

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

Before the State Corporation Commission of Virginia

Hornbaker 230 kV Line Loop and Hornbaker Switching Station

Application No. 349

Case No. PUR-2025-00046

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Volume 3 of 3

Environmental Routing Study

Hornbaker 230 kV Line Loop and Hornbaker Switching Station Project

PREPARED FOR

Dominion Energy Virginia

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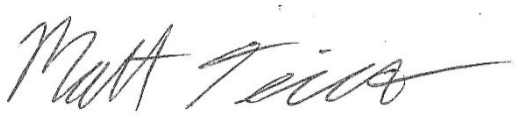
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Environmental Routing Study

Hornbaker 230 KV Line Loop and Hornbaker Switching Station Project

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ACRONYMS AND ABBREVIATIONS

Acronyms	Description
AMSL	above mean sea level
BMP	best management practice
CBG	Census Block Group
CBPA	Chesapeake Bay Preservation Act
CCB	Center for Conservation Biology
Company	Virginia Electric and Power Company
CFR	Code of Federal Regulations
CPCN	Certificate of Public Convenience and Necessity
CWA	Clean Water Act
DCOZOD	Data Center Opportunity Zone Overlay District
DCSM	Design and Construction Standards Manual
DNH	Division of Natural Heritage
DP	Delivery Point
EJ	environmental justice
EMF	electromagnetic field
ERM	Environmental Resources Management, Inc.
ESA	Endangered Species Act
FAA	Federal Aviation Administration

Acronyms	Description
FCV	Forest Conservation Value
GIS	geographic information system
GMU	George Mason University
HUC	hydrologic unit code
ID	Identification
IFP	Instrument Flight Procedure
IPaC	Information for Planning and Consultation
IVMP	Integrated Vegetation Management Plan
KOP	key observation point
kV	kilovolt
MP	milepost
NA	not applicable
NAIP	National Agricultural Imagery Program
NERC	North American Electric Reliability Corporation
NHD	National Hydrography Dataset
NHL	National Historic Landmark
NHP	Natural Heritage Program
NHR	natural heritage resource
NLEB	Northern Long-Eared Bat
nm	nautical mile(s)
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
PEM	palustrine emergent
PFO	palustrine forested
Project	Hornbaker Switching Station and New 230 KV Line and Devlin 230 kV Line Project
PSS	palustrine scrub-shrub
PUB	palustrine unconsolidated bottom
RPA	Resource Protection Area
Rt.	Virginia State Route
SCC	State Corporation Commission
SCS	stream conservation site
T&E	threatened and endangered

Acronyms	Description
TCB	Tricolored Bat
TERPS	Terminal Instrument Procedures
TOYR	Time-of-year restriction
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey
Va. Code	Code of Virginia
VaFWIS	Virginia Fish and Wildlife Information Service
VCRIS	Virginia Cultural Resources Information System
VDCR	Virginia Department of Conservation and Recreation
VDEQ	Virginia Department of Environmental Quality
VDHR	Virginia Department of Historic Resources
VDHR Guidelines	*Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia*
VDOT	Virginia Department of Transportation
VDWR	Virginia Department of Wildlife Resources
VEJA	Virginia Environmental Justice Act
VOF	Virginia Outdoors Foundation
VSR	visually sensitive resource
WERMS	Wildlife Environmental Review Map Service

1. INTRODUCTION AND BACKGROUND

This report presents the results of an environmental constraint identification and routing study prepared by Environmental Resources Management, Inc. (ERM) on behalf of Virginia Electric and Power Company (Dominion Energy Virginia, Dominion, or the Company) for Dominion's proposed Hornbaker 230 kilovolt (kV) Line Loop and Hornbaker Switching Station Project (the Project).

1.1 PROJECT DESCRIPTION

The purpose and need for the Project is to provide 300 MW of electrical service requested by the Northern Virginia Electric Cooperative (NOVEC) for a data center customer in Prince William County (the Customer), maintain reliable service for the overall load growth in the Hornbaker Load Area, and comply with mandatory North American Electric Reliability Corporation (NERC) Reliability Standards. Specifically, the Devlin Switching Station (a separate project) requires an additional 230 kV source to resolve the potential NERC reliability violation. To meet the Project purpose and need, Dominion proposes to construct and operate the following:

- A new 230-34.5 kV Switching Station in Prince William County on property to be obtained by the Company (Hornbaker Switching Station).
- One of two transmission solutions involving new, double circuit 230 kV transmission lines in new rights-of way. Dominion would construct either:
    - o A series of overhead routes, including a segment from a cut in on Dominion's existing Lines #172/#2187 north of the existing Wellington Substation to the proposed Pegasus Switching Station; a segment from the Pegasus Switching Station to the proposed Hornbaker Switching Station; and a segment from the Pegasus Switching Station to the proposed Devlin Switching Station; or
    - A hybrid route that includes an overhead right-of-way from a cut in on Dominion's existing Line #2196, adjacent to the existing Hourglass Substation, to a transition station east of Prince William Parkway (where the route transitions to an underground route) then underground to the proposed Hornbaker Switching Station; as well as an overhead right-of-way from the proposed Hornbaker Switching Station to the Pegasus and Devlin Switching Stations (part of other projects).

