intersection Loudoun County, Virginia.

On February 2, 2023, the U.S. Army Corps of Engineers (Corps) received your request for an approved jurisdictional determination for the above referenced project area. Based upon a desktop evaluation, the 33 CFR 329 definition of navigable waters of the United States, and the 33 CFR 328 definition of waters of the United States and federal regulation of navigable waters, the Corps determines:

There are waters of the U.S. within the above-described project area, which are subject to the permit requirements of Section 404 of the Clean Water Act (33 USC 1344) and/or Section 10 of the Rivers and Harbors Act. These waters exhibit wetland criteria as defined by the 1987 Corps of Engineers Wetland Delineation Manual, pre-2015 Rapanos Regulatory Regime and the Eastern Mountains and Piedmont Regional Supplement. This site also contains waters with an ordinary high-water mark that are part of the tributary system to Navigable Waters of the U.S.

The above-described project area contains isolated wetlands (SW-1, SW-2, SW-3, and SW-4), which are not subject to the permitting requirements of Section 404 of the Clean Water Act (pre-2015 Rapanos Regulatory Regime) nor Section 10 of the Rivers and Harbors Act. Any discharge of dredged and/or fill material into these non-jurisdictional wetlands/waters will not require a Department of Army Permit; however, you may be required to obtain a permit from the Virginia Department of Environmental Quality (DEQ) for activities affecting these isolated wetlands/waters and we are notifying them by copy of this letter.

The delineation included herein has been conducted to identify the location, extent, and jurisdictional status of the waters within the established project area for purposes of Section 404 of the Clean Water Act (CWA). The Corps verifies the delineation of waters of the U.S. depicted on the map entitled "Attachment I: Waters of the US (Including Wetlands) Delineation Map, NorthStar Square, Loudoun County, Virginia," dated September 20, 2023, latest revision date January 1, 2023, and conducted by Wetland studies and Solution, Inc. Please note, we are not confirming the Cowardin classifications of these waters, nor the limits/jurisdiction status of any waters mapped outside the above-described project area.

Please be aware that you may be required to obtain a Corps permit for any permanent or temporary discharges of dredged and/or fill material into waters of the U.S. In addition, you may be required to obtain a Corps permit for certain activities occurring within, under, or over a navigable water of the U.S. subject to Section 10 of the Rivers and Harbors Act. Furthermore, you may be required to obtain state and local authorizations, including a Virginia Water Protection Permit from DEQ, a permit from the Virginia Marine Resource Commission (VMRC), and/or from your local wetlands board. Any discharges of dredge and/or fill material into waters not subject to Corps jurisdiction (i.e., isolated waters) will not require a Corps permit but may require state or local authorization as cited above.

This delineation and jurisdictional determination may not be valid for the Wetland Conservation Provisions of the Food Security Act of 1985, as amended. Therefore, if you or your tenant are U.S. Department of Agriculture (USDA) program participants, or anticipate participation in USDA programs, you should discuss the applicability of a certified wetland determination with the local USDA service center, prior to starting work.

The Norfolk District has relied on the information and data provided by the agent to make this determination. If it is determined such information and data are materially false or materially incomplete, a new determination would be necessary.

ADMINISTRATIVE APPEALS NOTIFICATION

This letter constitutes an approved jurisdictional determination for the above-described project area. If you object to this determination, you may request an administrative appeal under Corps regulations (33 CFR Part 331.) Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and Request for Appeal (RFA) form. If you request to appeal this determination you must submit a completed RFA form to the North Atlantic Division Office at the following address:

ATTN: Mr. Andrew Dangler
Regulatory Appeals Review Officer
U.S. Army Corps of Engineers
North Atlantic Division-Fort Hamilton
301 John Warren Avenue-First Floor
Brooklyn, New York 11252-6700

The Corps will determine whether the RFA is complete and meets the criteria for appeal under 33 CFR 331.5. The RFA must be received at the above address within 60 days of the RFA, and by June 24, 2023. The Corps will not accept incomplete or late RFAs. You do not need to submit an RFA if you do not object to the approved jurisdictional determination.

This approved jurisdictional determination is valid for five years from the date of this notification unless new information (including any changes to the definition of Waters of the United States) warrants revision prior to the expiration date.

If you have any questions regarding this notification, please contact Regena Bronson either via telephone at (757) 201-7828 or via email at Regena.D.Bronson@usace.army.mil.

Sincerely,

Regena Bronson
Project Manager, Northern Virginia
Regulatory Section

Enclosure(s)

Cc: Anna Oesher, Wetlands Studies and Solutions, Inc.

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

February 14, 2024

Dominion Energy Services, Inc.
Attn: Rachel Studebaker
120 Tredegar Street
Richmond, VA 23219

Re: 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation

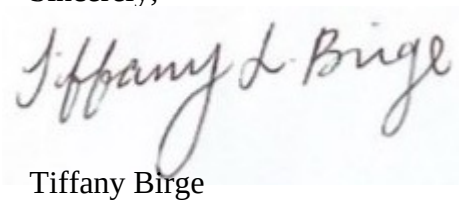
Dear Ms. Studebaker:

This will respond to the request for comments regarding the 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation Project, prepared by Dominion Energy. Specifically, Dominion Energy has proposed to construct a new 500-230 kV "Aspen Substation," a new overhead 500 kV single circuit "Aspen-Goose Creek Line" that connects the proposed Aspen Substation to the existing Goose Creek Substation, new overhead 500 kV and 230 kV single circuit "Aspen-Golden" lines, and a new 500-230 kV "Golden Substation" in 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) 247-2254 or by email at tiffany.birge@mrc.virginia.gov if you have questions. Thank you for the opportunity to comment.

Sincerely,



Tiffany Birge
Environmental Engineer, Habitat Management

TB/dd
HM

ERM

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
7 March 2024

SUBJECT
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 Project Wetland and Waterbody Desktop Summary

REFERENCE
0622601

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 500-230 kilovolt ("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 230 kV Lines #2081/#2150 Loop ("Project") located within 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 and will be completed upon a final route being approved. The Project routes and route variations are 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 a new 500-230 kV substation in Loudoun County, Virginia, entirely on Company-owned property ("Aspen Substation"). The 500 kV source to the Aspen Substation will be created by cutting the Company's existing overhead 500 kV Brambleton-Goose Creek Line #558 into the Aspen Substation between Structure #558/1857 and Structure #558/1856. The cut-in of Line #558 to the Aspen Substation will result in (i) 500 kV Aspen-Brambleton Line #558 and (ii) 500 kV Aspen-Goose Creek Line #597.
- Construct a new 500 kV single circuit transmission line extending approximately 0.2 mile connecting the proposed 500-230 kV Aspen Substation to the Company's existing 500 kV Goose Creek Substation in Loudoun County, Virginia, named Aspen-Goose Creek Line #5002 (or the "Aspen-Goose Creek Line"). Aspen-Goose Creek Line #5002 will be

constructed entirely on Company-owned property or existing right-of-way. Combined with the new 500 kV Aspen-Goose Creek Line #597, this new 500 kV Aspen-Goose Creek Line #5002 will bring two new sources to the area by connecting Goose Creek Substation to the area grid via the proposed Aspen Substation. To the extent there are any impacts related to the construction of the 0.2-mile Aspen-Goose Creek Line, such impacts were mitigated during permitting of the recent 500-230 kV Goose Creek Substation expansion and the Lines #558/#2180 right-of-way transmission corridor, in which the proposed line is located. Given that all associated impacts have been mitigated already, and that all Line #5002 work will be conducted within existing Company-owned property or right-of-way, the Company has not included any additional information regarding the construction of Line #5002 in this report.

- Construct a new approximately 9.4-mile overhead 500 kV single circuit transmission line and a new 230 kV single circuit transmission line on entirely[1] new right-of-way. The new transmission lines will originate at the 500 kV and 230 kV buses of the proposed Aspen Substation and continue to the proposed 500-230 kV Golden Substation, where the new lines will terminate, resulting in (i) 500 kV Aspen-Golden Line #5001, and (ii) 230 kV Aspen-Golden Line #2333 (collectively, the "Aspen-Golden Lines").

- Construct a new 500-230 kV substation on property to be obtained by the Company ("Golden Substation").

- Cut Line #2081 and Line #2150 between Structure #2081/124 / #2150/184 and Structure #2081/123 / #2150/183, and loop the existing lines into and out of the proposed Golden Substation, resulting in (i) Golden-Sterling Park #2081, (ii) Golden-Sterling Park #2150, (iii) Golden-Paragon Park #2348, and (iv) Golden-Paragon Park #2351 (collectively, the "Line Loop"). The Line Loop will be constructed entirely within existing transmission corridor right-of-way or on property to be obtained by the Company for the proposed Golden Substation. As the closest existing 230 kV lines to the proposed Golden Substation site, the Line Loop will provide a new 230 kV source from the Aspen/Goose Creek Substation area into Data Center Alley ("DCA") via the proposed Golden Substation. As the Line Loop is located contiguous with Aspen-Golden Line #2333 along the Route 1 right-of-way where Line #2333 and the Line Loop both enter the proposed Golden Substation, any impacts resulting from the Line Loop construction are included in the Route 1 discussion.

The Project is needed to maintain and improve electric service to customers in the eastern Loudoun load area ("Eastern Loudoun Load Area"), which is generally to the north and west of the Dulles Airport and is inclusive of the DCA; to address significant load growth in the Eastern Loudoun Load Area; and to resolve identified North American Electric Reliability Corporation reliability violations. The Company considered the facilities required to construct and operate the Project, the amount of new rights-of-way that will be required, the amount

[1] The Aspen-Golden Lines will be on entirely new right-of-way except where the lines cross the existing 100-foot-wide transmission line right-of-way corridor containing Beaumeade-Belmont Line #227 and Beaumeade-Pleasant View Line #274.

of existing development in each area, the 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) within the proposed routes and substation footprints. In accordance with Virginia Department of Environmental Quality ("DEQ") and the SCC's Memorandum of Agreement, the evaluation was conducted using various data sets that may indicate wetland location and type. This report is being submitted to the DEQ as part of the DEQ Wetland Impacts Consultation.

This desktop assessment did not include field investigations by the Company required for wetland delineations in accordance with the U.S. Army Corps of Engineers Wetland Delineation Manual (Environmental Laboratory, 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0).

PROJECT STUDY AREA AND POTENTIAL ROUTES

The study area identified for the Project encompasses approximately 30 square miles entirely within unincorporated areas of southeastern Loudoun County. It includes portions of the U.S. Census Bureau census-designated places of Ashburn, Belmont, Broadlands, Dulles Town Center, Kincora, Lansdowne, Moorefield, One Loudoun, Sterling, and University Center. There are no incorporated cities within the study area. Based on the above, ERM and Dominion defined the boundaries of the study area for the Project as follows and as shown in Attachment 1:

- The Company's existing 500 kV Line #558 to the west;
- Riverside Parkway to the north;
- Atlantic Boulevard to the east; and
- State Route 267 (Dulles Greenway) to the south.

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

ROUTE 1

Route 1 is comprised of three segments separated by the Belmont Park Segment (Belmont Park Variations A and B) and the Broad Run Segment (Broad Run Variations A and B). Route 1 begins at the proposed Aspen Substation and extends approximately 2.9 miles to the Belmont Park Segment, continues from the Belmont Park Segment approximately 3.3 miles to the Broad Run Segment and then continues for 0.4 mile from the Broad Segment where is terminates at the proposed Golden Substation. The Route 1 right-of-way, excluding the Belmont Park and Broad Run Variations, encompasses about 106.1 acres, inclusive of the proposed Aspen and Golden Substation sites and the Line Loop.

BELMONT PARK VARIATIONS

The Belmont Park Route Variations begin at Route 1 approximately 0.3 mile southwest of the intersection of Rt. 7 and Claiborne Parkway and rejoin Route 1 approximately 0.3 mile southeast of the intersection of Rt. 7 and Claiborne Parkway. Either Belmont Park Variation A (Belmont Park A) or Belmont Park Variation B (Belmont Park B) will be required to connect to Route 1.

BELMONT PARK VARIATION A

Belmont Park Variation A (Belmont Park A) is an approximately 0.6-mile-long variation that begins at Route 1 approximately 0.3 mile west of and extends approximately 0.3 mile east of Claiborne Parkway, directly south of Rt. 7. Belmont Park A crosses through the south side of the cloverleaf interchange of Rt. 7 and Claiborne Parkway/Lansdowne Boulevard. The Belmont Park A right-of-way encompasses about 6.9 acres.

BELMONT PARK VARIATION B

Belmont Park Variation B (Belmont Park B) is an approximately 0.6-mile-long variation that begins approximately 0.3 mile west of Claiborne Parkway on the south side of Rt. 7, crosses from the south to north side of Rt. 7, then extends approximately 0.4 mile to the southeast along the north side of Rt. 7 across Lansdowne Boulevard and crosses back to the south side of Rt 7. Belmont Park B crosses through the northern side of the cloverleaf interchange of Rt. 7 and Claiborne Parkway/Lansdowne Boulevard. The Belmont Park B right-of-way encompasses about 7.7 acres.

BROAD RUN VARIATIONS

The Broad Run Variations begin at Route 1 along the east side of Loudoun County Parkway approximately 0.6 mile south of Russell Branch Parkway, north of Beaverdam Run, and reconnect with Route 1 on the east side of Pacific Boulevard south of Cabin Branch. Either Broad Run Variation A (Broad Run A) or Broad Run Variation B (Broad Run B) will be required to connect to Route 1.

BROAD RUN VARIATION A

Broad Run A begins at Route 1 approximately 0.1 mile north of Beaverdam Run on the east side of Loudoun County Parkway. From there, Broad Run A continues south for 0.2 mile, crossing Beaverdam Run and collocating with Loudoun County Parkway. Broad Run A then follows the east side of Loudoun County Park for approximately 1.3 miles, crossing the Loudoun Water Broad Run Water Reclamation Facility (BRWRF) parcel, Reuse Lane, Aquiary Way, Gloucester Parkway, and Coach Gibbs Drive. Broad Run A then turns southeast for approximately 0.3 mile along the W&OD Trail, crossing over Broad Run toward the existing Paragon Substation. It then turns northeast for 0.2 mile and southeast for 0.2 mile, where it

reconnects with Route 1 near Pacific Boulevard. In total, Broad Run A is approximately 2.2 miles in length with a right-of-way encompassing about 29.7 acres.

BROAD RUN VARIATION B

Broad Run B begins at Route 1 approximately 0.6 mile south of Russell Branch Parkway on the east side of Loudoun County Parkway. From there, Broad Run B turns east for 0.4 mile then south for 0.8 mile across Loudon Water's BRWRF parcel following an existing Company overhead distribution line and a buried sewer utility right-of-way and access road. It then crosses Broad Run and continues to the south for 0.2 mile before crossing Gloucester Parkway, then continues south for 0.6 mile, passing existing BECO Substation and continuing south for 0.2 mile, where it crosses Pacific Boulevard and Cabin Branch and joins with Route 1. In total, Broad Run B is approximately 2.3 miles in length with a right-of-way encompassing about 30.6 acres.

PROPOSED SUBSTATIONS

The proposed 500-230 kV Aspen Substation will be located on approximately 10.0 acres 0.2 mile southwest of Cochran Mill Road. The proposed 500-230 kV Golden Substation will be located on approximately 9.0 acres. Impacts associated with the proposed Aspen Substation and proposed Golden Substation footprints are included in the impacts for Route 1 rather than individually.

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

Probability	Criteria
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 in. or larger diameter at breast height (DBH);
- 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 by the Company 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 the interpreted wetland types and probabilities displayed on color base map images.

FIELD DELINEATIONS COMPLETED WITHIN THE PROPOSED ROUTE SEGMENTS

Field delineations were completed by external parties in association with unrelated projects along Route 1 between Belmont Ridge Road and Belmont Park Variation A and along Broad Run Variation B between Beaverdam Run and Broad Run. A field delineation was completed by Wetland Studies and Solutions Inc. in September 2020 and revised in January 2023 along Route 1 (between MPs 2.0 and 2.8) southeast of the intersection of Belmont Ridge Road and Rt. 7. This field delineation was approved by the Corps in an Approved Jurisdictional

Determination in April 2023. Another field delineation of wetlands and waterbodies was conducted on behalf of Loudoun Water in 2013 in connection with a floodplain development permit (issued in 2016) and includes areas between MPs 0.3 and 1.0 of Broad Run Variation B.

These field delineations were used to outline boundaries of potential wetlands in these locations 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 the Route and Route Variations[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
Route 1						
High	1.8	0.7	1.0	0.0	0.0	0.1
Medium/High	8.2	3.2	3.6	0.0	0.6	0.8
Medium	6.5	1.0	1.9	1.5	1.6	0.4
Medium/Low	0.3	0	0.0	0.0	0.0	0.3
Low	N/A	N/A	N/A	N/A	N/A	N/A
Very Low	N/A	N/A	N/A	N/A	N/A	N/A
Belmont Park Variations						
Belmont Park Variation A						
High	NA	NA	NA	NA	NA	NA
Medium/High	0.4	0.0	0.4	NA	NA	NA
Medium	0.4	0.1	0.2	NA	NA	NA
Medium/Low	NA	NA	NA	NA	NA	NA
Low	NA	NA	NA	NA	NA	NA
Very Low	NA	NA	NA	NA	NA	NA
Belmont Park Variation B						
High	NA	NA	NA	NA	NA	NA
Medium/High	1.9	0.6	1.4	NA	NA	NA
Medium	0.6	0.2	0.4	NA	NA	NA

Probability	Total within right-of-way (acres) [c]	Wetland and Waterbody type (acres)				
		PEM Emergent	PFO Forested	PSS Scrub-shrub	PUB Freshwater pond	Riverine
Medium/Low	NA	NA	NA	NA	NA	NA
Low	NA	NA	NA	NA	NA	NA
Very Low	NA	NA	NA	NA	NA	NA
Broad Run Variations						
Broad Run Variation A						
High	0.4	NA	0.3	NA	NA	0.0
Medium/High	2.6	0.6	1.7	NA	NA	0.3
Medium	3.7	0.4	3.2	NA	0.0	0.0
Medium/Low	0.4	0.0	0.2	0.3	0.0	0.0
Low	NA	NA	NA	NA	NA	NA
Very Low	NA	NA	NA	NA	NA	NA
Broad Run Variation B						
High	2.3	0.0	2.2	NA	NA	0.0
Medium/High	7.4	1.8	5.2	NA	0.0	0.4
Medium	4.2	0.9	2.8	NA	0.4	0.0
Medium/Low	1.4	NA	1.4	NA	NA	NA
Low	NA	NA	NA	NA	NA	NA
Very Low	NA	NA	NA	NA	NA	NA

Note: Totals may not equal the sum of addends due to rounding.

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

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

b Route 1 includes the Aspen and Golden Substations and the Line Loop footprints.

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

The length of the corridor of Route 1 is approximately 6.6 miles and encompasses a total of approximately 104.4 acres (including the 5.9-acre Aspen and 8.5-acre Golden Substation footprints and the Line Loop). Based on the methodology discussed above, the right-of-way footprint will encompass approximately 15.8 percent (16.5 acres) of land with a medium or higher probability of containing wetlands and waterbodies. Based on ERM's desktop wetland and waterbody analysis, the Route 1 right-of-way would cross approximately 16.5 acres of

wetlands, including 6.5 acres of palustrine forested ("PFO") wetlands, 1.6 acres of palustrine scrub-shrub ("PSS"), 4.9 acres of palustrine emergent ("PEM") wetlands, 2.3 acres of palustrine unconsolidated bottom ("PUB") wetlands, and 1.3 acres of riverine wetlands.

BELMONT PARK VARIATIONS

BELMONT PARK VARIATION A

The length of the corridor of Belmont A is approximately 0.6 miles and encompasses a total of approximately 6.9 acres. Based on the methodology discussed above, the right-of-way footprint will encompass approximately 11.8 percent (0.8 acres) of land with a medium or higher probability of containing wetlands and waterbodies. The approximately 0.8 acre of wetlands includes 0.7 acre of PFO and 0.2 acre of PEM wetlands.

BELMONT PARK VARIATION B

The length of the corridor of Belmont B is approximately 0.6 miles and encompasses a total of approximately 7.7 acres. Based on the methodology discussed above, the right-of-way footprint will encompass approximately 32.9 percent (2.5 acres) of land with a medium or higher probability of containing wetlands and waterbodies. The approximately 2.5 acres of wetlands includese 1.8 acres of PFO and 0.7 acre of PEM wetlands.

BROAD RUN VARIATIONS

BROAD RUN VARIATION A

The length of the corridor of Broad Run A is approximately 2.2 miles and encompasses a total of approximately 29.7 acres. Based on the methodology discussed above, the right-of-way footprint will encompass approximately 22.2 percent (6.6 acres) of land with a medium or higher probability of containing wetlands and waterbodies. The approximately 6.6 acres of wetlands includes 5.3 acres of PFO, 1.0 acre of PEM, <0.1 acre of PUB, and 0.4 acre of riverine wetlands.

BROAD RUN VARIATION B

The length of the corridor of Broad Run B is approximately 2.3 miles and encompasses a total of approximately 30.6 acres. Based on the methodology discussed above, the right-of-way footprint will encompass approximately 45.3 percent (13.9 acres) of land with a medium or higher probability of containing wetlands and waterbodies. The approximately 13.9 acres of wetlands includes 10.3 acres of PFO, 2.7 acres of PEM, 0.4 acre of PUB, and 0.4 acre of riverine wetlands.

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 Variations cross

perennial and intermittent waterbodies (rivers, streams, tributaries, and open water features). Named waterbody crossings include perennial streams Sycolin Creek, Goose Creek, Russell Branch, and Beaverdam Run (Route 1), Broad Run (Broad Run Variations A and B), and Cabin Branch (Broad Run Variation B). According to the U.S. Army Corps of Engineers ("Corps") documentation, no waters considered navigable under Section 10 of the Rivers and Harbors Act are crossed by Route 1 and the Variations for the Project.

ROUTE 1

Route 1 would have a total of 32 waterbody crossings. Of these, 16 are NHD-mapped waterbody crossings, including three perennial streams (Sycolin Creek, Goose Creek, and Russell Branch), 12 unnamed, intermittent streams, and one lake/pond. There are 16 unmapped waterbodies, including 11 open waterbody features that appear to be stormwater control features and five unnamed, unclassified streams identified within the right-of-way using recent aerial imagery (spring 2023). Based on ERM's desktop wetland and waterbody analysis, the Route 1 right-of-way would encompass approximately 1.3 acres of riverine wetlands and 2.3 acres of PUB wetlands.

BELMONT PARK VARIATIONS

Based on ERM's desktop wetland and waterbody analysis, the Belmont Park Variations would not cross any NHD-mapped or unmapped waterbodies.

BROAD RUN VARIATIONS

BROAD RUN VARIATION A

Broad Run Variation A would have a total of five waterbody crossings. Of these, four are NHD-mapped waterbody crossings, including 2 perennial streams (Beaverdam Run and Broad Run) and two unnamed intermittent tributaries to Broad Run. There is one unmapped open waterbody feature identified within the right-of-way using recent aerial imagery (spring 2023). Based on ERM's desktop wetland and waterbody analysis, the Broad Run Variation A right-of-way would encompass approximately 0.4 acre of riverine wetlands and less than 0.1 acre of PUB wetlands.

BROAD RUN VARIATION B

Broad Run Variation B would have a total of six waterbody crossings. Of these, three are NHD-mapped perennial streams (Beaverdam Run, Broad Run, and Cabin Branch) and two are NHD-mapped unnamed intermittent tributaries to Broad Run. There is one unmapped open waterbody feature identified within the right-of-way using recent aerial imagery (spring 2023). Based on ERM's desktop wetland and waterbody analysis, the Broad Run Variation A right-of-way would encompass approximately 0.4 acre of riverine and 0.4 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. Direct impacts to wetlands would be limited to placement of structures within wetlands if unavoidable and the permanent conversion of PSS/PFO wetlands within the right-of-way to PSS or PEM type wetlands.

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.

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: Laura Meadows, Dominion Energy Virginia
James Young, 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.

U.S. Army Corps of Engineers (USACE). 2023. Notification of Approved Jurisdictional Determination. Provided to Dominion Energy from Toll Brothers, Inc.

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

PROPOSED ASPEN SUB

PROPOSED GOLDEN SUB

Bazil Newman Riverfront Park
Lansdowne
Lansdowne Golf Club
Leesburg Executive Airport
Battlefield Pkwy SE
Crosstrail Blvd
Riverside Pkwy
Belmont
411 ft
Sycolin
Dunlin
Sycolin Rd
Claiborne Pkwy
Bles Park / Eastern Loudoun Adult Day Center
Chesapeake and Ohio Canal
392 ft
River Rd
Hughes Rd
Horsepen Branch
McKee-Beshers WMA
Islands of the Potomac WMA
Algonkian Regional Park
Algonkian Pkwy
University Center
One Loudoun
Academies of Loudoun
Goose Creek Village
Hay Rd
Ashburn
Gloucester Pkwy
Ashburn Farm Pkwy
474 ft
Cascades
Countryside
Sugarland Run
Dulles Town Center
Banshee Reeks Nature Preserve
Evergreen Mills
Beaverdam Reservoir
Broadlands
Ashburn Rd
Farmwell Rd
Waxpool Rd
Dermott Dr
1757 Golf Club
Croson Ln
Moorefield
Loudoun County Pkwy
Moran Rd
Brambleton
Claude Moore Park / Recreation and Community Center / Heritage Farm Museum
Columbus
Cincinnati
West Virginia
Virginia
Appalachian Mountains
Piedmont
Raleigh
Norfolk
Dranesville
Run
Valley

15 7 267 659 641 607 625 28 636

0 0.5 1 Miles

N

- Existing Substation
- Proposed Substation
- Study Area
- Route 1
- Belmont Park Variation A
- Belmont Park Variation B
- Broad Run Variation A
- Broad Run Variation B
- Aspen-Goose Creek Line
- Lines #2081/#2150 Loop

ERM

Attachment 1
Project Overview
Aspen-Golden 500-230 kV Electric Transmission Project
Dominion Energy Virginia
Loudoun County, Virginia

Dominion Energy

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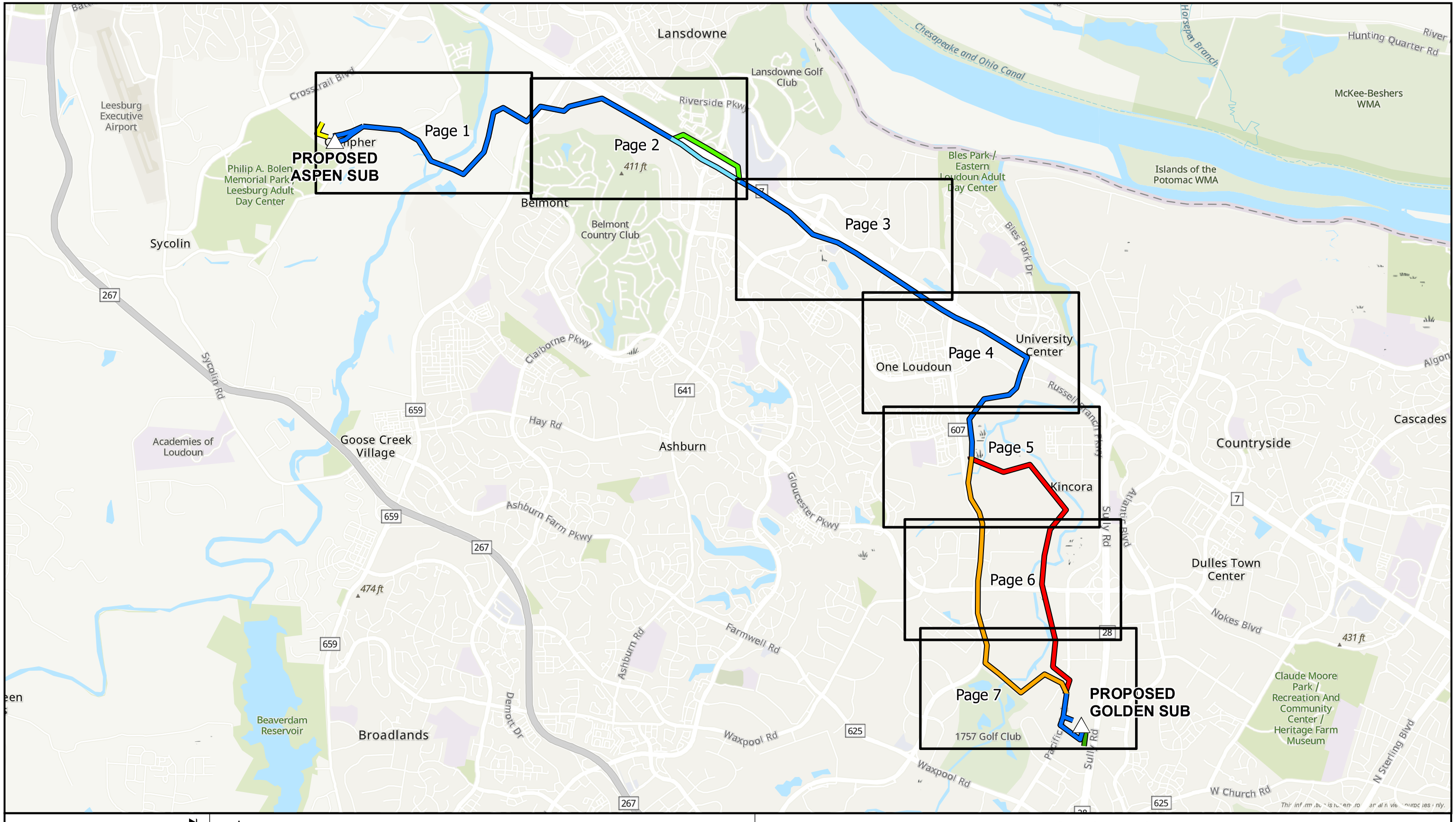
222 South 9th Street
Suite 2900
Minneapolis, Minnesota 55402

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

erm.com

ATTACHMENT 2



Attachment 2
Wetland and Waterbody Index
Aspen-Golden 500-230 kV Electric Transmission Project
Dominion Energy Virginia
Loudoun County, Virginia

ERM

Dominion Energy

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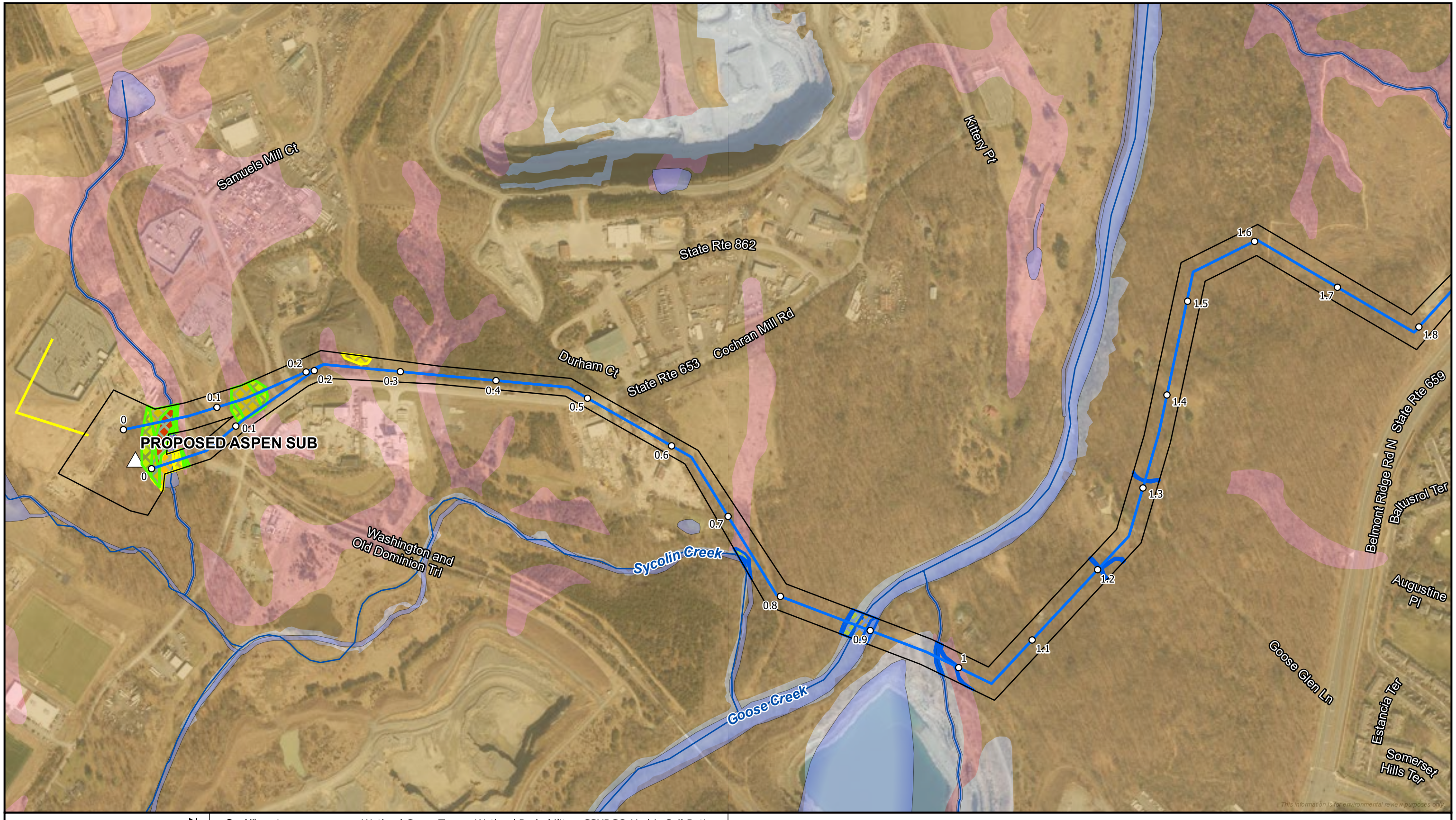

0 250 500
Feet

N

Mileposts
Route 1
Aspen-Goose Creek Line
Right-of-Way
NWI Wetland

Wetland Cover Type
PFO
PUB
Riverine

Wetland Probability
Medium
Medium/High
High

SSURGO Hydric Soil Rating
Not Hydric Soil
Partially Hydric Soil
Hydric Soil

ERM

Attachment 2
Wetland and Waterbody Mapset
Aspen-Golden 500-230 kV Electric Transmission Project
Dominion Energy Virginia
Loudoun County, Virginia

Dominion Energy

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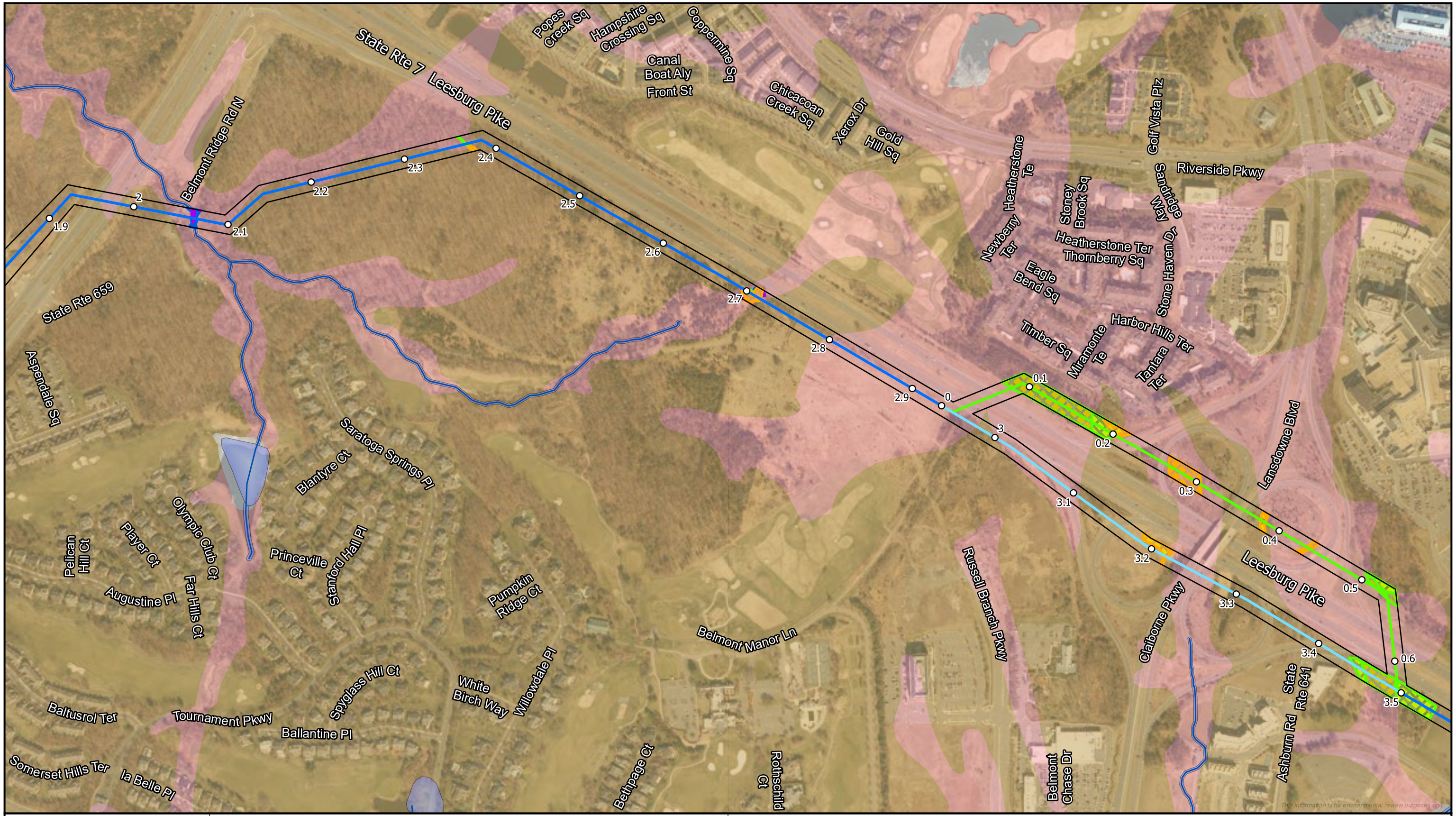

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Feet

N

Mileposts
Route 1
Belmont Park Variation A
Belmont Park Variation B
Right-of-Way
NWI Wetland

Wetland Cover Type
PEM
PFO
PSS
Riverine

Wetland Probability
Medium
Medium/High
High

SSURGO Hydric Soil Rating
Not Hydric Soil
Partially Hydric Soil
Hydric Soil

ERM

Attachment 2
Wetland and Waterbody Mapset
Aspen-Golden 500-230 kV Electric Transmission Project
Dominion Energy Virginia
Loudoun County, Virginia

Dominion Energy

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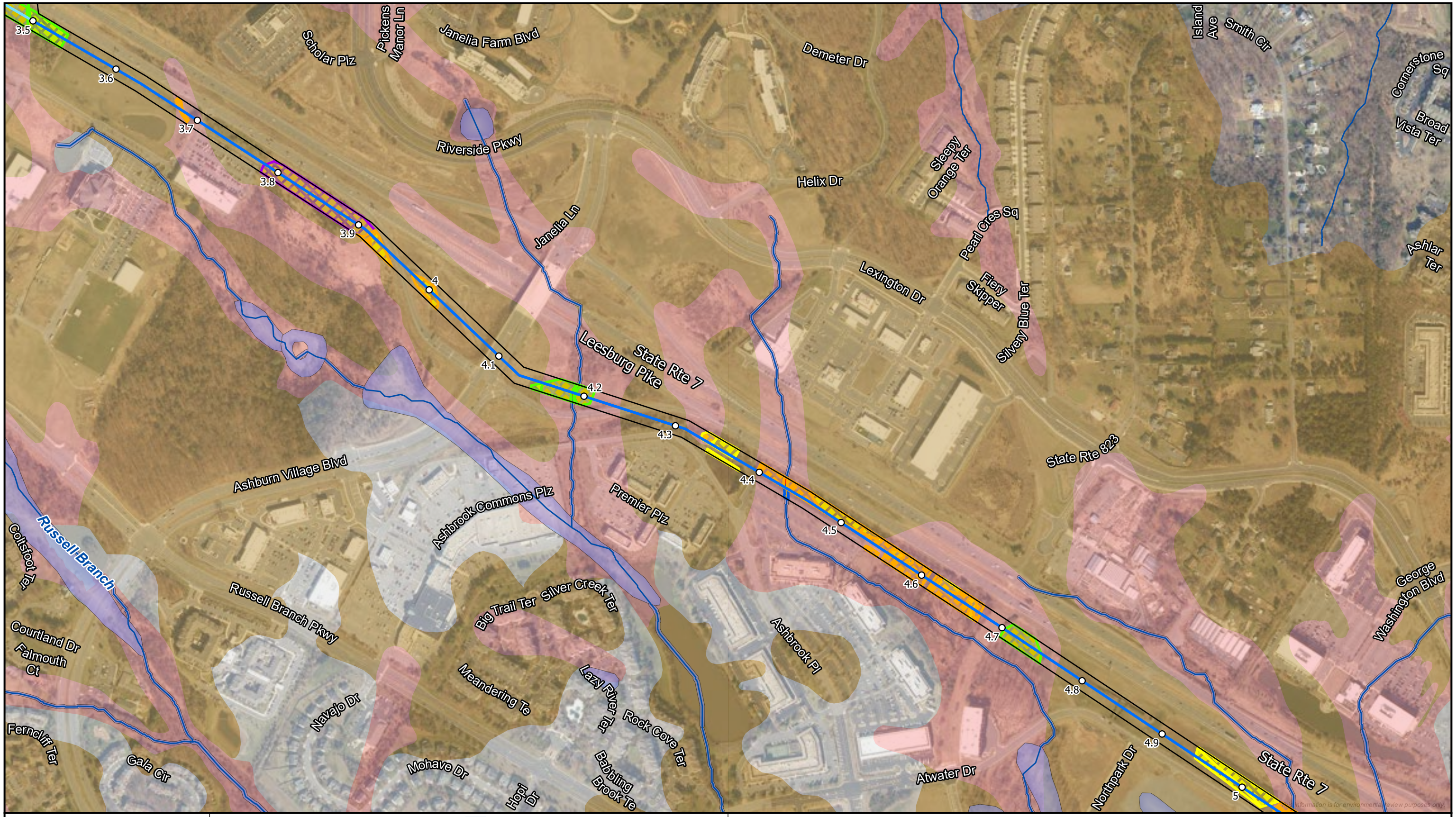

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Feet

N

Mileposts
Route 1
Belmont Park Variation A
Belmont Park Variation B
Right-of-Way
NWI Wetland

Wetland Cover Type
PEM
PFO
PSS
PUB

Riverine

Wetland Probability
Medium
Medium/High
High

SSURGO Hydric Soil Rating
Not Hydric Soil
Partially Hydric Soil
Hydric Soil

ERM

Attachment 2
Wetland and Waterbody Mapset
Aspen-Golden 500-230 kV Electric Transmission Project
Dominion Energy Virginia
Loudoun County, Virginia