These facilities are collectively referred to as the Project in this document. The Company's targeted in-service date for the Project is June 1, 2029.

ERM identified five route alternatives that can be combined to serve the two electrical solutions described above. A breakdown of the route alternatives that make up the two electrical solutions, each a grouping of three route alternatives, are included below in Table 1.1-1.

TABLE 1.1-1 ROUTE ALTERNATIVES AND SOLUTIONS

Electrical Solution	Route Alternative	Summary
Solution 1 (Overhead)	Wellington–Pegasus Route 1	Overhead double circuit route from a cut-in on existing Lines #172/#2187, north of the existing Wellington Substation, to the proposed Pegasus Switching Station. [a]
	Pegasus–Hornbaker Route 1	Overhead double circuit route between the proposed Hornbaker Switching Station and the proposed Pegasus Switching Station. [a]
	Devlin–Pegasus Route 1 OR Devlin–Pegasus Route 2	Overhead double circuit route between the proposed Pegasus Switching Station and the proposed Devlin Switching Station. [a]
Solution 2 (Hybrid)	Hourglass–Hornbaker Route 1 (Hybrid)	Hybrid underground and overhead double circuit route between a cut in on Dominion's existing Line #2196, adjacent to the existing Hourglass Substation, and the proposed Hornbaker Switching Station.
	Pegasus–Hornbaker Route 1	Overhead double circuit route between the proposed Hornbaker Switching Station and the proposed Pegasus Switching Station. [a]
	Devlin–Pegasus Route 1 OR Devlin–Pegasus Route 2	Overhead double circuit route between the proposed Pegasus Switching Station and the proposed Devlin Switching Station. [a]

[a] The Devlin and Pegasus Switching Stations are not part of the proposed Project.

Figures 1.1-1 and 1.1-2 depict an overview of the Project, inclusive of the five route alternatives. All figures referred to in this document are provided in Appendix A, Figures. All mileposts (MPs) associated with the Project facilities listed above are rounded to the nearest 0.1 mile. All references to those MPs in this document are assumed to be approximate (e.g., a reference to MP 1.2 means "approximately at" MP 1.2, etc.).

In developing the Hornbaker Route Alternatives and Devlin-Hornbaker Route Alternatives, ERM and the Company considered the facilities needed to construct and operate the new feeds, the required locations of the proposed new switching station, the width of new right-of-way that would be required, the amount of existing and proposed development in the area, the potential for impacts on environmental resources and communities, and cost.[1] As discussed in detail below, ERM identified a total of four components for the Project, three of the components each have one viable route alternative, and one component has two viable route alternatives.

1.2 STRUCTURE TYPES AND RIGHT-OF-WAY WIDTHS

The proposed Project would be constructed entirely in new right-of-way measuring 100-feet-wide. Dominion Energy Virginia would use multiple structure configurations for the Project (see the proposed structure types in Appendix B, Structural Drawings). The main structure type for the

[1] Cost is addressed elsewhere in Dominion's application to the State Corporation Commission (SCC) of Virginia for the Project.

new structures would be monopoles made of galvanized steel, with heights ranging from 90 to 135 feet and an average height of approximately 109 feet based on preliminary conceptual design, excluding foundation reveal, and subject to change based on final engineering. Two circuits would be supported on the same structure at approximately 600–900-foot intervals along the right-of-way for the Project.

1.3 CONSTRUCTION, OPERATION, AND MAINTENANCE PROCESS

Construction of new overhead transmission lines would involve some or all of the steps listed below:

- Detailed survey of the route alignment;
- Right-of-way acquisition and clearing;
- Construction of access roads, where necessary;
- Installation of tower foundations;
- Assembly and erection of new structures;
- Stringing and tensioning of conductors; and
- Final cleanup and land restoration.

All required materials for the Project's 230 kV structures would be delivered and assembled at each structure location within the proposed (or existing) right-of-way. Detailed foundation design will be completed prior to construction. The foundation design could include poured concrete requiring excavation or steel piles or caissons that might be vibrated, drilled, or driven into place, depending on soil conditions and final design. Structures would be erected with a crane and anchored to the foundation during final assembly. Excess soil from foundation construction (if any) would be evenly distributed at each structure, and the vegetation would be replanted and stabilized. In wetland areas, excess soil would be removed and evenly distributed on an upland site within Dominion's proposed right-of-way. Typical construction equipment could include hole diggers or drilling equipment, cranes, wire stringing rigs, tensioners, backhoes, and trucks.

All conductors and shield wires would be strung under tension. This system involves stringing a "lead line" between structures for the conductors and ground wires. The lead line pulls a steel cable that is connected to the conductors and shield wires, which are pulled through neoprene stringing blocks to protect the conductor and shield wire from damage. Stringing the conductors and shield wires under tension protects the wires from possible damage should they be allowed to touch the ground, fences, or other objects.

Once the Project is in-service, maintenance of the right-of-way under the transmission lines will be essential for the reliable operation of the line as well as for public safety. Operation and maintenance of the Project will include periodic inspections of the line and the right-of-way; occasional replacement of hardware as necessary; periodic clearing of vegetation, either mechanically or by selective, low-volume application of approved herbicides within the corridor; and the cutting of danger trees outside the right-of-way. Danger trees are trees outside the cleared corridor that are sufficiently tall enough to fall into the right-of-way and potentially impact the transmission line. Periodic inspections would occur through both aerial and walking patrols.

Normal operation and maintenance would require only infrequent visits by Dominion Energy Virginia or its contractors.

Vegetation maintenance must be completed on a 3-4 year cycle to comply with applicable federal standards to maintain safe and reliable operation of the bulk electric system. Maintenance may include danger tree removal, hazard tree removal, tree trimming, and removal of undesirable vegetation located within the rights-of-way. Corrective maintenance is prescribed on an on-demand basis and may include any of the aforementioned activities. Integrated Vegetation Management prescriptions are used on an on-demand basis in a selective manner, targeting tall or fast growing woody vegetation of species that at maturity may be incompatible with the safe and reliable operation of the line. IVM prescriptions include selective low volume herbicide applications, manual, and mechanical brush removal. Dominion only uses herbicides that are approved by the U.S. Environmental Protection Agency (USEPA) on power line rights-of-way.

Based on a discussion between the Company and representatives of the Virginia Department of Conservation and Recreation (VDCR) Division of Natural Heritage (DNH), 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 VDCR 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 is in the process of ongoing coordination with DCR-DNH pertaining to the Company's IVMP with a meeting held on November 11, 2024. The Company is continuing to coordinate with DCR with the commitment to schedule additional meetings to discuss DCR's concern. Once the addendum is finalized, the Company will report on the results of its communications with DCR in future proceedings.[2]

1.4 OBJECTIVES OF THE STUDY

The Company requested ERM's services to define and collect information within a study area, identify and compare alternative routes for the new transmission lines within the study area, and document this information in a report. More specifically, ERM's scope of work consisted of the following:

- Defining and describing a study area for routing the transmission lines proposed for the Project;

[2] *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 (August 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 (June 22, 2022) at 22 *(agreeing with the Company that, with its IVMP, the Company should not be required to undergo the additional cost of DCR-DNH's ISMP; however, recommending that the Company meet with DCR-DNH regarding its IVMP and report the results of the meeting in the next transmission CPCN filing)*.

- Gathering and assessing information about routing constraints and opportunities to be considered as part of the study;
- Identifying and mapping routing constraints and opportunities within the study area;
- Participating in public outreach efforts for the Project (e.g., public open house and agency meetings) to gather information from stakeholders, agency staff, and the public regarding constraints in the study area;
- Identifying buildable alternative routes for the proposed transmission lines meeting the siting criteria provided in the Code of Virginia (Va. Code) and included in the Virginia State Corporation Commission's (SCC's) filing guidelines for transmission projects;
- Comparing the alternative routes based on an analysis of environmental impacts and use of routing opportunities; and
- Recommending preferred routes.

2. METHODOLOGY

The process of routing new electric transmission lines begins with the definition of a study area encompassing and surrounding the beginning and end points for the new line. This is followed by evaluating routing opportunities and constraints within the area, such as collocation opportunities (e.g., roads, existing utility lines, or other linear infrastructure), land uses, planned developments, and environmental, visual, recreational, and cultural features. The study area is adjusted as needed based on constraints and opportunities, and viable route alternatives are developed to avoid constraints and use opportunities to the extent practicable. Communication with stakeholders and analysis of impacts results in adjustments to routes throughout the process.

The fundamental goals of the routing process are to maximize collocation with compatible linear features or land uses; avoid, minimize, or mitigate impacts on the human and natural environment; and provide regulators with viable route alternatives meeting the purpose and need of the Project that are both efficient and equitable. Route viability is assessed through permitting risk, constructability, right-of-way acquisition, and cost after the least impactful alternatives are developed. The routing process steps, outlined below, provide a framework for understanding the Project, how routes are identified and screened, and the selection of a preferred alternative.

2.1 STEP 1: DEFINING THE STUDY AREA

The first step in the routing process is to define a geographic study area based on the Company's electric transmission and service obligations specific to a project—encompassing the beginning and end points of the route—that will allow for a reasonable range of potential alternatives. Additionally, and to the extent practicable, the limits of the study area are defined by reference to easily distinguishable landmarks, such as roads or other features. Doing so helps Dominion and ERM describe the boundaries to stakeholders, such as potentially affected landowners or County and agency staff. Section 3.1 describes the study area for the Project.

2.2 STEP 2: INVENTORY OF ROUTING CONSTRAINTS AND OPPORTUNITIES

The second step in the routing process involves the identification and mapping of environmental and built features within the study area. Based on extensive data collection, this step results in an inventory of routing constraints and opportunities in the study area, including but not limited to:

- Locations of delivery points;
- Electric transmission and other utility rights-of-way;
- Residences and residential areas;
- Planned developments;
- State, county, and private road rights-of-way;
- Public lands;
- Conservation and open space easements;
- Parks and trails;
- Wetlands and waterbodies;
- Forested lands;

- Schools, cemeteries, and places of worship or other public gatherings;
- Natural heritage resources (NHRs; e.g., conservation sites and habitat for rare, threatened, and endangered [T&E] species);
- Visually sensitive resources (VSRs)—locations where views are protected by regulation, or where higher quality views are an expected condition, regardless of regulatory status; and
- Archaeological and historic sites and other nationally or locally significant cultural resources.