Dominion Energy

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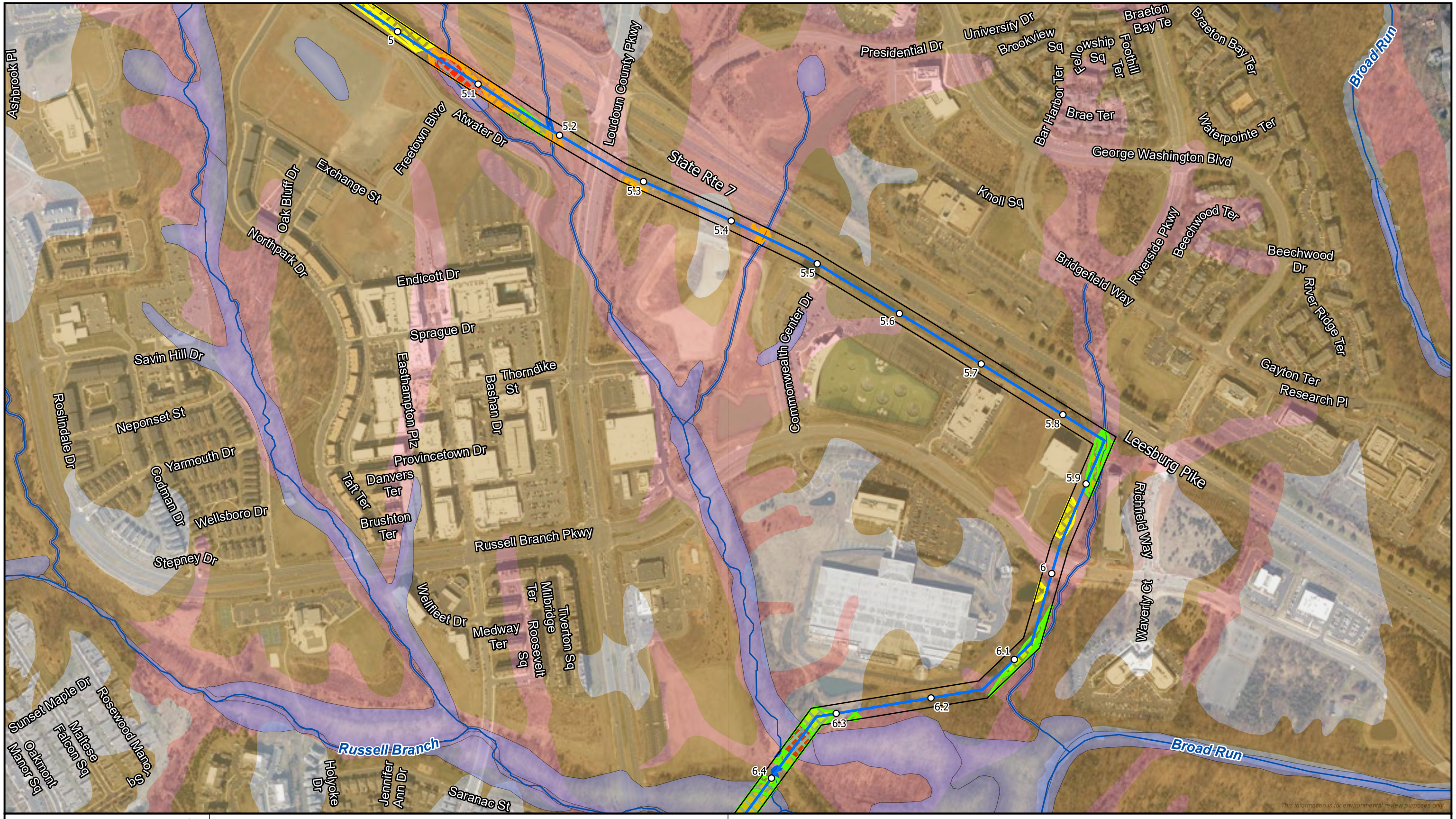

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Feet

N

Mileposts
Route 1
Right-of-Way
NWI Wetland

Wetland Cover Type
PEM
PFO
PUB
Riverine

Wetland Probability
Medium
Medium/High
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SSURGO Hydric Soil Rating
Not Hydric Soil
Partially Hydric Soil
Hydric Soil

ERM

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Aspen-Golden 500-230 kV Electric Transmission Project
Dominion Energy Virginia
Loudoun County, Virginia

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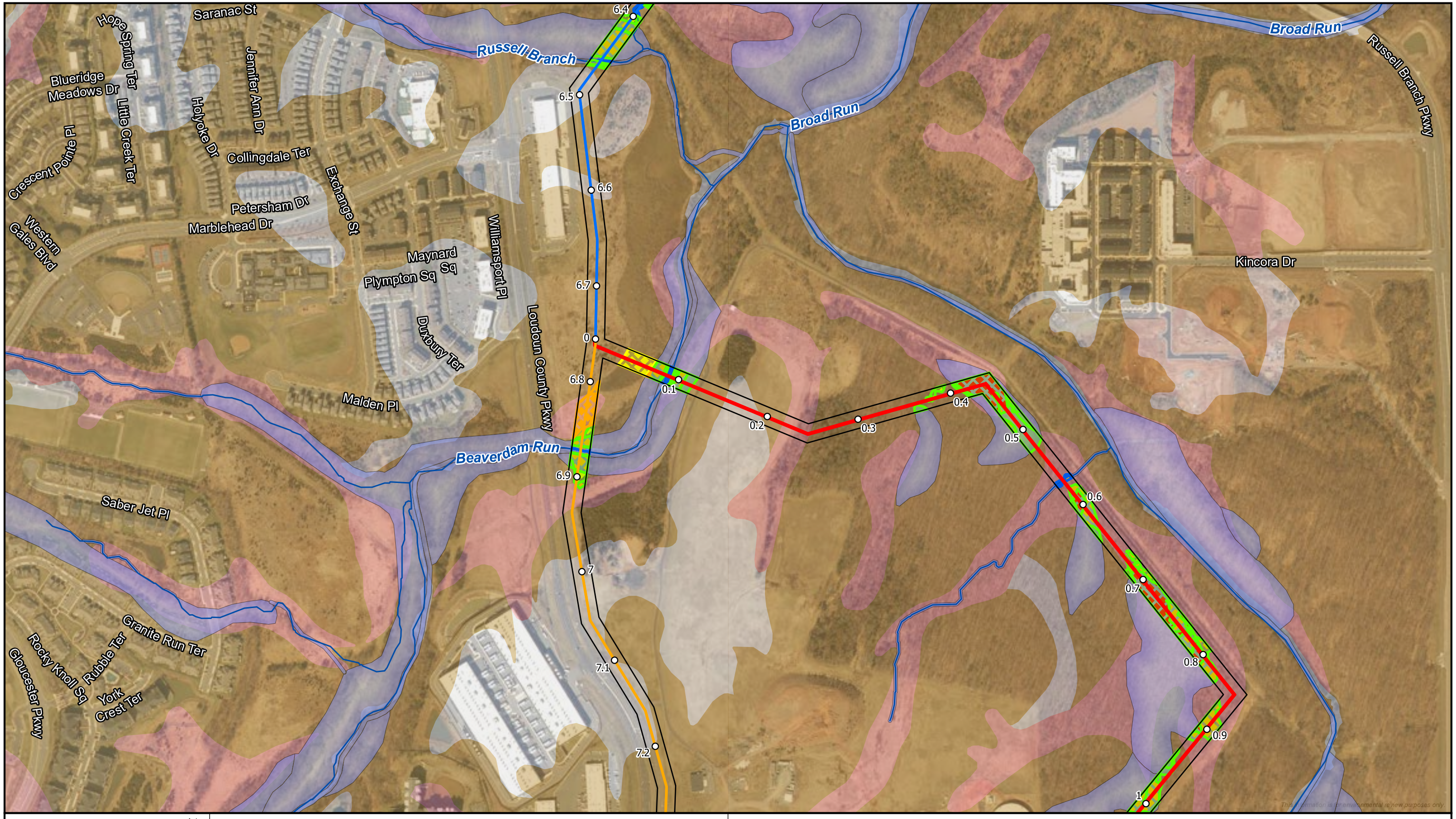

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Feet

N

Mileposts
Route 1
Broad Run Variation A
Broad Run Variation B
Right-of-Way
NWI Wetland

Wetland Cover Type
PEM
PFO
PUB
Riverine

Wetland Probability
Medium
Medium/High
High

SSURGO Hydric Soil Rating
Not Hydric Soil
Partially Hydric Soil
Hydric Soil

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Attachment 2
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Dominion Energy Virginia
Loudoun County, Virginia

Dominion Energy

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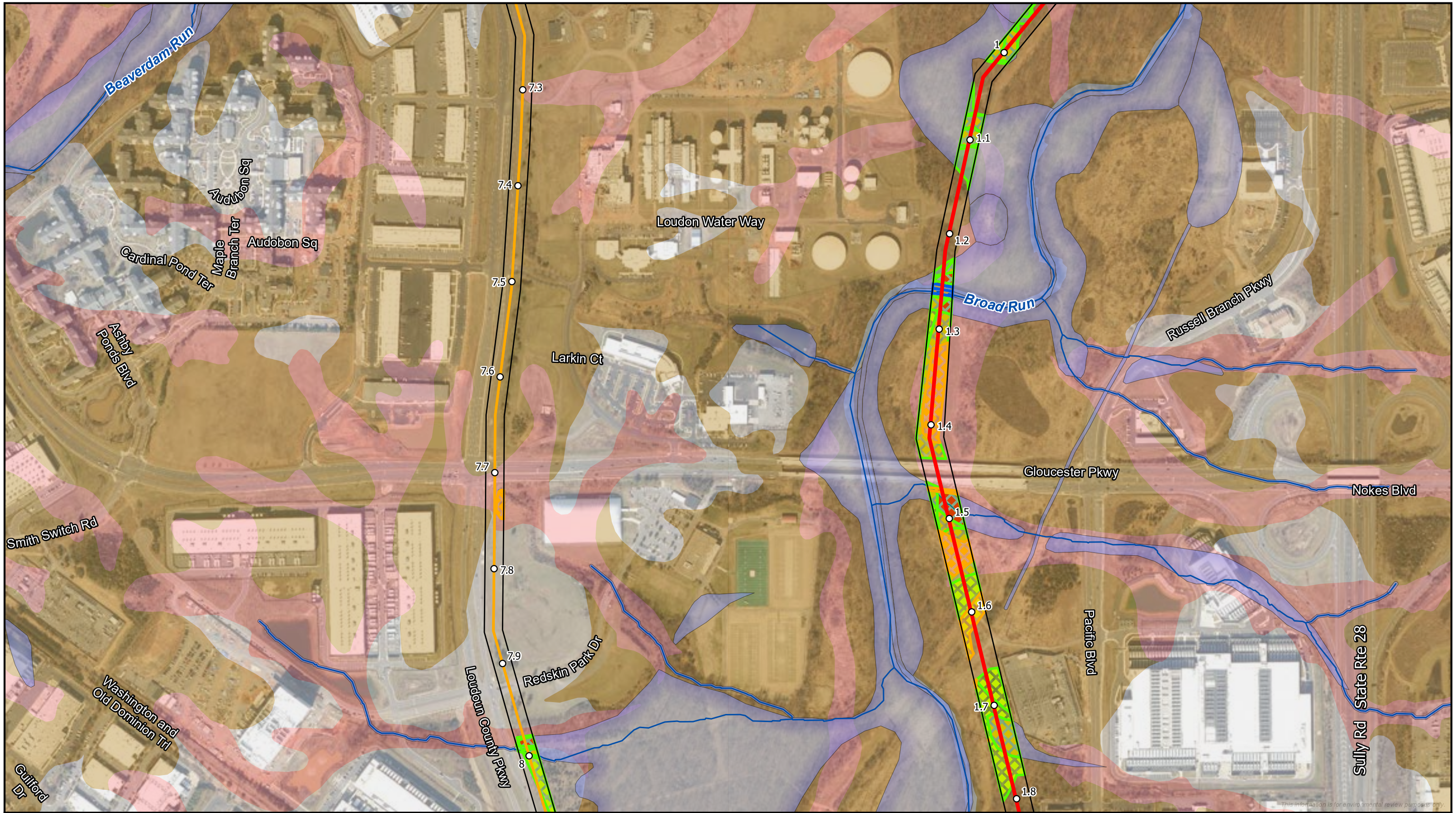

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Mileposts
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Broad Run Variation B
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Loudoun County, Virginia

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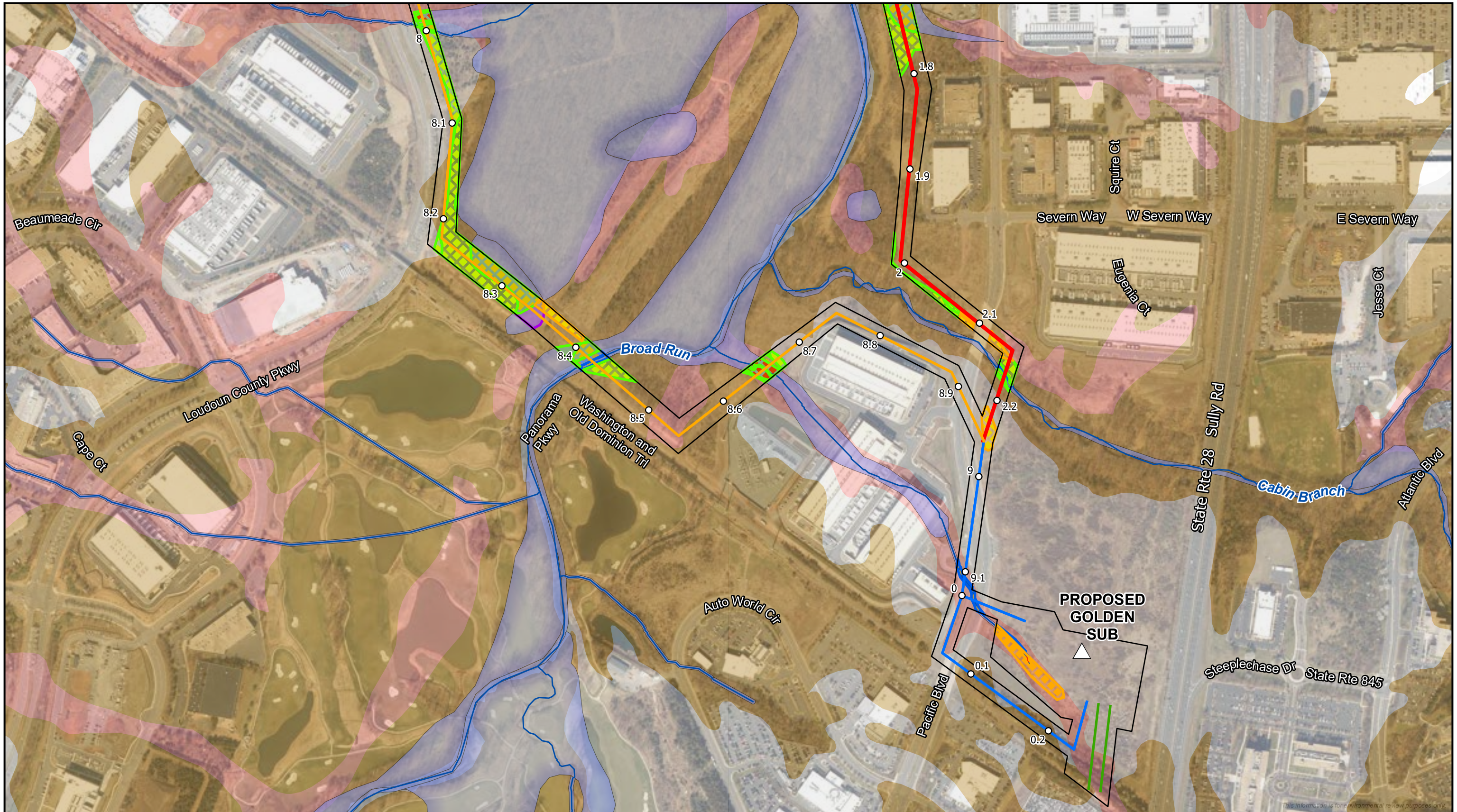

0 250 500
Feet

N

Mileposts
Route 1
Broad Run Variation A
Broad Run Variation B
Lines #2081/#2150 Loop
Right-of-Way
NWI Wetland

Wetland Cover Type
PEM
PFO
PSS
Riverine

Wetland Probability
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Medium/High
High

SSURGO Hydric Soil Rating
Not Hydric Soil
Partially Hydric Soil
Hydric Soil

ERM

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Dominion Energy Virginia
Loudoun County, Virginia

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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 28, 2024

Rachel Studebaker
Environmental Specialist III
Dominion Energy Services
120 Tredegar Street, Richmond, VA 23219

RE: Dominion Energy Virginia's Proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation Project; Loudoun County, Virginia.

Dear Ms. Studebaker:

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 kV substation (the "Aspen Substation"), a new overhead 500 kV single circuit transmission line that connects the proposed Aspen Substation to the existing Goose Creek Substation ("Aspen-Goose Creek Line), a new overhead 500 kV single circuit transmission line and a new-230 kV single circuit transmission line (the "Aspen-Golden Lines), and a new 500-230 kV substation (the "Golden Substation"), in Loudoun County, Virginia (collectively, 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. Table 1 below provides a summary of the wetlands that could be affected by the proposed options. In addition to the wetland desktop delineation method, the Company incorporated several existing field delineations into the Wetland Desktop Study. The Company identified previous field delineations which had been completed by external parties (developers and landowners) in association with unrelated development projects at various points along Route 1 and the route variations. When available, previous field delineations were used in lieu of the desktop method and incorporated into the wetland and waterbody probability table below.

Table 1: Summary of the Probabilities of Wetland and Waterbody Occurrence along the Aspen-Golden Lines [a, b]

Probability	Total within right-of-way Acres [b]	Wetland and Waterbody type (acres)				
		PEM (Emergent)	PFO (Forested)	PSS (Scrub-shrub)	PUB (Freshwater pond)	Riverine (Stream)
Route 1 [c]						
High	1.8	0.7	1.0	0.0	0.0	0.1
Medium/High	8.2	3.2	3.6	0.0	0.6	0.8
Medium	6.5	1.0	1.9	1.5	1.6	0.4
Belmont Park Variations						
Belmont A						
High	NA	NA	NA	NA	NA	NA
Medium/High	0.4	0.0	0.4	NA	NA	NA
Medium	0.4	0.1	0.2	NA	NA	NA
Belmont B						
High	NA	NA	NA	NA	NA	NA
Medium/High	1.9	0.6	1.4	NA	NA	NA
Medium	0.6	0.2	0.4	NA	NA	NA
Broad Run Variations						
Broad Run A						
High	0.4	NA	0.3	NA	NA	0.0
Medium/High	2.6	0.6	1.7	NA	NA	0.3
Medium	3.7	0.4	3.2	NA	0.0	0.0
Broad Run B						
High	2.3	0.0	2.2	NA	NA	0.0
Medium/High	7.4	1.8	5.2	NA	0.0	0.4
Medium	4.2	0.9	2.8	NA	0.4	0.0

NA *Not applicable due to absence of wetland or waterbody type within the route segment.*
a *The numbers in this table have been rounded for presentation purposes; as a result, the totals may not reflect the sum of the addends.*
b *Total acres may not total the sum of wetland and waterbody types. 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 *Wetlands and waterbodies within the proposed Aspen and Golden Substation footprints are included within Route 1.*

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 6, 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.

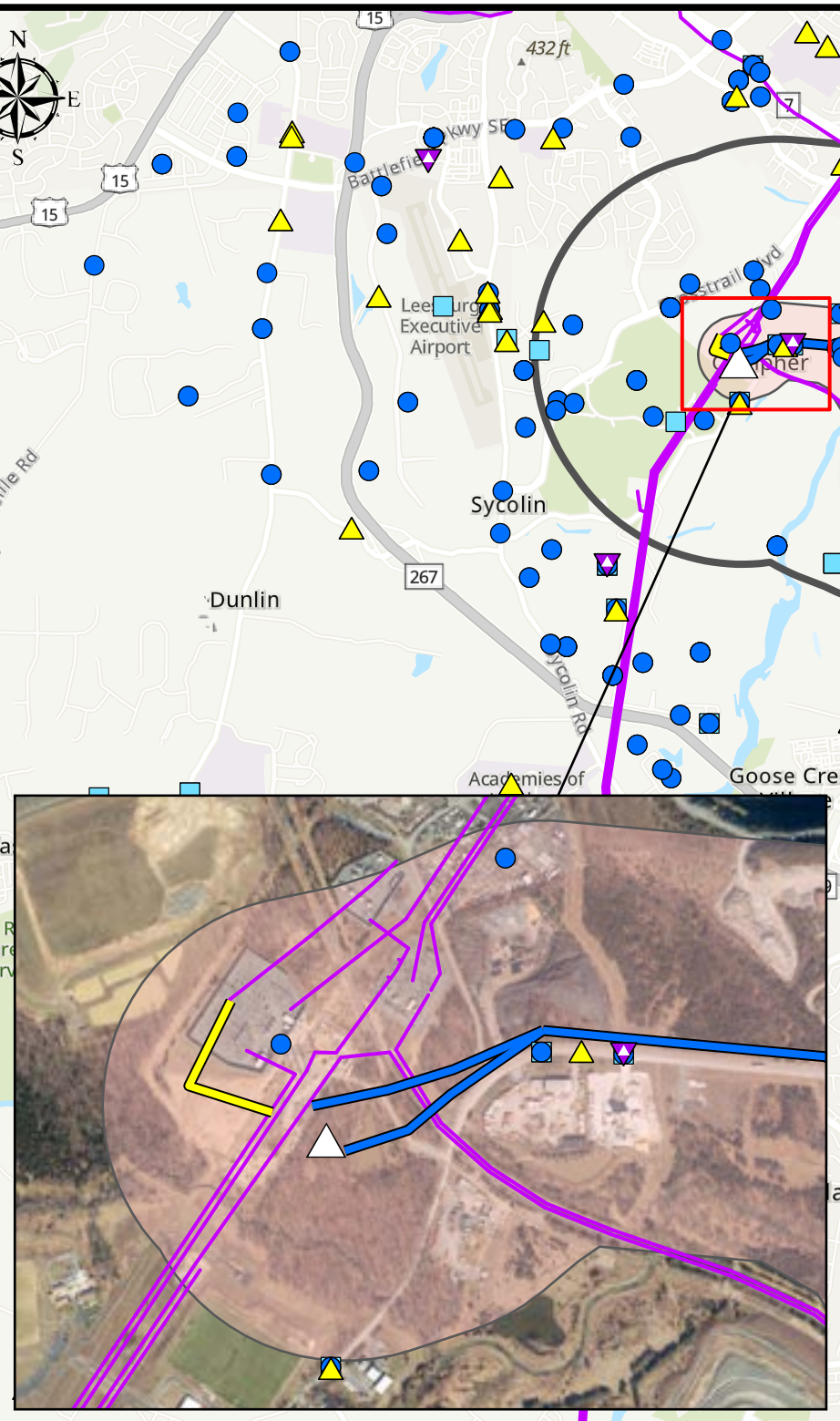
Should you have any questions, please don't hesitate to contact me at 804-965-4329 or at **michelle.henicheck@deq.virginia.gov.**

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



EPA Sites
Air
Water
Land
Toxics
Waste
PROPOSED GOLDEN SUB
Lansdowne
Belmont
Sycolin
Dunlin
One Loudoun
Countryside
Cascades
Sugarland Run
Sterling
Goose Creek
Ashburn
Moorefield
Bazil Newman Riverfront Park
Lansdowne Golf Club
Chesapeake and Ohio Canal
McKee-Beshers WMA
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Dranesville
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Atlantic Blvd
Leesburg Executive Airport
Battlefield Pkwy
Belmont Park / Eastern Loudoun Adult Day Center
University Center
Pincora
267 Golf Club
Banshee Reeks Nature Preserve
Academies of
Washin
West Virginia
Virginia
Richmond
Project Location
0
1
2
Miles
N
S
E
W
15
267
641
607
637
28
625
7
432 ft
411 ft
392 ft

This information is for environmental review purposes only.

Proposed Substation
Route 1
Belmont Park Variation A
Belmont Park Variation B
Broad Run Variation A
Broad Run Variation B
Aspen-Goose Creek Line
Lines #2081/#2150 Loop
Existing Dominion Transmission Lines
1-Mile Buffer of Project Impacts
1,000-Foot Buffer of Project Impacts

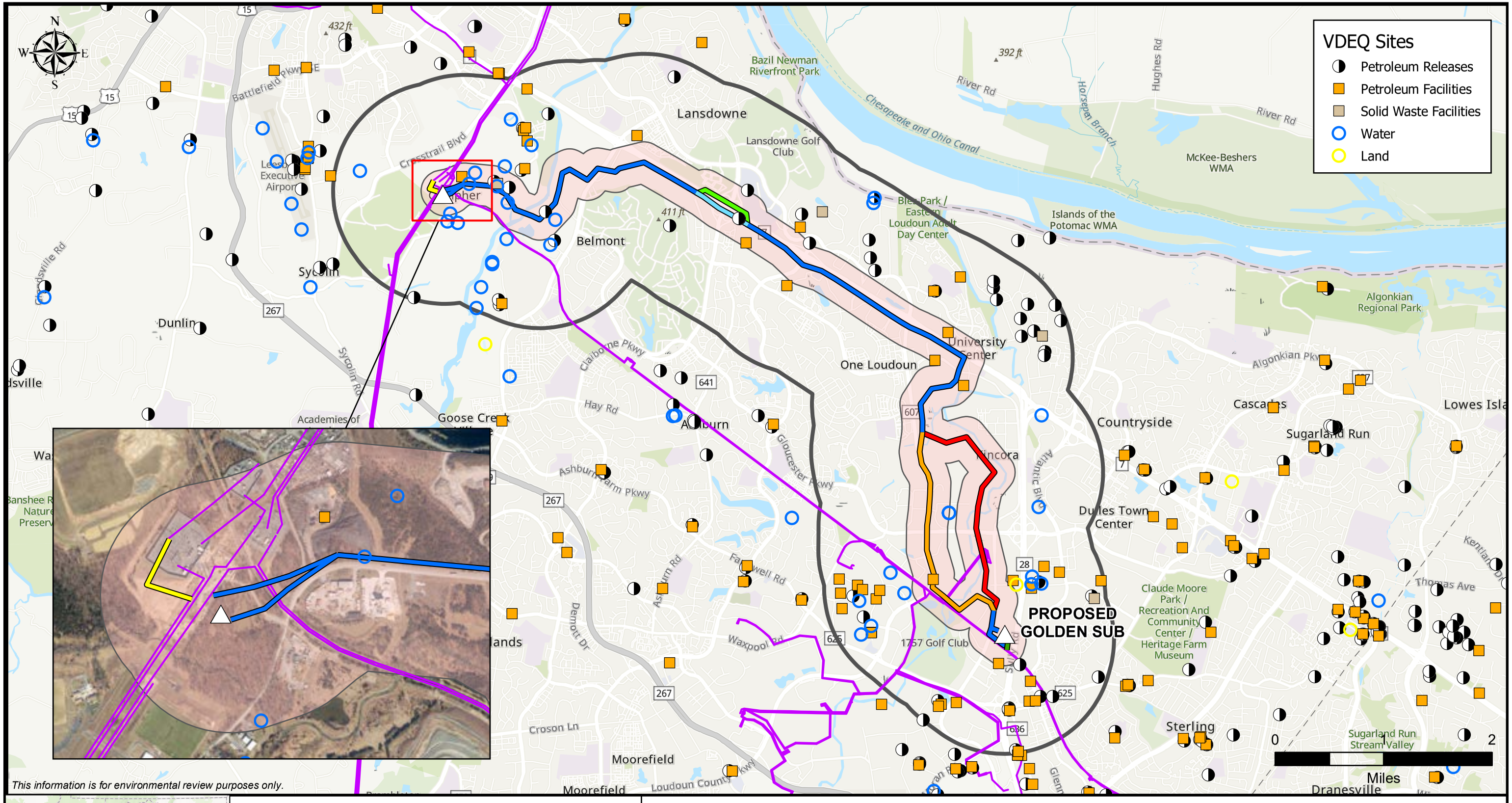
Attachment 2.F.1
EPA Solid and Hazardous Waste Sites
Aspen-Golden 500-230 kV Electric Transmission Project
Dominion Energy Virginia
Loudoun County, Virginia

ERM

Dominion Energy

MPLS M:\US\Projects\D-F\Dominion\Loudoun_500kV_ArcGIS\DEQ_Supplement\DOM_A2G_Contaminated_Sites.aprx\DOM_A2G_EPA_Contaminated_Sites | REVISED: 03/02/2024

DRAWN BY: JPB



This information is for environmental review purposes only.

Attachment 2.F.1
VDEQ Solid and Hazardous Waste Sites
Aspen-Golden 500-230 kV Electric Transmission Project
Dominion Energy Virginia
Loudoun County, Virginia

ERM

Dominion Energy

MPLS M:\US\Projects\D-F\Dominion\Loudoun_500kV_ArcGIS\DEQ_Supplement\DOM_A2G_Contaminated_Sites.aprx\DOM_A2G_VDEQ_Contaminated_Sites | REVISED: 03/02/2024

DRAWN BY: JPB

COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

September 21, 2023

Briana Cooney
Environmental Resources Management, Inc.
222 South 9th Street, Suite 2900
Minneapolis, MN 55402

Re: 0622601, Aspen to Golden

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.

Terrestrial Resources

According to the information in our files, the Ashburn Quarry Conservation Site and Murray's Ford Conservation Site are located within the project area. Conservation sites are tools for representing key areas of the landscape that warrant further review for possible conservation action because of the natural heritage resources and habitat they support. Conservation sites are polygons built around one or more rare plant, animal, or natural community designed to include the element and, where possible, its associated habitat, and buffer or other adjacent land thought necessary for the element's conservation. Conservation sites are given a biodiversity significance ranking based on the rarity, quality, and number of element occurrences they contain; on a scale of 1-5, 1 being most significant. The Ashburn Quarry Conservation Site has been assigned a biodiversity 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

Peregrine Falcons nest 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 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).

The Murray's Ford Conservation Site has been assigned a biodiversity rank of B2, which represents a site of very high significance. The natural heritage resource associated with this site is:

Piedmont Mafic Barren	G1/S1/NL/NL

Piedmont Mafic Barren communities are low-elevation outcrop barrens, these communities can contain sparse woodlands, scrub, and herbaceous vegetation. These communities occur up to 3200 feet in elevation and most of the documented occurrences are on mafic outcrops, which includes diabase outcrops (Fleming et al 2021). Mafic barrens generally have a high cover of exposed bedrock but have a higher cover of organic soils or soil mats than acidic barrens. This leads to a higher vascular plant cover that is usually a patchwork of severally stunted trees, shrub thickets, and herbaceous mats. Lithophytic lichens, which are classified as fungi, also help make up the patchwork cover (Fleming et al. 2021).

These small-patch communities are prone to degradation from trampling and invasive weeds when they are located near popular trails and overlooks. The Mafic Barrens are more prone to invasion by the non-native weeds than their acidic counterparts (Fleming et al. 2021).

DCR recommends avoiding both conservation sites when planning the powerline routes, including but not limited to avoiding tree removal at Murray's Ford Conservation Site. 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).

In addition to the documented resources, according to DCR's diabase screening layer and review by a DCR biologist, there is a potential for diabase flatrocks to occur in the project area. 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 the resource 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.

Aquatic Resources

According to the information in our files, the Broad Run - Rte 607 Stream Conservation Unit (SCU) is located within the project area. SCUs identify stream reaches that contain aquatic natural heritage resources, including 2 miles upstream and 1 mile downstream of documented occurrences, and all tributaries within this reach. SCUs are also given a biodiversity significance ranking based on the rarity, quality, and number of element occurrences they contain. The Broad Run - Rte 607 SCU has been assigned a biodiversity rank of B5, which represents a site of general interest/open space significance. The natural heritage resource associated with this SCU is:

Lampsilis cariosa	Yellow Lampmussel	G3G4/S2/NL/NL

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

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

To minimize adverse impacts to the aquatic ecosystem as a result of the proposed activities, DCR recommends the implementation of and strict adherence to applicable state and local erosion and sediment control/storm water management laws and regulations.

Additional Comments

Additionally, if tree clearing occurs outside of the existing rights-of-way (ROW), the proposed project has the potential to impact 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 any new or existing ROWs. 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.

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 $800.00 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*, G3/S2/NL/LT) is within the submitted project boundary. 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

Johnson, R.I. 1970. The systematics and zoogeography of the Unionidae (Mullusca: Bilvava) of the southern Atlantic slope region. Bulletin Museum of Comparative Zoology vol 140(6): 362-365.

NatureServe. 2009. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed: April 27, 2010).

Williams, J.D., M.L. Warren, Jr., K.S. Cummings, J.L. Harris, and R.J. Neves. 1993. Conservation status of freshwater mussels of the United States and Canada. Fisheries 18: 6-9.

VAFWIS - Department of Wildlife Resources

39,02,37.3 -77,29,05.2
is the Search Point
Submit Cancel

Search Point
- (●) **Change** to "clicked" map point
- ( ) **Fixed** at 39,02,37.3 -77,29,05.2

Show Position Rings
( ) Yes (●) No
1 mile and 1/4 mile at the **Search Point**

Show Search Area
(●) Yes ( ) No
3.9 Search distance miles radius

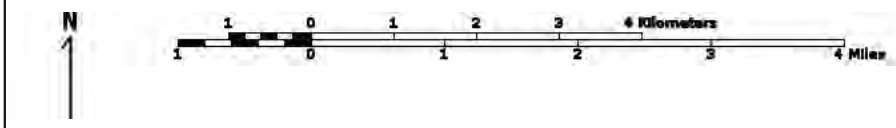
Search Point is at map center

Base Map Choices
Topography

Map Overlay Choices
Current List: Search

Map Overlay Legend
3.9 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 39,02,37.3 -77,29,05.2
Map Location 39,02,37.3 -77,29,05.2

Select **Coordinate System:**
- (●) Degrees,Minutes,Seconds Latitude - Longitude
- ( ) Decimal Degrees Latitude - Longitude
- ( ) Meters UTM NAD83 East North Zone
- ( ) Meters UTM NAD27 East North Zone

Base Map source: USGS 1:100,000 topographic maps (see Microsoft terraserver-usa.com for details)

Map projection is UTM Zone 18 NAD 1983 with left 276959 and top 4332564. Pixel size is 16 meters . Coordinates displayed are Degrees, Minutes, Seconds North and West. Map is currently displayed as 1000 columns by 1000 rows for a total of 1000000 pixles. The map display represents 16000 meters east to west by 16000 meters north to south for a total of 256.0 square kilometers. The map display represents 52502 feet east to west by 52502 feet north to south for a total of 98.8 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 2023-10-18 17:52:06 (qa/qc March 21, 2016 12:20 - tn=1533012 dist=6275.099999999999 I)
$poi=39.0436944 -77.4847777

VaFWIS Search Report Compiled on 10/18/2023, 5:54:24 PM

Help

Known or likely to occur within a **3.9 mile radius around point 39,02,37.3 -77,29,05.2** in **107 Loudoun County, VA**

View Map of Site Location

519 Known or Likely Species ordered by Status Concern for Conservation (displaying first 32) (32 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	Yes	BOVA,Habitat,SppObs,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	Potential	BOVA,BBA
100155	ST	Ia	Skipper, Appalachian grizzled	Pyrgus wyandot		HU6
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,HU6
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	Potential	BOVA,BBA
040181		IIa	Tern, common	Sterna hirundo		HU6
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
040304		IIc	Warbler, Swainson's	Limnothlypis swainsonii		HU6
100154		IIc	Butterfly, Persius duskywing	Erynnis persius persius		HU6
100166		IIc	Skipper, Dotted	Hesperia attalus slossonae		BOVA,HU6

To view **All 519 species** View 519

*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 (4 records)

View Map of All Fish Impediments

ID	Name	River	View Map
1239	ASHBURN VILLAGE LAKE #1	TR-RUSSEL BRANCH	Yes
1214	BEAVERDAM CREEK DAM	BEAVERDAM CREEK	Yes
1216	GOOSE CREEK DAM	GOOSE CREEK	Yes
1220	HORSEPEN DAM	HORSEPEN RUN	Yes

Colonial Water Bird Survey

N/A

Threatened and Endangered Waters (20 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 (022535)	ST	060081	ST	IIa	Floater, green	Lasmigona subviridis	Yes
Goose Creek (023151)	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 (026603)	ST	060081	ST	IIa	Floater, green	Lasmigona subviridis	Yes
Goose Creek (027795)	ST	060081	ST	IIa	Floater, green	Lasmigona subviridis	Yes
Goose Creek (028649)	ST	060081	ST	IIa	Floater, green	Lasmigona subviridis	Yes
Goose Creek (028846)	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 (032895)	ST	060081	ST	IIa	Floater, green	Lasmigona subviridis	Yes
Goose Creek (034177)	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

(237 records - displaying first 20 , 1 Observation with Threatened or Endangered species)

View Map of All Query Results
Species Observations

obsID	class	Date Observed	Observer	N Species			View Map
				Different Species	Highest TE*	Highest Tier**	
623115	SppObs	Jul 23 2015	Linda; Sieh	1	ST	I	Yes

633212	SppObs	Jun 17 2015	Rick Browder; Gabriel Darkwah	3		III	Yes
633211	SppObs	Jun 17 2015	Rick Browder; Gabriel Darkwah	4		III	Yes
607875	SppObs	Jul 22 2009	Richard; Browder	7		III	Yes
601718	SppObs	Jun 2 2009	Richard; Browder	8		III	Yes
318779	SppObs	Mar 13 2007	Christine Geist	7		III	Yes
318780	SppObs	Jan 9 2007	Christine Geist	1		III	Yes
308381	SppObs	Jun 2 2004	Alex Barron	4		III	Yes
308382	SppObs	Jun 2 2004	Alex Barron	4		III	Yes
67864	SppObs	Aug 21 2001	Rick Browder (Principle Permittee)	5		III	Yes
67870	SppObs	Aug 7 2001	Rick Browder (Principle Permittee)	6		III	Yes
55951	SppObs	Oct 3 1998	PAUL ANGERMEIER (PRINCIPAL PERMITTEE), KEVIN R. GOODWIN, (COLLECTOR), VA COOPERATIVE FISH AND WILDLIFE UNIT	1		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
332209	SppObs	Jan 1 1956	VPI-VA. TECH	13		III	Yes
364125	SppObs	Jan 1 1900		1		III	Yes
631137	SppObs	Jun 25 2019	John Alderman; Joseph Alderman	6		IV	Yes
628395	SppObs	Jul 16 2015	Cynthia Hauser	2		IV	Yes
628394	SppObs	Jul 15 2015	Cynthia Hauser	2		IV	Yes

Displayed 20 Species Observations

Selected 237 Observations View all 237 Species Observations

Habitat Predicted for Aquatic WAP Tier I & II Species (9 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					
Beaverdam Creek (20700081)	ST	030062	ST	Ia	Turtle, wood	Glyptemys insculpta	Yes
Beaverdam Run (20700081)	ST	030062	ST	Ia	Turtle, wood	Glyptemys insculpta	Yes
Broad Run (20700081)	ST	030062	ST	Ia	Turtle, wood	Glyptemys insculpta	Yes
Goose Creek (20700081)	ST	060081	ST	IIa	Floater, green	Lasmigona subviridis	Yes
Horsepen Run (20700081)	ST	030062	ST	Ia	Turtle, wood	Glyptemys insculpta	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 (10 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**	
50202	Arcola, NE	43		III	Yes
51202	Herndon, NE	51		III	Yes
51201	Herndon, NW	47	ST	I	Yes
50214	Leesburg, CE	63		III	Yes

50212	Leesburg, NE	58		III	Yes
50216	Leesburg, SE	69		III	Yes
51214	Sterling, CE	76		II	Yes
51213	Sterling, CW	64		III	Yes
51216	Sterling, SE	72		III	Yes
51215	Sterling, SW	6		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:
Arcola
Leesburg
Herndon
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
PL17	Broad Run-Lenah Run	49	ST	I
PL18	Horsepen Run	61	ST	I
PL19	Broad Run-Beaverdam Run	53	ST	I
PL20	Potomac River-Selden Island	47	ST	I

Compiled on 10/18/2023, 5:54:24 PM I1533012.0 report=all searchType= R dist= 6275 poi= 39,02,37.3 -77,29,05.2

PixelSize=64; Anadromous=0.02072; BBA=0.041119; BECAR=0.02017; Bats=0.02198; Buffer=0.238285; County=0.05297; HU6=0.054136; Impediments=0.021847; Init=0.268766; PublicLands=0.023184; Quad=0.029871; SppObs=0.337972; TEWaters=0.034999; TierReaches=0.059447; TierTerrestrial=0.037049; Total=1.278718; Tracking_BOVA=0.198836; Trout=0.02287; huva=0.029137

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: 2023-0126495
Project Name: A2G 20230908

September 08, 2023

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

To Whom It May Concern:

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

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

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

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

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

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

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, 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 https://www.fws.gov/program/migratory-bird-permit/what-we-do.

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 Project Code in the header of this

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

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds

OFFICIAL SPECIES LIST

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

This species list is provided by:

Virginia Ecological Services Field Office
6669 Short Lane
Gloucester, VA 23061-4410
(804) 693-6694

PROJECT SUMMARY

Project Code: 2023-0126495
Project Name: A2G 20230908
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/@39.04592435,-77.48691233786717,14z

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.