2.3 STEP 3: IDENTIFYING AND ASSESSING ROUTE ALTERNATIVES

The third step in the routing process is the identification of potential route corridors—swaths of the study area feasible for routing new transmission infrastructure—and the exclusion of areas where transmission line routing is impracticable due to land use or other constraints. This step is critical in larger, heavily developed or developing areas, where planned developments or protected lands, like parks, can limit potential routes. This step can also aid in the refinement of the study area. Public agencies and locality staff are engaged at this stage by the Company to provide insight on current and future developments and land use planning. The viability of a potential route corridor is assessed by evaluating environmental impacts, compatibility with existing and future land uses, permitting risk, community input, ability to acquire new right-of-way, constructability, and cost.

After a route corridor is identified, potential route alternatives or variations within that corridor are developed using geographic information system (GIS) software, and field reconnaissance is conducted to better inform the understanding of the area. To the extent practicable, routes are identified that avoid constraints and utilize opportunities. Throughout this step, the Project team continues to collect and assess data on constraints, obtained through desktop sources, field reconnaissance, and ongoing stakeholder/public engagement activities (e.g., photography, targeted mailings, a Project website, open houses, and virtual and in-person meetings). The Project team uses this information to qualify and better understand resources that could be affected and to refine routes, where feasible, to avoid or reduce potential impacts.

The routes developed for the Project are described in Section 4.6; other routes considered but rejected for the Project are described in Section 4.7.

2.4 STEP 4: FIELD RECONNAISSANCE AND STAKEHOLDER ENGAGEMENT

Field reconnaissance and stakeholder/public engagement activities (e.g., a project website, open houses, targeted mailings, and virtual and in-person meetings) are used to gather information, identify resources, and help inform routing and route selection. Public engagement activities for the Project are discussed in Section 4.4.

2.5 STEP 5: ROUTE ALTERNATIVE ANALYSIS AND ROUTE RECOMMENDATION

Using data and stakeholder outreach feedback gathered during the routing process, route alternatives, and also for this Project the solutions, are analyzed and compared quantitatively and qualitatively based on constraint data and community/stakeholder input. After completing this analysis, a preferred route/solution is selected through comparison of the advantages and

disadvantages of each alternative relative to SCC Guidelines. A proposed route/solution and alternative routes/solutions are then presented for notice in the SCC Application for the Project. Routes deemed too impactful and/or infeasible or impracticable are not carried forward for notice.

3. DEVELOPMENT OF THE PROJECT

3.1 INITIAL DESIGN OF THE PROJECT

The initial design of the Project consisted of constructing a new overhead double circuit 230 kV transmission line from the Company's existing Lines #2187/#172 to the proposed Hornbaker Switching Station (the Hornbaker Project). The proposed tap location on Lines #2187/#172 was located just west of the intersection with Freedom Center Boulevard, approximately 1,800 feet west of the existing Godwin Substation. Two other electrical solutions were reviewed but were ultimately removed from consideration, as described in more detail in Section 4.7.3.

ERM and Dominion originally identified four potential route options for this proposed electrical solution. Of these, two were ultimately removed from consideration (see Section 4.7.3) and two were carried forward and presented to the public (Option 1—Route 1 and Option 1—Route 2 (see Figure 4.6-1)). Both route options began at the same tap location identified above. The routes followed the same alignment from the tap and extended south along the west side of Freedom Center Boulevard, across University Boulevard, and south to the most southern commercial building located along the east side of Innovation Drive. The routes then turned to the west and extended to Innovation Drive, where they deviated from each other around (one to the north and one to the south) the commercial buildings adjacent to Prince William Parkway. After crossing Discovery Boulevard, the routes converged and followed the same alignment to the proposed Hornbaker Switching Station. Both routes also crossed several parcels of land owned by the Prince William County Board of Supervisors.

3.2 INITIAL PUBLIC OUTREACH AND OPEN HOUSE

During the spring and summer of 2023, the Company and ERM conducted individual meetings with stakeholders in the area to solicit feedback on the initial routes. These included local agencies in Prince William County and the City of Manassas, as well as the Northern Viriginia District of Virginia Department of Transportation (VDOT), the Manassas Regional Airport, George Mason University (GMU), and local developers. Feedback from stakeholder was used to refine the alignments of the various route options under consideration.

Dominion officially announced the Project in July 2023 via mail and its website,[3] and held an initial open house for the Project on August 1, 2023, at the Manassas Church of the Brethren in Manassas. The Company also maintained a project website with up-to-date Project information and an interactive public comment map. Approximately 48 community members attended the open house, including several members of the Prince William County Board of Supervisors.

Most of the feedback received on the two proposed routes presented at the open house was negative. The primary concern was regarding what was considered to be the viewshed impacts of the routes on businesses in the area. The most vocal opponents were the business owners in the Innovation Park development. Both routes were situated directly adjacent to several buildings in

[3] https://dominionenergy.com/hornbakerdevlin.

the development. Both the business owners and Board members expressed a preference for an underground route across Innovation Park.

Following the open house, on August 8, 2023, the Company and ERM participated in a meeting at the Sweeney Barn in Manassas. The meeting was held by the Innovation Park developer and attended by business owners within Innovation Park, as well as Prince William County staff and elected officials. Feedback received was consistent with the open house, due to the close proximity of the routes to several existing businesses in Innovation Park. The elected officials indicated during the meeting that they would not approve an easement for any overhead route that crossed County-owned land. This decision rendered both routes non-viable, since the routes crossed several parcels of land owned by the Prince William County Board of Supervisors.

3.3 REVISION OF INITIAL PROJECT

Following the rejection of the initial routes for the Project, ERM next sought to develop other overhead route alternatives to serve the proposed Hornbaker Switching Station that did not cross County-owned land, as well as underground routes across County-owned land that would be acceptable to the County, stakeholders, and the public.

Concurrent with the development of the Hornbaker Project, the Company also began reviewing route options for a separate project, the Devlin to Hornbaker Project. This project would extend a double circuit 230 kV line from the proposed Devlin Switching Station, located near the intersection of Wellington Road and Hansen Farm Road, to the proposed Hornbaker Switching Station. As the Hornbaker Load Area projected demand continued to grow due to additional proposed data centers in the area, it became apparent that both the original Hornbaker project and the Devlin to Hornbaker project needed to be constructed together to serve projected loads and maintain the reliability of the grid in the area. Therefore, during the time when new route alternatives were being developed for the Hornbaker project, Dominion decided to combine the Hornbaker project and the Devlin to Hornbaker project (as defined at the time) into a single project, to be known as the Hornbaker Loop Project (i.e., the Project, as defined in Section 1 of this document).

4. ROUTING PROCESS

4.1 STUDY AREA DESCRIPTION

The study area identified for the Project encompasses approximately 11.9 square miles entirely within Prince William County. The southeast corner of the study area includes portions of the City of Manassas. The limits of the study area, depicted on Figure 4.1-1, are generally defined by the following features:

- Dominion's existing 500 kV/230 kV transmission line corridor (encompassing Lines #535, #2114, #569, and #2163) to the northwest;
- Prince Willliam Parkway and Dominion's existing transmission lines #2187/#172 to the northeast/east;
- The Norfolk Southern Railroad, and areas to its south, to the south; and
- Linton Hall Road to the west.

4.2 GIS MAPPING AND INVENTORY OF ROUTING CONSTRAINTS AND OPPORTUNITIES

In accordance with the Guidelines for Transmission Line Applications Filed Under Title 56 of the Va. Code, ERM assessed opportunities for routing the Project. ERM used the following sources to identify constraints and opportunities within the study area:

- Prince William County Interactive Data Portal GIS datasets (Prince William County 2024a);
- Environmental Systems Research Institute, Inc. (ESRI) World Elevation Terrain 2-foot contours (ESRI et al. 2024);
- VDOT Northern Virginia District project website (VDOT 2024a);
- VDCR Conservation Lands Database (VDCR 2024a);
- U.S. Census Bureau American Community Survey, 5-Year Estimates (2018–2023) (U.S. Census Bureau 2023 a,b,c,d,e);
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) mapping (USFWS 2024);
- Virginia Cultural Resources Information System (VCRIS; VDHR 2023);
- National Agricultural Imagery Program (NAIP) aerial imagery, flown December 2023 (NAIP 2023);
- Google Earth Aerial Imagery (Google LLC 2024); and
- Existing utility transmission and distribution lines (Rextag 2023).

ERM researched, studied, mapped, and incorporated resources identified through these sources into GIS, where the layers were organized by resource type.

The remainder of this section summarizes the major constraints and opportunities in the study area affecting transmission line routing. Constraints include existing and planned developments, public lands, and conservation easements that can only be crossed with permission from landowners or the applicable managing agency, such as public lands. Some of the features

discussed below are both constraints and opportunities. For example, highways and roads can provide opportunities for routing new transmission infrastructure, but adjacent development can limit the area available for a new transmission right-of-way. Routing constraints and opportunities are shown on Figure 4.2-1. These resources (along with other constraints) are described in more detail in Chapter 5.

- **Planned Developments:** Most of the Project study area lies within the Prince William County Data Center Overlay District (see Section 5.1.3). This area is undergoing significant development for data centers and other commercial and technology-related uses. This dense development limits routing opportunities in the area.
- **Public Lands:** The study area includes extensive publicly owned lands, particularly along and west of Prince William Parkway. Crossing public lands requires approval from the government entity that owns the land, because public lands are exempt from condemnation authority. Through coordination with the applicable government entities, Dominion determined that many existing publicly owned parcels are planned for future development, making the government entities reluctant to provide approval for the Project to cross these lands.
- **Underground Utilities:** Prince William Water operates numerous water and sewer lines in the study area. Most of these lines are adjacent to or underneath roadways, although some lines follow parcel boundaries. Additionally, the large number of existing and planned data centers in the study area are served by numerous underground fiber optic cables and electric distribution lines, many of which run along roadways. The density of underground utilities in some portions of the study area constrains Dominion's ability to site transmission structures (or underground lines) in a way that doesn't impact existing or planned underground utilities.
- **Prince William Parkway:** Prince William Parkway is the main throughfare through the study area. This roadway would typically provide an ideal collocation routing opportunity for some Project segments; however, the road is bordered by commercial development and extensive publicly owned lands from approximately Hansen Farm Road to Rt. 28. As a result, Prince William Parkway is not available for extended collocation.