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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. Species profile: https://ecos.fws.gov/ecp/species/7541	Proposed Threatened

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

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

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

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

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

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

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

---

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

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE

SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Sep 1 to Jul 31
Black-billed Cuckoo *Coccyzus erythropthalmus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Cerulean Warbler *Dendroica cerulea* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/2974	Breeds Apr 28 to Jul 20
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Kentucky Warbler *Oporornis formosus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 20
King Rail *Rallus elegans* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8936	Breeds May 1 to Sep 5
Prairie Warbler *Dendroica discolor* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Prothonotary Warbler *Protonotaria citrea* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 1 to Jul 31
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Rusty Blackbird *Euphagus carolinus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

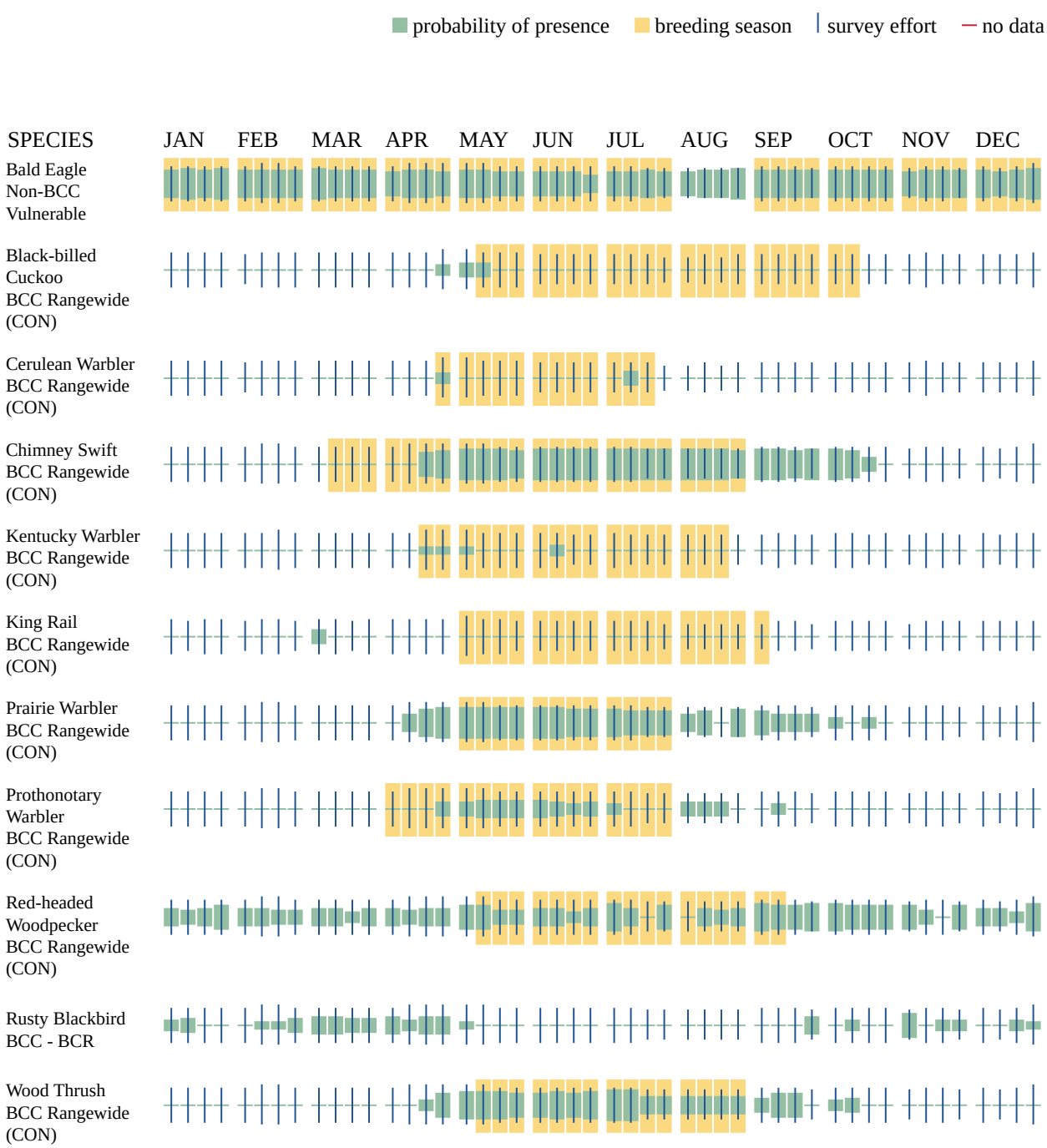
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)

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

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species

- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

MIGRATORY BIRDS FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects
For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

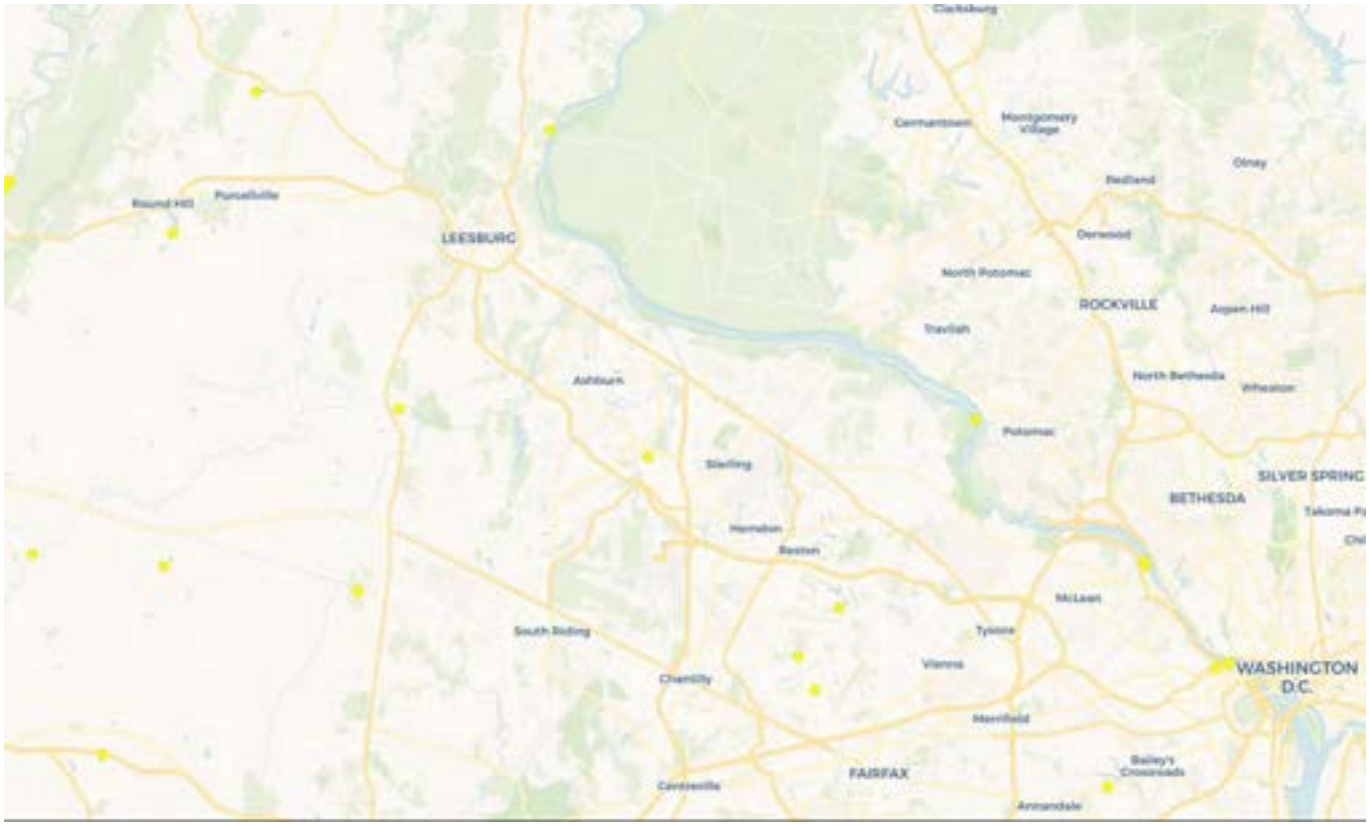
Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

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

CCB Mapping Portal



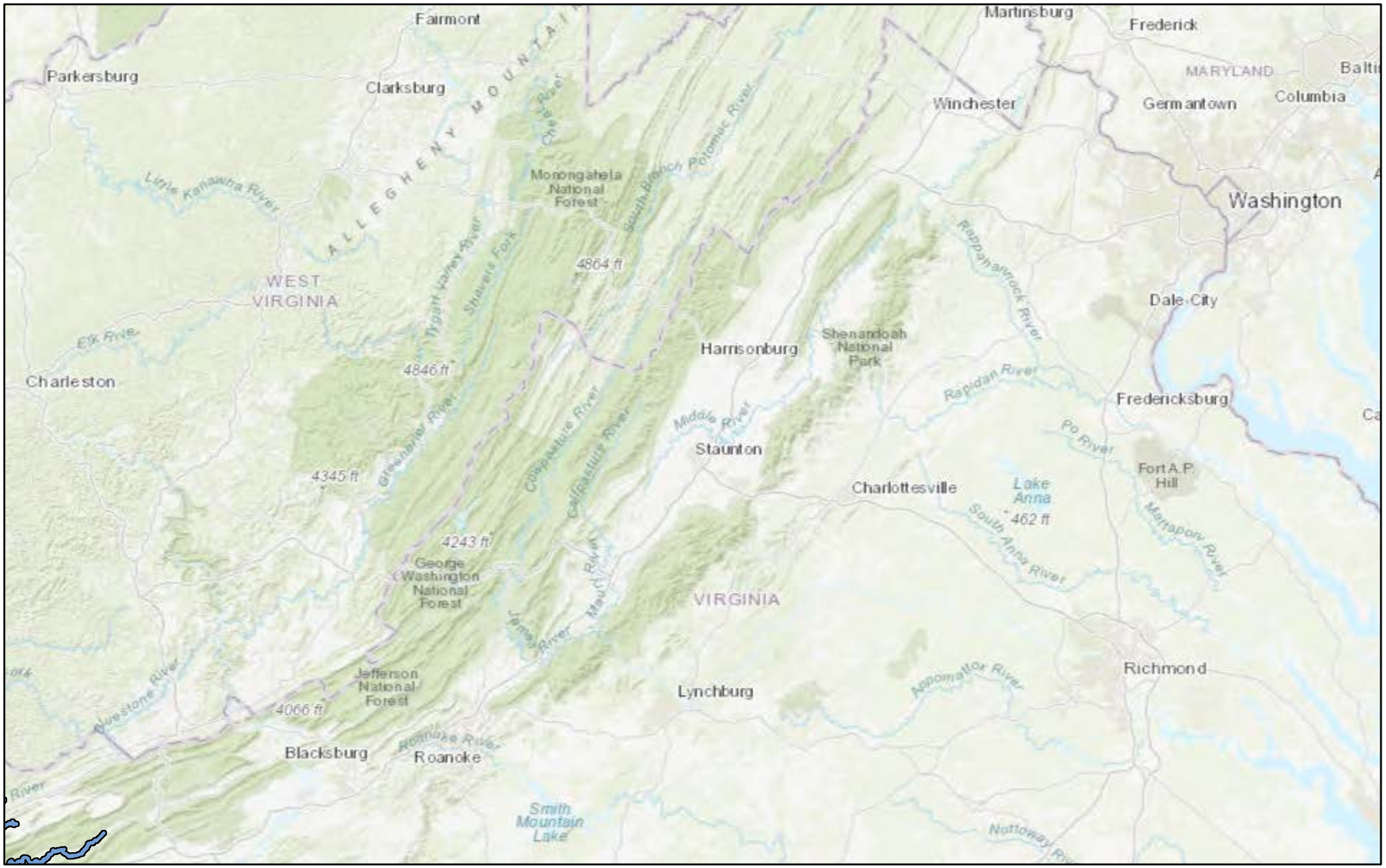
Layers: VA Eagle Nest Locator, VA Eagle Nest Buffers

Map Center [longitude, latitude]: [-77.46734619140625, 39.03065255999985]

Map Link:
https://ccbbirds.org/maps/#layer=VA+Eagle+Nest+Locator&layer=VA+Eagle+Nest+Buffers&zoom=11&lat=39.03065255999985&lng=-77.46734619140625&legend=legend_tab_7c321b7e-e523-11e4-aaa0-0e0c41326911&base=Street+Map+%28OSM%2FCarto%29

Report Generated On: 02/17/2023

Critical Habitat - Loudoun N and Compton



February 17, 2023

Virginia Critical Habitat (published)

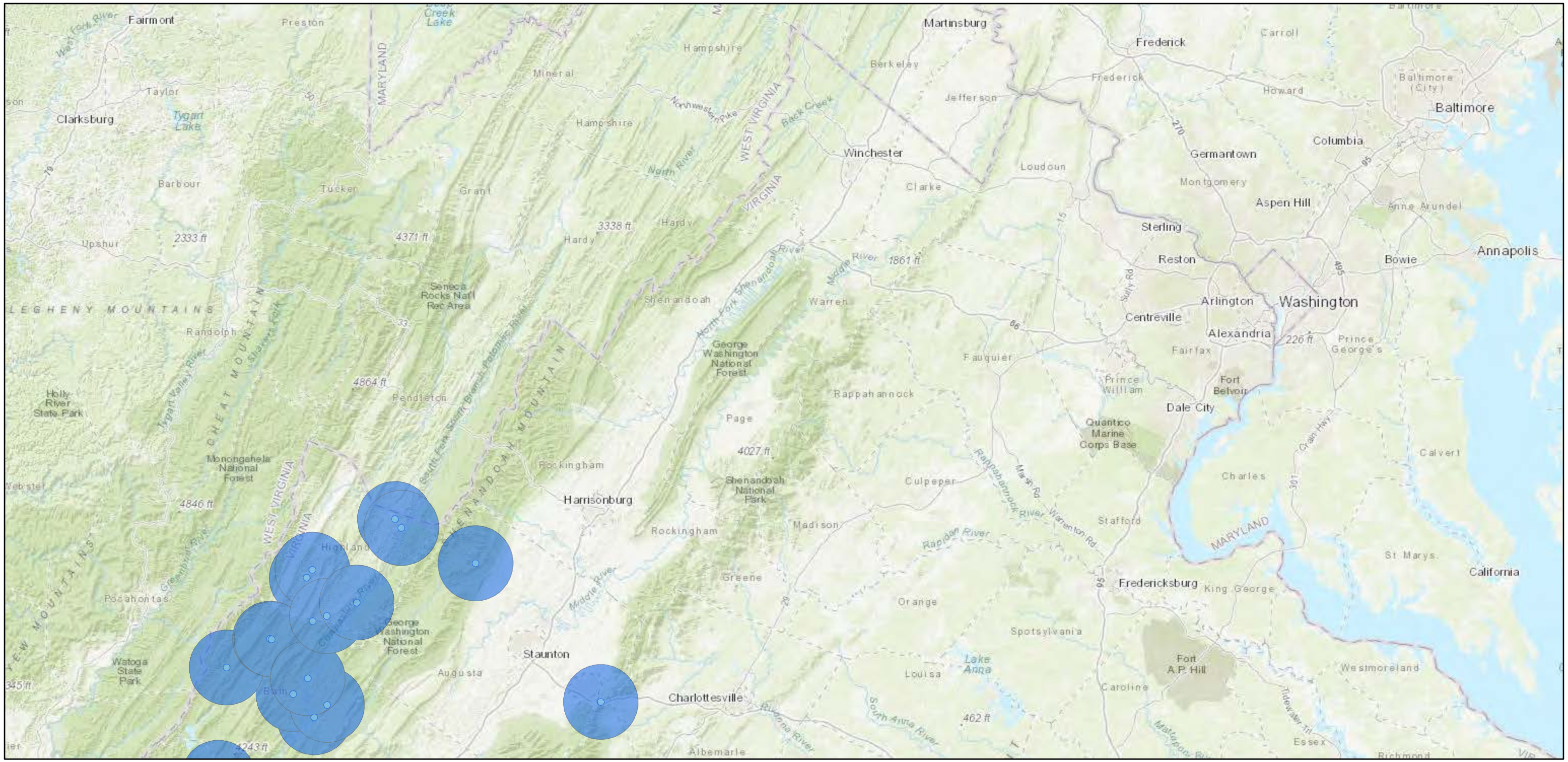
1:2,311,162

0 15 30 60 mi

0 20 40 80 km

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

MYLU-PESU Locations and Roost Trees - Loudoun N and Compton



2/17/2023, 12:01:00 PM

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 - Loudoun N and Compton

2/17/2023, 12:10:39 PM

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 |

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

Aspen-Golden 500-230 kV Electric Transmission Project

Pre-Application Analysis

6 March 2024

Project No.: 0622601

The business of sustainability

ERM

Signature page

16 February 2024

Aspen-Golden 500-230 kV Electric Transmission Project

Pre-Application Analysis

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EXECUTIVE SUMMARY

This report presents the findings of the pre-application analysis prepared by Environmental Resources Management (ERM) on behalf of Virginia Electric and Power Company (herein referred to as Dominion Energy Virginia, Dominion, or the Company) for the proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 kV and 230 kV Aspen-Golden Lines, 500-230 kV Golden Substation Project, and Lines #2081/#2150 Loop (Aspen-Golden 500-230 kV Electric Transmission Project or Project) in Loudoun County, Virginia. For this Project, the Company is proposing to construct and operate:

- A new 500-230 kV substation (Aspen Substation) to be built east of and adjacent to Dominion's existing 500 kV Line (Brambleton-Goose Creek Lines #558) and 230 kV Lines (Beaumeade-Belmont Line #227 and Belmont-Pleasant View Line #2180), east of the existing Goose Creek Substation, within existing Company right-of-way and on property owned by the Company;
- A new 500 kV single circuit transmission line extending for approximately 0.2 mile from the proposed 500-230 kV Aspen Substation to the Company's existing 500 kV Goose Creek Substation, named Aspen-Goose Creek Line #5002 (or "Aspen-Goose Creek Line");
- A new overhead 500 kV single circuit transmission line and a new 230 kV single circuit transmission line extending for approximately 9.4 or 9.5 miles from the proposed 500-230 kV Aspen Substation to the proposed 500-230 kV Golden Substation, named Aspen-Golden Line #5001 and Aspen-Golden Line #2333 (or "Aspen-Golden Lines");
- A new 500-230 kV substation, referred to as Golden Substation, to be built on an open land parcel between Pacific Boulevard and Route 28 (Sully Road) directly north of the existing 230 kV Lines (Paragon Park-Sterling Park Line #2081 and Paragon Park-Sterling Park Line #2150) on property to be obtained by the Company north of the Washington & Old Dominion (W&OD) Trail; and
- A new loop of two existing 230 kV single circuit transmission lines (Lines #2081 and #2150) extending for approximately < 0.1 mile (490 feet) from the Company's existing Lines #2081/#2150 transmission corridor to the proposed 500-230 kV Golden Substation, resulting in (i) Golden-Sterling Park #2081, (ii) Golden-Sterling Park #2150, (iii) Golden-Paragon Park #2348, and (iv) Golden-Paragon Park #2351, named the Lines #2081/#2150 Loop ("Line Loop" or "Loop").[1]

In identifying potential routes for the proposed new Aspen-Golden Lines, ERM considered the facilities required to construct and operate the new infrastructure, the length and width of new right-of-way that would be required, the extent of existing development in the area, the potential for impacts on environmental and human resources, and cost. ERM identified one viable overhead route for the Aspen-Golden Lines, referred to as Route 1. Within Route 1, two overhead route variations were identified along State Route 7 (Rt. 7), referred to as the Belmont Park Segment, and two overhead route variations were identified near Broad Run, referred to as the Broad Run Segment. Additional descriptions of Route 1 and the Belmont Park and Broad Run Segments are provided in Section 5.1 of the Environmental Routing Study.

This pre-application analysis assesses and compares potential impacts on previously recorded historic and archaeological resources in relation to each route. Impacts associated with construction and operations of the proposed Aspen and Golden Substations were also considered. 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 pre-application analysis is a required study for

[1] Impacts associated with the Loop are included with those of Route 1.

transmission line projects regulated by the State Corporation Commission (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).

Fourteen known archaeological sites were identified within the right-of-way of the routes for the Aspen-Golden Lines. Of these, nine are considered not eligible for listing in the National Register of Historic Places (NRHP), three have not been evaluated, one is potentially eligible, and one is eligible for listing on the NRHP. Four sites are located in what would be the right-of-way for Route 1, while five sites are each located within what would be the right-of-way for Broad Run Variation A and B. No previously recorded archaeological sites were identified within what would be the right-of-way for Belmont Park Variations A or B, the Line Loop, the Aspen and Golden Substations, or the Aspen-Goose Creek Line. The archaeological sites associated with each route and their current NRHP status are summarized in the table 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.

Ten 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 transmission line routes. The likely impacts on individual historic resources associated with each route are presented in the table below.

Route 1 passes near ten historic resources meeting the criteria specified in the Guidelines, while Belmont Park Variations A and B pass near four. Broad Run Variations A and B pass near three, and the Aspen-Goose Creek Line passes near two. ERM recommends that Route 1 would have no impact on four resources, a minimal impact on three resources, and a moderate impact on three resources; Belmont Park Variations A and B would have a minimal impact on one resource and a moderate impact on three resources; Broad Run Variations A and B would have no impact on two resources and a minimal impact on one resource, and the Aspen-Goose Creek Line would have a minimal impact on two resources.

For a majority of its alignment, Route 1 is the only viable route for the Aspen-Golden Lines. Further, because the existing right-of-way and Company-owned or to-be-owned property are adequate for the proposed Aspen-Goose Creek Line and Lines #2081/#2150 Loop, no new right-of-way is required, and therefore the Company did not consider any alternative routes requiring new right-of-way for the proposed Aspen-Goose Creek Line or Line Loop.

Accordingly, while this report addresses potential impacts on all of the resources meeting the criteria for inclusion in the Guidelines, our comparison of routes is limited to Belmont Park Variations A and B and Broad Run Variations A and B. Of the former, Belmont Park Variation B appears to present the least impact on cultural resources because there are no archaeological sites in what would be its right-of-way and it is farther away from aboveground historic resources than Belmont Park Variation A. Of the latter, Broad Run Variation A appears to present the least impact on cultural resources with five archaeological sites in what would be its right-of-way and greater distance between the route and aboveground historic resources.

Executive Summary of National Register Status of Considered Archaeological Resources in the Study Area of the Routes

Considered Resource	Aspen-Golden Lines					Aspen-Goose Creek Line
	Route 1	Belmont Park Variation A	Belmont Park Variation B	Broad Run Variation A	Broad Run Variation B	
44LD0021	-	-	-	-	Not Eligible	-
44LD0107	-	-	-	-	Not Eligible	-
44LD0109	-	-	-	-	Not Eligible	-
44LD0110	-	-	-	Not Eligible	-	-
44LD0142	-	-	-	Not Eligible	-	-
44LD0209	-	-	-	-	Unevaluated	-
44LD0213	Not Eligible	-	-	-	-	-
44LD0579	Not Eligible	-	-	-	-	-
44LD0581	Potentially Eligible	-	-	-	-	-
44LD0647	-	-	-	Not Eligible	-	-
44LD0649	-	-	-	Eligible	-	-
44LD0650	-	-	-	-	Unevaluated	-
44LD0651	-	-	-	Not Eligible	-	-
44LD2010	Unevaluated	-	-	-	-	-

Note:For the purposes of this report, Lines #2081/#2150 Loop was analyzed as a part of Route 1 due to its connection to the proposed Golden Substation. No archaeological resources were located in the Line Loop's Study Area.

Executive Summary of Project Impacts to Considered Aboveground Historic Resources in the Study Area of the Routes

Considered Resource	Aspen-Golden Lines					Aspen-Goose Creek Line
	Route 1	Belmont Park Variation A	Belmont Park Variation B	Broad Run Variation A	Broad Run Variation B	
053-0084	Moderate	Moderate	Moderate	-	-	-
053-0106	Moderate	Moderate	Moderate	-	-	-
053-0110	None	-	-	None	None	-
053-0276	Minimal [a, b, c]	-	-	Minimal	None	Minimal
053-0278	Minimal	Minimal	Minimal	-	-	-
053-0336	Minimal [a]	-	-	-	-	Minimal
053-5223	None [b]	-	-	None	None	-
053-6238	Moderate	Moderate	Moderate	-	-	-
053-6406	None [b, c]	-	-	-	-	-
253-5182	None	-	-	-	-	-

[a] *Resource is within the designated tiers for the proposed Aspen Substation*
[b] *Resource is within the designated tiers for the proposed Golden Substation*
[c] *Resource is within the designated tiers for the Lines #2081/#2150 Loop*

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Acronyms and Abbreviations

Name	Description
3D	three dimensional
ABPP	American Battlefield Protection Program
BRWRF	Broad Run Water Reclamation Facility
CMOS	complementary metal–oxide–semiconductor
ERM	Environmental Resources Management
ESRI	Environmental Systems Research Institute
GNSS	Global Navigation Satellite System
HABS	Historic American Building Survey
IBM	International Business Machines Corporation
ISO	International Organization for Standardization
JPEG	Joint Photographic Experts Group format
kV	kilovolt
MP	milepost
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	Aspen-Golden 500-230 kV Electric Transmission Project
RAW	an unprocessed image
SCC	State Corporation Commission
SLR	single-lens reflex
SP	Simulation Point
USGS	U.S. 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

1. INTRODUCTION

This report presents the findings of a pre-application analysis conducted for Dominion Energy Virginia's 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 kV and 230 kV Aspen-Golden Lines, 500-230 kV Golden Substation Project, and Lines #2081/#2150 Loop (Aspen-Golden 500-230 kV Electric Transmission Project, or Project) in Loudoun County, Virginia. For this Project, the Company is proposing to construct and operate:

- A new 500-230 kV substation (Aspen Substation) to be built east of and adjacent to Dominion's existing 500 kV Line (Brambleton-Goose Creek Lines #558) and 230 kV Lines (Beaumeade-Belmont Line #227 and Belmont-Pleasant View Line #2180), east of the existing Goose Creek Substation, within existing Company right-of-way and on property owned by the Company;
- A new 500 kV single circuit transmission line extending for approximately 0.2 mile from the proposed 500-230 kV Aspen Substation to the Company's existing 500 kV Goose Creek Substation,
- A new overhead 500 kV single circuit transmission line and a new 230 kV single circuit transmission line extending for approximately 9.4 or 9.5 miles from the proposed 500-230 kV Aspen Substation to the proposed 500-230 kV Golden Substation;
- A new 500-230 kV substation, referred to as Golden Substation, to be built on an open land parcel between Pacific Boulevard and Route 28 (Sully Road) directly north of the existing 230 kV Lines (Paragon Park-Sterling Park Line #2081 and Paragon Park-Sterling Park Line #2150) on property to be obtained by the Company north of the W&OD Trail; and
- A new loop of two existing 230 kV single circuit transmission lines (Lines #2081 and #2150) extending for approximately < 0.1 mile (490 feet) from the Company's existing Lines #2081/#2150 transmission corridor to the proposed 500-230 kV Golden Substation, resulting in (i) Golden-Sterling Park #2081, (ii) Golden-Sterling Park #2150, (iii) Golden-Paragon Park #2348, and (iv) Golden-Paragon Park #2351.[2]

The pre-application analysis assesses potential impacts on previously recorded historic and archaeological resources relative to each route. 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

In identifying potential routes for the new Aspen-Golden Lines, ERM considered the facilities required to construct and operate the new infrastructure, the length and width of new right-of-way that would be required, the extent of existing development in the area, the potential for impacts on environmental and human resources, and cost. Due to the rapid development taking place in the area containing the Project and resulting complexity to and changes in land uses (most notably data center and other planned developments), ERM identified one viable overhead route for the Aspen-Golden Lines, referred to as Route 1. Within Route 1, however, two overhead route variations were identified along Rt. 7, referred to as the Belmont Park Segment, and two overhead route variations were identified near Broad Run, referred to as the Broad Run Segment. Only one viable route was identified for the Aspen-Goose Creek Line.

A map depicting the Aspen-Golden Lines (including Route 1 and the Belmont Park and Broad Run Variations), the Aspen-Goose Creek Line, and Lines #2081/#2150 Loop is provided as Figure 1.1-1.

[2] Impacts associated with the Loop are included with those of Route 1.

1.1.1. Aspen-Golden Lines

1.1.1.1. Route 1

Route 1 consists of three segments that will be connected to one another by one of the Belmont Park Variations and one of the Broad Run Variations. Throughout this document, the term “Route 1” will be used to describe the three segments of Route 1.

The proposed 500 kV and 230 kV Aspen-Golden Lines originate from what would be two different backbones within the proposed Aspen Substation, with the 500 kV line to the north and the 230 kV line to the south. From here, the lines head northeast for approximately 0.2 mile on adjacent but converging alignments, crossing two of the Company’s existing 230 kV transmission lines (Lines #227 and #274) and merging into a combined 500-230 kV configuration on the north side of Cochran Mill Road. Route 1 then heads east in a combined 500-230 kV configuration for about 0.3 mile along the north side of Cochran Mill Road south of the future Twin Creeks Substation (which is part of a different Dominion project for two future 230 kV double circuit lines, referred to as the future Twin Creeks Lines). The route then continues southeast for approximately 0.4 mile, passing between planned buildings associated with a proposed, planned data center development (referred to as Campus A) and continuing to a crossing of Goose Creek.

After crossing Goose Creek, Route 1 continues southeast for about 0.1 mile, then turns and continues northwest for approximately 0.5 mile, crossing another proposed data center planned development (referred to as Campus B). The route then heads east for 0.3 mile towards Belmont Ridge Road, crossing the future Russell Branch Parkway dedication and a third proposed data center planned development (referred to as Campus C). It next heads northeast for 0.5 mile, crossing Belmont Ridge Road, Freedom Trail Road, and a forested parcel planned to be developed as either a data center (Campus D) or mixed-use residential-commercial area to the south side of Rt. 7. Route 1 then continues southeast adjacent to the south side of the highway for approximately 0.5 mile along Belmont Ridge Road.

At this point, Route 1 would either continue southeast adjacent to the south side of Rt. 7 for about 0.6 mile (Belmont Park Variation A), or alternatively, it would cross to the north side of the highway, continue southeast adjacent to the north side of the highway for about 0.6 mile, then cross the highway a second time to the south (Belmont Park Variation B). Both variations cross the interchange at the intersection of Claiborne Parkway/Lansdowne Boulevard with Rt. 7. Additional description of the Belmont Park Variations is provided below.

On the east side of the Claiborne Parkway/Lansdowne Boulevard interchange, Rt. 7 continues southeast adjacent to the south side of Rt. 7 for another approximately 2.4 miles, crossing Ashburn Village Boulevard and Loudoun County Parkway, and passing between Rt. 7 and Atwater Drive for about 0.4 mile. Before reaching George Washington Boulevard, the route turns and heads south for approximately 0.3 mile, crossing Russell Branch Parkway, then continues southwest for about 0.3 mile toward Loudoun County Parkway, passing south of an existing data center and across the edge of two BOS open space easements. The route continues another approximately 0.3 mile south, passing east of a commercial building and south of the intersection of Loudoun County Parkway and Malden Place and north of Beaverdam Run.

The route next would follow Broad Run Variation A or B south and east towards Pacific Boulevard. Broad Run Variation A heads south adjacent to the east side of Loudoun County Parkway for about 1.4 miles, then east/southeast for about 0.7 mile mostly adjacent to the north side of Dominion’s existing right-of-way for Lines #2150 and #2081. In contrast, Broad Run Variation B heads east for about 0.4 mile towards Broad Run, then parallels Broad Run to the southeast through mostly forested, undeveloped area, then continues south for about 1.4 miles across the Broad Run floodplain with a crossing of Gloucester Parkway.

At the south end of the Broad Run Variations, Route 1 continues along a common alignment adjacent to the east side of Pacific Boulevard near Cabin Branch on a parcel with a proposed data center development (Campus F). The route then turns south for 0.2 mile, where the 500 kV lines enter what would be the west side of the proposed Golden Substation (approximately 0.1 mile). The 230 kV lines continue for another 0.3 mile south and east, then enter the south side of the Golden Substation.

Excluding the Belmont Park and Broad Run Variations, Route 1 measures approximately 6.4 miles in length for the 500 kV portion of the Aspen-Golden Lines and approximately 6.6 miles in length for the 230 kV portion of the Aspen-Golden Lines.

1.1.1.2. Belmont Park Variations

The Belmont Park Route Variations begin at Route 1 approximately 0.3 mile southwest of the intersection of Rt. 7 and Claiborne Parkway and rejoin Route 1 approximately 0.3 mile southeast of the intersection of Rt. 7 and Claiborne Parkway. Either Belmont Park Variation A or Belmont Park Variation B will be needed to connect to Route 1.

Belmont Park Variation A

Belmont Park Variation A is an approximately 0.6-mile-long route segment along the south side of Rt. 7 extending from a point approximately centered on the crossing of Claiborne Parkway at the interchange of the parkway with Rt. 7. Belmont Park Variation A crosses through the south side of the cloverleaf interchange of Rt. 7 and Claiborne Parkway/Lansdowne Boulevard. It crosses approximately 0.1 mile of land that was rezoned in January 2023 from industrial to high-density residential land (Residential 16) as part of the Belmont Park planned development (discussed in Section 6.1.6 of the Routing Study). It otherwise crosses about 0.5 mile of industrial, office, and commercial zoned land.

Belmont Park Variation B

Belmont Park Variation B is an approximately 0.6-mile-long route segment beginning approximately 0.3 mile west of Claiborne Parkway on the south side of Rt. 7. From here, the route crosses to the north side of Rt. 7; then extends approximately 0.4 mile southeast adjacent to the north side of Rt. 7, crossing Lansdowne Boulevard; then crosses back to the south side of Rt. 7. Belmont Park Variation B crosses through the north side of the cloverleaf interchange of Rt. 7 and Claiborne Parkway/Lansdowne Boulevard. It was identified and assessed as a potential option to avoid impacts to the Belmont Park planned development parcel discussed in Section 6.1.6 of the Routing Study. Belmont Park Variation B crosses approximately 0.4 mile of land zoned for housing (H3), with the remaining 0.3 mile zoned for office and industrial uses. It is approximately 430 feet longer than Belmont Park Variation A.

1.1.1.3. Broad Run Variations

The Broad Run Variations begin at Route 1 along the east side of Loudoun County Parkway, approximately 0.5 mile south of Russell Branch Parkway, north of Beaverdam Run, and they reconnect with Route 1 on the east side of Pacific Boulevard south of Cabin Branch, approximately 0.2 mile north of the W&OD Trail on a parcel with a proposed data center (Campus F).

Broad Run Variation A

Broad Run Variation A originates along Route 1 approximately 0.6 mile south of Russell Branch Parkway on the east side of Loudoun County Parkway. From there, it heads south for 0.2 mile towards Loudoun County Parkway, crossing Beaverdam Run and collocating with Loudoun County Parkway. The route variation parallels Loudoun County Parkway for approximately 1.3 miles, crossing the Loudoun Water Broad Run Water Reclamation Facility (BRWRF) parcel, Gloucester Parkway, and Coach Gibbs Drive.

Less than 0.1 mile north of the W&OD Trail, the route turns and heads east for about 0.3 mile, crossing over Broad Run and heading towards the existing Paragon Substation. It then continues north and east for about 0.4 mile, bypassing an existing data center and crossing Pacific Boulevard, where it reconnects with Route 1. In total, Broad Run Variation A measures approximately 2.2 miles long.

Broad Run Variation B

Broad Run Variation B begins along Route 1 approximately 0.6 mile south of Russell Branch Parkway on the east side of Loudoun County Parkway. From there, it heads southeast for about 0.2 mile, then northeast for another 0.2 mile towards Broad Run. Approximately 280 feet south of the Broad Run shoreline, the route variation turns and continues southeast for about 0.4 mile, following the existing Russell Branch Interceptor sewer line on the southwest side of Broad Run. It then heads south/southwest for about 0.4 mile, then south for 1.0 mile, where it parallels an existing Loudoun Water utility line for approximately 0.8 mile, then crosses Broad Run and Gloucester Parkway and passes west of BECO Substation. Before reaching Cabin Branch, the route variation turns and heads east for 0.2 mile, crossing Pacific Boulevard, and then heads south for about 0.1 mile across Cabin Branch, where it reconnects with Route 1. In total, Broad Run Variation B measures approximately 2.3 miles long.

1.1.2. Aspen-Goose Creek Line

The Aspen-Goose Creek Line is a 0.2-mile-long 500 kV transmission line extending from the existing Goose Creek Substation to the proposed Aspen Substation. The Aspen-Goose Creek Line consists of a single monopole structure forming the elbow of a 90-degree turn between the backbones of the existing Goose Creek Substation and proposed Aspen Substation. The Aspen-Goose Creek Line would be entirely within the boundary of the existing Goose Creek Substation, existing Dominion transmission line right-of-way, and the proposed Aspen Substation boundary, all of which are within a Dominion-owned parcel. Because of this, no route alternatives were considered for the Aspen-Goose Creek Line and it is not analyzed as a separate feature in this study. To the extent the Aspen-Goose Creek Line is located within the Company's existing Goose Creek Substation or transmission right-of-way corridor, any impacts resulting from the construction of that line already were mitigated during permitting of the Goose Creek Substation expansion and transmission corridor. Where the Aspen-Goose Creek Line is located within the proposed Golden Substation, any impacts from construction of that line are included with Route 1.

1.1.3. Lines #2081/#2150 Loop

The Lines #2081/#2150 Loop are 0.1-mile-long 230 kV transmission lines that would connect the Company's existing Paragon Park-Sterling Park 230 kV Lines #2081 and #2150 to the proposed Golden Substation. Specifically, the Company proposes to cut Line #2081 and Line #2150 between Structure #2081/124 / #2150/184 and Structure #2081/123 / #2150/183, and loop the existing lines into and out of the proposed Golden Substation, resulting in the following lines: (i) Golden-Sterling Park #2081, (ii) Golden-Sterling Park #2150, (iii) Golden-Paragon Park #2348, and (iv) Golden-Paragon Park #2351. To cut the lines into the proposed Golden Substation, the Company will remove one existing double circuit lattice tower (Structure #2081/123 / #2150/183) and replace it with four dull galvanized steel single circuit monopoles (Structures #2081/122A, #2150/182A, #2348/123A, and #2351/183A). From the proposed single circuit structures within the existing transmission corridor, the Company will extend new conductor for one span (approximately 490 feet [<0.1 mile]) that runs contiguous with the Line #2333 right-of-way where Line #2333 terminates into the proposed Golden Substation. The Loop will be within existing right-of-way or on property to be obtained by the Company at the proposed Golden Substation, and as such, there are no route alternatives considered for the Loop.

1.1.4. Collocation with the Twin Creeks Lines

For approximately 0.9 mile, the Aspen-Golden Lines will be collocated with two future 230 kV double circuit lines along the same corridor, referred to as the future Twin Creeks Lines. The future Twin Creeks Lines will serve five new substations on three new data center campuses. The five future substations include the Twin Creeks, Sycolin Creek, Starlight, Lunar, and Apollo Substations. One future substation, Twin Creeks Substation, will be located northeast of the proposed Aspen Substation, and the four additional substations will be located along the east side of Goose Creek between the W&OD Trail and Rt. 7. The Company anticipates filing an application with the SCC for approval of the Twin Creeks Lines and related transmission infrastructure later in March 2024. Due to the proximity of the two projects, a collocated overhead transmission corridor was planned for and evaluated to reduce overall impacts to historic resources and other resources particularly Goose Creek, which is a state-designated scenic river. Per VDHR guidance, the simulations prepared as part of this study depict both this Project and the future Twin Creeks Lines project for assessing cumulative effects. Three resources would have visibility towards both the Aspen-Golden 500-230 kV Electric Transmission Project and the future Twin Creeks Lines project.

1.2. Management Summary

Fourteen known archaeological sites were identified within what would be the right-of-way for Route 1 and the Belmont Park and Broad Run Variations. Of these, nine are considered not eligible for listing in the NRHP, three have not been evaluated to determine their eligibility for listing in the NRHP, one is potentially eligible, and one is eligible for listing in the NRHP. Four sites are located in what would be the right-of-way for Route 1, while five sites each are within what would be the right-of-way for Broad Run Variations A and B. Of these, one site along Broad Run is eligible and four are not eligible for the NRHP, and three sites along Broad Run Variation B are not eligible and two have not been evaluated for listing in the NRHP. No previously recorded archaeological sites were identified within what would be the rights-of-way for the Belmont Park Variations, Lines #2081/#2150 Loop, or the Aspen-Goose Creek Line.[3] The known archaeological sites in what would be the rights-of-way for the routes could be impacted by equipment traffic or clearing during 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.

Ten 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 transmission line routes. Of these, Route 1 passes near the largest number of considered historic resources (ten), while Belmont Park Variations A and B pass near four, Broad Run Variations A and B pass near three, and the Aspen-Goose Creek Line passes near two. For the Aspen-Golden Lines, ERM recommends that Route 1 would have no impact on four resources, a minimal impact on three resources, and a moderate impact on the three resources; Belmont Park Variations A and B would have a minimal impact on one resource and a moderate impact on three resources; and Broad Run Variations A and B would have no impact on two resources and a minimal impact on one resource. In the case of the Aspen-Goose Creek Line, ERM recommends that it would have a minimal impact on two resources.

Considering that Route 1 would be chosen regardless for the Aspen-Golden Lines, the variations are the routes that require further comparison. Between Belmont Park Variations A and B, Belmont Park Variation B appears to present the least impact on cultural resources, with no archaeological sites within the right-of-way, and it is a bit farther away from the considered historic resources than Belmont Park

[3] As the Aspen-Goose Creek Line will be constructed entirely within existing right-of-way or on Company-owned property, there is no actual new or defined right-of-way for the line. Strictly for purposes of studying any impacts relative to the Aspen-Goose Creek Line, ERM assumed that the width of the right-of-way would be 150 feet.

Variation A. Between Broad Run Variations A and B, Broad Run Variation A appears to present the least impact on cultural resources, with five archaeological sites in the right-of-way, and it is farther away from the resources than Broad Run Variation B. For the Aspen-Goose Creek Line, only one option is available. However, if Belmont Park Variation A and Broad Run Variation B are chosen, the impact findings for the historic resources are the same.

For a majority of its alignment, Route 1 is the only viable route for the Aspen-Golden Lines and there are no viable alternatives to the Aspen-Goose Creek Line [or the Line Loop]. Therefore, while this report addresses potential impacts on all of the resources meeting the criteria for inclusion in the Guidelines, our comparison of routes is limited to Belmont Park Variation A and B and Broad Run Variation A and B. Of the former, Belmont Park Variation B appears to present the least impact on cultural resources because there are no archaeological sites in what would be its right-of-way and it is farther away from aboveground historic resources than Belmont Park Variation A. Of the latter, Broad Run Variation A appears to present the least impact on cultural resources with five archaeological sites in what would be its right-of-way and greater distance between the route and aboveground historic resources.

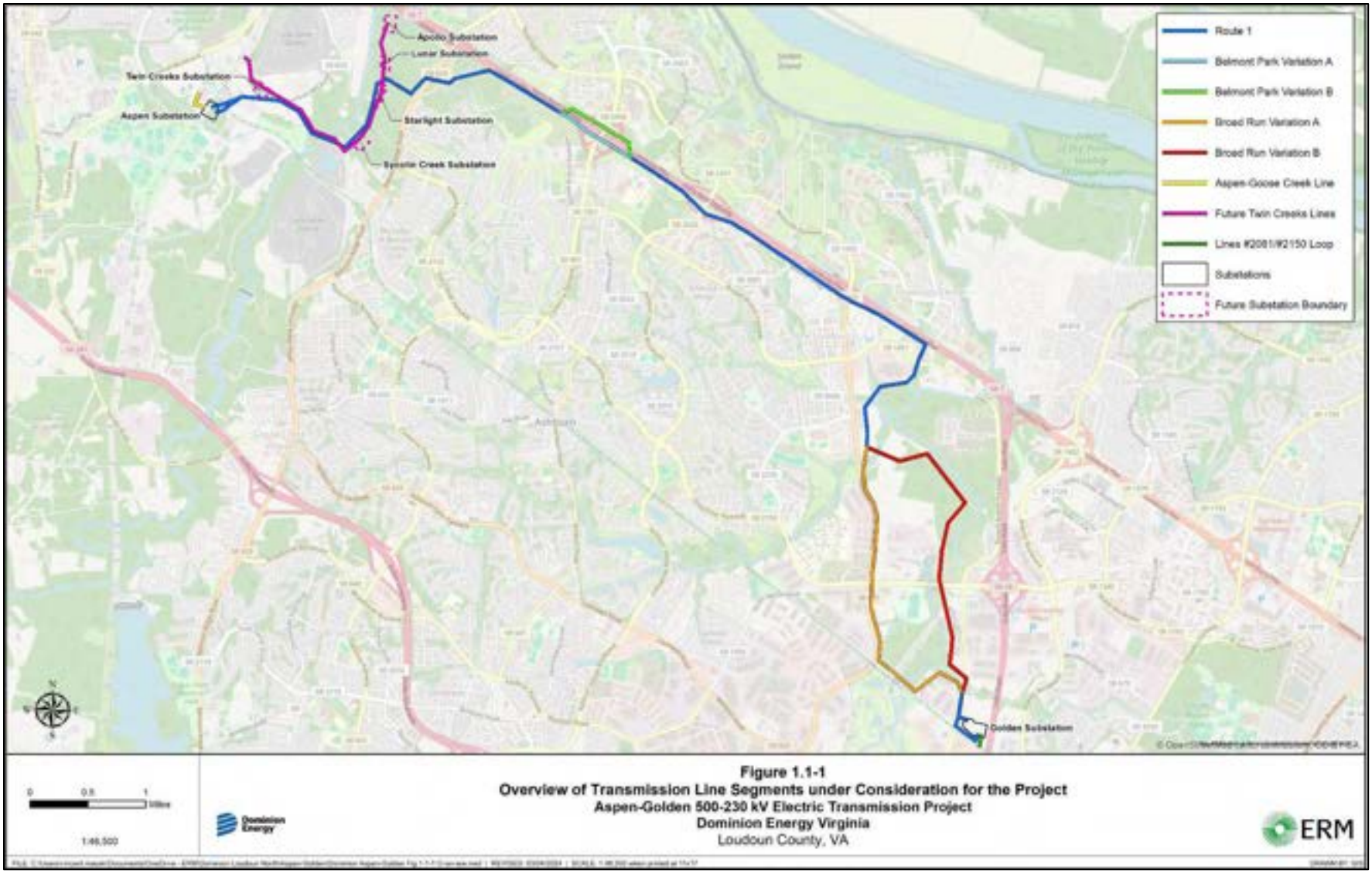

Figure 1.1-1: Overview of Transmission Line Segments under Consideration for the Project

2. RECORDS REVIEW

2.1. Data Collection Approach

ERM conducted an analysis of potential cultural resource impacts for the 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 each centerline;
- NRHP-listed properties, NHLs, battlefields, and historic landscapes within a 1.0-mile radius of each centerline;
- NRHP-eligible and NRHP-listed properties, NHLs, battlefields, and historic landscapes within a 0.5-mile radius of each centerline; and
- All of the above qualifying resources as well as archaeological sites within the right-of-way for each route.

Information on the considered resources in each study tier was collected from the Virginia Cultural Resource 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 each centerline.

Along with the records review, ERM conducted field assessments of the considered aboveground resources along each route in accordance with the Guidelines. Digital photographs of each architectural resource and views to the proposed transmission line were taken. Photo simulations were then prepared to assess the potential for visual impacts on 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 lines.

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 cultural deposits in these areas (for example, due to transmission structure placement, tree clearing, or heavy equipment traffic within a site). Information on the known archaeological sites in the right-of-way for each transmission line route are summarized in Table 2.2 1 while the site locations are depicted on Figure 2.2-1. Individual maps for each route variation are provided in Attachment 1.

Of the 14 previously recorded sites within what would be the rights-of-way for the Aspen-Golden Lines, nine are considered not eligible for listing in the NRHP, three have not been evaluated, one is potentially eligible, and one is eligible for listing on the NRHP. Four sites are within what would be the right-of-way for Route 1, while five each are within Broad Run Variations A and B. No previously recorded archaeological sites are within what would be the rights-of-way for Belmont Park Variation A or B, or the Aspen-Goose Creek Line. 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.