4.3 FIELD RECONNAISSANCE AND STAKEHOLDER ENGAGEMENT

ERM and Company staff conducted field reconnaissance of the study area and potential route corridors from public roads and rights-of-way throughout 2023 and 2024. During these visits, ERM took photographs to aid in the routing process and the analysis of impacts, particularly on visual and cultural resources.

Ater identifying preliminary routes, Dominion met with various developers, existing business owners, individual Prince William County commissioners, and representatives from the County's Economic Development, Planning, Public Works, Transportation, and Zoning Departments in the summer and winter of 2023 and throughout 2024. Dominion also met with VDOT staff and the Manassas Regional Airport in spring of 2023 and summer of 2024. The purpose of these meetings was to review the Project and potential route alternatives. Dominion also gathered feedback on the routes through engagement with the public, elected officials, regulatory and planning groups, and land managing agencies.

As referenced in Section 3.2, Dominion announced the Project via mail and website in June of 2023 and held an initial in-person open house in August of 2023 to share information and receive feedback from stakeholders. Due to feedback from the initial open house, the initial route alternatives were reevaluated, and the Project was redesigned to incorporate the then-proposed Devlin-Hornbaker transmission line. In October 2024, Dominion held two additional in-person open houses on October 29 and 30, 2024 to share information on the redesigned Project and to receive feedback on the newly developed transmission line routes. To serve the most widely spoken foreign language speakers in the study area (besides English), the Project website includes Spanish translations. Dominion maintains the Project website with up-to-date Project information and an interactive public comment map. ERM used the feedback obtained through the stakeholder engagement process to adjust several of the routes and inform the Company's decision to reject some routes as infeasible (see Section 4.6).

4.4 ASSESSING ELECTRICAL SOLUTIONS

Based on a detailed review of possible electrical solutions to meet the Project's purpose and need, Dominion identified two viable electrical solutions. As described in Section 1.1, the electrical solution for the Project requires a new double circuit 230 kV source to provide the requested 300 MW to the proposed Hornbaker Switching Station, as well as an additional 230 kV source to the proposed Devlin Switching Station to resolve the potential NERC reliability violation. Future load forecasts show the combined loading of Dawkins Branch and Devlin Stations is projected to exceed 300 MW by the summer of 2029. An additional 230 kV source to the Devlin Switching Station is needed due to the N-1-1 load drop violations during the Company's reliability analysis.

Electrical Solution 1 would require two 230 kV circuits to tap Dominion's existing Line #2187 north of the existing Wellington Substation and extend south through the Pegasus Switching Station (proposed as part of a separate project) to the proposed Hornbaker Switching Station. This solution would also require two 230 kV circuits to extend from the proposed Devlin Switching Station to the proposed Pegasus Switching Station. All segments could be constructed overhead for this solution.

Electrical Solution 2 would require two 230 kV circuits to tap Dominion's existing Line #2196 northeast of the existing Hourglass Substation and extend to the proposed Hornbaker Switching Station. This solution would also require two 230 kV circuits to extend from the proposed Devlin Switching Station through the proposed Pegasus Switching Station to the Proposed Hornbaker Switching Station. Due to the presence of County-owned land located between the Line #2196 tap location and the Hornbaker Switching Station, and the County's preference for underground routes across County-owned lands, which are not subject to eminent domain, the western portion of Line #2196-to-Hornbaker route would need to be constructed underground and would need to enter the Hornbaker Switching Station as an underground route, thus requiring a portion of the Hornbaker Switching Station to constructed with gas-insulated switchgear, where the route would transition back to above ground.

Both electrical solutions would serve the need for the Project and when considering the thermal capacity within the vicinity of the Hornbaker Load Area, both solutions appear to be electrically equivalent. Via N-1-1 Thermal analysis of the 2029 Regional Transmission Expansion Planning

Model, the latest model released by PJM to date, there is a 1% or less loading difference in favor of Electrical Solution 1, as compared to Electrical Solution 2.

4.5 IDENTIFYING AND ASSESSING ROUTE ALTERNATIVES

After identifying the routing constraints and opportunities in the study area (Section 4.2), ERM developed preliminary potential routes for the Project. Where possible, ERM identified preliminary routes that avoided proximity to existing homes; accounted for planned development; collocated with existing linear infrastructure such as roads; and minimized crossings of natural resources such as wetlands, waterbodies, and forested areas. ERM then conducted multiple site visits and began refining and evaluating each preliminary potential route.

Table 4.5-1 summarizes the viable route alternative segments that ERM identified and developed for the Project, as well as how these route alternatives would be combined into electrical solutions that address the Project's purpose and need (as described in Sections 1.1 and 3.3). All overhead route alternatives would be constructed as a double circuit 230 kV transmission line on double circuit monopole structures in a new 100-foot-wide right-of-way. The underground segments would accommodate a double circuit 230 kV transmission line in an 80-foot-wide right-of-way. Figure 1.1-1 provides an aerial overview of these routes. Sections 4.5.1 through 4.5.5 provide descriptions of these route alternatives. The resource-specific discussions in Section 5 of this report assess and evaluate the potential impacts from the construction of each route alternative, while Section 6 compares the impacts of the route alternatives and overall electrical solutions.