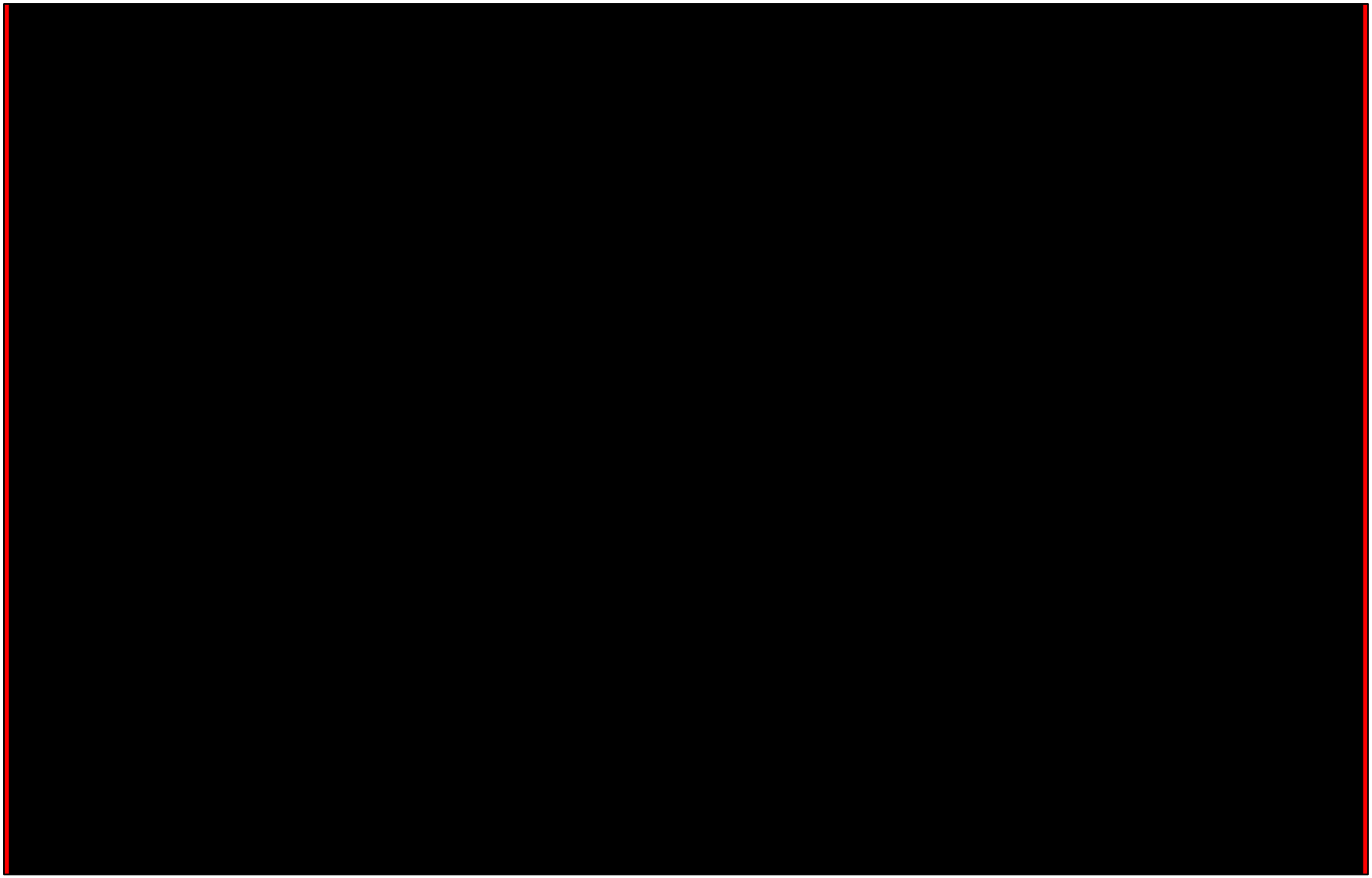

Figure 2.2-1: Locations of Archaeological Resources in the Right-of-Way for Each Route (Redacted)

Table 2.2-1: Archaeological Resources in the Right-of-Way for Each Route

Route	Greenfield or Existing/ Expanded ROW?	Site Number	Description	NRHP Status
Route 1	Greenfield	44LD0213	Surface scatter (Pre-Contact)	Not Eligible
	Greenfield	44LD0579	Stone Foundation (Antebellum Period, Early National Period)	Not Eligible
	Greenfield	44LD0581	Historic Farmstead (Antebellum Period, Civil War, Early National Period, Reconstruction and Growth)	Potentially Eligible
	Greenfield	44LD2010	Lithic scatter (Pre-Contact) and Dwelling (Antebellum Period, Civil War, Early National Period, Reconstruction and Growth)	Unevaluated
Belmont Park Variation A	Not applicable	None identified	Not applicable	Not applicable
Belmont Park Variation B	Not applicable	None identified	Not applicable	Not applicable
Broad Run Variation A	Greenfield	44LD0110	Artifact scatter (Early Woodland, Late Archaic)	Not Eligible
	Greenfield	44LD0142	Artifact scatter (Pre-Contact)	Not Eligible
	Greenfield	44LD0647	Historic farmstead (Antebellum Period, Civil War, Reconstruction and Growth)	Not Eligible
	Greenfield	44LD0649	Historic farmstead (Antebellum Period, Civil War, Reconstruction and Growth)	Eligible
	Greenfield	44LD0651	Historic farmstead (Antebellum Period, Early National Period)	Not Eligible
Broad Run Variation B	Greenfield	44LD0021	Artifact scatter (Woodland)	Not Eligible
	Greenfield	44DL0107	Artifact scatter (Woodland)	Not Eligible
	Existing/Expanded ROW	44LD0109	Artifact scatter (Pre-Contact)	Not Eligible
	Greenfield	44DL0209	Temporary camp (Pre-Contact)	Unevaluated
	Greenfield	44LD0650	Temporary camp (Early Archaic)	Unevaluated
Aspen-Goose Creek Line	Not applicable	None identified	Not applicable	Not applicable

ROW = right-of-way

2.3. Historic Resources

The following discussion summarizes the known historic resources in the vicinity of each route based on the VDHR's tiered study model defined in the Guidelines. The locations of the considered historic architectural resources and the various routes are shown on Figure 2.3-1. Individual maps for each proposed route are provided in Attachment 1.

Resources located within what would be the right-of-way of a route may be subject to both direct impacts from placement of the lines 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 would likely be visually impacted, unless topography, vegetation, or the built environment obscures the view to the transmission lines. 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 lines. Beyond 1.0 mile, it becomes even less likely that a given resource would be within line-of-sight of a transmission line.

Since each route variation is associated with Route 1, and the route variations themselves are proximate to one another, impacts on some resources would be similar or identical regardless of the route variations selected for the Aspen-Golden Lines (although the distance from the proposed transmission lines would differ in some cases). The nature of the impacts, while estimated in this study with the assistance of photo simulations, would depend on the final Project design in which the exact placement and height of transmission structures are determined. The purpose of the simulations and associated assessments in this report are to provide data on likely impacts and to compare those impacts to support the selection of a preferred route.

Once a route is selected by the SCC, that route would be subject to a full historic architectural survey in which additional (as of yet, unrecorded) historic properties could be identified and Project impacts assessed. The survey area would be defined based on the design height of the transmission line structures, topography, tree cover, and other factors impacting line-of-sight from historic resources to the selected route.

2.3.1. Route 1

The considered resources that lie within the VDHR tiers for Route 1 are presented in Table 2.3-1 and depicted in Attachment 1, Sheet 1. There are ten aboveground historic resources identified within the VDHR tiers for Route 1, including the Aspen and Golden Substations, Line #5002 where located on Aspen Substation, and the Line Loop. The considered resources were subjected to field reconnaissance and a preliminary assessment of impacts, discussed in the next chapter.

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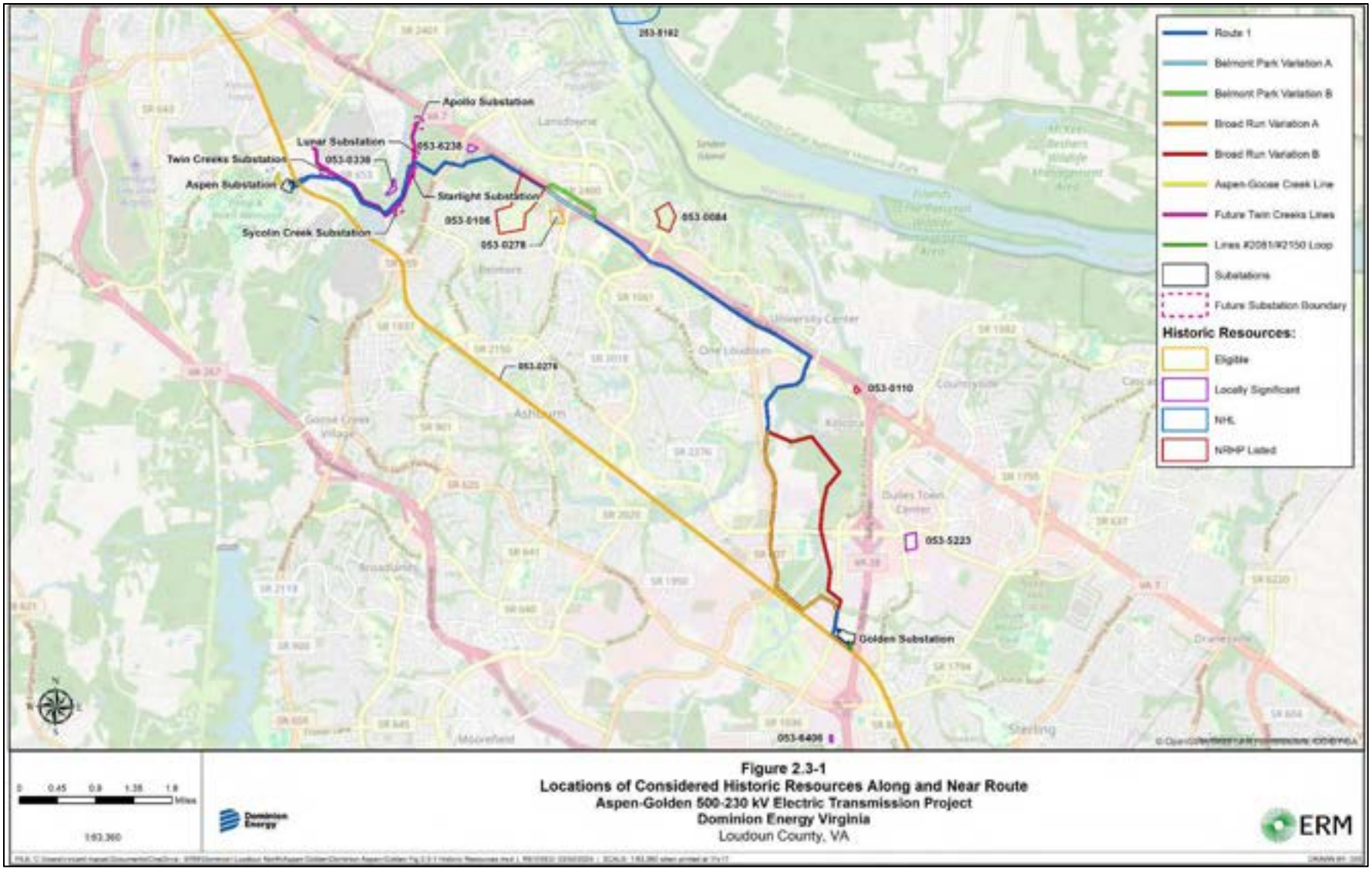


Figure 2.3-1: Locations of Considered Historic Resources Along and Near Routes

Table 2.3-1: Historic Resources in VDHR Tiers for Route 1

Buffer (miles)	Resource Category	Resource Number	Description
1.0 to 1.5	National Historic Landmark	253-5182	Ball's Bluff Battlefield & National Cemetery Historic District Boundary Increase
0.5 to 1.0	Locally Significant	053-6406+#	Tippett's Hill Cemetery
		053-5223+	Nokes House
0.0 to 0.5	National Register Properties (Listed)	053-0084	Janelia/Howard Hughes Research Center
		053-0110	Broad Run Bridge and Toll House
	National Register – Eligible	053-0278	Belmont Chapel and Cemetery
	Locally Significant	053-0336*	Cooke's Mill
		053-6238	African American Burial Ground for the Enslaved at Belmont
0.0 (within ROW)	National Register Properties (Listed)	053-0106	Belmont Manor
	National Register – Eligible	053-0276*+#	Washington and Old Dominion Railroad Historic District

** Resource is within the designated tiers for the proposed Aspen Substation*
+ Resource is within the designated tiers for the proposed Golden Substation
#Resource is within the designated tiers for the Line Loop

2.3.2. Belmont Park Variation A

The considered resources that lie within the VDHR tiers for Belmont Park Variation A are presented in Table 2.3-2 and depicted in Attachment 1, Sheet 2. There are four aboveground historic resources identified within the VDHR tiers for Belmont Park Variation A. The four considered resources were subjected to field reconnaissance and a preliminary assessment of impacts, discussed in the next chapter.

Table 2.3-2: Historic Resources in VDHR Tiers for Belmont Park Variation A

Buffer (miles)	Resource Category	Resource Number	Description
0.5 to 1.0	National Register Properties (Listed)	053-0084	Janelia/Howard Hughes Research Center
	Locally Significant	053-6238	African American Burial Ground for the Enslaved at Belmont
0.0 to 0.5	National Register – Eligible	053-0278	Belmont Chapel and Cemetery
0.0 (within ROW)	National Register Properties (Listed)	053-0106	Belmont Manor

2.3.3. Belmont Park Variation B

The considered resources that lie within the VDHR tiers for Belmont Park Variation B are presented in Table 2.3-3 and depicted in Attachment 1, Sheet 3. There are four aboveground historic resources identified within the VDHR tiers for Belmont Park Variation B. The considered resources were subjected to field reconnaissance and a preliminary assessment of impacts, discussed in the next chapter.

Table 2.3-3: Historic Resources in VDHR Tiers for Belmont Park Variation B

Buffer (miles)	Resource Category	Resource Number	Description
0.5 to 1.0	National Register Properties (Listed)	053-0084	Janelia/Howard Hughes Research Center
	Locally Significant	053-6238	African American Burial Ground for the Enslaved at Belmont
0.0 to 0.5	National Register – Eligible	053-0278	Belmont Chapel and Cemetery
0.0 (within ROW)	National Register Properties (Listed)	053-0106	Belmont Manor

2.3.4. Broad Run Variation A

The considered resources that lie within the VDHR tiers for Broad Run Variation A are presented in Table 2.3-4 and depicted in Attachment 1, Sheet 4. There are three aboveground historic resources identified within the VDHR tiers for Broad Run Variation A. The considered resources were subjected to field reconnaissance and a preliminary assessment of impacts, discussed in the next chapter.

Table 2.3-4: Historic Resources in VDHR Tiers for Broad Run Variation A

Buffer (miles)	Resource Category	Resource Number	Description
0.5 to 1.0	National Register Properties (Listed)	053-0110	Broad Run Bridge and Toll House
	Locally Significant	053-5223	Nokes House
0.0 to 0.5	National Register – Eligible	053-0276	Washington and Old Dominion Railroad Historic District

2.3.5. Broad Run Variation B

The considered resources that lie within the VDHR tiers for Broad Run Variation B are presented in Table 2.3-5 and depicted in Attachment 1, Sheet 5. There are three aboveground historic resources identified within the VDHR tiers for Broad Run Variation B. The considered resources were subjected to field reconnaissance and a preliminary assessment of impacts, discussed in the next chapter.

Table 2.3-5: Historic Resources in VDHR Tiers for Broad Run Variation B

Buffer (miles)	Resource Category	Resource Number	Description
0.5 to 1.0	National Register Properties (Listed)	053-0110	Broad Run Bridge and Toll House
	Locally Significant	053-5223+	Nokes House
0.0 to 0.5	National Register – Eligible	053-0276	Washington and Old Dominion Railroad Historic District

2.3.6. Aspen-Goose Creek Line

The considered resources that lie within the VDHR tiers for the Aspen-Goose Creek Line are presented in Table 2.3-6 and depicted in Attachment 1, Sheet 6. There are two aboveground historic resources identified within the VDHR tiers for the Aspen-Goose Creek Line. The considered resources were subjected to field reconnaissance and a preliminary assessment of impacts, discussed in the next chapter.

Table 2.3-6: Historic Resources in VDHR Tiers for Aspen-Goose Creek Line

Buffer (miles)	Resource Category	Resource Number	Description
0.5 to 1.0	Locally Significant	053-0336	Cooke's Mill
0.0 to 0.5	National Register – Eligible	053-0276	Washington and Old Dominion Railroad Historic District

3. PREVIOUS SURVEYS

Large portions of the various Aspen-Golden Lines have previously been surveyed for cultural resources, providing expansive information about known resources in the area, although some of the surveys focused exclusively on archaeological resources. Twenty-two previous cultural resource surveys intersect at least one of the routes under consideration. Information on these previous surveys—including VDHR survey number, report title, report authors, and report date—is provided in Table 2.4-1. The extent of the previous survey coverage is depicted on maps provided in Attachment 2.

Table 2.4-1: Cultural Resource Surveys Covering Portions of the Routes

VDHR Survey #	Title	Author(s)	Date
LD-108	Phase I Archaeological Survey at Belmont Plantation, Loudoun County, Virginia	Douglas C. McLearen, Kimberly S. Zawacki, Matthew R. Laird, James G. Harrison III	1999
LD-140	Historic and Archaeological Site Survey of the Lansdowne Tract, Loudoun County, Virginia	Eugene M. Scheel	1991
LD-141	Phase I Cultural Resources Investigations of 218 Acres on the 352 Loudoun County Sanitation Authority Tract, Loudoun County, Virginia	Alain C. Outlaw, Timothy E. Morgan, Mary B. Clemons	2001
LD-146	Interim Report: Archaeological Survey of Portions of Ashburn Village Development, Loudoun County, Virginia	Espey, Huston & Associates, Inc.	1989
LD-147	Archaeological Survey of the Proposed Route 607 (Loudoun County Parkway) Project, Proposed Route 28 Corridor Improvements PPTA Project, Loudoun County, Virginia	Joe B. Jones	2003
LD-182	Cultural Resources Survey, Proposed Connector of Pacific Boulevard, Loudoun County, Virginia	Heidi Luchsinger, Bill Hall, Loretta Lautzenheiser	2006
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-220	Phase I Archeological Investigation of the Circa 300 Acre One Loudoun Center Property, Loudoun County, Virginia	Christine Jirikowic, David Carroll, Kimberly Snyder	2005
LD-221	Cultural Resources Survey, Proposed Connector of Pacific Boulevard, Loudoun County, Virginia	Dennis Gosser, Bill Hall, Loretta Lautzenheiser	2007
LD-222	Cultural Resources Survey, Proposed Connector of Pacific Boulevard, Loudoun County, Virginia: Addendum: Stormwater Ponds	Loretta Lautzenheiser	2007
LD-230	A Phase I Investigation of the Circa 420 Acre A.S. Ray Property Along Broad Run, Loudoun County, Virginia	William M. Gardner, Kimberly A. Snyder, John Mullen, Gwen J. Hurst	2001

VDHR Survey #	Title	Author(s)	Date
LD-265	Phase I Archeological Investigations of the 225.8 Acre Commonwealth Center Property, Loudoun County, Virginia	John Mullen, David Carroll, Paw Jorgensen, Christopher Shephard	2006
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-331	Phase I Architectural and Archaeological Survey of the Proposed Waxpool Transmission Line Right-of-Way Expansion Area, Loudoun County, Virginia	Arthur Striker, Danielle Worthing	2013
LD-343	Cultural Resources Survey of the Proposed Dominion Pleasant View Substation Expansion, Loudoun County, Virginia	Elizabeth Monroe, Mary Ruffin Hanbury	2012
LD-344	Supplemental Cultural Resources Survey of the Proposed Dominion Pleasant View Substation Expansion, Loudoun County, Virginia: An Addendum to Cultural Resources Survey of the Proposed Dominion Pleasant View Substation Expansion	Elizabeth Bell, Mary Ruffin Hanbury	2013
LD-350	A Phase I Cultural Resources Survey of Approximately 8.0 Miles of Proposed Improvements to the Dominion Virginia Power 500kV Transmission Line from the Goose Creek Substation to the Brambleton Substation, Loudoun County, Virginia	Brynn Stewart, Sandra DeChard, Ellen Brady	2013
LD-376	Phase I Archeological Investigation of the Circa 38 Acre INOVA Loudoun Hospital Expansion Site, Loudoun County, Virginia	Jarod Hutson	2008
LD-392	Results of a Phase I Archeological Investigation of the Circa 88.8 Acre Beaumeade Corporate Park, Loudoun County, Virginia	William M. Gardner, Kimberly A. Snyder, Gwen J. Hurst	2002
LD-485	Phase I Archaeological Investigation TransCanada SIAP 245 Line VC-010 Pressure Test/Replacement Project, Loudoun County, Virginia	Barbara A. Munford, Jonathan Glenn	2019
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 for Analysis

Fieldwork for the pre-application analysis was conducted by Secretary of the Interior Qualified architectural historian Emily Dodson and Michael Langmyer between March 20–25, August 28–30, and December 6-7, 2023. The fieldwork involved photographing ten resources requiring visual assessment according to the Guidelines and examining potential line-of-sight views from each resource toward the routes. For resources where property owner approval was granted for historic resource documentation, photographs were taken toward the proposed transmission line(s) 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 applicable route(s).

Panoramic photographs were taken from each resource, with an effort to capture the direction with the clearest, most unobstructed view toward the applicable route or routes. 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 was 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 leveler
- 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 Joint Photographic Experts Group (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 along each route 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 each 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 level of impacts by severity according to the following scale devised by VDHR:

- **None**–Project is not visible from the resource.
- **Minimal**–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 lines 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. 053-0084, Janelia/Howard Hughes Research Center

Janelia/Howard Hughes Research Center (053-0084) is located at 19700 Helix Drive on a 256.2-acre parcel. The main dwelling is situated in the center of a medical research campus surrounded by rolling grassy hills with walking paths. A row of trees is located southeast of the dwelling. The campus includes institutional buildings, roadways, several retention ponds, and woodlands (Google Earth Pro 2023). Due to a lack of access, ERM architectural historians took photos from the public right-of-way along Helix Drive (Attachment 4, Figure 1).

053-0084 was initially surveyed in 1967 by an unknown investigator (Unknown 1967). The surveyor noted the circa 1935 dwelling was called Janelia and included a primary dwelling, swimming pool, garage, garden, and a secondary dwelling. It was designed by architect Phillip Smith of the firm Smith and Walker of Boston, Massachusetts for Robert and Vinton L. Pickens. The dwelling was described as a three-and-a-half story country house designed in the modified Normandy manor style. Constructed of reinforced concrete faced with painted brick, the dwelling had an irregular plan with multiple extensions, each with a separate steeply pitched hipped roof sheathed in slate. Windows were multipaned casements flanked with board and batten shutters. Most of the first-floor openings were French doors. There were six tall freestanding chimneys. A stone belt course was located at the sills of the second-floor openings. The dwelling was set amid formerly landscaped grounds, near the center of a 281-acre farm at the end of a gravel lane. The swimming pool was built circa 1935, but was not described in the 1967 survey. A two-story garage, called the carriage house, was a brick building measuring six bays wide, of which four of the bays featured replacement overhead wooden carriage doors, and the other two bays featured pedestrian entrances. The building was capped by a hipped slate roof. There were two brick interior end chimneys. The windows at the second level were partial eyebrow dormers with multi-light windows. Originally, formal gardens surrounded the house, but were overgrown at the time of the 1967 survey. Visible during the 1967 survey were large yews and boxwoods that were separated by grassy walkways leading to beds that once grew lilies. The secondary dwelling was a modern modular house built at an unknown date for tenant farmers (Unknown 1967).

The main dwelling and garage were visible during ERM's current field survey, and they appear to be in good condition. Janelia/Howard Hughes Research Center is significant as one of Virginia's last representatives of the country house ideal, fostered in England and which spread to America in the late nineteenth century. Janelia/Howard Hughes Research Center contained all the essential ingredients of the genteel country place, including a sprawling Normandy style manor house, service building, formal gardens, and a pastoral landscape setting with calculated scenic views. Janelia/Howard Hughes Research Center meets Criteria C as significant in the area of architecture (Melinat 2018). In 2018, Megan Melinat of VDHR noted the pool and the secondary dwelling were not observed, and the formal gardens had been razed (Melinat 2018). Howard Hughes Medical Institute began constructing a medical research campus around the historic dwelling and garage around 2002 (NETROnline 2023). The property presently operates as a medical research facility called the Janelia Research Campus (HHMI 2023).

Janelia/Howard Hughes Research Center was determined potentially eligible in 1986 by VDHR staff, and a NRHP nomination was prepared in 1986 by Paula Stoner Reed. 053-0084 was listed in the Virginia Landmarks Register (VLR) in 1986 and in the NRHP in 1987. The resource lies within the half-mile study tier for Route 1 and within the one-mile study tier for Belmont Park Variation A and Belmont Park Variation B.

4.3.2. 053-0106, Belmont Manor

Belmont (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 located 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 2).

The property originally was 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 Building 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 prepared by Calder C. Loth, a staff member of the Virginia Historic Landmarks Commission (VHLC) in 1976.

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 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's northern boundary lies within the right-of-way study tier for Route 1, Belmont Park Variation A, and Belmont Park Variation B.

4.3.3. 053-0110, Broad Run Bridge and Toll House

Broad Run Bridge and Toll House (053-0110) is located on a 0.85-acre parcel at 45290 Russell Branch Parkway/Route 1061. 053-0110 is located adjacent to the Sully Road South Bound exit of the Harry Byrd Highway. A small retention pond and a group of attached residences are southwest of the toll house with the Broad Run River flowing east-southeast of the Toll House (Google Earth Pro 2023). Due to a lack of access, ERM architectural historians took photos from the public right-of-way along Russell Branch Parkway (Attachment 4, Figure 3).

053-0110 was surveyed in 1970 by VHLC staff, who described the bridge as a double span of arches supported by a central pier with massive abutments on either bank. Conical buttressing flanked the arches and the squared off buttresses supported the stone walls on land. The asphalt covered roadway rose to the center of the bridge span and was flanked by low parapet walls. The surveyor noted the house was a one-story, three-bay dwelling, which was later enlarged with three additional wings. Little original interior fabric remained in 1970 (VLHC 1970a). A windshield survey occurred in 1990 by Harlan Hambright, who confirmed that the bridge was in ruinous condition and demolished (Hambright 1990). In 2009, an unknown investigator updated the bridge's assessment. They noted the east span collapsed on February 19, 1976. In 2009, only traces of the abutments remained along with a massive pile of stones in and along Broad Run. The toll house remained intact but was unoccupied and in poor condition, with boarded windows after having formerly served as a private residence (Unknown 2009a). In 2014, Mary Ruffin Hanbury noted that the toll house had a central side-gable portion with an interior end chimney at the western end. A central single-leaf door was flanked by boarded up windows. The toll house had a stone addition built to the west and another frame addition built to the east of the original building. A hipped-roof addition was added to the south of the original building, attached via a gabled hyphen. The original house featured a large, shed-roof dormer on the rear/south slope. The chimneys and exterior walls were constructed of uncoursed stone, and the roof was sheathed in a composite material (Hanbury 2014).

The Virginia General Assembly passed an act to incorporate the Leesburg Turnpike Company to build a road from Leesburg to the Little River Turnpike at Alexandria in 1809. By 1822, the road had been completed to Dranesville and one of the toll gates erected may have been at the Broad Run Bridge, which had been constructed in 1820. This suggests that the toll house was also constructed around 1820. The Turnpike Company eventually ceased operations and the road no longer operated as a toll road around the time of the Civil War. The stone bridge, which remained in use until 1949, had replaced several wooden bridges that washed away. The stone bridge was damaged by Hurricane Agnes in 1972 and collapsed on February 19, 1976 (VLHC 1970b).

ERM noted the toll house during the field survey, which was in good condition. The ruins of the bridge were not visible from the public-right-of-way nor in aerial imagery.

053-0110 was nominated for the NRHP by VHLC staff and listed in the VLR in 1969. The resource was listed in the NRHP in 1970 under Criterion A and deemed significant in the areas of commerce and transportation. At the time of the nomination, the Broad Run Bridge and Toll House, built circa 1820, were considered the only extant combination of bridge and toll house remaining in Virginia (VLHC 1970b). Resource 053-0110 lies within the half-mile study tier for Route 1 and the one-mile study tier for Broad Run Variation A and Broad Run Variation B.

4.3.4. 053-0276, Washington & 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, 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 4). 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 2000a). 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 2000a; 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 Aspen-Golden Lines.

The VDHR determined 053-0276-0001 as eligible for the NRHP in 1999. 053-0276 lies within the right-of-way study tier for Route 1 and the Line Loop, and the half-mile study tier for Broad Run Variation A, Broad Run Variation B, and the Aspen-Goose Creek Line.

4.3.5. 053-0278, Belmont Chapel and Cemetery

Belmont Chapel and Cemetery (053-0278) is located at 43600 Russell Branch Parkway/Route 901 in Ashburn. The cemetery and chapel, now a ruin, are located adjacent and south of St. David's Episcopal School and Church. Further south are commercial businesses, with Route 901 to the east. The resource is situated in a grove of trees (Google Earth Pro 2023). Due to a lack of access, ERM architectural historians took photos from the public right-of-way along Russell Branch Parkway (Attachment 4, Figure 5).

The chapel was built circa 1841 with the cemetery established circa 1846. The two resources are historically associated with Belmont (053-0106). In 1963, an unknown surveyor identified the chapel as destroyed, but recommended the ruin as eligible for the NRHP under Criterion D (Unknown 1963). The chapel was surveyed again by John G. Lewis in 1973 and Diva Lynch in 2005 (Lewis 1973; Lynch 2005). Historically, the chapel was a simple but stately stone and wood building. It had a gallery inside an arched fieldstone-gothic façade measuring 40 feet high. The chapel had large windows adorned with Georgian style trim. Inside, there was a semi-circular raised platform, surrounded by a communion rail, where the pulpit and altar stood. The communion rail was crafted by Morris Wampler, an officer in the 8th Virginia Infantry for the Confederacy, and an engineer for General P.G.T. Beauregard (Unknown 2009b). The Lynch survey identified the chapel as built by Margaret Mercer, who consulted Benjamin Latrobe for its design. Miss Mercer was the daughter of John Francis Mercer, Governor of Maryland from 1801 to 1803, and both of whom were members of the American Colonization Society, whose goal was to free enslaved persons and ensure their safe passage to Liberia. Miss Mercer established Belmont Academy, a Ladies seminary, which offered affluent women courses in science, mathematics, literature, languages, art, music, and religion. She also established a large Sunday school, which was open to the public and taught reading and writing to people of all ages and races. After Miss Mercer's death in 1846, the academy moved to Leesburg in 1856, the chapel served as a Chapel-of-Ease for St. James Church and continued to serve the local community. During the 1950s, the Diocese of Virginia sued the local landowners and reclaimed the property in an out of court settlement, stating the land had been deeded to the Diocese by Margaret Mercer's descendants. The last recorded religious event was a wedding held in 1951. In the ensuing years, the chapel fell into disrepair and the roof collapsed in a storm. In 1963, a fire, set by vandals, destroyed the remaining foundation and portion of the façade; however, the Lynch survey noted the fire destroyed the chapel in 1967 (Lynch 2005; Unknown 2009b).

The cemetery contains over 200 graves of local families, buried between 1846 and 1934. Margaret Mercer was buried in the cemetery but exhumed at a later date. The cemetery was reopened for interments in 2000 by St. David's Episcopal Church, which planned to raise funds to rebuild the chapel.

In 2005, VDHR determined 053-0278 as eligible for the NRHP under Criterion D, with a period of significance from 1840 to 1967. 053-0278 lies within the half-mile study tier for Route 1 and Belmont Park Variations A and B.

4.3.6. 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 6). 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 most of the mill, 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 and the one-mile study tier for the Aspen-Goose Creek Line.

4.3.7. 053-5223, Nokes House

The Nokes House (053-5223) is located at 45564 Thyer Road in Sterling (Attachment 4, Figure 7). This resource encompasses an approximately 10-acre area at the southeast corner of Nokes Boulevard and Atlantic Boulevard. The associated buildings are situated on the southern end of the resource boundary off Thayer Road. The property itself is heavily wooded with no discernable access point. The surrounding area is predominantly commercial in all directions, with major roadways to the north and west.

In 2002, History Matters, LLC first surveyed the resource. They noted a circa 1880 vernacular two-story dwelling with a side-gable roof clad in asbestos shingles on a continuous stone foundation. Additional outbuildings were also noted, including a circa 1880 privy, circa 1920 poultry house and garage, circa 1940 barn, and a circa 1950 well house (History Matters, LLC 2002). The resource was surveyed again in 2019 by Robert Taylor of Dutton + Associates, LLC. During this survey, the house was noted as being heavily overgrown but with no visible changes. Additional observations during the survey suggested that the dwelling is a hall-and-parlor type with several additions to the rear and east elevation. The prior 2002 survey noted a portion of the dwelling was of log construction; however, this was not observed in 2019. Taylor also noted a side-gable roof clad in standing seam metal with an unknown foundation. Two interior gable-end brick chimneys intersect the roof ridge. The rear addition features a shed roof with an exterior brick chimney. A two-story side-gable addition comes off the main block, with a one-story shed-roof addition on its rear side. A raised, full-width, hipped-roofed porch spans the front, south, elevation where the main entrance is located. Secondary entrances are on the rear-ell side and the one-story wing sheltered by porticos. Windows consist of double-hung two-over-two units on the main block and six-over-six on the additions (Taylor 2019).

In 2023, ERM visited the resource and could not see the dwelling or any of the outbuildings from the public right-of-way along Thyer Road. Further desktop research shows that the resource was demolished between 2020 and 2021 (Google Earth Pro 2023).

053-5223 has not been formally evaluated by the VDHR, but ERM has categorized it as locally significant for the purposes of the Aspen-Golden Lines due to its ties to the local African American community. 053-5223 lies within the one-mile study tier for Route 1 and Broad Run Variations A and B.

4.3.8. 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 8). 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. The site was identified as possibly representing an African American burial ground affiliated with 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 the complete known extent of the resource (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 the Aspen-Golden Lines due to its ties to the African American community. 053-6238 lies within the half-mile study tier for Route 1 and within the one-mile study tier for Belmont Park Variations A and B.

4.3.9. 053-6406 Tippett's Hill Cemetery

Tippett's Hill Cemetery (also Tippet Hill and Tippet's Hill) is a locally significant African American resource within Loudoun County. The resource represents an active African American cemetery located off Vantage Data Plaza in Sterling, Virginia, between Pacific Boulevard and Sully Road (Appendix 4, Figure 9). The boundary of the resource defined in VCRIS covers approximately 0.95 acre.

Tippett's Hill Cemetery (053-6406) was previously recorded in 2015 by John Mullen of Thunderbird Archaeology. Mullen described the cemetery as having 115 grave markers of varying styles, with the earliest reported interment dating to 1863 (Mullen 2015). The survey delineated the boundaries of the cemetery, but no details on the findings were provided. The online cemetery database, Find A Grave, lists 134 memorials within the cemetery (Find A Grave 2023). The oldest grave listed in Find A Grave is Philip J. Coleman, a Confederate soldier who died on July 23, 1863, of wounds sustained in battle on June 9, probably at the Battle of Manassas Gap. However, no photograph of this burial is included with the listing, and no marker for this grave was found by Mullen. The most recent burial recorded on Find A Grave was in 2023. Coleman is the only reported burial dating to the nineteenth century and, as a private in the Confederate army in 1863, he was white. The next oldest graves are members of the African American Johnson, Nokes, and Ewing families from the first three decades of the twentieth century. It is possible that the attribution of Coleman's grave to this cemetery is an error.

According to a historical marker placed at the entrance to the cemetery, the "burying ground" originally served as the slave cemetery for the Tippett's Hill Plantation and markers in the cemetery date to the 1700s. However, no markers or graves of that age have been recorded in previous surveys. The cemetery was turned over to the residents of the Nokes Mountain community in the early 1900s. The Nokes Mountain community was first established in 1901 by George Washington Nokes, who was the first African American landowner in eastern Loudoun County. The location of his home is also a locally significant African American site, 053-5223, located at the corner of Nokes Boulevard and Atlantic Boulevard. The community had a small schoolhouse in the 1920s along with Tippett's Hill Cemetery. Beyond George Washington Nokes, the Ewings family was another early African American family that owned land in the community; they operated a large dairy farm. The Nokes Mountain community did not have a church until 1962 when First Baptist was organized (Lee 2004). According to the historical marker,

Tippett's Hill Cemetery is still administered by the descendants of Clarence L. Nokes, Sr. (1890–1985), who was one of its longtime caretakers.

The marker at the cemetery was placed as a result of an agreement that was part of an application by a developer in 2018 to construct data centers on properties surrounding the cemetery. The applicant also agreed to fence off the cemetery during construction, suspend construction during funerals, pave an existing gravel road onto the property from Moran Road, provide four parking spaces, improve pedestrian paths in the cemetery, and remove and replace dead and diseased trees within a 25-foot buffer around the cemetery (Greene 2018).

053-6406 has not been formally evaluated by the VDHR. However, ERM has categorized the resource as locally significant for the purposes of the Aspen-Golden Lines due to its association with the African American community. 053-6406 lies within the one-mile study tier for Route 1.

4.3.10. 253-5182, Ball's Bluff Battlefield & National Cemetery Historic District Boundary Increase

Ball's Bluff Battlefield & National Cemetery Historic District (the District) was listed as a NHL and on the NRHP in 2016. The resource 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 Montgomery County, Maryland on either side of the Potomac River east of Leesburg, Virginia. The boundaries of the resource are roughly defined by the American Battlefield Protection Program (ABPP) Core Area and encompass approximately 3,301 acres in two discontiguous 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 to the north of the routes. None of the routes fall within the NHL boundary; however, a small portion of the ABPP battlefield boundary (VCRIS boundary) on Goose Creek is within the 1.5-mile study tier for Route 1 (Appendix 4, Figure 10).

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 Ball's 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).

253-5182 was listed on the NRHP and added as an NHL in 2016. It is located within the 1.5-mile study tier for Route 1.

4.4. Historic Resource Findings for Route 1

The impacts to each resource in the Route 1 study tiers are discussed below. Photo simulations are provided in Attachment 5.

4.4.1. 053-0084, Janelia/Howard Hughes Research Center

Janelia/Howard Hughes Research Center is located approximately 0.3 mile to the northeast of Route 1 in an area where the route is adjacent to a highway (Attachment 5, Figure 1). The space between the resource and the route contains landscaped open space, Riverside Parkway, and Harry Byrd Highway. Construction of the new transmission lines along Route 1 would introduce modern elements (structures and conductors) to the southwest viewshed.

One photo simulation was prepared from SP 16, which is located along Riverside Parkway, approximately 170 feet from the southern boundary of 053-0084. This SP was chosen as the closest point to the resource from the nearest public right-of-way. At this location, as illustrated in the simulation from SP 16, the new transmission structures would be visible due to their close proximity and the open land between the resource and the route (Attachment 5, Figure 2). However, while this view from the periphery of the resource towards the route is unobstructed, the view from the dwelling itself towards the new transmission line structures would be somewhat obstructed by the trees and other vegetation surrounding the dwelling. A small portion of the transmission line would be visible from the dwelling itself, but greater viewshed effects would be felt within the southernmost corner of the resource boundary, and to a lesser extent along the western portion of the parcel, which also features open lawn. Route 1 would add modern transmission infrastructure (structures and conductors) to a viewshed where it does not currently exist, but where other modern developments, such as divided highways and commercial buildings, already intrude. The scale of the new transmission lines in relatively close proximity to the resource would represent a more obtrusive new element within the viewshed.

Because Route 1 would add a highly visible modern element to Janelia's southern and western viewshed, ERM recommends that there would be a **Moderate Impact** on this resource from Route 1.

4.4.2. 053-0106, Belmont Manor

Belmont Manor is transected by Route 1 on the resource's northeastern boundary in an area where the route is adjacent to a highway (Attachment 5, Figure 3). The area crossed consists of predominately open field with sparse tree coverage on the northwest corner. Minimal vegetation, primarily near the

northwestern corner of the resource boundary, would be removed for the installation of the new transmission line.

Three simulations were prepared from the resource, one each from SP 1, SP 2, and SP 4. SP 1, in the interior of the resource, was chosen due to its close proximity to the historic structures at a location that would have the greatest visual impact. From this viewpoint, as illustrated in the simulation from SP 1, the new transmission structures would be visible due to the open expanse of land between the vantage point and route (Attachment 5, Figure 4), though the modern infrastructure visible to the northwest has already compromised the viewshed. More importantly, the construction of the golf course between November 2011 and October 2012 significantly altered the landscape viewshed towards the northeast, which was historically undeveloped land. SP 4 was also taken from within the resource boundaries, approximately 340 feet southwest of Route 1 (Attachment 5, Figure 5). SP 4, which is closer to the route, depicts the view for visitors entering the resource. SP 4 illustrates the scale of intrusion Route 1 would create within the northwestern portion of the resource, which is characterized by undeveloped land. SP 2 depicts the view from Harry Byrd Highway (Attachment 5, Figure 6). As illustrated in the simulation for this viewpoint, the northern viewshed has already been impacted by existing overhead utility lines along Harry Byrd Highway, though those lines would be dwarfed by Route 1.

As shown in the simulations, transmission infrastructure installed along Route 1 would be visible from each of the viewpoints and would be visible from many vantage points across the resource. The new transmission lines would add additional, obtrusive modern infrastructure to the viewshed, though the setting of the resource has already been compromised by the construction of a golf course and residential development within its boundaries. Although the resource has lost much of its historic setting, Route 1 would add a more substantial modern element to the northern viewshed. Thus, ERM recommends that there would be a **Moderate Impact** on this resource from Route 1.

4.4.3. 053-0110, Broad Run Bridge and Toll House

The Broad Run Bridge and Toll House is approximately 0.5 mile to the southeast of Route 1 in an area where part of the route parallels a highway (Attachment 5, Figure 7). The space between the resource and the route consists of dense areas of vegetation, a health insurance facility, and a modern university campus building. One simulation was prepared from the resource, from Harry Byrd Highway (SP 17) (Attachment 5, Figure 8). As shown by the simulation, there would be no view to the route due to vegetation and distance. Therefore, there would be **No Impact** on this resource from Route 1.

4.4.4. 053-0276, Washington & Old Dominion Railroad Historic District

Route 1 traverses the W&OD Railroad Historic District in an area where the route intersects Dominion's existing Lines #227/#274, as well as Lines #2081/#2150 Loop, where it cuts into the proposed Golden Substation (Attachment 5, Figure 9). The route additionally is approximately 100 feet to the northeast of the proposed Aspen Substation site and about 100 feet to the southwest of the proposed Golden Substation site. The surrounding area is wooded but also contains existing Dominion substations. It is also located 0.1 mile to the east of the Aspen-Goose Creek Line in an area where the route connects from the proposed Aspen Substation to the existing Goose Creek Substation. Four simulations (from SP 5, SP 7, SP 19, and SP 20) were prepared from the resource, each from the historic district's right-of-way. As shown by SP 7 and SP 19, Route 1 would be visible near the intersection of the route and the resource and when in close proximity to the route, but it would not be visible otherwise, as shown in SP 5 (Attachment 5, Figures 10 through 12). SP 7 shows that the proposed Aspen Substation and Aspen-Goose Creek Line would be visible when in close proximity and that the existing Dominion transmission lines would be more prominent in the landscape as a result of the removal of trees at the substation site. The proposed Golden Substation, as well as the Line Loop would similarly be visible when in close proximity as shown in SP 20 (where the Line Loop is highlighted in purple and the proposed Golden

Substation is highlighted in pink) (Attachment 5, Figure 13), though Dominion's existing lines are already a conspicuous element in the district's viewshed as they share the district's right-of-way. Multiple existing Dominion substations are visible and directly adjacent to the district.

Although the district's historic landscape has been altered by similar infrastructure, the new transmission lines installed along Route 1 would be visible, thus constituting a change. For this reason, ERM recommends that Route 1 would have a **Minimal Impact** on 053-0276.

Please note that the future Twin Creeks Lines would also by minimally visible (only four transmission structures would be visible in the distance) from SP 7 when looking to the east (Attachment 5, Figure 14). When looking east from SP 7, however, the Route 1 Segment of the Aspen-Golden Lines would not be visible.

4.4.5. 053-0278, Belmont Chapel and Cemetery

The Belmont Chapel and Cemetery is located 0.1 mile to the southeast of Route 1 in an area where the route parallels Harry Byrd Highway (Attachment 5, Figure 15). The area between the resource and the route includes Harry Byrd Highway, an open field, and scattered trees. Two simulations were taken for the resource. SP 8 was taken at the resource's northwestern corner on Russell Branch Parkway, and SP 9 was taken at the resource's northeastern corner at Claiborne Parkway. By itself, Route 1 would not be visible from the resource due to distance and vegetation, as illustrated by the simulations. However, Route 1 connects with the Belmont Park Variations in this area. Thus, for the purposes of this report, Route 1 and Belmont Park Variation A are depicted in the simulations. (Belmont Park Variation B, like Variation A, would also be visible, but less obtrusively given that it is routed to the north.) Only one structure associated with Belmont Park Variation A and a small section of conductors are visible from SP 8 (Attachment 5, Figures 16 and 17). Alternatively, SP 9 shows that Belmont Park Variation A is present in the landscape; none of Route 1 itself would be visible from this vantage point (Attachment 5, Figure 18). The simulation also shows an existing overhead utility line in the background, behind a modern residential development. Belmont Park Variation A is only visible from the northern edge of the resource, and nowhere else within the cemetery due to screening tree cover. Still, because the Aspen-Golden Lines would be visible and add additional modern elements to the northern viewshed, ERM recommends that there would be a **Minimal Impact** to this resource from Route 1, primarily because of its connection with both Belmont Park Variations A and B.

4.4.6. 053-0336, Cooke's Mill

Cooke's Mill is located approximately 0.9 mile to the east of the proposed Aspen Substation and 276 feet to the west of Route 1 in an area where the route uses a greenfield alignment (Attachment 5, Figure 19). The area between the resource and the route 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 616 feet west of the route, while SP 29 was taken from the southwestern boundary of the resource, approximately 640 feet to the northwest of the route (Attachment 5, Figures 20 and 21). 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), highlighted in pink in the simulations, would have a view of the route. SP 28 was taken at the easternmost resource boundary, closest to the route, approximately 276 feet west of the right-of-way, and SP 30 was taken on the west bank of Goose Creek, closest to the mill (Attachment 5, Figures 22 and 23). From SP 28, three transmission line structures 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 shows conductors would be visible through another clearing in the trees here.

Because discrete locations within the resource would have limited views of Route 1, installation of the transmission line 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 a **Minimal Impact** to the resource from Route 1. The future Twin Creeks Lines is also minimally visible in SPs 28 and 30, although none of the proposed (or future) substations associated with this Project or the future Twin Creeks Lines project would be visible from the resource. Only one of the transmission structures for the future Twin Creeks Lines and associated conductors would be visible (highlighted in purple in the simulations).

4.4.7. 053-5223, Nokes House

The Nokes House is located 0.8 mile to the northeast of Route 1 and 0.89 mile to the northeast of the proposed Golden Substation in an area where the route parallels Gloucester Parkway (Attachment 5, Figure 24). The area between the resource and the route contains modern industrial structures, woodlands, Dominion's existing Line #2143/2150/2165, and Dominion's existing BECO Substation. One simulation was prepared for the resource, SP 32, along Nokes Boulevard (Attachment 5, Figure 25). As shown in the simulation, there would be no view to the route due to distance and intervening vegetation. Thus, ERM recommends there would be **No Impact** on this resource from Route 1.

4.4.8. 053-6238, African American Burial Ground for the Enslaved at Belmont

The African American Burial Ground for the Enslaved at Belmont is located approximately 408 feet to the north of Route 1 in an area where the route mostly uses a greenfield alignment, though one segment parallels Belmont Ridge Road (Attachment 5, Figure 26). The area between the resource and the route to the southwest, south, and southeast consists of dense woodland. Areas to the west-southwest and east consist of strips of cleared land along the right-of-way for Harry Byrd Highway and Belmont Ridge Road. Four simulations were prepared from the resource: SP 301, located at the southernmost boundary of the resource; SP 302, along Harry Byrd Highway at the eastern corner of the resource; SP 303, near the terminus of Freedom Trail Road at the northernmost point of the resource boundary; and SP 308, located on Freedom Trail Road (about 100 feet outside of the VDHR boundary).

SP 301 shows that the route would only be minimally visible from the southernmost point of the resource, where it is closest to the route (Attachment 5, Figure 27). This is the extent of the route visibility from the historic section of the cemetery. All other areas within the cemetery trail (which surrounds the burial ground) and inside the forested area would have no view of Route 1 or least no more of a view than what is shown in SP 301. Outside the forested areas, SP 302, SP 303, and SP 308 would have unobstructed sight lines infrastructure installed along the route due to the absence of vegetation between the resource and route. SP 302 is a vantage point that would only be experienced by visitors walking alongside the resource, outside of the cemetery and parallel to Harry Byrd Highway (Attachment 5, Figure 28). Likewise, SP 303 only captures the view that visitors would experience as they walk into the cemetery entrance from Belmont Ridge Road. This view would quickly be screened upon entering the wooded interior of the resource (Attachment 5, Figure 29). SP 308, which is outside of the resource boundary, simulates the view towards Route 1 for visitor as they drive into the parking area cemetery (Attachment 5, Figure 30 (Route 1 is highlighted in pink)). This view would also be screened as visitors leave their vehicles and enter the forest to visit the burial area.

The area surrounding the resource has lost its historic feeling as a result of the construction of divided highways to the north and west. As a result, the proposed transmission line would constitute one more element of modern infrastructure within an altered landscape. Although the historic section of the

cemetery has minimal views to the route, the portions of the resource outside of the tree line and those right outside the resource boundary would have clear line of sight to the route. Thus, ERM recommends that there would be a **Moderate Impact** on this resource from Route 1. The future Twin Creeks Lines would also be minimally visible from SP 308. Only the tips of two of the transmission structures for the future Twin Creeks Lines would be visible (as highlighted in purple in the simulation).

4.4.9. 053-6406, Tippett's Hill Cemetery

Tippett's Hill Cemetery is located approximately 0.9 mile to the south of Route 1 and 0.9 mile to the south of the proposed Golden Substation in an area where the route parallels Gloucester Road (Attachment 5, Figure 31). The cemetery is also approximately 0.8 mile to the south of Lines #2081/#2150 Loop. The area between the resource and the route contains a large shopping center, data center buildings, and Dominion's existing Lines #2165/2170 and #2150/2181. One simulation was prepared from the resource, SP 31, along Vantage Data Plaza (Attachment 5, Figure 32). As shown in the simulation, there would be no view to the route due to distance and intervening infrastructure. Thus, ERM recommends there would be **No Impact** on this resource from Route 1 or Lines #2081/#2150 Loop.

4.4.10. 253-5182, Ball's Bluff Battlefield & National Cemetery Historic District Boundary Increase

Ball's Bluff Battlefield and National Cemetery Historic District Boundary Increase is located 1.48 miles to the north of Route 1 in an area where the route uses a greenfield alignment (Attachment 5, Figure 33). The area between the district and the route contains dense residential developments. One simulation was prepared from the district, SP 26, which is in the Bazil Newman Riverfront Park on the west bank of the Potomac River (Attachment 5, Figure 34). As shown in the simulation, there would be no view to the route due to distance and intervening infrastructure. Therefore, ERM recommends there would be **No Impact** on this resource from Route 1.

4.5. Historic Resource Findings for Belmont Park Variation A

4.5.1. 053-0084, Janelia/Howard Hughes Research Center

Janelia/Howard Hughes Research Center is located approximately 0.6 mile to the east-northeast of Belmont Park Variation A where the route is adjacent to a highway (Attachment 5, Figure 35). The area between the resource and the route contains a high traffic highway, parkway, additional areas associated with Janelia's Research Campus, and Shenandoah University's Northern Virginia Campus.

One simulation was taken from SP 16, on Riverside Parkway. This point was chosen as the closest point to the resource from the public right-of-way along the parkway. By itself, Belmont Park Variation A would not be visible from the resource due to distance and intervening structures, as shown by SP 16 (Attachment 5, Figure 36). However, Route 1 connects with Belmont Park Variation A in this area. Thus, for the purposes of this report, both Route 1 and Belmont Park Variation A are depicted. Here, the new transmission line structures for Route 1 would be visible from the public right-of-way and from the southern margin of the resource, which consists of open lawn. The view towards Belmont Park Variation A from the actual historic dwelling, however, would be obstructed by a line of trees on the southern edge of the property that blocks most of the view to the south. Still, Route 1 would be visible from the dwelling's second story and from the edges of the resource boundary.

While the southern viewshed already contains other modern developments, such as divided highways and commercial buildings, Belmont Park Variation A would introduce new large-scale modern infrastructure that would be prominent in the landscape. Thus, ERM recommends that there would be a **Moderate Impact** to this resource from Belmont Park Variation A because of its connection with Route 1.

4.5.2. 053-0106, Belmont Manor

Belmont Manor's northeastern corner is crossed by Belmont Park Variation A in an area where the route parallels a highway (Attachment 5, Figure 37). The surrounding area contains woodlands and large modern residential developments. Parts of these developments extend into Belmont Manor's boundary. Three simulations were prepared for the resource, from SP 1, SP 2, and SP 4. SP 1 was taken from Ridge Road, in the center of the resource; SP 4 was taken from the northern portion of the resource; and SP 2 was taken from the northeastern edge of the resource on Harry Byrd Highway where Belmont Park Variation A connects to Route 1. Thus, for the purposes of this report, both Route 1 and Belmont Park Variation A are shown in the simulations.

SP 1 shows that transmission infrastructure installed along Route 1 and Belmont Park Variation A would be visible from the center of the resource (Attachment 5, Figure 38). Although located in the distance, the new transmission lines would be prominent in the landscape. SP 4 was taken closer to the route variation and shows the view to the route for visitors entering the resource (Attachment 5, Figure 39). SP 2 was taken right where Belmont Park Variation A would start and shows the view from the public road but still inside the resource boundary (Attachment 5, Figure 40). This would be the view for drivers on Harry Byrd Highway. Although the simulations shows both Belmont Park Variation A and Route 1 visible from many vantage points within the resource, it is important to note that modern infrastructure has already compromised the historic viewshed inside and outside of the resource. This includes a modern residential development and golf course constructed between November 2011 and October 2012 within the resource boundary. In addition, modern utility lines are present in the landscape along Harry Byrd Highway, although they are much smaller in scale than the transmission structures proposed for the Project.

All of the extant viewshed changes have significantly compromised the setting of the resource, which was historically undeveloped agricultural land. Furthermore, other than the northern and northeastern views, all other views would remain unchanged. Nevertheless, installation of the Aspen-Golden Lines along Belmont Park Variation A would directly impact and be visible from multiple points within the resource. Thus, ERM recommends that Belmont Park Variation A would have a **Moderate Impact** on 053-0106.

4.5.3. 053-0278, Belmont Chapel and Cemetery

The Belmont Chapel and Cemetery is located approximately 0.2 mile to the southwest of Belmont Park Variation A in an area where the route parallels Harry Byrd Highway (Attachment 5, Figure 41). The area between the resource and the route includes ramps to access the highway, an open field, and scattered trees. The surrounding views to the west and south also include modern elements like a grocery store and an office building.

Three simulations were prepared for the resource, two from SP 8 on Russell Branch Parkway, and one from SP 9 on Claiborne Parkway at the northern resource boundary. Looking northwest from SP 8, one structure and its associated conductors would be visible, while the view northeast towards the route from SP 8 would be entirely obstructed by a hill (Attachment 5, Figures 42 and 43). The transmission line would be visible from SP 9 at the northeast corner of the resource (Attachment 5, Figure 44). It is important to note, however, that the historic view to the north from this location has already been diminished through the addition of modern residential development. Also, SP 9 was taken from the outer edge of the resource, outside of a group of trees that would screen the view from more significant areas of the resource (notably the cemetery) to the south.

Because Belmont Park Route Variation A would introduce additional modern elements that would be more prominent within the resource's viewshed, even if the visibility is only from the northern boundary, ERM recommends that the route would have a **Minimal Impact** to 053-0278.

4.5.4. 053-6238, African American Burial Ground for the Enslaved at Belmont

The African American Burial Ground for the Enslaved at Belmont is located approximately 0.7 mile to the northwest of Belmont Park Variation A in an area where the route mostly uses a greenfield alignment (Attachment 5, Figure 45). The area between the resource and the route contains dense vegetation and Harry Byrd Highway. Two simulations were prepared from the resource: SP 301, located at the southernmost boundary of the resource; and SP 302 along Harry Byrd Highway, at the eastern corner of the resource. Because Belmont Park Variation A connects to Route 1 on the south side of Harry Byrd Highway southeast of the resource, for the purposes of this report, both Route 1 and Belmont Park Variation A are shown in the simulations.

Although Belmont Park Variation A would not be visible from SP 301, the simulation shows minimal visibility towards Route 1 from the southernmost point of the resource, where it is closest to the route (Attachment 5, Figure 46). This is the extent of the route visibility from the historic section of the cemetery. All other areas within the cemetery trail and inside the forested area surrounding the cemetery would have no view of Route 1 or least no more of a view than what is shown in SP 301. There would be a view of transmission infrastructure installed along Route 1 and Belmont Park Variation A from SP 302 (Attachment 5, Figure 47), but this view would only be experienced by visitors walking alongside the resource, outside of the cemetery and parallel to Harry Byrd Highway. SP 302 has an unobstructed view of the route due to its location outside of the historic forested area. Although the historic section of the cemetery has minimal views of Route 1, the eastern portion of the resource outside of the tree line also would have clear line of sight to both Route 1 and Belmont Park Variation A. The variation would introduce modern elements to the southeastern viewshed for viewers outside the tree line along Harry Byrd Highway, but no other locations in the resource boundary would have a view of Belmont Park Variation A.

It is important to note, however, that Route 1 would be visible from inside the historic section of the cemetery regardless of which Belmont Park variation is chosen. It is also worth noting that 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 lines would constitute one more element of modern infrastructure within an altered landscape. Thus, ERM recommends that there would be a **Moderate Impact** on this resource from Belmont Park Variation A, mainly because of its connection to Route 1.

4.6. Historic Resource Findings for Belmont Park Variation B

4.6.1. 053-0084, Janelia/Howard Hughes Research Center

Janelia/Howard Hughes Research Center is located approximately 0.6 mile to the east-northeast of Belmont Park Variation B where the route is adjacent to a highway (Attachment 5, Figure 48). The area between the resource and the route consists of a high traffic highway, parkway, additional areas associated with Janelia's Research Campus, and Shenandoah University's Northern Virginia Campus.

One simulation was taken from SP 16, on Riverside Parkway. This point was chosen as the closest point to the resource from the public right-of-way along the parkway. By itself, Belmont Park Variation B would not be visible from the resource due to distance and intervening structures, as shown by SP 16 (Attachment 5, Figure 49). However, Route 1 connects with Belmont Park Variation B in this area. Thus, for the purposes of this report, both Route 1 and Belmont Park Variation B are depicted. Here, the new transmission line structures for Route 1 would be visible from the public right-of-way and from the southern margin of the resource, which consists of open lawn. The view towards Belmont Park Variation B from the actual historic dwelling, however, would be obstructed by a line of trees on the southern edge

of the property that blocks most of the view to the south. Still, Route 1 would be visible from the dwelling's second story and from the edges of the resource boundary.

While the southern viewshed already contains other modern developments, such as divided highways and commercial buildings, Belmont Park Variation B would introduce new large-scale modern infrastructure that would be prominent in the landscape. Thus, ERM recommends that there would be a **Moderate Impact** to this resource from Belmont Park Variation B because of its connection with Route 1.

4.6.2. 053-0106, Belmont Manor

Belmont Manor's northeastern corner is crossed by Belmont Park Variation B in an area where the route parallels a highway (Attachment 5, Figure 50). The surrounding area contains woodlands and large modern residential developments. Parts of these developments extend into Belmont Manor's boundary. Three simulations were prepared for the resource, from SP 1, SP 2, and SP 4. SP 1 was taken from Ridge Road, in the center of the resource; SP 4 was taken from the northern portion of the resource; and SP 2 was taken from the northeastern edge of the resource on Harry Byrd Highway. Belmont Park Variation B connects to Route 1 in this area. Thus, for the purposes of this report, both Route 1 and Belmont Park Variation B are shown in the simulations.

SP 1 shows that Route 1 and Belmont Park Variation B would be visible from the center of the resource (Attachment 5, Figure 51). Although located in the distance, the new transmission lines would be prominent in the landscape. The simulation from SP 4, taken closer to the route variation, shows the view for visitors entering the resource (Attachment 5, Figure 52). SP 2 was taken right where Belmont Park Variation B starts and shows the view from the public road but still inside the resource boundary (Attachment 5, Figure 53). This would be the view for drivers on Harry Byrd Highway. Although both Belmont Park Variation B and Route 1 would be visible from many vantage points within the resource, it is important to note that modern infrastructure has already compromised the historic viewshed inside and outside of the resource. This includes a modern residential development and golf course constructed between November 2011 and October 2012, which is located inside of the resource boundary. In addition, modern utility lines are present in the landscape along Harry Byrd Highway, although they are much smaller in scale than the transmission structures proposed for the Project.

All of the extant viewshed changes have significantly compromised the setting of the resource, which was historically undeveloped agricultural land. Furthermore, other than the northern and northeastern views, all other views would remain unchanged. Nevertheless, installation of the Aspen-Golden Lines along Belmont Park Variation B would directly impact and be visible from multiple points of the resource. Thus, ERM recommends that Belmont Park Variation B would have a **Moderate Impact** on 053-0106.

4.6.3. 053-0278, Belmont Chapel and Cemetery

The Belmont Chapel and Cemetery is located approximately 0.2 mile to the southwest of Belmont Park Variation B in an area where the route uses parallels Harry Byrd highway (Attachment 5, Figure 54). The area between the resource and the route includes ramps to access Harry Byrd Highway as well as the highway itself. The surrounding views to the west and south also include modern elements like a grocery store and an office building.

Three simulations were prepared for the resource, two from SP 8 on Russell Branch Parkway, and one from SP 9 on Claiborne Parkway at the northern resource boundary. Looking northwest from SP 8, one structure and its associated conductors would be visible, while the view northeast towards the route from SP 8 would be entirely obstructed by a hill (Attachment 5, Figures 55 and 56). The transmission line would be visible from SP 9 at the northeast corner of the resource (Attachment 5, Figure 57). It is important to note, however, that the historic view to the north has already been diminished through the addition of modern residential development. Also, SP 9 was taken from the outer edge of the resource,

outside of a group of trees that would screen the view from more significant areas of the resource (notably the cemetery) to the south.

Because Belmont Park Variation B would introduce additional modern elements that would be more prominent to the resource, even if the visibility is only from the northern boundary, ERM recommends that the route would have a **Minimal Impact** to 053-0278.

4.6.4. 053-6238, African American Burial Ground for the Enslaved at Belmont

The African American Burial Ground for the Enslaved at Belmont is located approximately 0.7 mile to the northwest of Belmont Park Variation B in an area where the route mostly uses a greenfield alignment (Attachment 5, Figure 58). The area between the resource and the route contains dense vegetation and Harry Byrd Highway. Two simulations were prepared from the resource: SP 301, located at the southernmost boundary of the resource; and SP 302 along Harry Byrd Highway, at the eastern corner of the resource. Because Belmont Park Variation B connects to Route 1 on the south side of Harry Byrd Highway southeast of the resource, for the purposes of this report, both routes are shown in the simulations.

Although Belmont Park Variation B would not be visible from SP 301, the simulation shows minimal visibility towards Route 1 from the southernmost point of the resource, where it is closest to the route (Attachment 5, Figure 59). This is the extent of the route visibility from the historic section of the cemetery. All other areas within the cemetery trail and inside the forested area surrounding the cemetery would have no view of Route 1/Belmont Park Route Variation B or least no more of a view than what is shown in SP 301. There would be a view of transmission infrastructure installed along Route 1 and Belmont Park Variation B from SP 302 (Attachment 5, Figure 60), but this view would only be experienced by visitors walking alongside the resource, outside of the cemetery and parallel to Harry Byrd Highway. SP 302 has an unobstructed view of the route due to its location outside of the historic forested area. Although the historic section of the cemetery has minimal views of Route 1, the portions of the resource outside of the tree line would have clear line of sight of both Route 1 and Belmont Park Variation B. The route variation would introduce modern elements to the southeastern viewshed for viewers outside the tree line along Harry Byrd Highway, but no other locations in the resource boundary would have a view of Belmont Park Variation B.

It is important to note that Route 1 would be visible from inside the historic section of the cemetery regardless of which Belmont Park variation is chosen. It is also worth noting that 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 proposed transmission line would constitute one more element of modern infrastructure within an altered landscape. Thus, ERM recommends that there would be a **Moderate Impact** on this resource from Belmont Park Variation B because of its connection to Route 1.

4.7. Historic Resource Findings for Broad Run Variation A

4.7.1. 053-0110, Broad Run Bridge and Toll House

The Broad Run Bridge and Toll House is located approximately 0.9 mile to the northeast of Broad Run Variation A in an area where part of the route uses a greenfield alignment and part follows a road (Attachment 5, Figure 61). The area between the resource and the route consists of dense vegetation and a commercial development. One simulation was prepared for the resource, SP 21, along Pacific Boulevard (Attachment 5, Figure 62). As shown in the simulation, there would be no view to the route due to distance and intervening vegetation. Thus, ERM recommends there would be **No Impact** on this resource from Broad Run Variation A.

4.7.2. 053-0276, Washington & Old Dominion Railroad Historic District

The W&OD Railroad Historic District is approximately 20 feet to the southwest of Broad Run Variation A in an area where the route intersects Dominion's existing Lines #227#/274 (Attachment 5, Figure 63). The surrounding area is wooded and contains data centers. Two simulations were prepared from this resource from the historic district's right-of-way (Attachment 5, Figure 64). SP 18 was chosen because it is in the area closest to the resource that was accessible during at the time of survey due to an unrelated construction project. The majority of the district would have no visibility towards the route variation, as shown by SP 18. The portion of Broad Run Variation A in the closest proximity to the district, however, would be visible paralleling the path for a distance of 0.3 mile. In addition, Route 1 would connect to Broad Run Variation A, which would be visible near the proposed Aspen Substation at SP 20 (Attachment 5, Figure 65). Still, Dominion's existing lines would be more prominent in the district, as they share the district's right-of-way.

Although the historic landscape has been altered already by similar infrastructure, because Broad Run Variation A would likely be visible from a small section of the district it constitutes a change. Thus, ERM recommends that Broad Run Variation A would have a **Minimal Impact** on 053-0276.

4.7.3. 053-5223, Nokes House

The Nokes House is located 0.81 mile to the northeast of the south end of Broad Run Variation A in an area where the route uses a greenfield alignment (Attachment 5, Figure 66). The area between the resource and the route consists of modern industrial structures, Dominion's existing Lines #2143/#2150/#2165, and Dominion's existing BECO Substation. One simulation was prepared for the resource, SP 33, along Nokes Boulevard (Attachment 5, Figure 67). As shown in the simulation, there would be no view to the route due to distance and intervening vegetation. Thus, ERM recommends there would be **No Impact** on this resource from Broad Run Variation A

4.8. Historic Resource Findings for Broad Run Variation B

4.8.1. 053-0110, Broad Run Bridge and Toll House

The Broad Run Bridge and Toll House is located approximately 0.9 mile to the northeast of Broad Run Variation B in an area where the route uses a greenfield alignment (Attachment 5, Figure 68). The area between the resource and the route contains dense vegetation and a commercial development. One simulation was prepared for the resource, SP 21, along Pacific Boulevard (Attachment 5, Figure 69). As shown in the simulation, there would be no view to the route due to distance and intervening vegetation. Thus, ERM recommends there would be **No Impact** on this resource from Broad Run Variation B.

4.8.2. 053-0276, Washington & Old Dominion Railroad Historic District

The Washington and Old Dominion Railroad Historic District is located approximately 0.2 mile to the southwest of Broad Run Variation B in an area where the route is adjacent to Dominion's existing Lines #227/#274 (Attachment 5, Figure 70). The surrounding area is wooded and contains data centers. One simulation was prepared from this resource from the historic district's right-of-way (Attachment 5, Figure 71). By itself, Broad Run Variation B would not be visible from the resource due to distance, as shown by SP 20. Because Route 1 connects with Broad Run Variation B in this area, however, both Route 1 and Broad Run Variation B are depicted. As shown in the simulation, the new transmission line structures for Route 1 and the proposed Golden Substation would be visible from the historic district. Nevertheless, this view towards the route is small in this area in comparison to the resource as a whole. Likewise, Dominion's existing Lines #227/#274 follows the length of the district, making it more prominent in the

viewscape than the Aspen-Golden Lines. This existing line has already introduced modern infrastructure to the resource itself and its historic viewshed.

The addition of the route would constitute a very minor change to the existing view. Therefore, ERM recommends that there would be a **Minimal Impact** to this resource from Broad Run Variation B because of its connection with Route 1.

4.8.3. 053-5223, Nokes House

The Nokes House is located 0.70 mile to the east of Broad Run Variation B in an area where the route uses a greenfield alignment (Attachment 5, Figure 72). The area between the resource and the route contains modern industrial structures, Dominion's existing Line #2143/2150/2165, and Dominion's existing BECO Substation. One simulation was prepared for the resource, SP 33, along Nokes Boulevard (Attachment 5, Figure 73). As shown in the simulation, there would be no view to transmission infrastructure installed along the route due to distance and intervening vegetation. Thus, ERM recommends there would be **No Impact** on this resource from Broad Run Variation B.

4.9. Historic Resource Findings for Aspen-Goose Creek Line

4.9.1. 053-0276, Washington & Old Dominion Railroad Historic District

The W&OD Railroad Historic District is located 0.09 mile to the east of the Aspen-Goose Creek Line in an area where the route connects from the proposed Aspen Substation to the existing Goose Creek Substation. It is adjacent to Dominion's existing Lines #227/#274 and connects to their existing Lines #227/#558/#2180 (Attachment 5, Figure 74). The surrounding area is wooded and contains existing Dominion substations. One simulation was prepared from the resource, SP 7, from the historic district's right-of-way. Route 1 and the proposed Aspen Substation connect with the Aspen-Goose Creek Line in this area. Thus, for the purposes of this report, both Route 1 and the Aspen-Goose Creek Line are depicted in the simulation, because Route 1 would have greater impact on land not already occupied by Dominion infrastructure.

As shown in the simulation, the Aspen-Goose Creek Line would be visible from vantage points within the resource where close to the new transmission lines (Attachment 5, Figure 75). Only the cables and one structure would be visible from the resource, while Route 1 and the proposed Aspen Substation would also be visible. Nonetheless, Dominion's existing lines would be more prominent in the district's viewshed, as they share the district's right-of-way. In addition, multiple existing Dominion substations are visible, and are directly adjacent to the district. While the historic landscape of the district has been severely altered by Dominion infrastructure and other modern elements, the Aspen-Goose Creek Line would be a new, visible addition, and thus constitutes a change. It is important to note that the Aspen-Goose Creek Line would be entirely within the boundary of the existing Goose Creek Substation, existing Dominion transmission line right-of-way, and the proposed Aspen Substation boundary. For this reason, ERM recommends that the Aspen-Goose Creek Line would have a **Minimal Impact** on 053-0276.

4.9.2. 053-0336, Cooke's Mill

Cooke's Mill is located approximately 0.9 mile to the east of the proposed Aspen-Goose Creek Line in an area where the route is within the boundary of the existing Goose Creek Substation, existing Dominion transmission line right-of-way, or proposed Aspen Substation boundary. The Aspen-Goose Creek Line is adjacent to the existing Dominion Lines #227#/274 and connects to their existing Lines #227/#558/#2180 (Attachment 5, Figure 76). The area between the resource and the route consists of dense vegetation and existing Dominion substations. There would be no view of the Aspen-Goose Creek Line from any vantage point at 053-0336 because of distance and dense intervening vegetation, as shown by SP 29

(Attachment 5, Figure 77). However, Aspen-Goose Creek Line would connect to the proposed Aspen Substation and Route 1, for the purposes of this report, simulations were also created facing towards Route 1.

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 616 feet west of Route 1, while SP 29 was taken from the southwestern boundary of the resource, approximately 640 feet to the northwest of the route (Attachment 5, Figures 78 and 79). Route 1 would not be visible from these SPs due to the dense intervening vegetation. The transmission line would, however, be visible from the two other SPs (SP 28 and SP 30) (highlighted in pink in the simulations). SP 28 was taken at the easternmost boundary, closest to Route 1, approximately 276 feet west of the right-of-way, while SP 30 was taken approximately 180 feet to the northwest of SP 28 on the west bank of Goose Creek, closest to the mill (Attachment 5, Figures 80 and 81). Three structures and conductors associated with Route 1 would be visible from SP 28 through a clearing in the trees, and conductors would be visible through a clearing at SP 30. Because the eastern portion of the resource has discrete vantage points where Route 1 would be visible, installation of the transmission line along the route would add modern elements to the historic viewshed, though no other areas of the resource would have a view of the route. Thus, ERM recommends there would be a **Minimal Impact** to the resource from the Aspen-Goose Creek Line, because of its connection to Route 1.

The future Twin Creeks Lines would be minimally visible in SPs 28 and 30, although none of the proposed (or future) substations associated with either this Project or the future Twin Creeks Lines project would be visible from the resource. Only one of the future Twin Creeks Lines transmission structures and associated conductors would be visible (highlighted in purple in the simulations).

4.10. Archaeology Findings

Fourteen known archaeological sites are located in the right-of-way of the transmission line routes (Table 4.10-1): four within what would be the right-of-way of Route 1 (44LD0213, 44LD0579, 44LD0581, and 44LD2010); five within what would be the right-of-way of Broad Run Variation A (44LD0110, 44LD0142, 44LD0647, 44LD0649, and 44LD0651); and five within what would be the right-of-way of Broad Run Variation B (44LD0021, 44LD0107, 44LD0109, 44LD0209, and 44LD0650). No previously recorded sites were identified within what would be the right-of-way for Belmont Park Variation A, Belmont Park Variation B, or the Aspen-Goose Creek Line.

The sites that would be impacted by each route 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 4.10-1: Archaeological Resources within the Right-of-Way for the Alternate Routes

	Aspen-Golden Lines					Aspen-Goose Creek Line
Considered Resources	Route 1	Belmont Park Variation A	Belmont Park Variation B	Broad Run Variation A	Broad Run Variation B	
44LD0021	-	-	-	-	X	-
44LD0107	-	-	-	-	X	-
44LD0109	-	-	-	-	X	-
44LD0110	-	-	-	X	-	-
44LD0142	-	-	-	X	-	-
44LD0209	-	-	-	-	X	-
44LD0213	X	-	-	-	-	-
44LD0579	X	-	-	-	-	-
44LD0581	X	-	-	-	-	-
44LD0647	-	-	-	X	-	-
44LD0649	-	-	-	X	-	-
44LD0650	-	-	-	-	X	-
44LD0651	-	-	-	X	-	-
44LD2010	X	-	-	-	-	-
Total Resources	4	0	0	5	5	0

"X" indicates that the resource is within the right-of-way of the route.

4.10.1. Route 1

Four archaeological sites lie within the right-of-way for Route 1: 44LD0213, 44LD0579, 44LD0581, and 44LD2010. 44LD0213 is a Pre-Contact (AD 1500–1606) Native American camp consisting of a surface artifact scatter. The site was originally identified in 1981 during a Phase I survey conducted by William Rust. The site was later revisited in 1997 by William & Mary Center for Archaeological Research

(WMCAR) and again in 2005 by Thunderbird Archeology. [redacted] Approximately 110 feet of the Route 1 intersects the site along Harry Byrd Highway. The site has been determined not eligible for listing in the NRHP. Given the site's proximity to the existing highway shoulder, it is unlikely that any intact cultural remains would be encountered within the Project area.

Site 44LD0579 is interpreted as the remains of an early to mid-twentieth century farmstead/domestic site. The site was originally surveyed in 1998 by Cultural Resources, Inc. and subsequently surveyed in 2009 by WMCAR and again in 2020 by Thunderbird Archeology. [redacted] Approximately 0.2 mile of Route 1 intersects the site along Harry Byrd Highway. Site 44LD0579 is adjacent to sites 44LD0581 and 44LD0580. Site 44LD0579 has been determined not eligible for listing in the NRHP. Given the findings of previous surveys and the site's proximity to the existing highway shoulder, it is unlikely that any intact cultural remains would be encountered within the Project area.

44LD0581 is a single dwelling farmstead with a nineteenth century occupation. According to a deed from Ludwell Lee to John Waters, the area consisted of a building on a one-acre parcel since at least 1829. Specific occupants and use of the building are unclear, but it likely served a combined commercial and residential function. It appears to have remained in use until at least 1879, when a deed from Columbus Waters to Mary Ross Stanton notes Charles Keene as occupying the property. The site was originally surveyed in 1998 by Cultural Resources, Inc. and again in 2020 by Thunderbird Archeology. At the time of the 2020 survey an unknown portion of the site had been destroyed, but the remaining site area had been recommended potentially eligible for listing on the NRHP. [redacted] Approximately 377 feet of Route 1 intersects 44LD0581 along Harry Byrd Highway. Given the complexity and history of the site as well as the artifact distribution previously observed across the site, it is possible intact cultural components could be encountered in the Project area. No transmission structures, however, are currently planned to be installed within the site boundaries.

Site 44LD2010 is a multicomponent site consisting of a Pre-Contact lithic scatter and single Euro-American dwelling dating from circa 1820 to 1877. The dwelling is situated on a terrace above a dam and lock and opposite the known location of Mavin's Mill (053-0336), which can be seen in a Yardley Taylor map and a 1937 aerial photograph. The site was originally surveyed in 2022 by Thunderbird Archeology. At the time of the survey, up to about a quarter of the site had been reported as destroyed. [redacted] Approximately 104 feet of Route 1 intersects the site. Due to the lack of twentieth century land use impacts and the presence of a potential feature and historic fills identified in the survey, the previous surveyors concluded that the site has the potential to yield additional intact subsurface features and information, though it has not been formally evaluated to determine NRHP eligibility. No transmission structures are currently planned to be placed within the site boundaries.

4.10.2. Belmont Park Variation A

No known archaeological sites fall within the right-of-way for Belmont Park Variation A.

4.10.3. Belmont Park Variation B

No known archaeological sites fall within the right-of-way for Belmont Park Variation B.

4.10.4. Broad Run Variation A

Five archaeological sites lie within what would be the right-of-way for Broad Run Variation A: 44LD0110, 44LD0142, 44LD0647, 44LD0649, 44LD0651. 44LD0110 is a multicomponent artifact scatter dating from

the Late Archaic (1201 BCE) to Early Woodland (AD 299) cultural periods. The site was surveyed, along with 44LD0107, in 1979, 1997, and most recently in 2008 by Dutton and Associates. [redacted] Broad Run Variation A intersects 0.18 mile of the site, which has been determined not eligible for listing in the NRHP. The overall integrity of the archaeological deposits at the site has likely been disturbed by the construction of the existing building. Given that Broad Run Variation A intersects the site in proximity to the existing building, it is unlikely that any intact cultural remains would be encountered.

44LD0142 is a prehistoric surface artifact scatter dating from an unknown cultural period. The site was identified during a 1981 survey conducted by William F. Rust, at which time an unknown portion of the site was reported as being destroyed. [redacted] The site has been determined not eligible for listing in the NRHP. Given the site's proximity to the existing building and graded road, it is unlikely that cultural remains would be encountered there.

44LD0647 consists of a Euro-American farmstead that dates from 1850 to 1899. The site was identified in a surface survey of a plowed field at an unknown date. [redacted] Approximately 76 feet of Broad Run Variation A intersects the site along Loudoun County Parkway. The site has been determined not eligible for listing on the NRHP. Based on the Project's proximity to the existing highway and sidewalk that runs parallel to the Project area, it is unlikely that intact cultural remains would be encountered.

44LD0649 consists of a Euro-American farmstead that dates from 1850 to 1899. It was identified in a surface survey of a plowed field at an unknown date and again by VDHR in 2001. [redacted] Broad Run Variation A intersects the site for a distance of 334 feet. The site has been determined eligible for listing in the NRHP. However, the integrity of the archaeological deposits in the western portion of the site has likely been disturbed by construction of the existing utility complex and adjacent highway. Regardless, no transmission structures currently are planned to be installed within the site boundary.

Site 44LD0651 consists of a Euro-American farmstead that dates from 1800 to 1849. It was identified in a surface survey of a plowed field in 1999 by Archaeological & Cultural Solutions, Inc. The site has been determined not eligible for listing in the NRHP. [redacted] Approximately 108 feet of Broad Run Variation A intersects the site. The overall integrity of the archaeological deposits at the site has likely been disturbed by construction of the existing highway, adjacent transmission line, and water utility complex.

4.10.5. Broad Run Variation B

Five archaeological sites lie within the right-of-way for Broad Run Variation B: 44LD0021, 44LD0107, 44LD0109, 44LD0209, and 44LD0650. 44LD0021 is a multicomponent site surveyed in February 1970 and December 1979 by unknown parties, and in July 2022 by Dovetail Cultural Resources Group. The site was defined as a multicomponent artifact scatter with Middle Archaic, Early Woodland, Middle Woodland, and Late Woodland components. [redacted] Broad Run Variation B intersects 44LD0021 for a distance of 0.06 mile. The site has been determined not eligible for listing in the NRHP and was characterized as destroyed as of the 2022 survey. Given the current nature of the site, it is unlikely that any intact cultural remains would be encountered.

44LD00107 is a multicomponent site dating from the Early Woodland (1200 BCE) to Late Woodland (AD 1606) cultural periods. The site was surveyed in 1979, 1997, and most recently in 2008 by Dutton and Associates. [redacted] Broad Run Variation B would intersect the site for a distance of 540 feet. The site

has been determined not eligible for listing in the NRHP. The previous survey reports indicate that a portion of the site has been destroyed.

44LD0109 is a prehistoric lithic scatter of an indeterminate cultural period. The site was originally identified in a Phase I survey conducted by William Rust in 1979 and was later revisited by WMCAR in 1997. The site was determined not eligible for listing on the NRHP. [redacted] Approximately 96 feet of Broad Run Variation B intersects the site. It is likely that the archaeological deposits along the route have been destroyed by construction of the BECO Substation.

Site 44LD0209 is a Pre-Contact temporary encampment. It was originally identified in a survey conducted by William Rust in 1981 and later revisited in 1997 by WMCAR. The site has not been evaluated for NRHP eligibility. [redacted] Approximately 239 feet of Broad Run Variation B intersects the site. No transmission structures are currently planned to be installed within the site boundary.

44LD0650 is an Early Archaic (8500-6501 BCE) temporary encampment. The site was originally identified during a Phase I surface survey in 2001 by VDHR. The site has not been evaluated for NRHP eligibility. [redacted] Approximately 225 feet of Broad Run Variation B intersects the site. No transmission structures are currently planned to be installed within the site boundary.

4.10.6. Aspen-Goose Creek Line

No archaeological sites fall within the right-of-way for the Aspen-Goose Creek Line.

5. CONCLUSIONS 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.

Fourteen known archaeological sites are located in the right-of-way of the transmission line routes reviewed in this study. 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 a preferred route is selected by the SCC. Potential impacts to sites along the preferred route will be assessed as part of the field survey.

Ten aboveground historic resources fall within the VDHR study tiers for the routes under consideration. A comparison of the number of resources impacted and the degree of impact of each route is presented in Table 5-1. The specific resources affected by each route are covered in the subsections that follow.

Table 5-1: Comparison of Project Impacts on Historic Resources in the Study Areas of the Routes

Route	Number of Considered Resources in Each Impact Category				
	None	Minimal	Moderate	Severe	Total
Route 1	4	3	3	-	10
Belmont Park Variation A	-	1	3	-	4
Belmont Park Variation B	-	1	3	-	4
Broad Run Variation A	2	1	-	-	3
Broad Run Variation B	2	1	-	-	3
Aspen-Goose Creek Line	-	2	-	-	2

Note: Route 1 includes impacts to the Line Loop and the proposed Aspen and Golden Substations

Final assessments of Project impacts will be dependent on the completion of identification-phase archaeological and historic structure surveys along the routes selected by the SCC followed by 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 or 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

Ten previously recorded historic architectural resources meet the criteria specified in the Guidelines within the VDHR study tiers for Route 1 (Table 5.1-1). The route would have no impact on four, a minimal impact on three, and a moderate impact on three.

Table 5.1-1: Impacts on Historic Resources in the VDHR Study Tiers for Route 1

Buffer (miles)	Resource Category	Resource Number	Description	Impact
1.0 to 1.5	National Historic Landmarks	253-5182	Ball's Bluff Battlefield & National Cemetery Historic District Boundary Increase	None
0.5 to 1.0	National Register Properties (Listed)	-	-	-
	National Register – eligible (Battlefields/Historic Landscape)	-	-	-
	Locally Significant	053-6406[b, c]	Tippett's Hill Cemetery	None
0.0 to 0.5	National Register Properties (Listed)	053-0084	Janelia/Howard Hughes Research Center	Moderate
		053-0110	Broad Run Bridge and Toll House	None
	National Register – Eligible	053-0278	Belmont Chapel and Cemetery	Minimal
	Locally Significant	053-0336[a]	Cooke's Mill	Minimal
		053-5223[b]	Nokes House	None
		053-6238	African American Burial Ground for the Enslaved at Belmont	Moderate
0.0 (within ROW)	National Register Properties (Listed)	053-0106	Belmont Manor	Moderate
	National Register – Eligible	053-0276[a, b, c]	Washington and Old Dominion Railroad Historic District	Minimal

[a] *Resource is within the designated tiers for the proposed Aspen Substation*
[b] *Resource is within the designated tiers for the proposed Golden Substation*
[c] *Resource is within the designated tiers for the Lines #2081/#2150 Loop*

5.2. Belmont Park Variation A

Four previously recorded historic architectural resources meet the criteria specified in the Guidelines within the VDHR study tiers for Belmont Park Variation A (Table 5.2-1). The route would have a minimal impact on one resource, and a moderate impact on three.

Table 5.2-1: Impacts on Historic Resources in the VDHR Study Tiers for Belmont Park Variation A

Buffer (miles)	Resource Category	Resource Number	Description	Impact
1.0 to 1.5	National Historic Landmarks	-	-	
0.5 to 1.0	National Register Properties (Listed)	053-0084	Janelia/Howard Hughes Research Center	Moderate
	National Register – eligible (Battlefields/Historic Landscape)	-	-	
	Locally Significant	053-6238	African American Burial Ground for the Enslaved at Belmont	Moderate
0.0 to 0.5	National Register – Eligible	053-0278	Belmont Chapel and Cemetery	Minimal
0.0 (within ROW)	National Register Properties (Listed)	053-0106	Belmont Manor	Moderate

5.3. Belmont Park Variation B

Four previously recorded historic architectural resources meet the criteria specified in the Guidelines within the VDHR study tiers for Belmont Park Variation B (Table 5.3-1). The route would have a minimal impact on one resource, and a moderate impact on three.

Table 5.3-1: Impacts on Historic Resources in the VDHR Study Tiers for Belmont Park Variation B

Buffer (miles)	Resource Category	Resource Number	Description	Impact
1.0 to 1.5	National Historic Landmarks	-	-	-
0.5 to 1.0	National Register Properties (Listed)	053-0084	Janelia/Howard Hughes Research Center	Moderate
	National Register – eligible (Battlefields/Historic Landscape)	-	-	-
	Locally Significant	053-6238	African American Burial Ground for the Enslaved at Belmont	Moderate
0.0 to 0.5	National Register – Eligible	053-0278	Belmont Chapel and Cemetery	Minimal
0.0 (within ROW)	National Historic Landmarks, National Register Properties – potentially eligible (battlefield)	053-0106	Belmont Manor	Moderate

5.4. Broad Run Variation A

Three previously recorded historic architectural resources meet the criteria specified in the Guidelines within the VDHR study tiers for Broad Run Variation A (Table 5.4-1). The route would have a no impact on two resources, and a minimal impact on one.

Table 5.4-1: Impacts on Historic Resources in the VDHR Study Tiers for Broad Run Variation A

Buffer (miles)	Resource Category	Resource Number	Description	Impact
1.0 to 1.5	National Historic Landmarks	-	-	
0.5 to 1.0	National Register Properties (Listed)	053-0110	Broad Run Bridge and Toll House	None
	National Register – eligible (Battlefields/Historic Landscape)	-	-	
	Locally Significant	053-5223	Nokes House	None
0.0 to 0.5	National Register – Eligible	053-0276	Washington and Old Dominion Railroad Historic District	Minimal
0.0 (within ROW)	National Historic Landmarks, National Register Properties – potentially eligible (battlefield)	-	-	

5.5. Broad Run Variation B

Three previously recorded historic architectural resources meet the criteria specified in the Guidelines within the VDHR study tiers for Broad Run Variation B (Table 5.5-1). The route would have a no impact on two resources, and a minimal impact on one.

Table 5.5-1: Impacts on Historic Resources in the VDHR Study Tiers for Broad Run Variation B

Buffer (miles)	Resource Category	Resource Number	Description	Impact
1.0 to 1.5	National Historic Landmarks	-	-	-
0.5 to 1.0	National Register Properties (Listed)	053-0110	Broad Run Bridge and Toll House	None
	National Register – eligible (Battlefields/Historic Landscape)	-	-	-
	Locally Significant	053-5223	Nokes House	None
0.0 to 0.5	National Register – Eligible	053-0276	Washington and Old Dominion Railroad Historic District	Minimal
0.0 (within ROW)	National Historic Landmarks, National Register Properties – potentially eligible (battlefield)	-	-	-

5.6. Aspen-Goose Creek Line

Two previously recorded historic architectural resources meet the criteria specified in the Guidelines within the VDHR study tiers for the Aspen-Goose Creek Line (Table 5.6-1). The route would have a minimal impact on two resources.