In some instances, during the process of route identification and refinement or as a result of stakeholder engagement (see Section 4.3), ERM and the Company became aware of a constraint or other issues that rendered a potential alternative infeasible or impracticable. In total, ERM and the Company identified 24 routes (17 overhead and 7 underground) for the Hornbaker Component of the Project and 15 routes (11 overhead and four underground) for the Devlin–Pegasus and Pegasus–Hornbaker components of the Project that subsequently were rejected from further consideration. Section 4.6 provides descriptions of these rejected routes and the reasons they were rejected from further consideration.

As referenced in Section 1.1, ERM identified five route alternatives that can be combined into two electrical solutions, each with two routing options, consisting of a grouping of three route alternatives, to serve the Project need. A breakdown of the routes that make up the two electrical solutions are included below in Table 4.5-1. The following section provides a detailed description of each of the five route alternatives.

TABLE 4.5-1 ROUTE ALTERNATIVES AND SOLUTIONS

Electrical Solution	Route Alternative	Summary
Solution 1 (Overhead)	Wellington–Pegasus Route 1	Overhead double circuit route from a cut-in on existing Lines #172/#2187, north of the existing Wellington Substation, to the proposed Pegasus Switching Station. [a]

Electrical Solution	Route Alternative	Summary
	Pegasus–Hornbaker Route 1	Overhead double circuit route between the proposed Hornbaker Switching Station and the proposed Pegasus Switching Station. [a]
	Devlin–Pegasus Route 1 OR Devlin–Pegasus Route 2	Overhead double circuit route between the proposed Pegasus Switching Station and the proposed Devlin Switching Station. [a]
Solution 2 (Hybrid)	Hourglass–Hornbaker Route 1 (Hybrid)	Hybrid underground and overhead double circuit route between a cut in on Dominion's existing Line #2196, adjacent to the existing Hourglass Substation, and the proposed Hornbaker Switching Station.
	Pegasus–Hornbaker Route 1	Overhead double circuit route between the proposed Hornbaker Switching Station and the proposed Pegasus Switching Station. [a]
	Devlin–Pegasus Route 1 OR Devlin–Pegasus Route 2	Overhead double circuit route between the proposed Pegasus Switching Station and the proposed Devlin Switching Station. [a]

[a] The Devlin and Pegasus Switching Stations have been proposed as part of other projects.

4.5.1 WELLINGTON-PEGASUS ROUTE 1

The Wellington–Pegasus Route 1 is an overhead route that taps Dominion existing Line #2187 approximately 0.2 mile north of the existing Wellington Substation. From the tap, the route extends southwest for approximately 0.2 mile, crossing an industrial yard, Thong Pan Road, and Wellington Road, as well as a forested parcel bounded by these roads. The route then turns west, paralleling the south side of Wellington Road for approximately 0.2 mile (including a crossing of Prince William Parkway). The route turns south paralleling the west side of Hornbaker Road for approximately 0.1 mile before crossing the road and terminating at the proposed Pegasus Switching Station.

Wellington–Pegasus Route 1 is approximately 0.6-mile long and requires approximately 7.2 acres of right-of-way. Existing land use along the route largely consists of a mix of forested and industrial lands and a small amount of residential development.

4.5.2 PEGASUS–HORNBAKER ROUTE 1

Pegasus–Hornbaker Route 1 is an overhead route that begins at the proposed Pegasus Switching Station, extending southeast for approximately 0.1 mile and then turning southwest for approximately 0.7 mile. This segment crosses through forested land adjacent to industrial and commercial development and crosses University Boulevard. East of Industrial Court, the route turns generally southeast and collocates with the east side of the road for about 0.2 mile, crossing an industrial storage yard/parking lot. The route then turns south for about 0.1 mile, crossing Industrial Court and Industrial Road and another industrial storage yard, before turning southeast and paralleling the west side of Hawkins Drive for about 0.2 mile. At this point, the route turns east, crosses the most southern part of Hawkins Drive and an industrial storage yard for 0.1 mile. The route then turns north and then back east for 0.2 mile, following parcel lines. The Route then

turns to the south-southeast for about 0.3 mile (collocated with the west side of Hornbaker Road) before terminating at the proposed Hornbaker Switching Station.

Pegasus–Hornbaker Route 1 is approximately 1.9 miles long and requires approximately 24.8 acres, including approximately 22.5 acres for transmission right-of-way and 2.3 acres for the proposed Hornbaker Switching Station. The Hornbaker Switching Station acreage is included in Pegasus–Hornbaker Route 1 throughout this routing study. Existing land use along the route is primarily industrial development with some forested land.

4.5.3 DEVLIN–PEGASUS ROUTE 1

Starting at the proposed Devlin Switching Station, Devlin–Pegasus Route 1 is an overhead route that heads generally southeast for approximately 0.3 mile, crossing Hansen Farm Road and Balls Ford Road. The route turns east/southeast for 0.5 mile, following vegetated/forested parcel boundaries before angling slightly to the east to pass south of a data center building currently under construction. The route then turns northeast for 0.1 mile to cross Buckey Timber Drive and then heads southeast for 0.4 mile, passing between industrial buildings and crossing Virginia Meadows Drive and Dawkins Branch. The route then turns south, paralleling the east side of Dawkins Branch for approximately 0.2 mile before turning southeast for approximately 0.8 mile. This segment crosses Lexington Valley Drive and Sudley Manor Drive, passing between residential areas east of Lexington Valley Drive. After crossing an existing natural gas pipeline near MP 2.1, the route turns northeast for approximately 0.1 mile and then southeast for approximately 0.2 mile before terminating at the proposed Pegasus Switching Station.