Table 5.6-1: Impacts on Historic Resources in the VDHR Study Tiers for the Aspen-Goose Creek Line

Buffer (miles)	Resource Category	Resource Number	Description	Impact
1.0 to 1.5	National Historic Landmarks	-	-	-
0.5 to 1.0	National Register Properties (Listed)	-	-	-
	National Register – eligible (Battlefields/Historic Landscape)	-	-	-
	Locally Significant	053-0336	Cooke's Mill	Minimal
0.0 to 0.5	National Register – Eligible	053-0276	Washington and Old Dominion Railroad Historic District	Minimal
0.0 (within ROW)	National Historic Landmarks, National Register Properties – potentially eligible (battlefield)	-	-	-

5.7. 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 along the specific routes selected by the SCC that could be impacted by the Project. Survey will be conducted in accordance with the following guidelines:

- Guidelines for Assessing Impacts of Proposed Electrical Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia (VDHR 2008);
- National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation (National Park Service [NPS] 1995).

The survey teams will be led by individuals meeting the Secretary of the Interior's professional qualifications standards for architectural history. Teams will traverse the length of the Project corridor(s), revisiting previously recorded historic architectural resources, and documenting additional as-of-yet unrecorded historic resources in the survey area. During the course of the survey, all resources 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 in accordance with NPS guidance if they are integral parts of districts or have merit to be considered eligible for the NRHP on their own.

Digital photographs will be taken to record 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.

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.

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.

Find A Grave
2023 Tippets Hill Cemetery. https://www.findagrave.com/cemetery/2332432/tippets-hill-cemetery. Accessed September 26, 2023.

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 March 2023.

Greene, Renss
2018 Loudoun Supervisors Approve Data Center Surrounding Cemetery. *Loudoun Now*. https://www.loudounnow.com/archives/loudoun-supervisors-approve-data-center-surrounding-cemetery/article_5ae392df-2734-57da-869b-1ba7e81f8013.html. Accessed December 2, 2022.

Hambright, Harlan
1990 VCRIS Architecture Form, 053-0110. On file, Virginia Department of Historic Resources.

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.

Howard Hughes Medical Institute (HHMI)
2023 About Us/History. https://www.janelia.org/about-us/history. Accessed March 22, 2023.

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

Lee, Deborah A.
2004 An Introduction to Loudoun County's African American Communities. The History of Loudoun County, Virginia. https://www.loudounhistory.org/african-american-communities/. Accessed September 26, 2023.

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, Virginia
2023 County Real Estate Assessments. https://logis.loudoun.gov/weblogis/. Accessed March 30, 2023.

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.

Lynch, Diva
2005 VCRIS Architecture Form, 053-0278. On file, Virginia Department of Historic Resources.

Malvasi, Meg Greene
2009a VCRIS Architecture Form, 053-106. On file, Virginia Department of Historic Resources.

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

Melinat, Megan
2018 VCRIS Architecture Form, 053-0084. 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.

Mullen, John
2015 Tippet's Hill Cemetery. VCRIS Entry Form, Department of Historic Resources, Richmond, Virginia. Accessed September 26, 2023.

NETROnline (National Environmental Title Research)
2023 Historic Aerials and Topographic Maps, Virginia. Accessed March 2023. Retrieved from: https://www.historicaerials.com/viewer.

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.

Taylor, Robert
2019 VCRIS Architecture Form, 053-5223. On file, Virginia Department of Historic Resources.

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

Unknown
1963 VCRIS Architecture Form, 053-0278. On file, Virginia Department of Historic Resources.

1967 VCRIS Architecture Form, 053-0084. On file, Virginia Department of Historic Resources.

2009a VCRIS Architecture Form, 053-0110. On file, Virginia Department of Historic Resources.

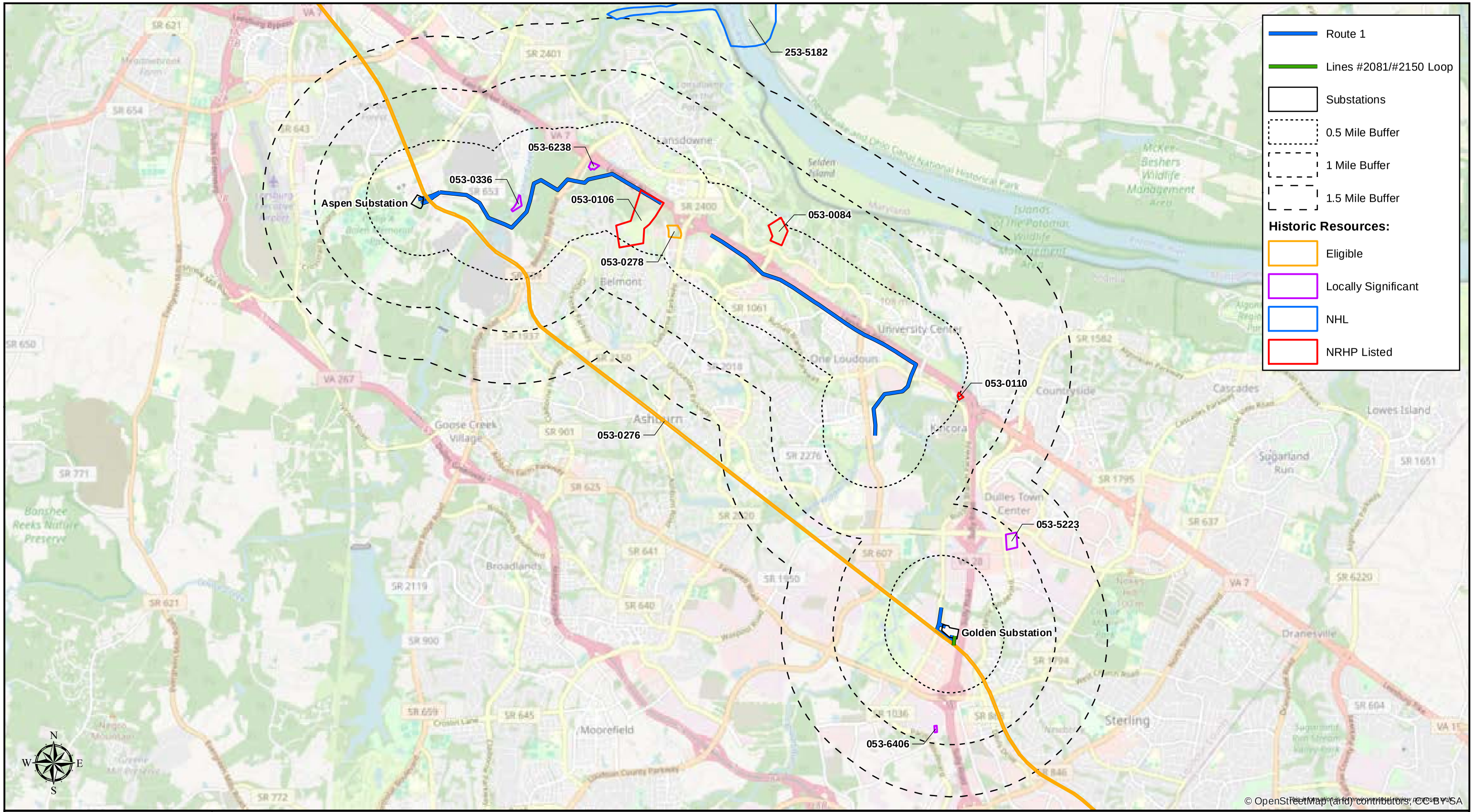
2009b VCRIS Architecture Form, 053-0278. On file, Virginia Department of Historic Resources.

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.

VLHC (Virginia Landmarks Historic Commission)
1970a VCRIS Architecture Form, 053-0110. On file, Virginia Department of Historic Resources.

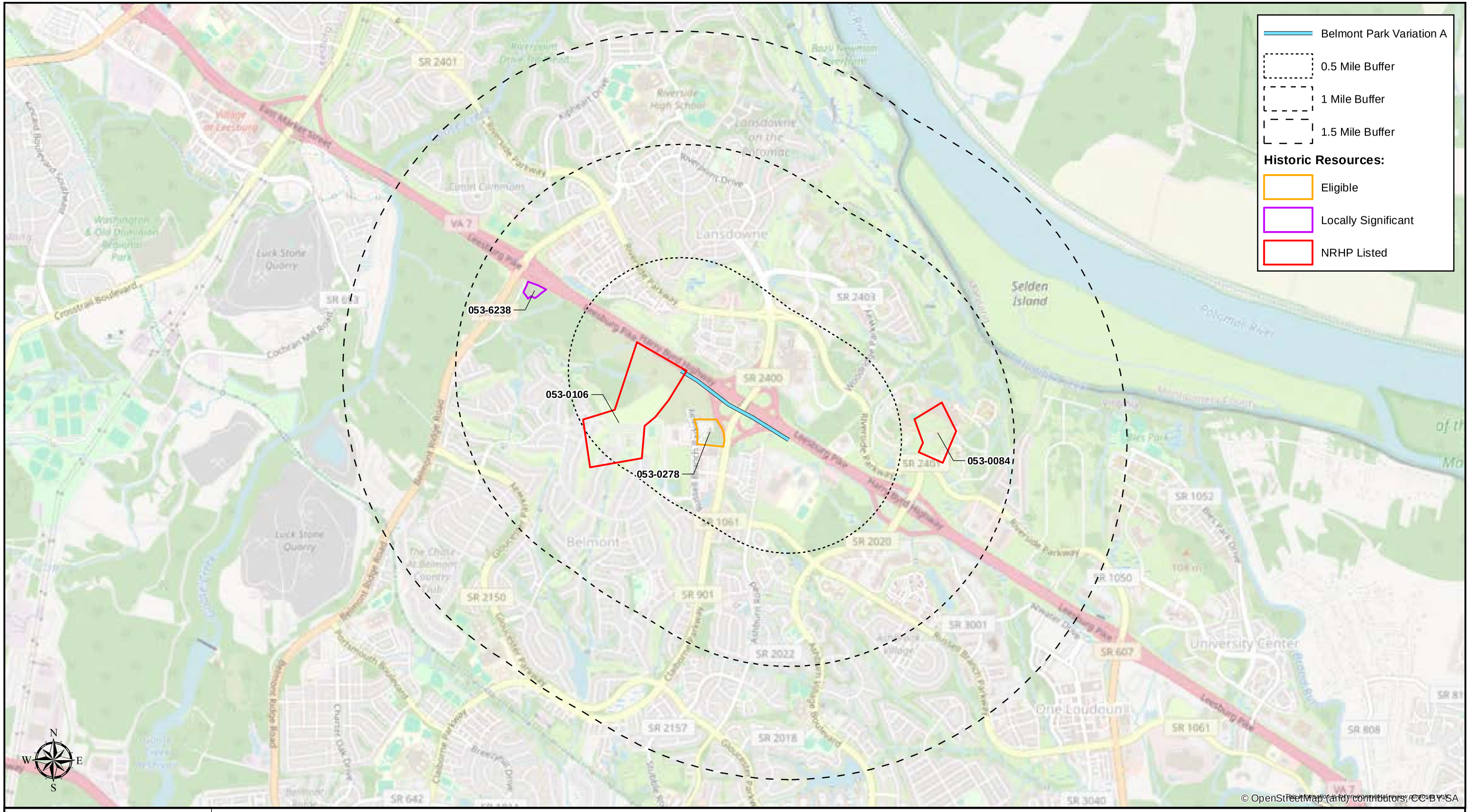
1970b NRHP Nomination Form, 704452035. On file, National Archives.

ATTACHMENT 1 LOCATIONS OF CONSIDERED HISTORIC RESOURCES ASSOCIATED WITH PROPOSED PROJECT



Attachment 1, Sheet 1
Locations of Considered Resources Associated with Proposed Project - Aspen to Golden Route 1
Aspen-Golden 500-230 kV Electric Transmission Project
Dominion Energy Virginia
Loudoun County, VA

FILE: C:\Users\vincent.macek\Documents\OneDrive - ERM\Dominion Loudoun North\Aspen-Golden\Dominion Aspen-Golden Attachment 1 Route 1.mxd | REVISED: 02/15/2024 | SCALE: 1:72,000 when printed at 11x17 DRAWN BY: GIS



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Attachment 1, Sheet 2

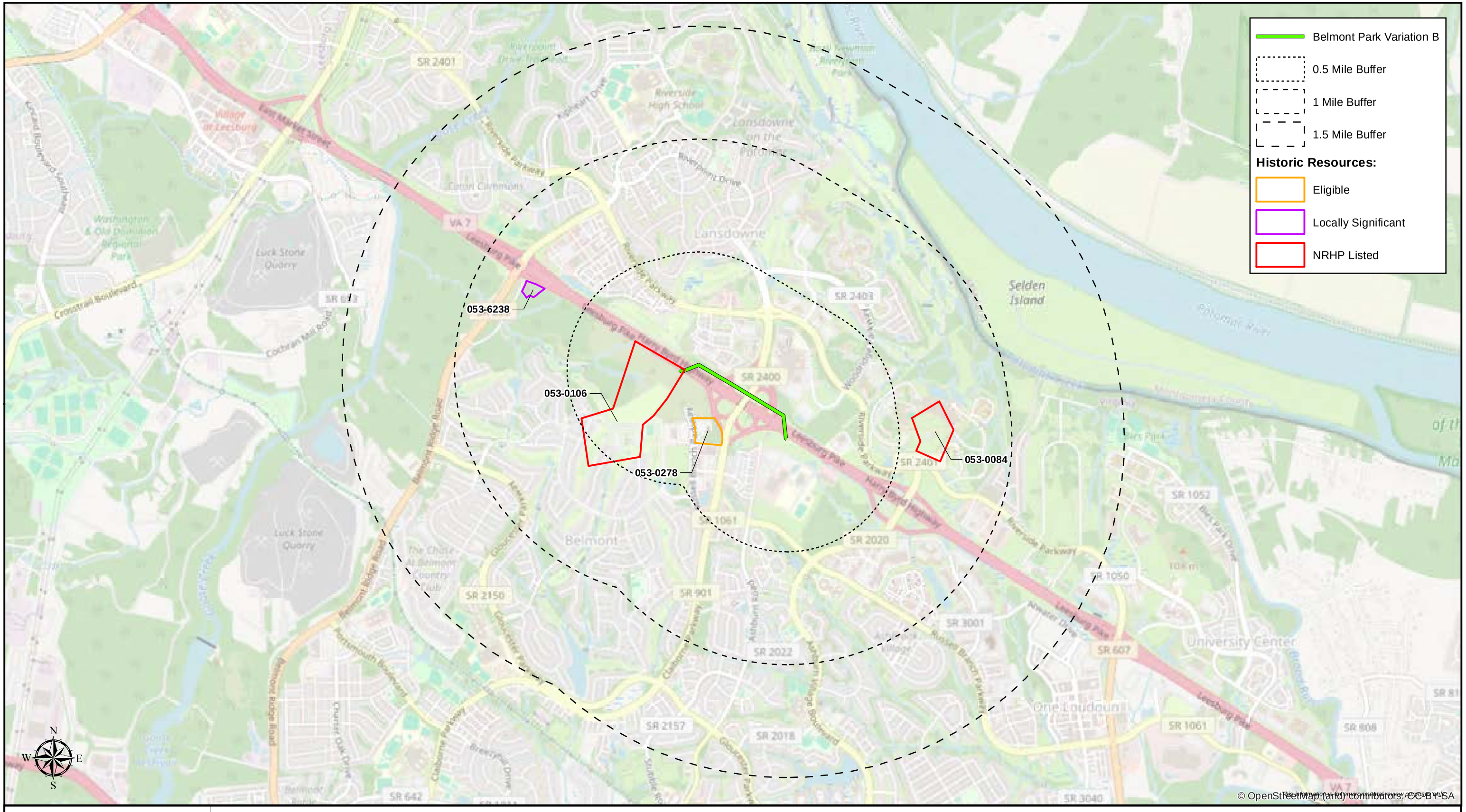
Locations of Considered Resources Associated with Proposed Project - Aspen to Golden Belmont Park Variation A

Aspen-Golden 500-230 kV Electric Transmission Project

Dominion Energy Virginia

Loudoun County, VA

FILE: C:\Users\vincent.macek\Documents\OneDrive - ERM\Dominion Loudoun North\Aspen-Golden\Dominion Aspen-Golden Attachment 1 Belmont A.mxd | REVISED: 02/01/2024 | SCALE: 1:33,000 when printed at 11x17 DRAWN BY: GIS



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Attachment 1, Sheet 3

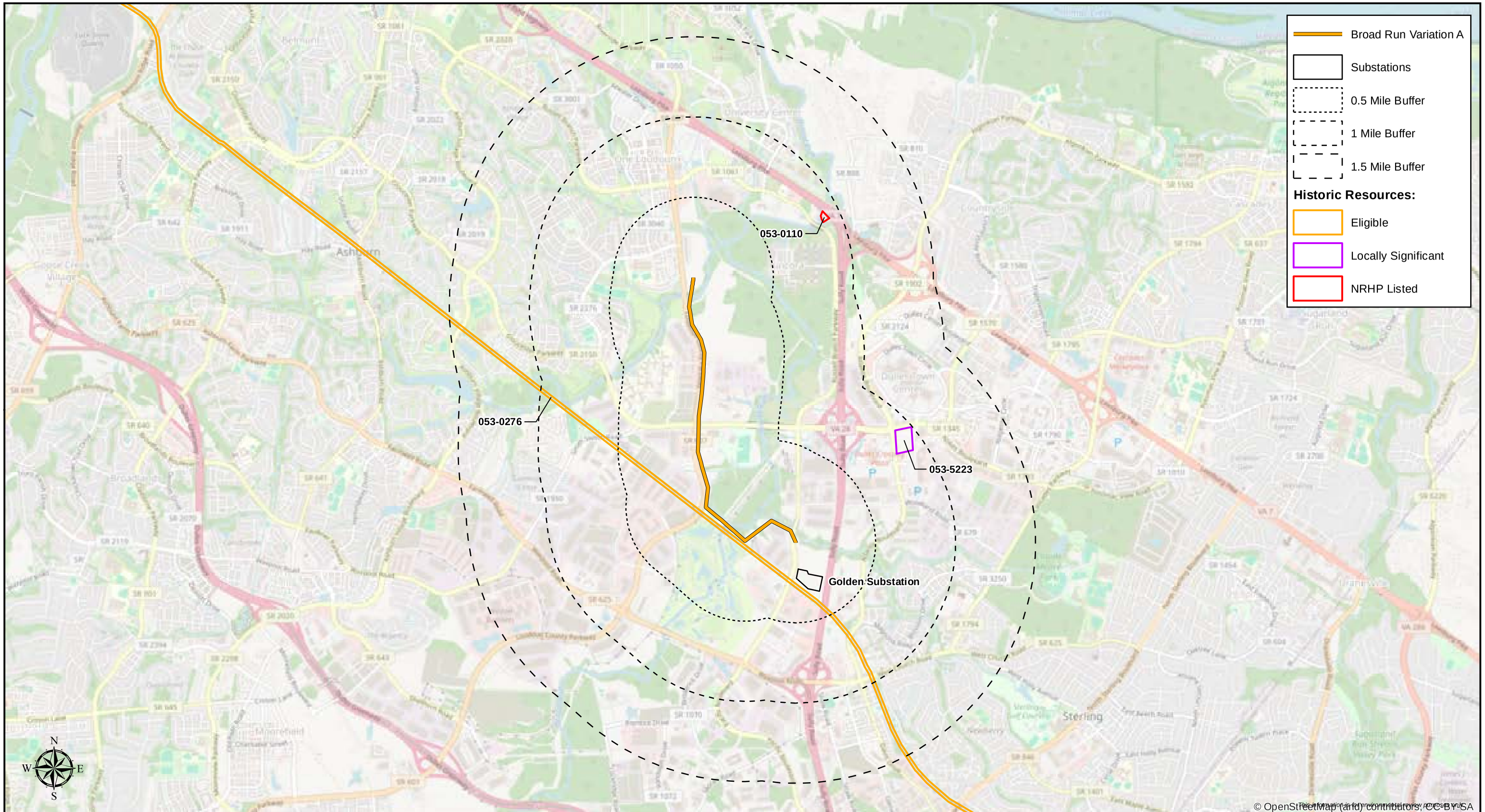
Locations of Considered Resources Associated with Proposed Project - Aspen to Golden Belmont Park Variation B

Aspen-Golden 500-230 kV Electric Transmission Project

Dominion Energy Virginia

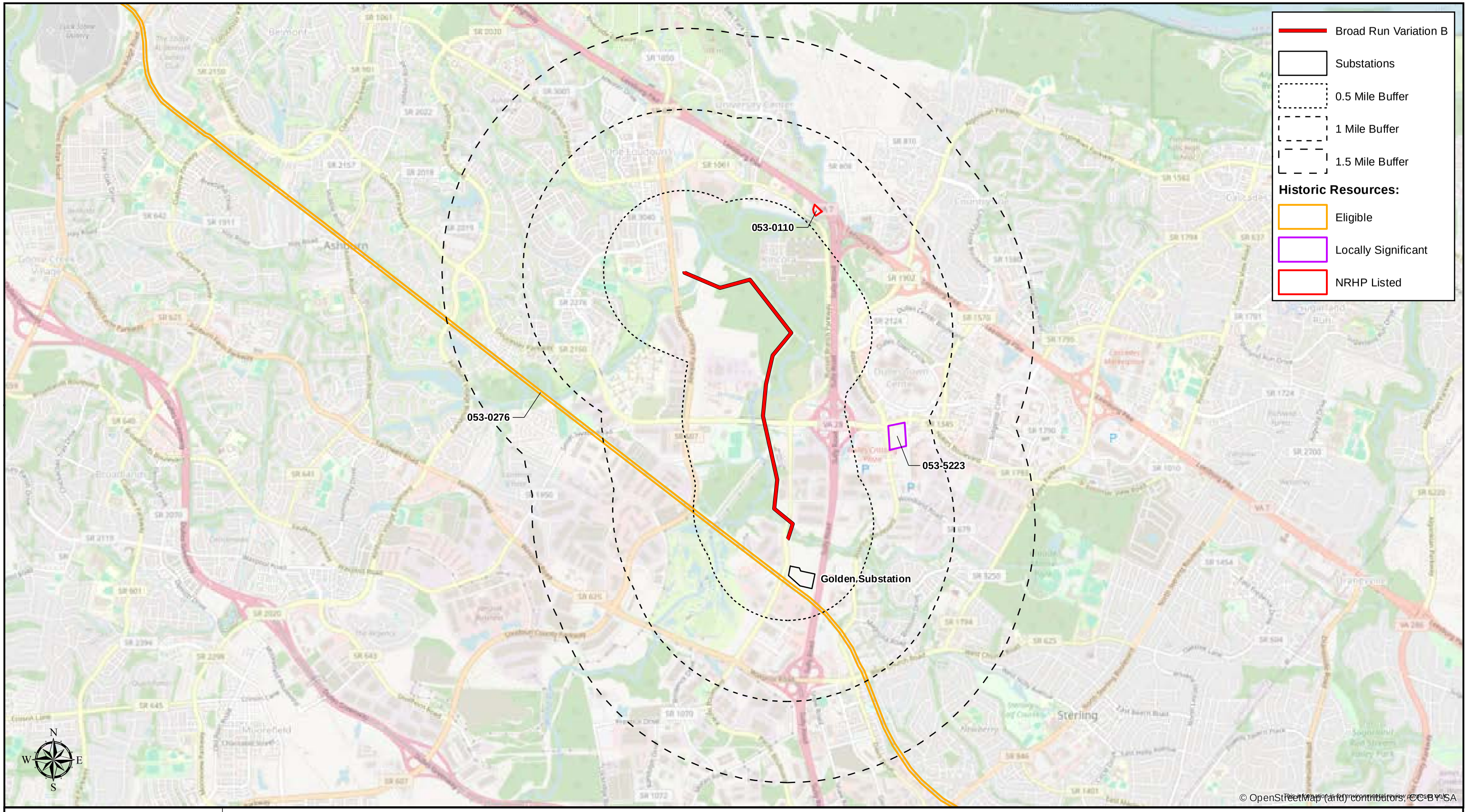
Loudoun County, VA

FILE: C:\Users\vincent.macek\Documents\OneDrive - ERM\Dominion Loudoun North\Aspen-Golden\Dominion Aspen-Golden Attachment 1 Belmont B.mxd | REVISED: 02/01/2024 | SCALE: 1:33,000 when printed at 11x17 DRAWN BY: GIS



Attachment 1, Sheet 4
Locations of Considered Resources Associated with Proposed Project - Aspen to Golden Broad Run Variation A
Aspen-Golden 500-230 kV Electric Transmission Project
Dominion Energy Virginia
Loudoun County, VA

FILE: C:\Users\vincent.macek\Documents\OneDrive - ERM\Dominion Loudoun North\Aspen-Golden\Dominion Aspen-Golden Attachment 1 Broad Run A.mxd | REVISED: 02/01/2024 | SCALE: 1:47,000 when printed at 11x17 DRAWN BY: GIS



0 0.5 1 1.5 Mi

1:46,000

Attachment 1, Sheet 5

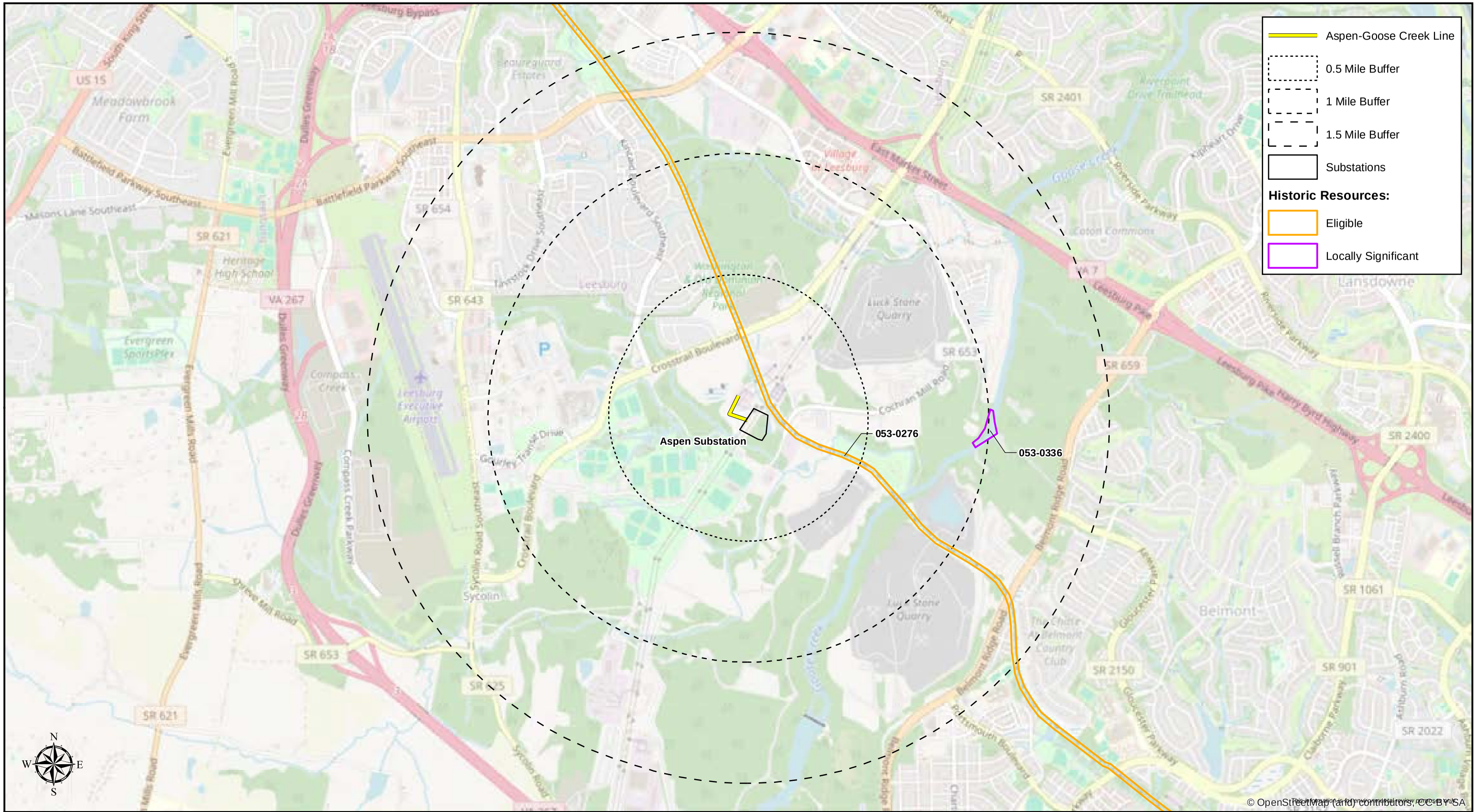
Locations of Considered Resources Associated with Proposed Project - Aspen to Golden Broad Run Variation B

Aspen-Golden 500-230 kV Electric Transmission Project

Dominion Energy Virginia

Loudoun County, VA

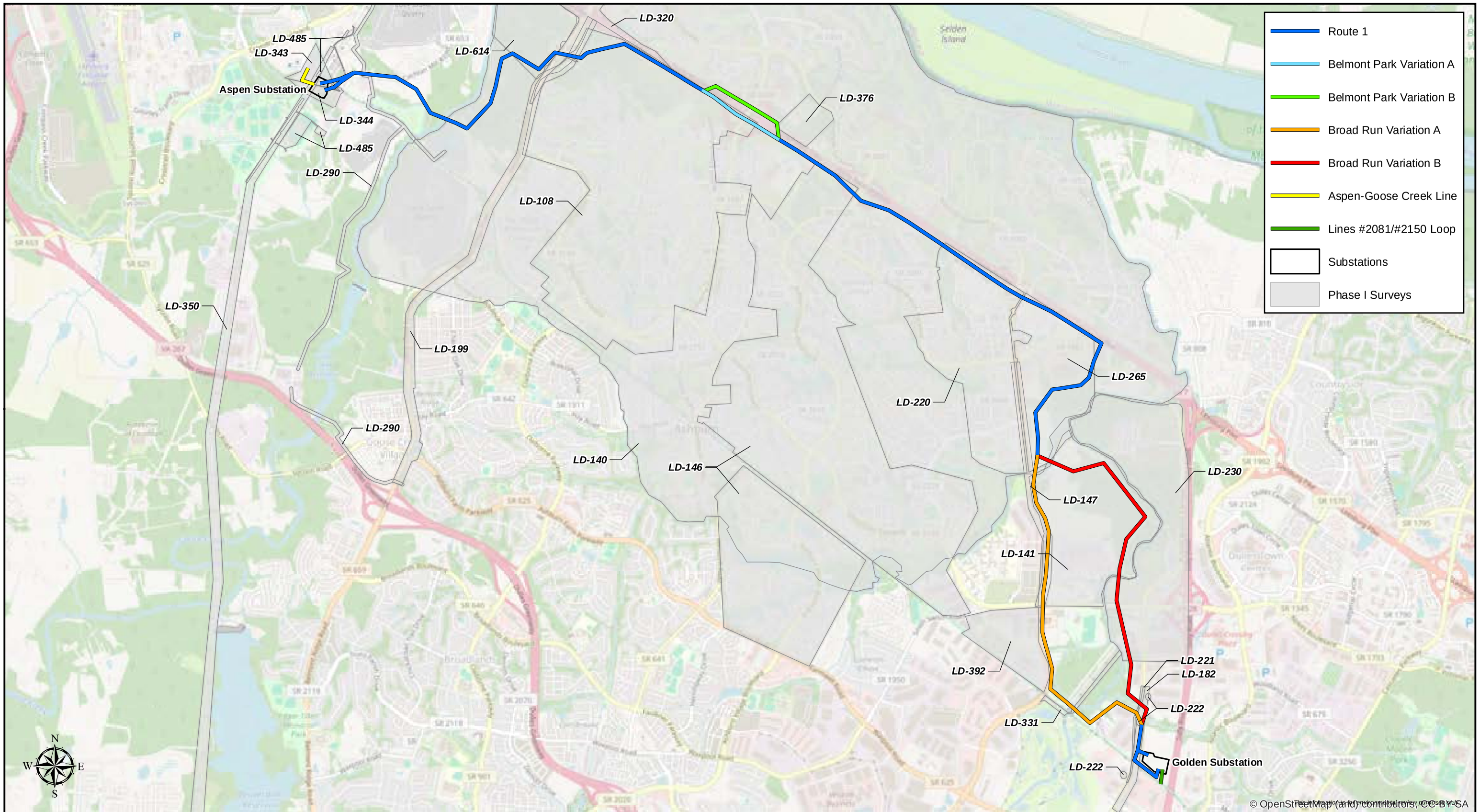
FILE: C:\Users\vincent.macek\Documents\OneDrive - ERM\Dominion Loudoun North\Aspen-Golden\Dominion Aspen-Golden Attachment 1 Broad Run B.mxd | REVISED: 02/01/2024 | SCALE: 1:46,000 when printed at 11x17 DRAWN BY: GIS



Attachment 1, Sheet 6
Locations of Considered Resources Associated with Proposed Project - Aspen-Goose Creek Line
Aspen-Golden 500-230 kV Electric Transmission Project
Dominion Energy Virginia
Loudoun County, VA

FILE: C:\Users\vincent.macek\Documents\OneDrive - ERM\Dominion Loudoun North\Aspen-Golden\Dominion Aspen-Golden Attachment 1 Aspen-Goose Creek.mxd | REVISED: 02/01/2024 | SCALE: 1:31,000 when printed at 11x17 DRAWN BY: GIS

ATTACHMENT 2 CULTURAL RESOURCES SURVEYS COVERING PORTIONS OF ROUTES



0 0.4 0.8 1.2 Miles

1:46,000

Attachment 2
Cultural Resource Surveys Covering Portions of Routes
Aspen-Golden 500-230 kV Electric Transmission Project
Dominion Energy Virginia
Loudoun County, VA

FILE: C:\Users\vincent.macek\Documents\OneDrive - ERM\Dominion Loudoun North\Aspen-Golden\Dominion Aspen-Golden Attachment 2.mxd | REVISED: 02/15/2024 | SCALE: 1:46,000 when printed at 11x17 DRAWN BY: GIS

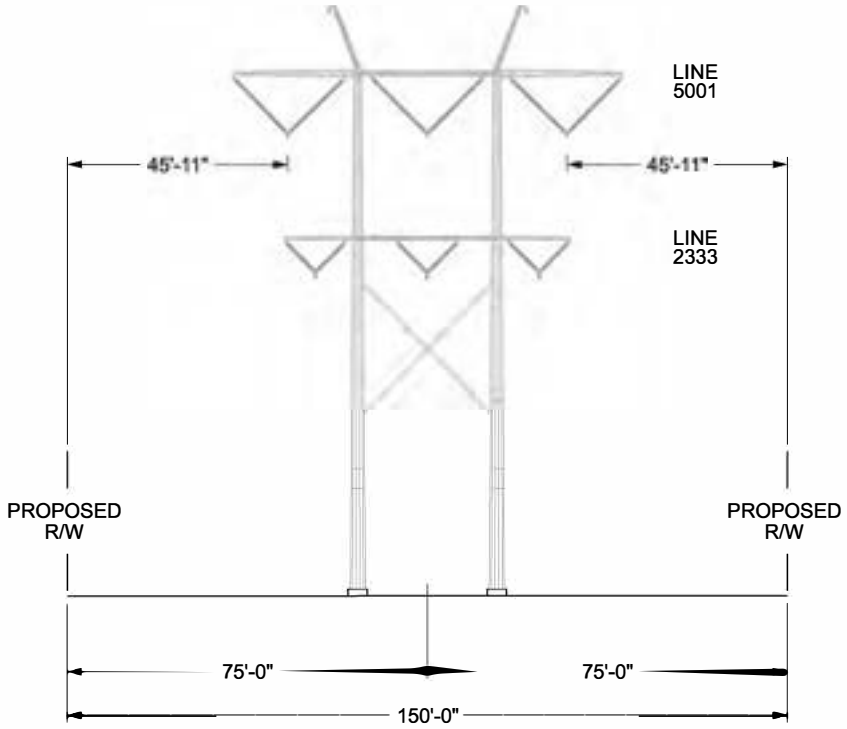
ATTACHMENT 3 TYPICAL DESIGN AND LAYOUT

ATTACHMENT 3 TYPICAL DESIGN AND LAYOUT
ASPEN-GOLDEN 500-230 KV Electric Transmission Project

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.

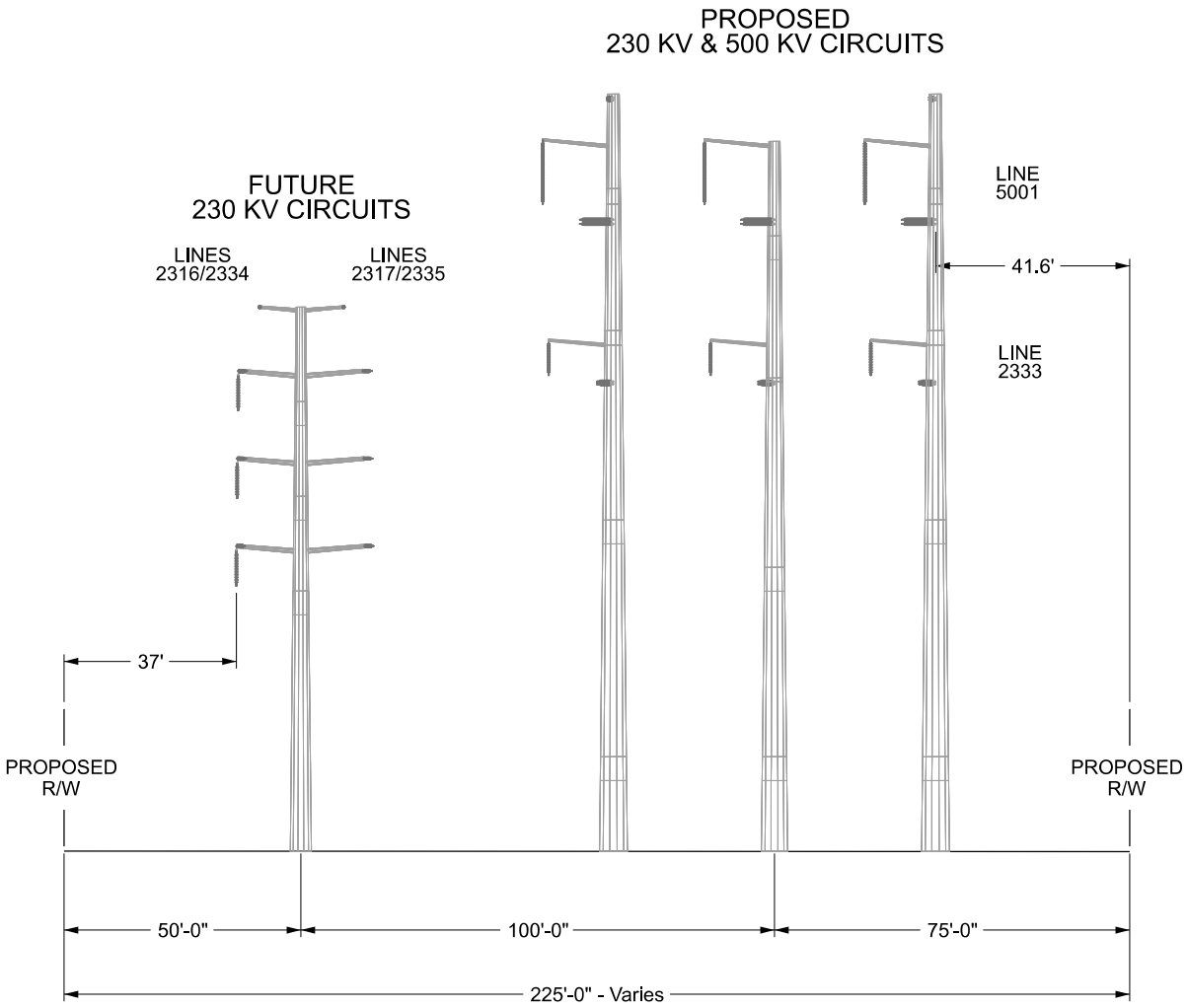
2. APPROXIMATE AVERAGE HEIGHT IS MEASURED FROM GROUNDLINE AT STRUCTURE CENTERLINE.

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.

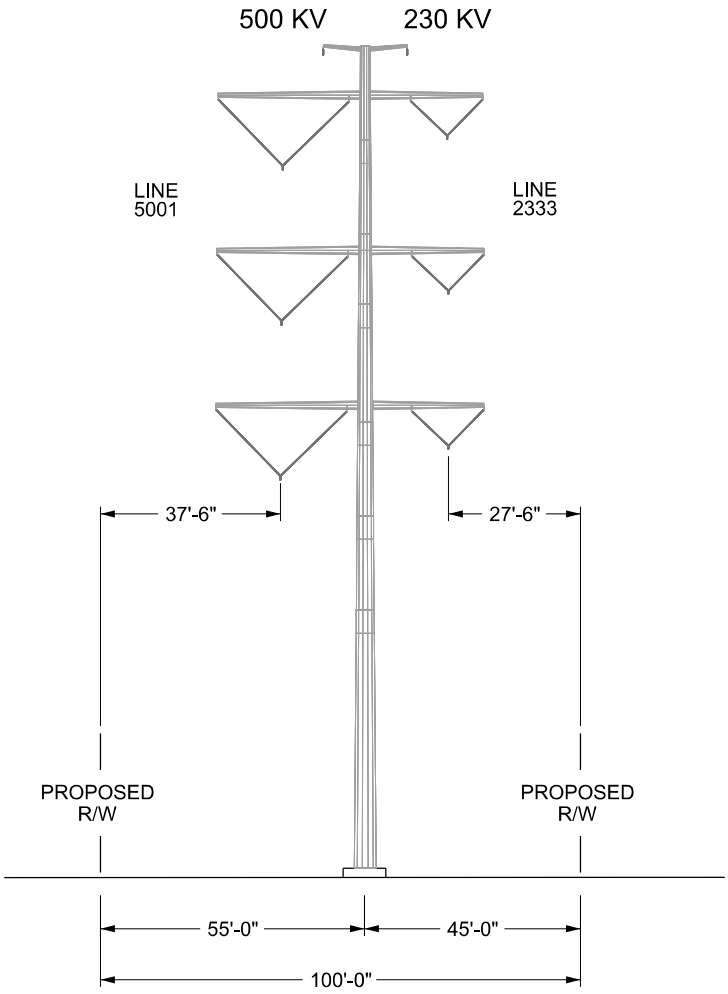
2. APPROXIMATE AVERAGE HEIGHT IS MEASURED FROM GROUNDLINE AT STRUCTURE CENTERLINE.

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

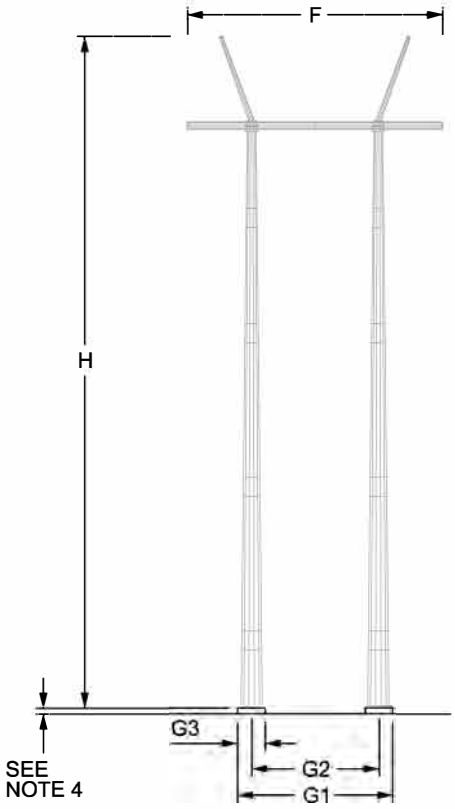
NOTE:

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

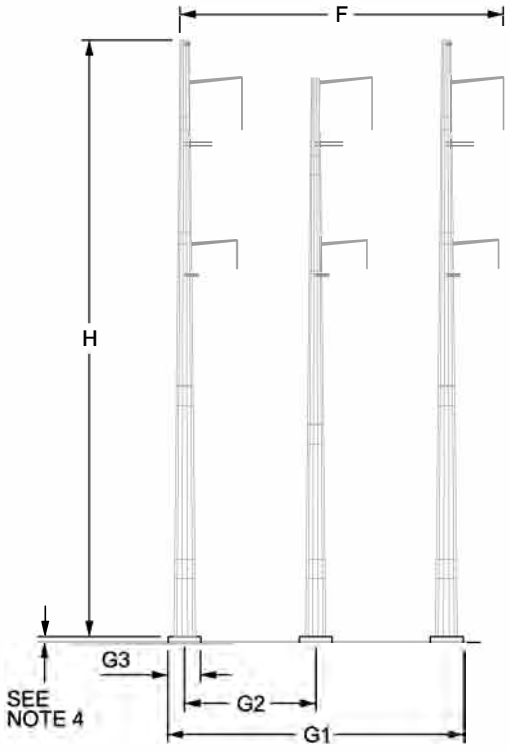
Dominion Energy
5000 Dominion Blvd
Glen Allen, VA 23060

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



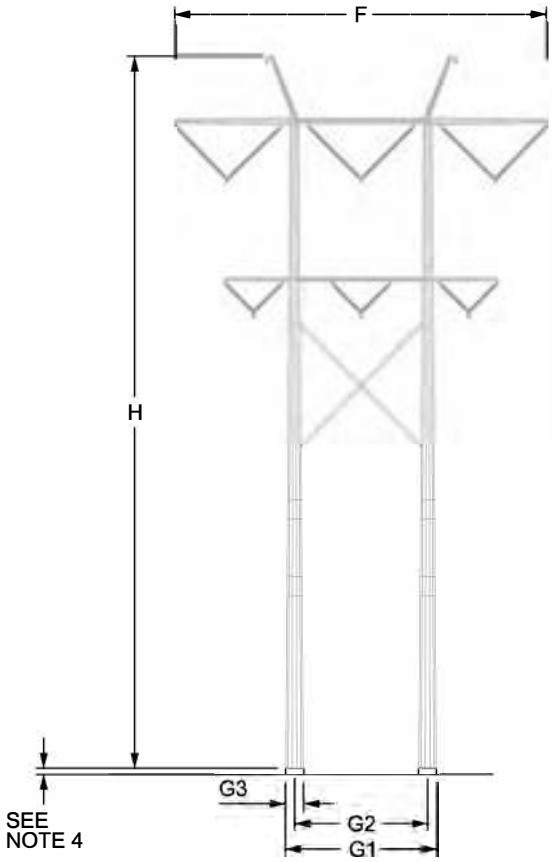
DOUBLE CIRCUIT 3-POLE STRUCTURE

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

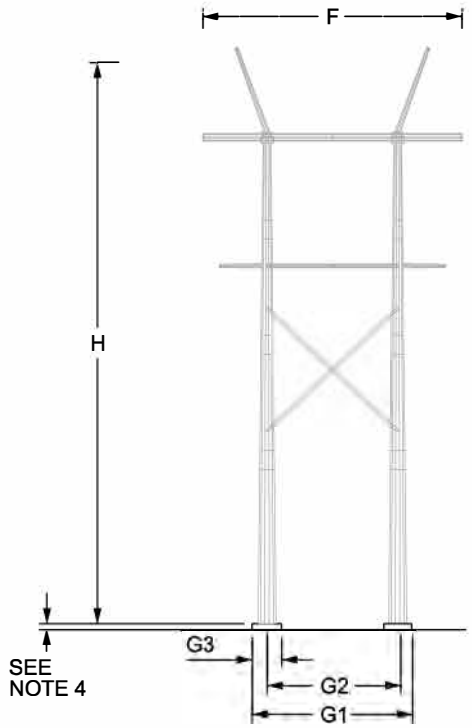
Dominion Energy
Dominion Energy
5000 Dominion Blvd
Glen Allen, VA 23060

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®

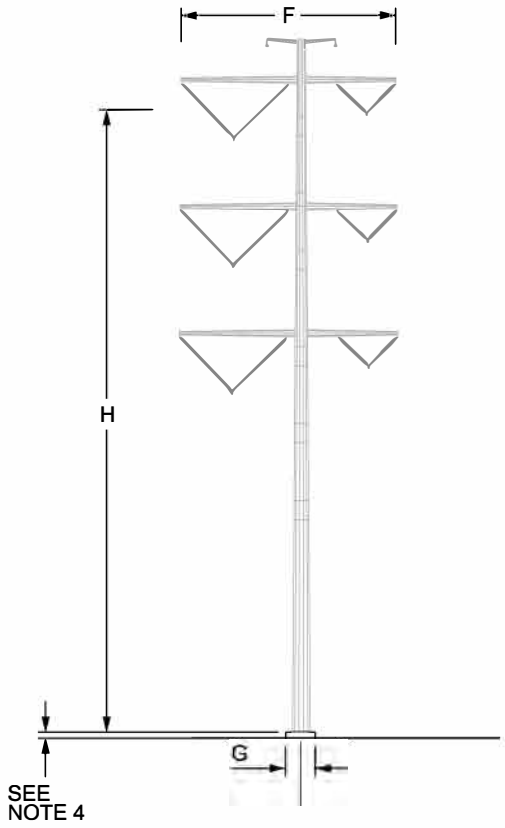
Dominion Energy
5000 Dominion Blvd
Glen Allen, VA 23060

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

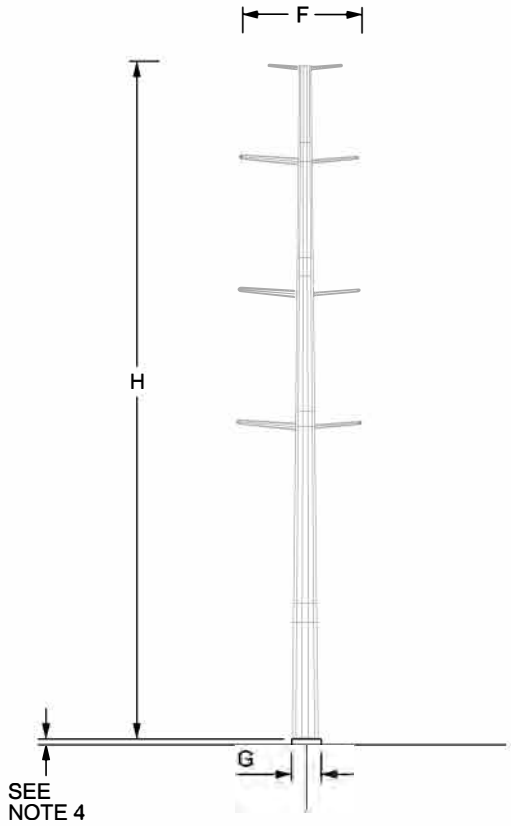
Dominion Energy
Dominion Energy
5000 Dominion Blvd
Glen Allen, VA 23060

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

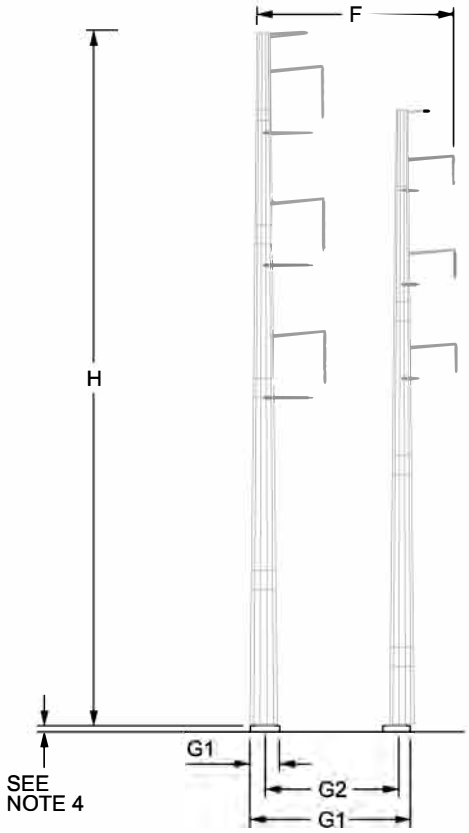
Dominion Energy
Dominion Energy
5000 Dominion Blvd
Glen Allen, VA 23060

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

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®

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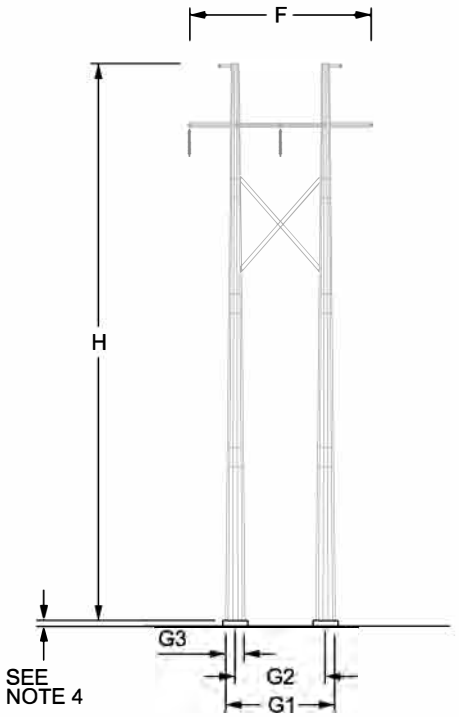
Glen Allen, VA 23060

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

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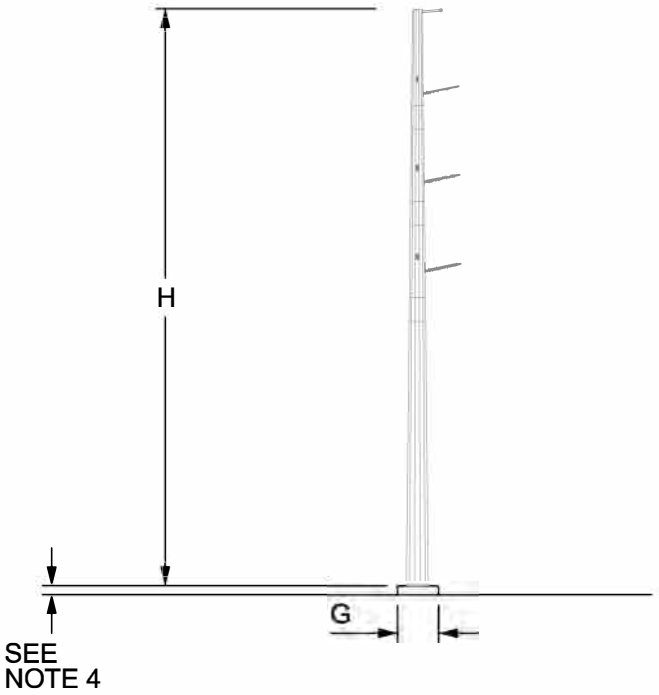
STRUCTURE: 2333/2, 2333/3

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

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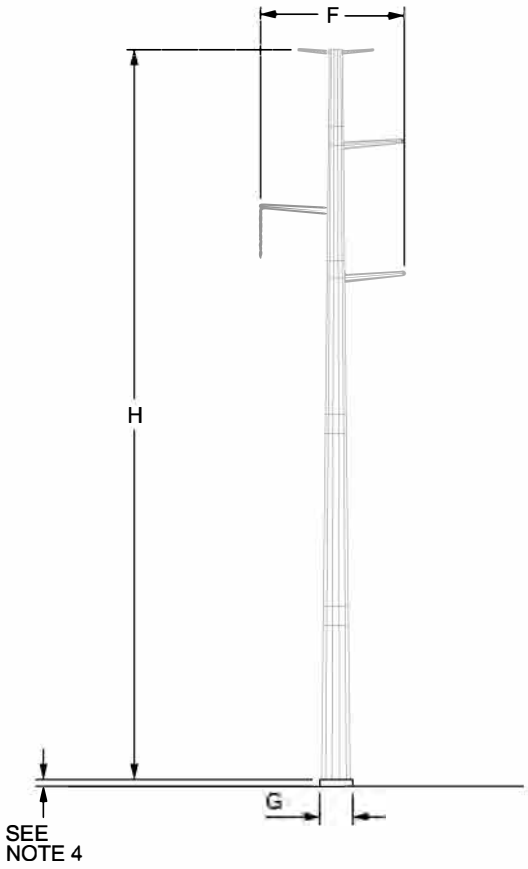
Glen Allen, VA 23060

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

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STRUCTURE: 5002/2

DRAWING NO.
ATTACHMENT II.B.3.x

DRAWN: MBV

ATTACHMENT 3 TYPICAL DESIGN AND LAYOUT
Twin Creeks Lines

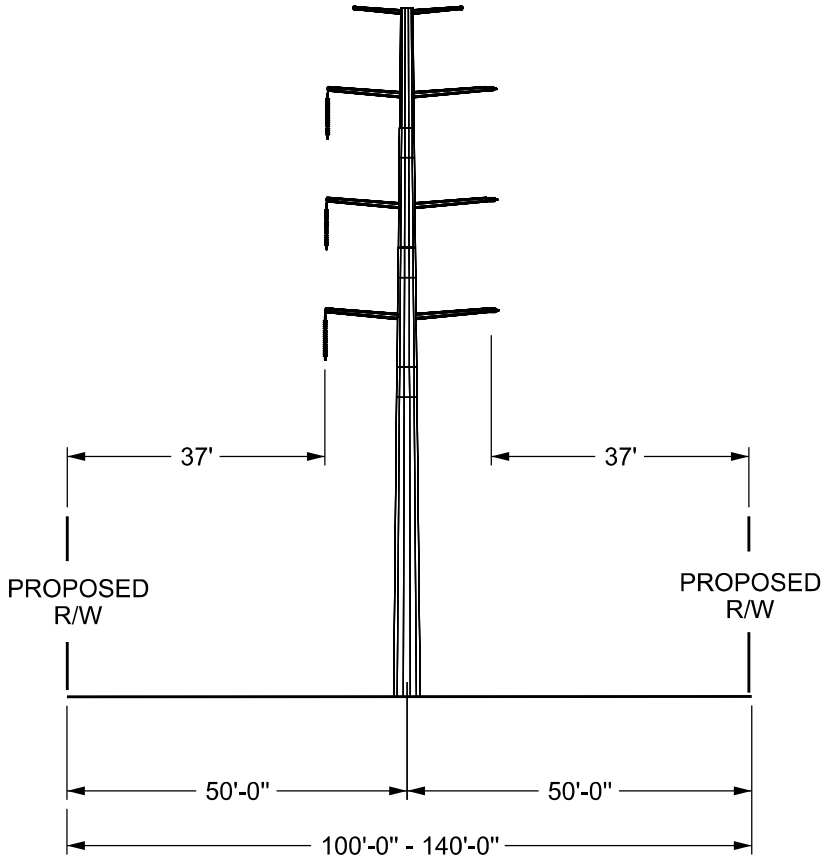
ATTACHMENT II.A.5.a.

$SYTIME$
$DATE$

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.

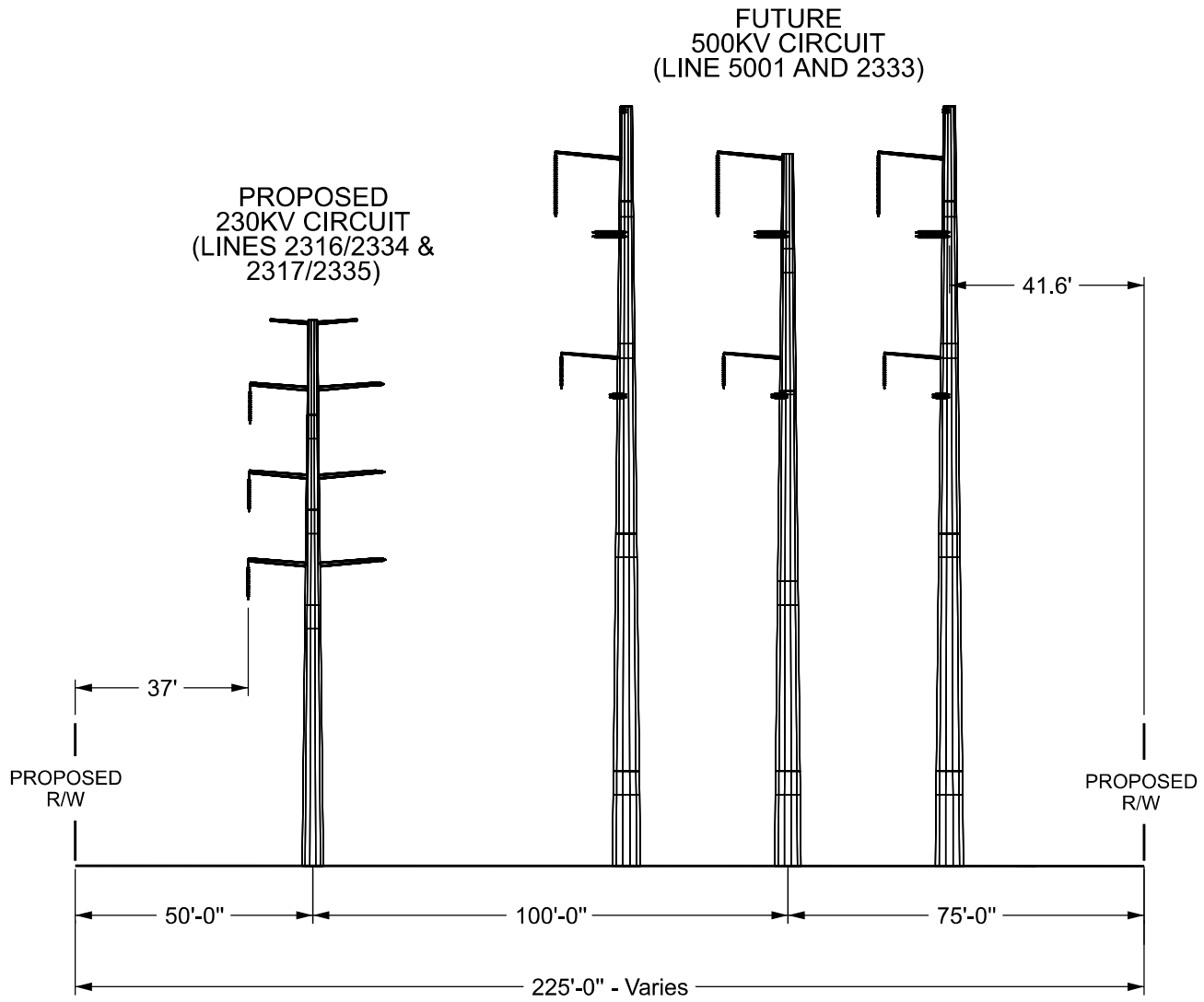
TDBDIAG $DGNSPEC$

ATTACHMENT II.A.5.b.

$SYTIME$
$DATE$
$DGNSPEC$
TDBDIAG

PRELIMINARY PROPOSED
APOLLO - TWIN CREEKS

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



PROPOSED CONFIGURATION

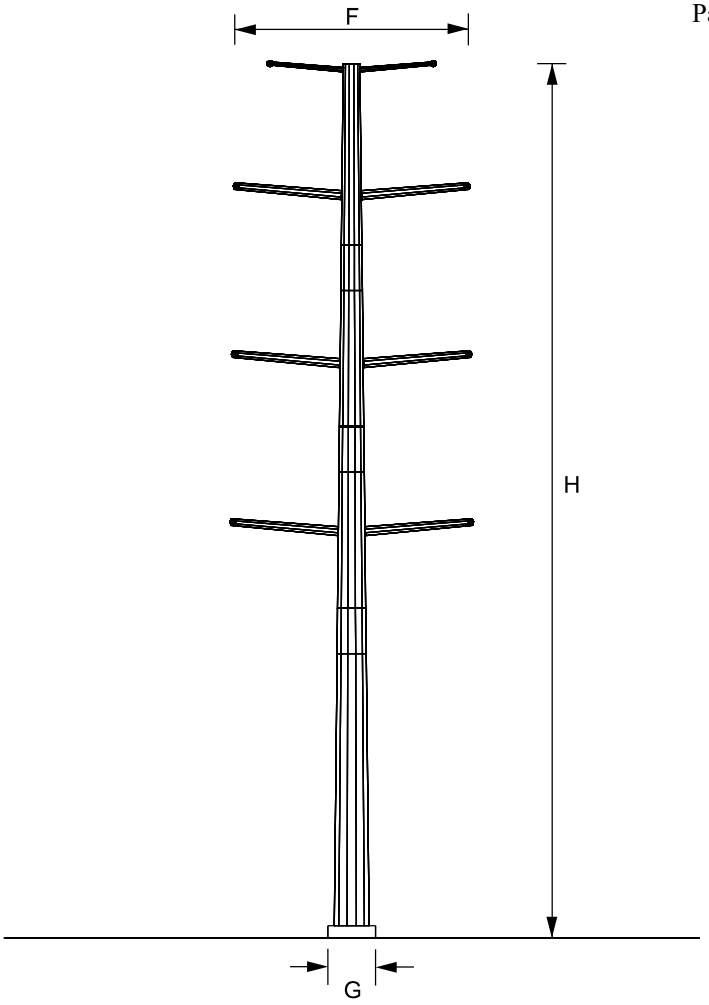
TYPICAL RIGHT OF WAY LOOKING TOWARD APOLLO

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

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Glen Allen, VA 23060

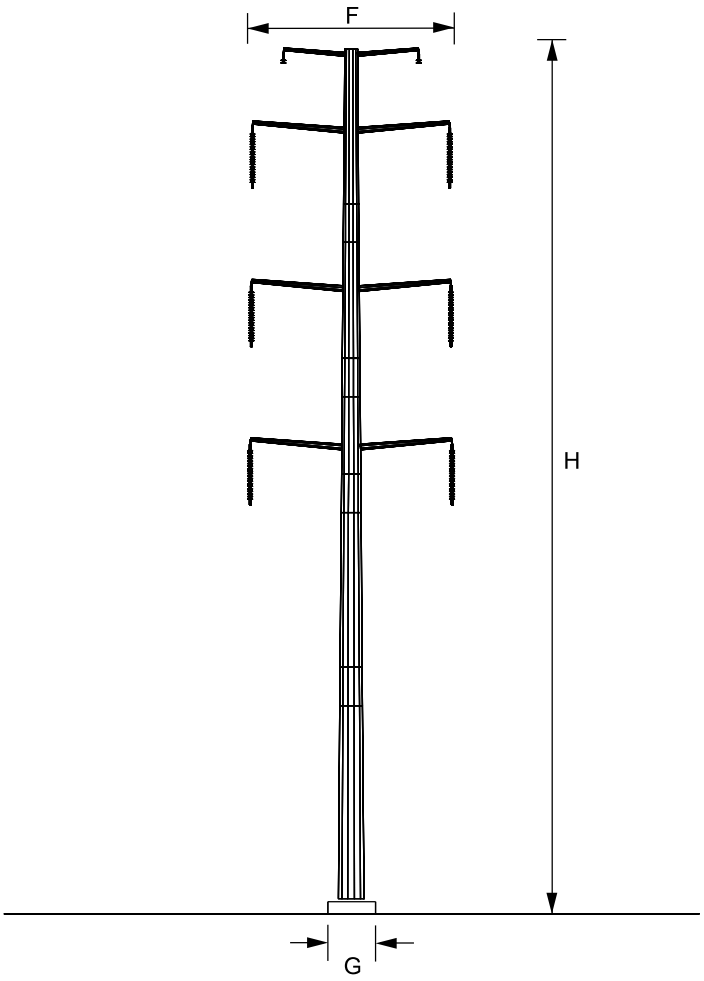
STRUCTURE: 203/2 (2320/5), 203/1C (2320/4), 203/1A (2320/2), 2316/2 (2317/2), 2316/3 (2317/3), 2316/4 (2317/4), 2334/2 (2335/2), 2334/3 (2335/3), 2342/2 (2343/2)

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

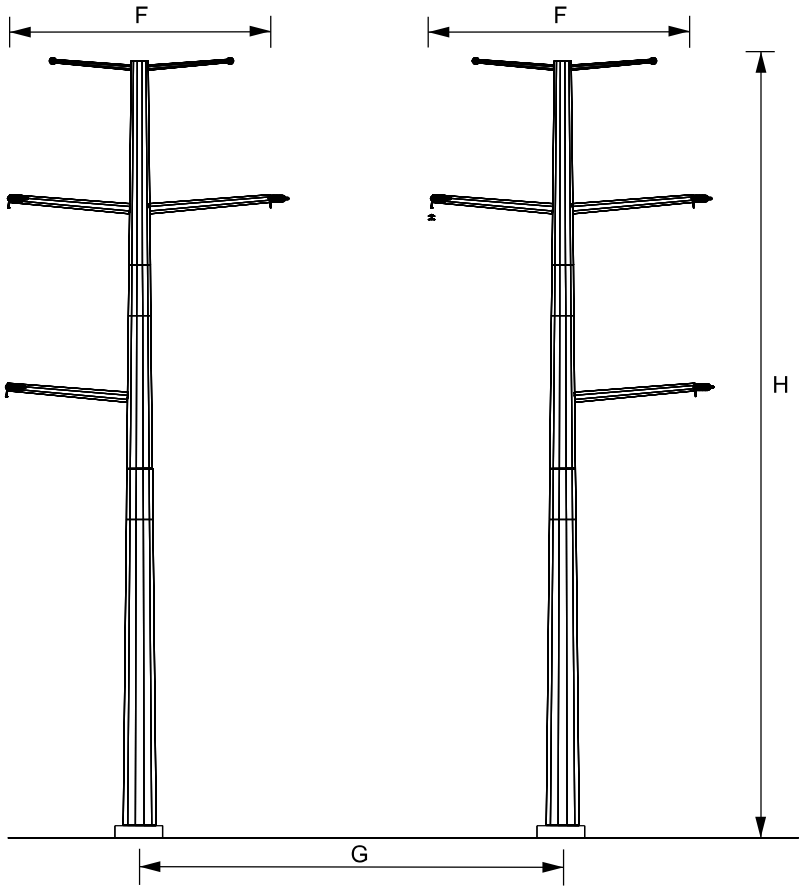
STRUCTURE: 203/1B (2320/3)

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
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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 4 HISTORIC RESOURCE PHOTOS

Figure 1. 053-0084, Janelia/Howard Hughes Research Center, View to the Northeast.

Figure 2. 053-0106, Belmont Manor, dwelling, North and East Elevations, View to the Southwest.

Figure 3. 053-0110, Broad Run Bridge and Toll House, Northeast and Northwest Elevations, View to the Southeast.

Figure 4. 053-0276, Washington & Old Dominion Railroad Historic District, Intersection at Cochran Mill Rd, View to the Southeast.

Figure 5. 053-0278, Belmont Chapel and Cemetery, chapel ruins, obelisk, and cemetery, View to the East.

Figure 6. 053-0336, Cooke's Mill, View to the Southwest.

Figure 7. 053-5223, Nokes House, No View from the Public ROW, View to the Northeast.

Figure 8. 053-6238, African American Burial Ground for the Enslaved at Belmont, View to the North.

Figure 9. 053-6406, Tippett's Hill Cemetery, View to the Southwest.

Figure 10. 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 053-0084.

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	286556E 4327207N
View Direction:	185 degrees
Viewpoint Elevation:	206 feet
Distance to Development:	1359 feet
Horizontal Field of View:	78 degrees

Date of Photography:	22nd March 2023 09:32
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	63 inches

VIEWPOINT CONTEXT

Figure 2
Route 1 Viewpoint SP 16
Riverside Pkwy at Ashburn Village Blvd
053-0084

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Figure 3. Aerial photograph depicting land use and photo view for 053-0106.

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	284469E 4327523N
View Direction:	42 degrees
Viewpoint Elevation:	394 feet
Distance to Development:	1746 feet
Horizontal Field of View:	94 degrees

Date of Photography:	28th August 2023 10:04
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	62 inches

VIEWPOINT CONTEXT

Figure 4
Route 1 Viewpoint SP 01
Ridge Rd W of Belmont Manor Ln
053-0106

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	284675E 4327942N
View Direction:	351 degrees
Viewpoint Elevation:	237 feet
Distance to Development:	224 feet
Horizontal Field of View:	91 degrees

Date of Photography:	28th August 2023 12:11
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	58 inches

VIEWPOINT CONTEXT

Figure 5
Route 1 Viewpoint SP 04
Harry Byrd Hwy W of Ridge Rd
053-0106

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	284860E 4327925N
View Direction:	285 degrees
Viewpoint Elevation:	255 feet
Distance to Development:	54 feet
Horizontal Field of View:	84 degrees

Date of Photography:	22nd March 2023 15:27
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	63 inches

VIEWPOINT CONTEXT

Figure 6
Route 1 Viewpoint SP 02
Harry Byrd Hwy W of Ridge Rd
053-0106

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Figure 7. Aerial photograph depicting land use and photo view for 053-0110.

Existing View

Proposed view showing hidden transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	289406E 4324846N
View Direction:	339 degrees
Viewpoint Elevation:	133 feet
Distance to Development:	2592 feet
Horizontal Field of View:	89 degrees

Date of Photography:	23rd March 2023 11:55
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	64 inches

VIEWPOINT CONTEXT

Figure 8
Route 1 Viewpoint SP 17
Harry Byrd Hwy W of Ridge Rd
053-0110

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

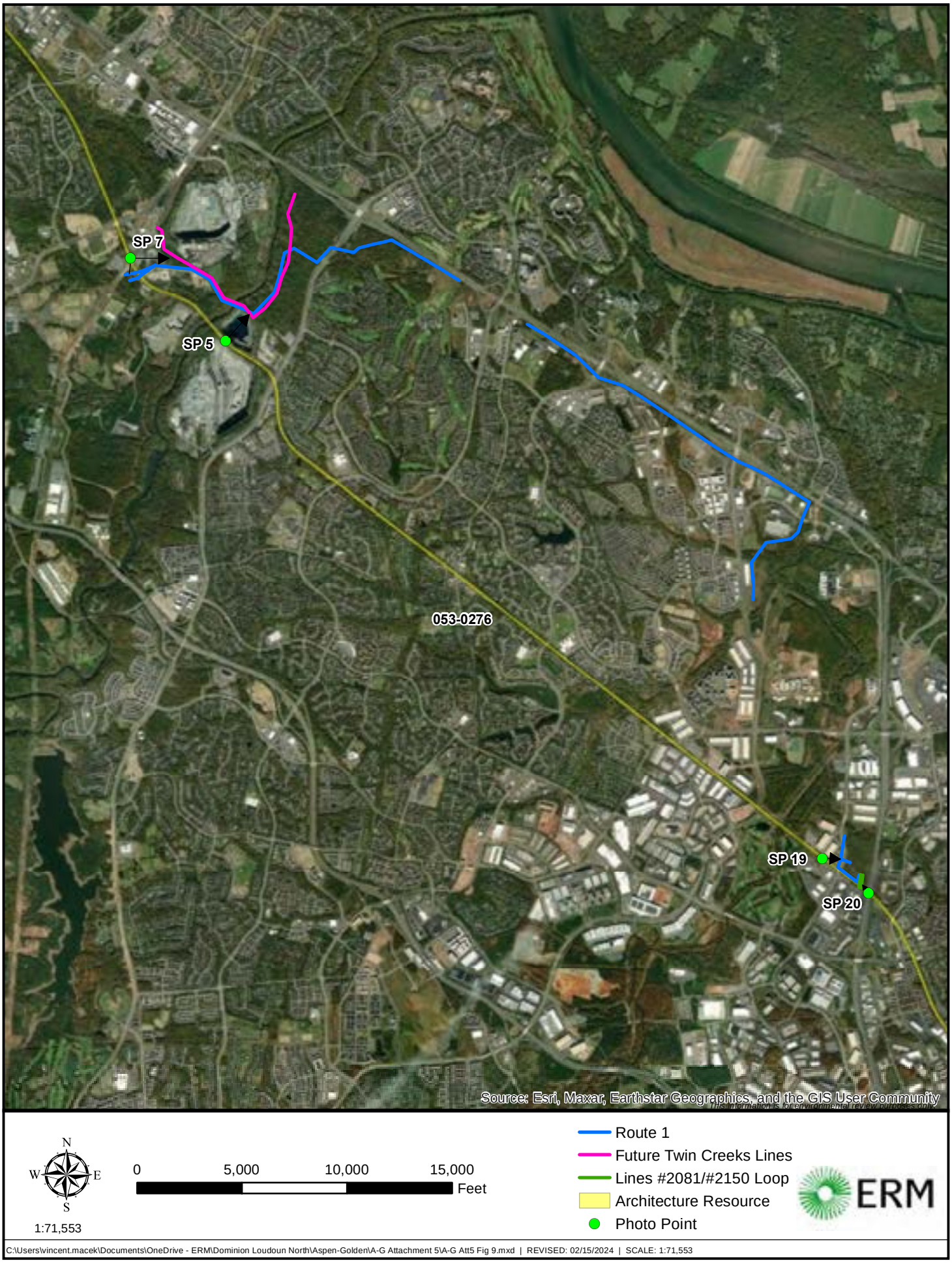


Figure 9. Aerial photograph depicting land use and photo view for 053-0276.

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	281156E 4328250N
View Direction:	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 10
Route 1 and Aspen-Goose Creek Line Viewpoint SP 07
Trail NW of Cochran Mill Rd & Samuels Mill Ct
053-0276

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	288788E 4321292N
View Direction:	93 degrees
Viewpoint Elevation:	148 feet
Distance to Development:	646 feet
Horizontal Field of View:	88 degrees

Date of Photography:	23rd March 2023 16:48
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	63 inches

VIEWPOINT CONTEXT

Figure 11
Route 1 Viewpoint SP 19
Trail SSE of SW End of Charles View Dr
053-0276

Pre-Application Analysis
Aspen-Golden 500-230 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:	1346 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 12
Route 1 Viewpoint SP 05
Trail NW of Jackpit Ln & Belmont Ridge Rd
053-0276

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Existing View

Proposed view showing location of Line Loop transmission line structures in purple and Golden Substation and Route 1 in pink.

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	289301E 4320886N
View Direction:	320 degrees
Viewpoint Elevation:	219 feet
Distance to Development:	604 feet
Horizontal Field of View:	90 degrees

Date of Photography:	23rd March 2023 13:07
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	64 inches

VIEWPOINT CONTEXT

Figure 13
Route 1 Viewpoint SP 20
Sully Rd N of Waxpool Rd
053-0276

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Existing View

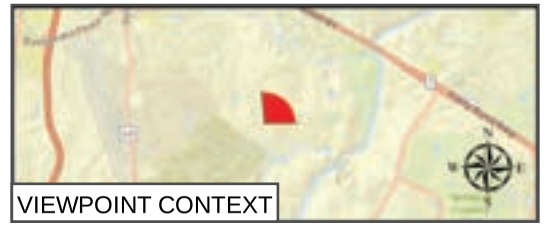
Proposed view showing location of Twin Creeks to Apollo transmission line structures (highlighted in purple), no view of Route 1

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 14
Twin Creeks to Apollo Viewpoint SP 07 East
Trail NW of Cochran Mill Rd
053-0276

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Figure 15. Aerial photograph depicting land use and photo view for 053-0278.

Existing View

Proposed view showing hidden transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	284947E 4327536N
View Direction:	278 degrees
Viewpoint Elevation:	240 feet
Distance to Development:	1231 feet
Horizontal Field of View:	96 degrees

Date of Photography:	23rd March 2023 10:45
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	62 inches

VIEWPOINT CONTEXT

Figure 16
Route 1 Viewpoint SP 08
Russell Branch Pkwy N of Tournament Pkwy
053-0278

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Existing View

Proposed view showing location of visible Belmont Park Variation A transmission line structures

Viewpoint Location UTM Zone 18N:	284947E 4327536N
View Direction:	278 degrees
Viewpoint Elevation:	240 feet
Distance to Development:	1231 feet
Horizontal Field of View:	96 degrees

Date of Photography:	23rd March 2023 10:45
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	62 inches

VIEWPOINT CONTEXT

Figure 17
Route 1 Viewpoint SP 08
Russell Branch Pkwy N of Tournament Pkwy
053-0278

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	285112E 4327551N
View Direction:	12 degrees
Viewpoint Elevation:	240 feet
Distance to Development:	1408 feet
Horizontal Field of View:	102 degrees

Date of Photography:	22nd March 2023 15:43
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	62 inches

VIEWPOINT CONTEXT

Figure 18
Route 1 Viewpoint SP 09
W Ramp - Harry Byrd Hwy to Claiborne Pkwy
053-0278

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

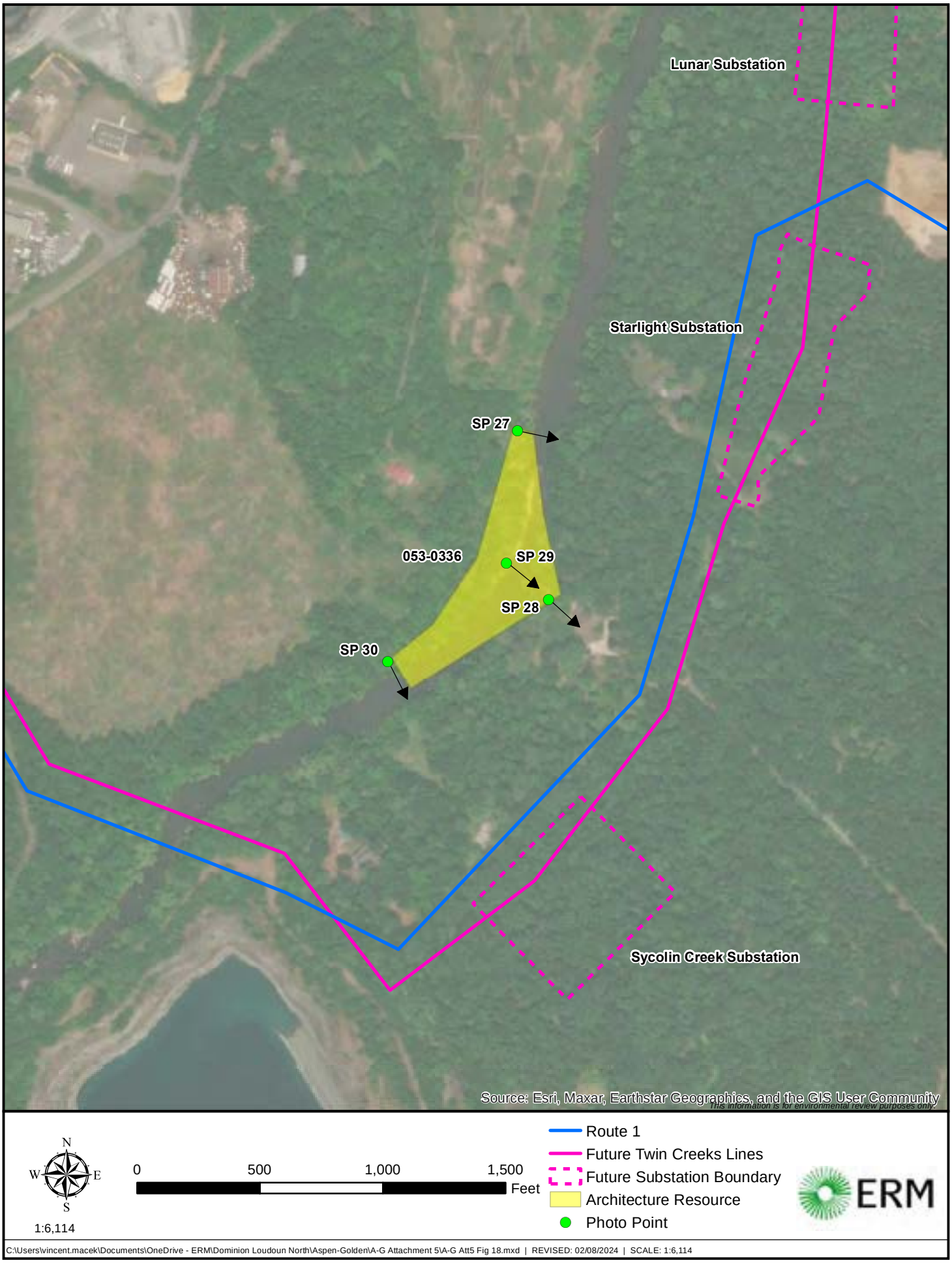


Figure 19. Aerial photograph depicting land use and photo view for 053-0336.

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:	203 feet
Distance to Development:	601 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 20
Route 1 Viewpoint SP 27
W Bank of Goose Creek W of Goose Glen Ln
053-0336

Pre-Application Analysis
Aspen-Golden 500-230 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 21
Route 1 Viewpoint SP 29
W Bank of Goose Creek W of Goose Glen Ln
053-0336

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Existing View

Proposed view showing location of transmission line structures for Route 1 (pink) and Twin Creeks to Apollo (purple)

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	282686E 4327920N
View Direction:	133 degrees
Viewpoint Elevation:	210 feet
Distance to Development:	362 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 22
Route 1 and Twin Creeks to Apollo Project Viewpoint SP 28
E Bank of Goose Creek W of Goose Glen Ln
053-0336

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Existing View

Proposed view showing location of transmission line structures for Route 1 (pink) and Twin Creeks to Apollo (purple)

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 23
Route 1 and Twin Creeks to Apollo Project Viewpoint SP 30
W Bank of Goose Creek W of Goose Glen Ln
053-0336

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

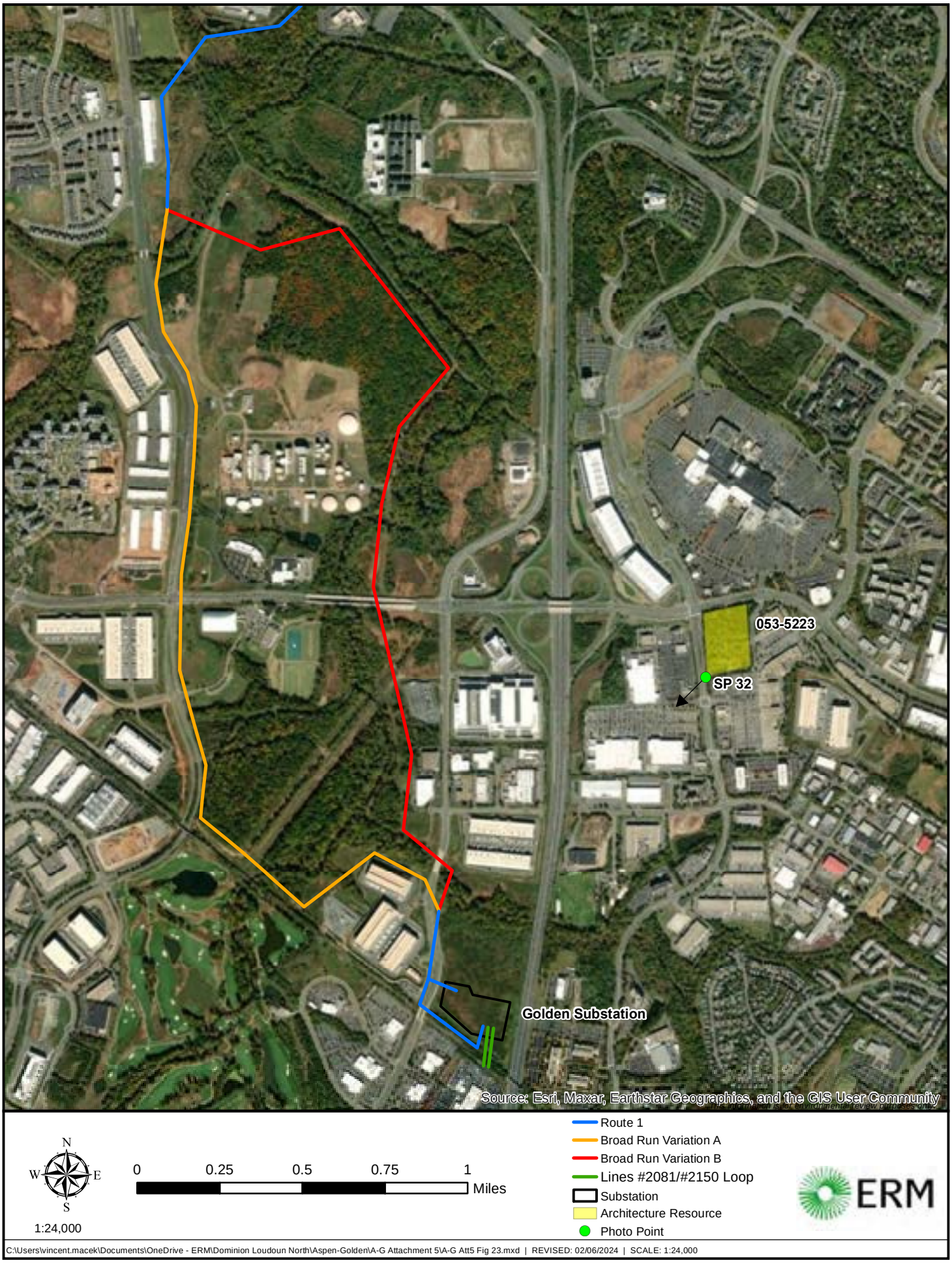


Figure 24. Aerial photograph depicting land use and photo view for 053-5223.

Existing View

Proposed view showing hidden transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	290077E 4322391N
View Direction:	215 degrees
Viewpoint Elevation:	201 feet
Distance to Development:	4408 feet
Horizontal Field of View:	88 degrees

Date of Photography:	30th August 2023 13:24
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	55 inches

VIEWPOINT CONTEXT

Figure 25
Route 1 Viewpoint SP 32
Atlantic Blvd N of Dulles Crossing Plz
053-5223

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Figure 26. Aerial photograph depicting land use and photo view for 053-6238.

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	283837E 4328450N
View Direction:	180 degrees
Viewpoint Elevation:	288 feet
Distance to Development:	420 feet
Horizontal Field of View:	90 degrees

Date of Photography:	7th December 2023 09:50
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	66 inches

VIEWPOINT CONTEXT

Figure 27
Route 1 Viewpoint SP 301
SE of NE End of Freedom Trail
053-6238

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	283907E 4328510N
View Direction:	154 degrees
Viewpoint Elevation:	309 feet
Distance to Development:	565 feet
Horizontal Field of View:	89 degrees

Date of Photography:	7th December 2023 09:34
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	66 inches

VIEWPOINT CONTEXT

Figure 28
Route 1 Viewpoint SP 302
Harry Byrd Hwy SE of Belmont Ridge Rd
053-6238

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	283787E 4328565N
View Direction:	234 degrees
Viewpoint Elevation:	288 feet
Distance to Development:	822 feet
Horizontal Field of View:	89 degrees

Date of Photography:	7th December 2023 09:33
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	66 inches

VIEWPOINT CONTEXT

Figure 29
Route 1 Viewpoint SP 303 West
NE End of Freedom Trail Rd
053-6238

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Existing View

Proposed view showing location of Route 1 transmission line structures (highlighted in pink) and Twin Creeks to Apollo (highlighted in purple)

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 30
Route 1 and Twin Creeks to Apollo Viewpoint SP 308
Freedom Trail Rd SW of Leesburg Pike
053-6238

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Figure 31. Aerial photograph depicting land use and photo view for 053-6406.

Existing View

Proposed view showing hidden transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	288881E 4319721N
View Direction:	11 degrees
Viewpoint Elevation:	280 feet
Distance to Development:	4357 feet
Horizontal Field of View:	99 degrees

Date of Photography:	30th August 2023 12:10
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	60 inches

VIEWPOINT CONTEXT

Figure 32
Route 1 Viewpoint SP 31
Vantage Data Plz N of Moran Rd
053-6406

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

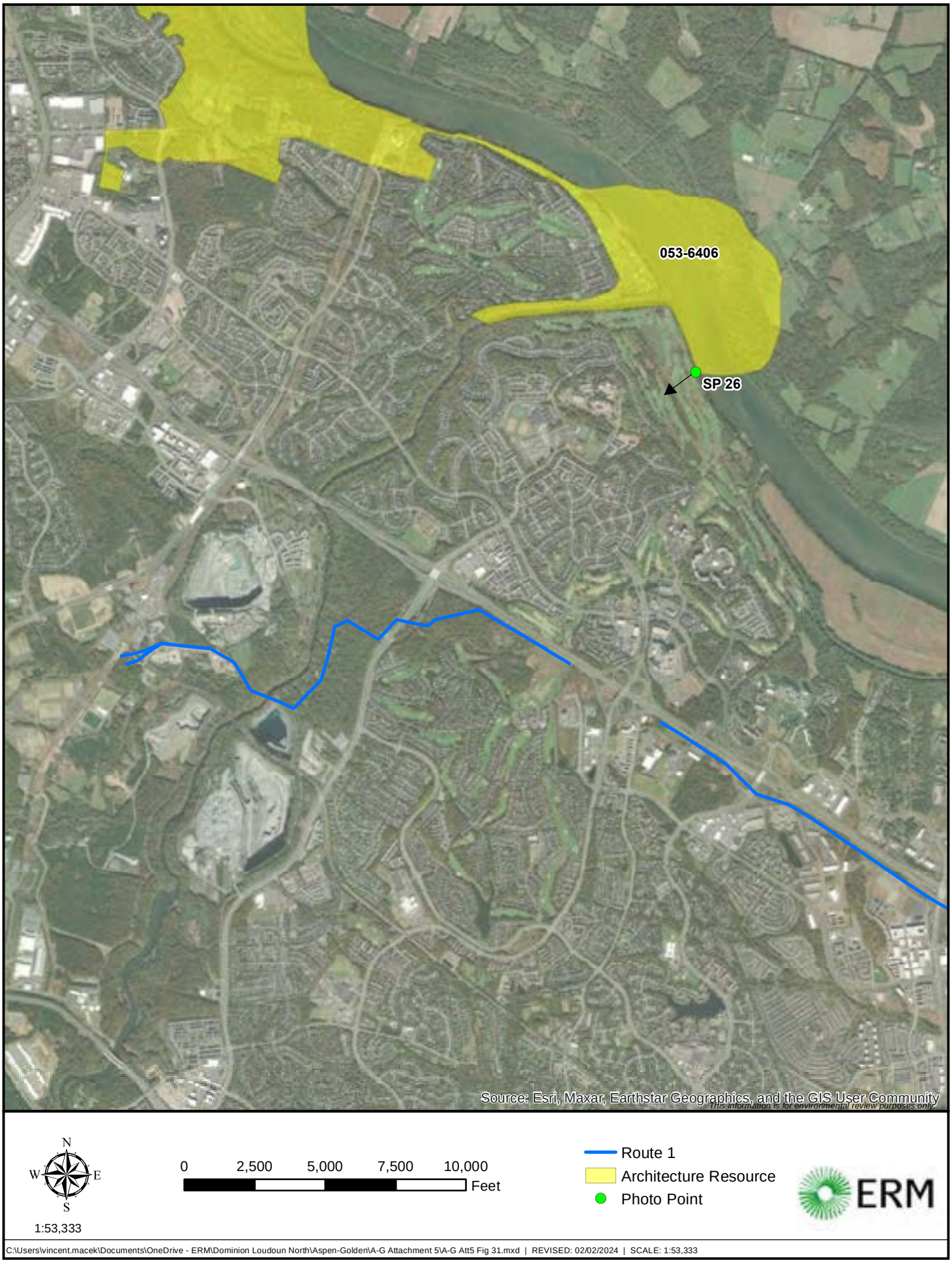


Figure 33. Aerial photograph depicting land use and photo view for 253-5182.

Existing View

Proposed view showing hidden transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	284322E 4327596N
View Direction:	232 degrees
Viewpoint Elevation:	279 feet
Distance to Development:	1806 feet
Horizontal Field of View:	90 degrees

Date of Photography:	28th August 2023 10:55
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	62 inches

VIEWPOINT CONTEXT

Figure 34
Route 1 Viewpoint SP 26
Ridge Rd W of Willowdale Pl
053-0106

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Figure 35. Aerial photograph depicting land use and photo view for 053-0084.

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	284469E 4327523N
View Direction:	267 degrees
Viewpoint Elevation:	206 feet
Distance to Development:	3133 feet
Horizontal Field of View:	75 degrees

Date of Photography:	22nd March 2023 09:32
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	63 inches

VIEWPOINT CONTEXT

Figure 36
Belmont Park Variation A Viewpoint SP 16
Riverside Pkwy at Ashburn Village Blvd
053-0084

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Figure 37. Aerial photograph depicting land use and photo view for 053-0106.

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	284469E 4327523N
View Direction:	42 degrees
Viewpoint Elevation:	394 feet
Distance to Development:	1796 feet
Horizontal Field of View:	94 degrees

Date of Photography:	28th August 2023 10:04
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	62 inches

VIEWPOINT CONTEXT

Figure 38
Belmont Park Variation A Viewpoint SP 01
Ridge Rd W of Belmont Manor Ln
053-0106

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	284675E 4327942N
View Direction:	73 degrees
Viewpoint Elevation:	237 feet
Distance to Development:	639 feet
Horizontal Field of View:	89 degrees

Date of Photography:	28th August 2023 12:11
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	58 inches

VIEWPOINT CONTEXT

Figure 39
Belmont Park Variation A Viewpoint SP 04
Harry Byrd Hwy W of Ridge Rd
053-0106

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	284860E 4327925N
View Direction:	120 degrees
Viewpoint Elevation:	255 feet
Distance to Development:	77 feet
Horizontal Field of View:	92 degrees

Date of Photography:	22nd March 2023 15:27
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	63 inches

VIEWPOINT CONTEXT

Figure 40
Belmont Park Variation A Viewpoint SP 02
Harry Byrd Hwy W of Ridge Rd
053-0106

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Figure 41. Aerial photograph depicting land use and photo view for 053-0278.

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	284947E 4327536N
View Direction:	278 degrees
Viewpoint Elevation:	240 feet
Distance to Development:	814 feet
Horizontal Field of View:	96 degrees

Date of Photography:	23rd March 2023 10:45
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	62 inches

VIEWPOINT CONTEXT

Figure 42
Belmont Park Variation A Viewpoint SP 08
Russell Branch Pkwy N of Tournament Pkwy
053-0278

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Existing View

Proposed view showing hidden transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	284947E 4327536N
View Direction:	66 degrees
Viewpoint Elevation:	240 feet
Distance to Development:	814 feet
Horizontal Field of View:	92 degrees

Date of Photography:	23rd March 2023 10:45
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	62 inches

VIEWPOINT CONTEXT

Figure 43
Belmont Park Variation A Viewpoint SP 08
Russell Branch Pkwy N of Tournament Pkwy
053-0278

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	285112E 4327551N
View Direction:	12 degrees
Viewpoint Elevation:	240 feet
Distance to Development:	438 feet
Horizontal Field of View:	102 degrees

Date of Photography:	22nd March 2023 15:43
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	62 inches

VIEWPOINT CONTEXT

Figure 44
Belmont Park Variation A Viewpoint SP 09
W Ramp - Harry Byrd Hwy to Claiborne Pkwy
053-0278

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

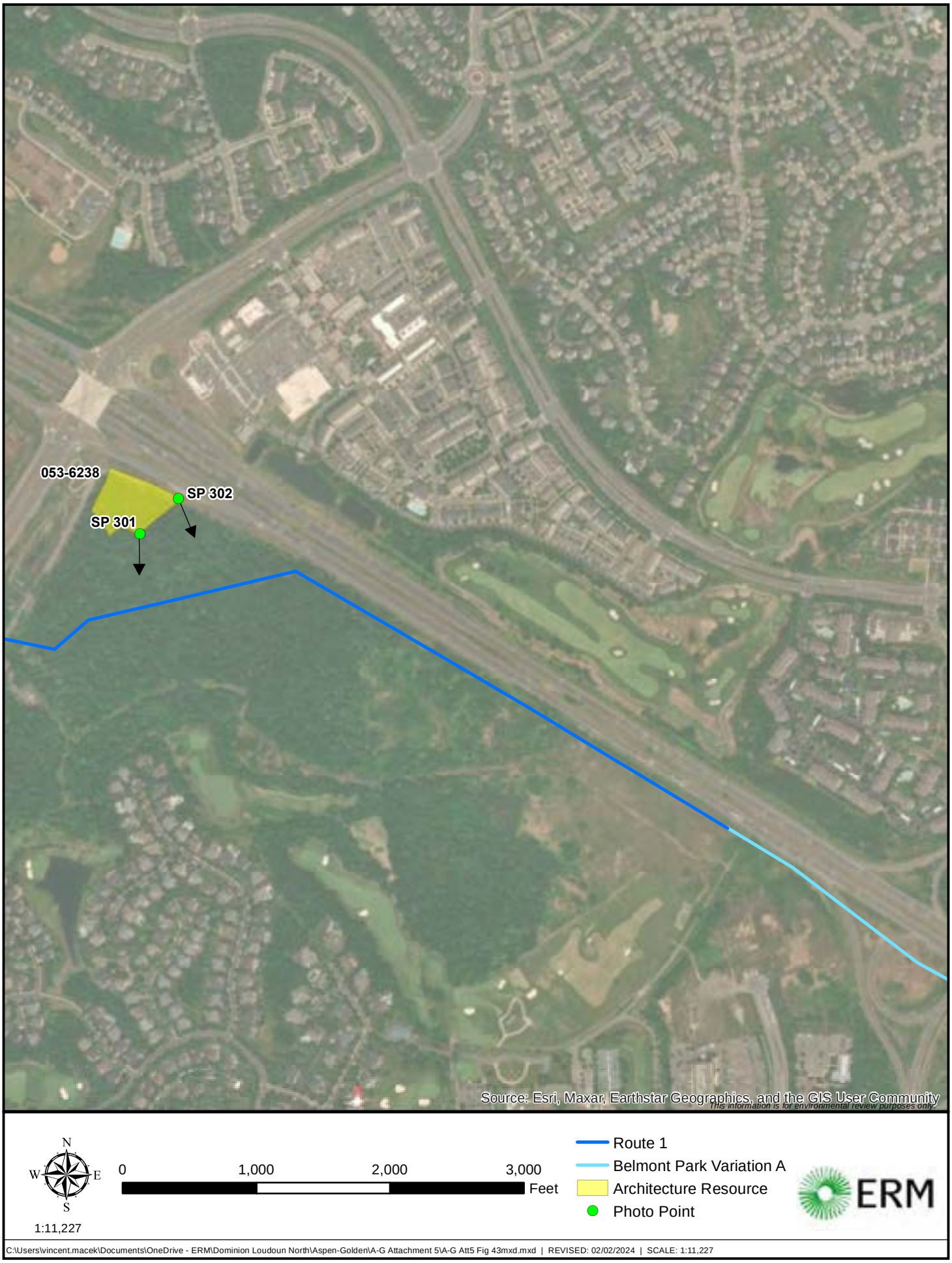


Figure 45. Aerial photograph depicting land use and photo view for 053-6238.

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	283837E 4328450N
View Direction:	180 degrees
Viewpoint Elevation:	288 feet
Distance to Development:	3819 feet
Horizontal Field of View:	90 degrees

Date of Photography:	7th December 2023 09:50
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	66 inches

VIEWPOINT CONTEXT

Figure 46
Route 1 Viewpoint SP 301
SE of NE End of Freedom Trail
053-6238

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	283907E 4328510N
View Direction:	154 degrees
Viewpoint Elevation:	309 feet
Distance to Development:	3719 feet
Horizontal Field of View:	89 degrees

Date of Photography:	7th December 2023 09:34
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	66 inches

VIEWPOINT CONTEXT

Figure 47
Belmont Park Variation A Viewpoint SP 302
Harry Byrd Hwy SE of Belmont Ridge Rd
053-6238

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Figure 48. Aerial photograph depicting land use and photo view for 053-0084.

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	284469E 4327523N
View Direction:	267 degrees
Viewpoint Elevation:	206 feet
Distance to Development:	3133 feet
Horizontal Field of View:	75 degrees

Date of Photography:	22nd March 2023 09:32
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	63 inches

VIEWPOINT CONTEXT

Figure 49
Belmont Park Variation B Viewpoint SP 16
Riverside Pkwy at Ashburn Village Blvd
053-0084

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Figure 50. Aerial photograph depicting land use and photo view for 053-0106.

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	284469E 4327523N
View Direction:	42 degrees
Viewpoint Elevation:	394 feet
Distance to Development:	1796 feet
Horizontal Field of View:	94 degrees

Date of Photography:	28th August 2023 10:04
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	62 inches

VIEWPOINT CONTEXT

Figure 51
Belmont Park Variation B Viewpoint SP 01
Ridge Rd W of Belmont Manor Ln
053-0106

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	284675E 4327942N
View Direction:	73 degrees
Viewpoint Elevation:	237 feet
Distance to Development:	634 feet
Horizontal Field of View:	89 degrees

Date of Photography:	28th August 2023 12:11
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	58 inches

VIEWPOINT CONTEXT

Figure 52
Belmont Park Variation B Viewpoint SP 04
Harry Byrd Hwy W of Ridge Rd
053-0106

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	284860E 4327925N
View Direction:	120 degrees
Viewpoint Elevation:	255 feet
Distance to Development:	77 feet
Horizontal Field of View:	92 degrees

Date of Photography:	22nd March 2023 15:27
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	63 inches

VIEWPOINT CONTEXT

Figure 53
Belmont Park Variation B Viewpoint SP 02
Harry Byrd Hwy W of Ridge Rd
053-0106

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Figure 54. Aerial photograph depicting land use and photo view for 053-0278.

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	284947E 4327536N
View Direction:	278 degrees
Viewpoint Elevation:	240 feet
Distance to Development:	1183 feet
Horizontal Field of View:	96 degrees

Date of Photography:	23rd March 2023 10:45
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	62 inches

VIEWPOINT CONTEXT

Figure 55
Belmont Park Variation B Viewpoint SP 08
Russell Branch Pkwy N of Tournament Pkwy
053-0278

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Existing View

Proposed view showing hidden transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	284947E 4327536N
View Direction:	66 degrees
Viewpoint Elevation:	240 feet
Distance to Development:	1183 feet
Horizontal Field of View:	92 degrees

Date of Photography:	23rd March 2023 10:45
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	62 inches

VIEWPOINT CONTEXT

Figure 56
Belmont Park Variation B Viewpoint SP 08
Russell Branch Pkwy N of Tournament Pkwy
053-0278

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	285112E 4327551N
View Direction:	12 degrees
Viewpoint Elevation:	240 feet
Distance to Development:	879 feet
Horizontal Field of View:	102 degrees

Date of Photography:	22nd March 2023 15:43
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	62 inches

VIEWPOINT CONTEXT

Figure 57
Belmont Park Variation B Viewpoint SP 09
W Ramp - Harry Byrd Hwy to Claiborne Pkwy
053-0278

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

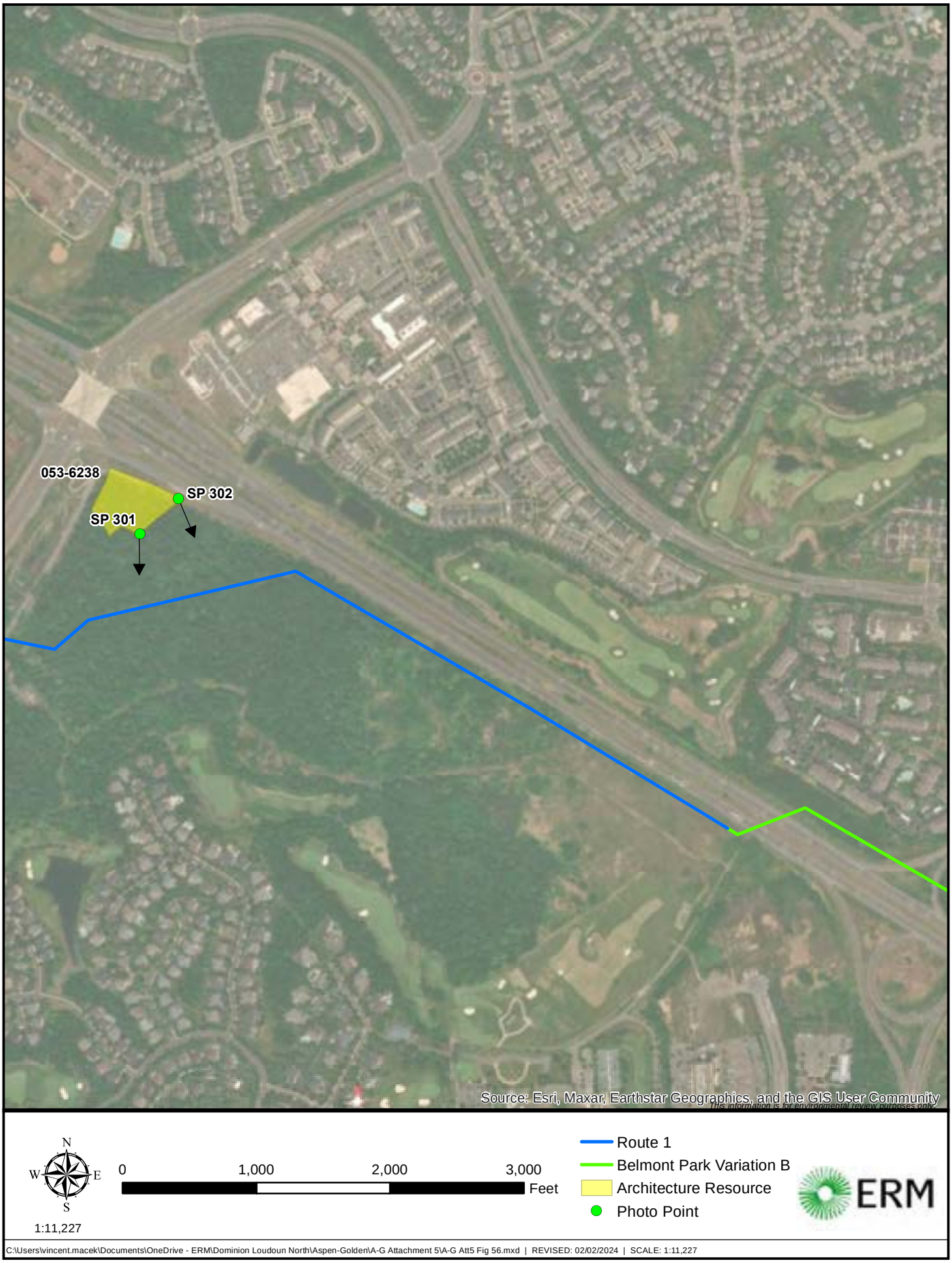


Figure 58. Aerial photograph depicting land use and photo view for 053-6238.

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	283837E 4328450N
View Direction:	180 degrees
Viewpoint Elevation:	288 feet
Distance to Development:	3819 feet
Horizontal Field of View:	90 degrees

Date of Photography:	7th December 2023 09:50
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	66 inches

VIEWPOINT CONTEXT

Figure 59
Route 1 Viewpoint SP 301
SE of NE End of Freedom Trail
053-6238

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	283907E 4328510N
View Direction:	154 degrees
Viewpoint Elevation:	309 feet
Distance to Development:	3719 feet
Horizontal Field of View:	89 degrees

Date of Photography:	7th December 2023 09:34
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	66 inches

VIEWPOINT CONTEXT

Figure 60
Belmont Park Variation B Viewpoint SP 302
Harry Byrd Hwy SE of Belmont Ridge Rd
053-6238

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Figure 61. Aerial photograph depicting land use and photo view for 053-0110.

Existing View

Proposed view showing hidden transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	289337E 4324703N
View Direction:	193 degrees
Viewpoint Elevation:	127 feet
Distance to Development:	4404 feet
Horizontal Field of View:	90 degrees

Date of Photography:	23rd March 2023 11:23
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	64 inches

VIEWPOINT CONTEXT

Figure 62
Broad Run Variation A Viewpoint SP 21
Pacific Blvd NW of Admiral Dr
053-0110

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Figure 63. Aerial photograph depicting land use and photo view for 053-0276.

Existing View

Proposed view showing hidden transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	287939E 4321987N
View Direction:	102 degrees
Viewpoint Elevation:	162 feet
Distance to Development:	709 feet
Horizontal Field of View:	89 degrees

Date of Photography:	23rd March 2023 15:25
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	62 inches

VIEWPOINT CONTEXT

Figure 64
Broad Run Variation A Viewpoint SP 18
Trail NW of Loudoun County Pkwy
053-0276

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Existing View

Proposed view showing location of transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	289301E 4320886N
View Direction:	320 degrees
Viewpoint Elevation:	219 feet
Distance to Development:	2298 feet
Horizontal Field of View:	90 degrees

Date of Photography:	23rd March 2023 13:07
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	64 inches

VIEWPOINT CONTEXT

Figure 65
Broad Run Variation A Viewpoint SP 20
Sully Rd N of Waxpool Rd
053-0276

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Figure 66. Aerial photograph depicting land use and photo view for 053-5223.

Existing View

Proposed view showing hidden transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	290072E 4322636N
View Direction:	284 degrees
Viewpoint Elevation:	215 feet
Distance to Development:	4782 feet
Horizontal Field of View:	89 degrees

Date of Photography:	30th August 2023 12:54
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	62 inches

VIEWPOINT CONTEXT

Figure 67
Broad Run Variation A Viewpoint SP 33
Nokes Blvd at Atlantic Blvd
053-5223

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Figure 68. Aerial photograph depicting land use and photo view for 053-0110.

Existing View

Proposed view showing hidden transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	289337E 4324703N
View Direction:	193 degrees
Viewpoint Elevation:	127 feet
Distance to Development:	2746 feet
Horizontal Field of View:	90 degrees

Date of Photography:	23rd March 2023 11:23
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	64 inches

VIEWPOINT CONTEXT

Figure 69
Broad Run Variation B Viewpoint SP 21
Pacific Blvd NW of Admiral Dr
053-0110

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Figure 70. 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:	289301E 4320886N
View Direction:	320 degrees
Viewpoint Elevation:	219 feet
Distance to Development:	2298 feet
Horizontal Field of View:	90 degrees

Date of Photography:	23rd March 2023 13:07
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	64 inches

VIEWPOINT CONTEXT

Figure 71
Broad Run Variation B Viewpoint SP 20
Sully Rd N of Waxpool Rd
053-0276

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Figure 72. Aerial photograph depicting land use and photo view for 053-5223.

Existing View

Proposed view showing hidden transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	290072E 4322636N
View Direction:	284 degrees
Viewpoint Elevation:	215 feet
Distance to Development:	3921 feet
Horizontal Field of View:	89 degrees

Date of Photography:	30th August 2023 12:54
Camera:	Nikon D800
Lens:	Nikkor 50mm 1.4
Camera Height:	62 inches

VIEWPOINT CONTEXT

Figure 73
Broad Run Variation B Viewpoint SP 33
Nokes Blvd at Atlantic Blvd
053-5223

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Figure 74. 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:	179 degrees
Viewpoint Elevation:	185 feet
Distance to Development:	576 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 75
Aspen-Goose Creek Line and Route 1 Viewpoint SP 07
Trail NW of Cochran Mill Rd & Samuels Mill Ct
053-0276

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

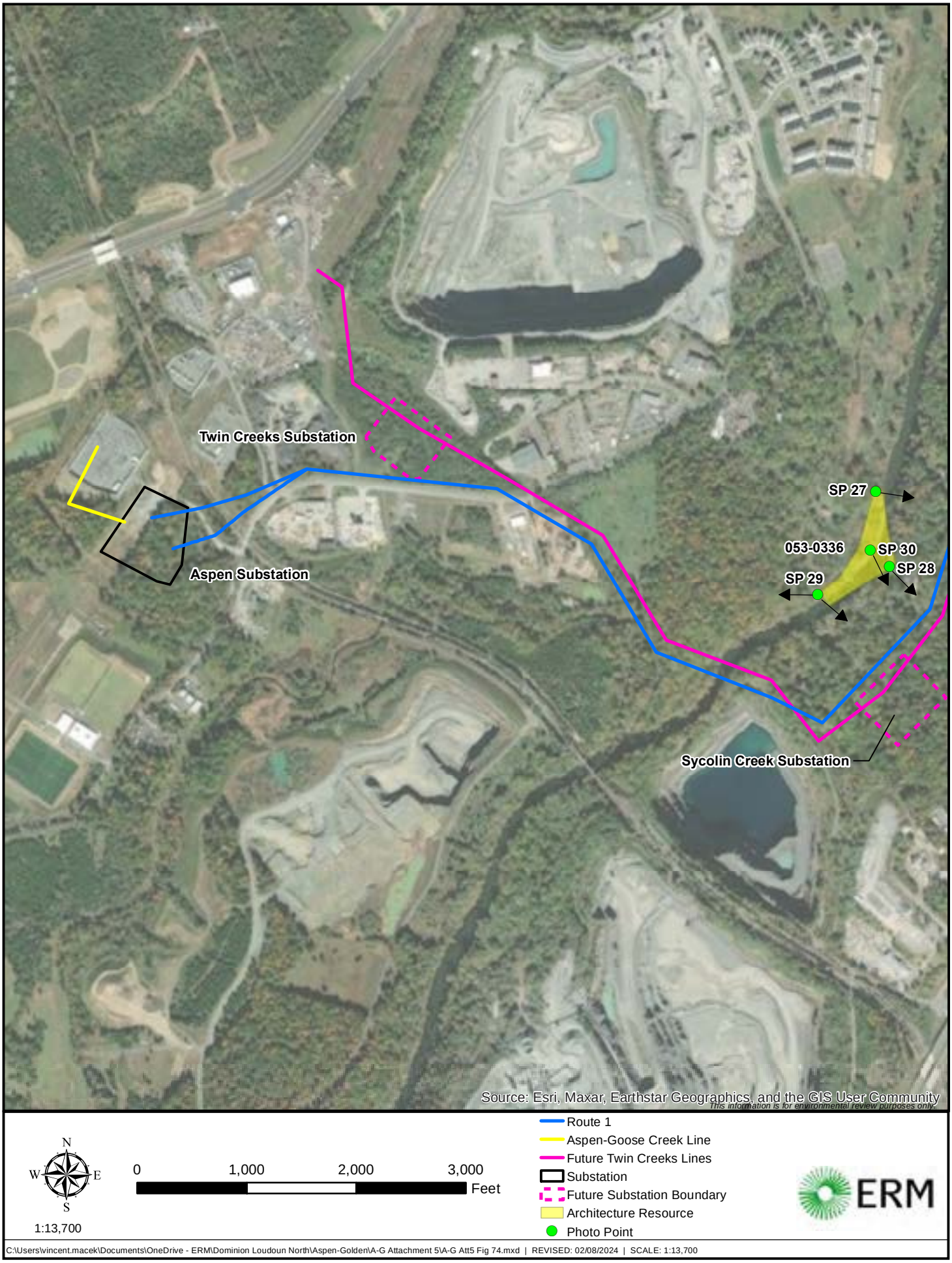


Figure 76. Aerial photograph depicting land use and photo view for 053-0336.

Existing View

Proposed view showing hidden transmission line structures

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	282530E 4327865N
View Direction:	278 degrees
Viewpoint Elevation:	215 feet
Distance to Development:	4941 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 77
Aspen-Goose Creek Line Viewpoint SP 29
W Bank of Goose Creek W of Goose Glen Ln
053-0336

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

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:	203 feet
Distance to Development:	5330 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 78
Route 1 Viewpoint SP 27
W Bank of Goose Creek W of Goose Glen Ln
053-0336

Pre-Application Analysis
Aspen-Golden 500-230 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:	4941 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 79
Route 1 Viewpoint SP 29
W Bank of Goose Creek W of Goose Glen Ln
053-0336

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Existing View

Proposed view showing location of transmission line structures for Route 1 (pink) and Twin Creeks to Apollo (purple)

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 80
Route 1 and Twin Creeks to Apollo Project Viewpoint SP 28
E Bank of Goose Creek W of Goose Glen Ln
053-0336

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

Existing View

Proposed view showing location of transmission line structures for Route 1 (pink) and Twin Creeks to Apollo (purple)

Dominion Energy

ERM

Viewpoint Location UTM Zone 18N:	282646E 4327956N
View Direction:	153 degrees
Viewpoint Elevation:	202 feet
Distance to Development:	5292 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 81
Route 1 and Twin Creeks to Apollo Project Viewpoint SP 30
W Bank of Goose Creek W of Goose Glen Ln
053-0336

Pre-Application Analysis
Aspen-Golden 500-230 kV Electric Transmission Project

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New Zealand
Norway
Panama
Peru
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US
Vietnam

ERM
3300 Breckinridge Boulevard
Suite 300
Duluth, Georgia, USA 30096

T: 678-781-1370

www.erm.com

The business of sustainability

ERM

From:	ImpactReview
To:	Laura P Meadows (DEV Trans Distribution - 1)
Subject:	[EXTERNAL] RE: Dominion Energy Virginia's Proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation Project
Date:	Tuesday, February 6, 2024 3:29:41 PM
Attachments:	image001.png

Excellent, thank you.

The Virginia Outdoors Foundation has reviewed the project referenced below. As of February 6, 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: Laura.P.Meadows@dominionenergy.com <Laura.P.Meadows@dominionenergy.com>
Sent: Tuesday, February 6, 2024 2:35 PM
To: ImpactReview <impactreview@vof.org>
Subject: RE: Dominion Energy Virginia's Proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation Project

Alert: This email originated from outside VOF
Good Afternoon,

Please see the attached.

Thank you,
Laura

Laura Meadows
Supervisor - Siting and Permitting

Electric Transmission

Dominion Energy
5000 Dominion Boulevard, 3rd Floor SW, Glen Allen, VA 23060
C: 804.239.8246

From: ImpactReview <impactreview@vof.org>
Sent: Tuesday, February 6, 2024 2:34 PM
To: Laura P Meadows (DEV Trans Distribution - 1) <Laura.P.Meadows@dominionenergy.com>
Subject: [EXTERNAL] RE: Dominion Energy Virginia's Proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation Project

Hi Laura,

Can you please send me the GIS shapefile of the transmission line routes?

Thanks,
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: Laura.P.Meadows@dominionenergy.com <Laura.P.Meadows@dominionenergy.com>
Sent: Tuesday, February 6, 2024 12:15 PM
To: ImpactReview <impactreview@vof.org>
Subject: Dominion Energy Virginia's Proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose

Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation Project

Alert: This email originated from outside VOF
Dear Ms. Little,

Attached please find a request for comment for Dominion Energy Virginia's Proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation Project in Loudoun County, Virginia. Please reach out to me should you have any questions or require any additional information.

Sincerely,
Laura Meadows

Laura Meadows
Supervisor - Siting and Permitting
Electric Transmission

Dominion Energy
5000 Dominion Boulevard, 3rd Floor SW, Glen Allen, VA 23060
C: 804.239.8246

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received the message in error, and delete it. Thank you.

From:	Denny, S. Scott (DOAV)
To:	Laura P Meadows (DEV Trans Distribution - 1)
Subject:	[EXTERNAL] Re: Dominion Energy Virginia's Proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation Project
Date:	Tuesday, February 6, 2024 3:50:14 PM
Attachments:	image001.png

Ms. Meadows:

The Virginia Department of Aviation has reviewed Dominion's proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Crook Line, 500 and 230 kV Aspen-Golden Lines and 500-230 kV Golden Substation Project. This project appears to be located within 20,000 linear feet of both the Dulles International Airport and the Leesburg Executive Airport. The proximity to these public use airports necessitates the need for the project sponsor to submit a 7460 form to the Federal Aviation Administration (FAA). Submission of this form will initiate an airspace study to determine if the proposed will constitute a hazard to air navigation. Provided the FAA issues a "Determination of No Hazard", the Department does not object to the project as it has been presented in your February 6, 2024 email information package.

Please note that the 7460 form should identify all structures, permanent and temporary, that will reach a finished height of 200' above ground level or higher. Please feel free to contact me at (804) 236-3638 if you have any questions regarding this matter.

Sincerely,

S. Scott Denny
Senior Aviation Planner
Virginia Department of Aviation

From: Laura.P.Meadows@dominionenergy.com <Laura.P.Meadows@dominionenergy.com>
Sent: Tuesday, February 6, 2024 12:15 PM
To: Denny, S. Scott (DOAV) <scott.denny@doav.virginia.gov>
Subject: Dominion Energy Virginia's Proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation Project

Dear Mr. Denny,

Attached please find a request for comment for Dominion Energy Virginia's Proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation Project in Loudoun County, Virginia. Please reach out to me should you have any questions or require any additional information.

Sincerely,
Laura Meadows

Laura Meadows

Supervisor - Siting and Permitting
Electric Transmission

Dominion Energy
5000 Dominion Boulevard, 3rd Floor SW, Glen Allen, VA 23060
C: 804.239.8246

From: Redmond, Rachel
To: Laura P Meadows (DEV Trans Distribution - 1)
Cc: Rabindranath, Sunil
Subject: [EXTERNAL] RE: Dominion Energy Virginia's Proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation Project
Date: Tuesday, February 27, 2024 11:47:04 AM
Attachments: image001.png
image002.png
image004.png
image005.png
image006.png

Hello Laura,

The airspace analysis didn't present any issues.

Rachel Redmond, **B.Arch, MPS, LEED AP BD+C**
Airport-Airspace Planner

METROPOLITAN WASHINGTON AIRPORTS AUTHORITY

1 Aviation Cir
Washington, DC 20001-6000
O: 703-572-0261
C: 847-636-1552

Rachel.Redmond@mwaa.com

mwaa.com [mwaa.com]

From: Laura.P.Meadows@dominionenergy.com <Laura.P.Meadows@dominionenergy.com>
Sent: Tuesday, February 27, 2024 7:51 AM
To: Redmond, Rachel <Rachel.Redmond@MWAA.com>
Cc: Rabindranath, Sunil <Sunil.Rabindranath@MWAA.com>
Subject: RE: Dominion Energy Virginia's Proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation Project

Good Morning Rachel,

I wanted to follow up and see if MWAA had any comments to provide based on the information that was sent earlier this month?

Thank you,
Laura

Laura Meadows
Supervisor - Siting and Permitting
Electric Transmission

Dominion Energy
5000 Dominion Boulevard, 3rd Floor SW, Glen Allen, VA 23060
C: 804.239.8246

Dominion Energy

From: Redmond, Rachel <Rachel.Redmond@MWAA.com>
Sent: Wednesday, February 7, 2024 3:50 PM
To: Laura P Meadows (DEV Trans Distribution - 1) <laura.p.meadows@dominionenergy.com>
Cc: Rabindranath, Sunil <Sunil.Rabindranath@MWAA.com>
Subject: [EXTERNAL] RE: Dominion Energy Virginia's Proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation Project

I think I've got them. Thanks, Laura!

Rachel Redmond, **B.Arch, MPS, LEED AP BD+C**
Airport-Airspace Planner

METROPOLITAN WASHINGTON AIRPORTS AUTHORITY

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Washington, DC 20001-6000
O: 703-572-0261
C: 847-636-1552

Rachel.Redmond@mwaa.com

mwaa.com [mwaa.com]

From: laura.p.meadows@dominionenergy.com <laura.p.meadows@dominionenergy.com>
Sent: Wednesday, February 7, 2024 3:06 PM
To: Redmond, Rachel <Rachel.Redmond@MWAA.com>
Cc: Rabindranath, Sunil <Sunil.Rabindranath@MWAA.com>
Subject: RE: Dominion Energy Virginia's Proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation Project

Hi Rachel,

The structure numbers 5001/16-17, and 22 are near the intersection of Route 7 and Belmont Ridge Rd. Structure 5001/31 is near the intersection of Route 7 and Ashburn Village Boulevard. Structures 5001/68-69 are the two to the north of the building at Pacific Boulevard and Charles View Drive. Please let me know if you would like any additional clarification.

Thank you,
Laura

Laura Meadows
Supervisor - Siting and Permitting
Electric Transmission

Dominion Energy
5000 Dominion Boulevard, 3rd Floor SW, Glen Allen, VA 23060
C: 804.239.8246

Dominion Energy

From: Redmond, Rachel <Rachel.Redmond@MWAA.com>
Sent: Wednesday, February 7, 2024 2:56 PM
To: Laura P Meadows (DEV Trans Distribution - 1) <laura.p.meadows@dominionenergy.com>
Cc: Rabindranath, Sunil <Sunil.Rabindranath@MWAA.com>
Subject: [EXTERNAL] RE: Dominion Energy Virginia's Proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation Project

Hey Laura,

This height information is greatly appreciated! Is it at all possible to get a rough location of where the following points would be located on each respective route? I'm trying to figure out which of the tallest points is closest to the airport for the analysis.

B-A Belmont Monopole Route:

	A	B	C	D
1	STR NUMBER LINE 1/STR	STR NUMBER LINE 2/STR	POLE CLASS	Struct. Height (ft)
70	5001/68	2333/68	DC H-Frame SUS	196
71	5001/69	2333/69	DC H-Frame SUS	196
82			Min H (ft) =	196
83			Max H (ft) =	120

B-B Monopole Route:

	A	B	C	D
1	STR NUMBER LINE 1/STR	STR NUMBER LINE 2/STR	POLE CLASS	Struct. Height (ft)
18	5001/16	2333/16	DC 2-POLE	190
19	5001/17	2333/17	DC 1-Pole DDE	190
24	5001/22	2333/22	DC 1-Pole SUS	190
33	5001/31	2333/31	DC 1-Pole SUS	190
81			Min H (ft) =	190
83				

Rachel Redmond, B.Arch, MPS, LEED AP BD+C
Airport-Airspace Planner

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1 Aviation Cir
Washington, DC 20001-6000
O: 703-572-0261
C: 847-636-1552

Rachel.Redmond@mwaa.com

mwaa.com [mwaa.com]

From: laura.p.meadows@dominionenergy.com <laura.p.meadows@dominionenergy.com>
Sent: Tuesday, February 6, 2024 1:56 PM
To: Redmond, Rachel <Rachel.Redmond@MWAA.com>
Cc: Rabindranath, Sunil <Sunil.Rabindranath@MWAA.com>
Subject: RE: Dominion Energy Virginia's Proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation Project

Hello Rachel,

Please see the shapefiles and excel chart of proposed conceptual structure heights, attached.

Thank you,
Laura

Laura Meadows
Supervisor - Siting and Permitting
Electric Transmission

Dominion Energy
5000 Dominion Boulevard, 3rd Floor SW, Glen Allen, VA 23060
C: 804.239.8246

Dominion Energy

From: Redmond, Rachel <Rachel.Redmond@MWAA.com>
Sent: Tuesday, February 6, 2024 1:45 PM
To: Laura P Meadows (DEV Trans Distribution - 1) <laura.p.meadows@dominionenergy.com>
Cc: Rabindranath, Sunil <Sunil.Rabindranath@MWAA.com>
Subject: [EXTERNAL] Dominion Energy Virginia's Proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation Project

Hello Laura,

My name is Rachel Redmond and I am an Airspace Planner with MWAA. I would like to request the shapefile(s) mentioned in the agency letter (attached) as well as height information for all proposed structures to assist with my airspace review.

Rachel Redmond, **B.Arch, MPS, LEED AP BD+C**
Airport-Airspace Planner

METROPOLITAN WASHINGTON AIRPORTS AUTHORITY

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Rachel.Redmond@mwaa.com

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Rachel M Studebaker (Services - 6)

From: Warren, Arlene (VDH) <Arlene.Warren@vdh.virginia.gov>
Sent: Thursday, February 15, 2024 11:13 AM
To: Rachel M Studebaker (Services - 6)
Cc: Environmental Impact Review (DEQ)
Subject: [EXTERNAL] RE: Dominion Energy Virginia's Proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation Electric Transmission Project - SCC Project Notification for CPCN

Project #: N/A
Project Name: Dominion Energy Virginia's Proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation Electric Transmission Project - SCC Project Notification for CPCN
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.**

The following public groundwater wells are located within a 1-mile radius of the project site (wells within a 1,000 foot radius are formatted in **bold):**

PWS ID Number	City/County	System Name	Facility Name
6107624	**LOUDOUN COUNTY**	**STERLING RURITAN**	**WELL 1**
6107623	LOUDOUN COUNTY	TART LUMBER COMPANY, INC.	WELL

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

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.

Well(s) within a 1,000-foot radius from project site should be field marked and protected from accidental damage during construction.

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: Rachel.M.Studebaker@dominionenergy.com <Rachel.M.Studebaker@dominionenergy.com>
Sent: Tuesday, February 6, 2024 12:32 PM
To: Rayfield, Bettina (DEQ) <bettina.rayfield@deq.virginia.gov>; Hypes, Rene (DCR) <Rene.Hypes@dcr.virginia.gov>; DCR-PRR Environmental Review (DCR) <envreview@dcr.virginia.gov>; Martin, Amy (DWR) <Amy.Martin@dwr.virginia.gov>; keith.r.goodwin@usace.army.mil; MRC - Scoping (MRC) <scoping@mrc.virginia.gov>; Troy Andersen <troy_andersen@fws.gov>; Tignor, Keith (VDACS) <keith.tignor@vdacs.virginia.gov>; Warren, Arlene (VDH) <Arlene.Warren@vdh.virginia.gov>; Folks, Clint (DOF) <clint.folks@dof.virginia.gov>
Cc: james.p.young@dominionenergy.com
Subject: Dominion Energy Virginia's Proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation Electric Transmission Project - SCC Project Notification for CPCN

To Whom it May Concern:

Please see the attached project agency notification for Dominion Energy's Certificate of Public Convenience and Necessity (CPCN) application with the State Corporation Commission (SCC) and associated project location map for the Dominion Energy Virginia Proposed 500-230 kV Aspen Substation, 500 kV Aspen-Goose Creek Line, 500 and 230 kV Aspen-Golden Lines, and 500-230 kV Golden Substation Project in Loudoun County, Virginia.

A shapefile of the proposed project alignment(s) will be submitted in a follow up email in the coming days. If you have any questions, please feel free to contact me or James Young at James.P.Young@dominionenergy.com.

Thank you,

Rachel Studebaker
Environmental Specialist III
Dominion Energy Services
120 Tredegar Street, Richmond, VA 23219
Cell: (804) 217-1847

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

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