Devlin–Pegasus Route 1 is approximately 2.4 miles long and requires approximately 28.6 acres of right-of-way. Existing current land use along the route largely consists of a mix of forested and industrial lands and a small amount of residential development.

4.5.4 DEVLIN–PEGASUS ROUTE 2

Devlin–Pegasus Route 2 is an overhead route that begins at the proposed Devlin Switching Station and follows the same alignment as Devlin–Pegasus Route 1 for the first 1.2 miles, diverging just east of Dawkins Branch. At this point, Devlin–Pegasus Route 2 turns north-northeast, passing through forested land and paralleling the west side of Dawkins Branch for approximately 0.2 mile before turning east for approximately 0.2 mile, collocating with the south side of Wellington Road. The route then crosses Lexington Valley Drive and continues southeast, paralleling the north side of Wellington Road for approximately 0.5 mile. Just before Sudley Manor Drive, the route turns southwest and crosses back over Wellington Road, paralleling the north side of Sudley Manor Drive for approximately 0.2 mile. At this point the route turns southeast and follows the same alignment as Devlin–Pegasus Route 1 for the remaining 0.6 mile to the proposed Pegasus Switching Station.

Devlin–Pegasus Route 2 is approximately 2.8 miles long and requires approximately 33.4 acres of right-of-way. Existing land use along the route largely consists of a mix of forested and industrial lands and a small amount of residential development.

4.5.5 HOURGLASS–HORNBAKER ROUTE 1 (HYBRID)

The Hourglass–Hornbaker Route 1 is a combination of approximately 0.5 mile of overhead transmission with approximately 0.8 mile of underground transmission and includes an approximately 3.1-acre transition station. Hourglass–Hornbaker Route 1 begins as an overhead line that taps the Company's existing Line #2196 just outside the Hourglass Switching Station. The route then extends approximately 0.4-mile northwest adjacent to an existing data center development. The route turns southwest for approximately 0.2 mile and enters the proposed transition station (currently an existing parking lot and adjacent forested area), where it transitions from overhead to an underground route. The route then continues out of the station to the southwest, including a trenchless crossing of Prince William Parkway. On the west side of the Parkway, the route turns west for approximately 0.2 mile through County-owned property, parallel to and south of Challenger Court and across Discovery Boulevard. West of Discovery Boulevard, the route turns west for approximately 0.4 mile through forested lands and an industrial parcel and crosses Hornbaker Road before terminating at the proposed Hornbaker Switching Station.

Hourglass–Hornbaker Route 1 is approximately 1.3 miles long (0.5 mile overhead and 0.8 mile underground) and requires approximately 19.7 acres of right-of-way, including 13.5 acres of transmission right-of-way and 3.1 acres for the proposed transition station. Existing land use along the route and transition station consists primarily of industrial development with a small amount of forested land.

4.6 ROUTES REJECTED FROM FURTHER CONSIDERATION

In developing the route alternatives for the Project, ERM identified and assessed route alternatives that were subsequently rejected from further consideration (see Figures 4.6-1 through 4.6-4). The remainder of this section provides descriptions of these alternatives and the rationale for rejecting them from additional review.

4.6.1 HORNBAKER OVERHEAD ROUTES

ERM developed overhead routes for five alternate solutions (Options 1 through 5) from cut-ins at various points along existing Lines #2187 and #172 west or southwest to the proposed Hornbaker Switching Station site (Figure 4.6-1, pages 1–4). These solutions and routes are alternatives to the Wellington–Pegasus and Pegasus–Hornbaker, or Hourglass–Hornbaker components of the Project described in Section 4.5.

4.6.1.1 OPTION 1

Option 1 considered cut-ins along the existing transmission lines between the existing Pioneer Substation to the southeast and the existing Wellington Substation to the northwest. ERM developed six candidate overhead routes under this option, including four that start from a cut-in on the GMU campus west of Freedom Center Drive and two starting from a cut-in south of and adjacent to the existing Wellington Substation (Figure 4.6-1, page 1). ERM also developed hybrid routes and an underground alternative for this option, as discussed in Section 4.6.2. Each of the overhead routes uses a 100-foot-wide right-of-way.

Rejected Route 1

Option 1 Rejected Route 1 originates at the cut-in on the GMU campus north of the intersection of Edwin King Lane and Freedom Center Boulevard. From the cut-in, the route heads south-southwest for approximately 0.3 mile on the west side of Freedom Center Boulevard along the edge of the GMU campus. After crossing University Boulevard, the route heads south for approximately 0.2 mile across forested land, including a short segment of County-owned protected open space and across a tributary to Cannon Branch. The remaining approximately 0.9 mile of the route runs southwest adjacent to or between industrial buildings in Innovation Park, crossing Prince William Parkway, Discovery Boulevard, Hornbaker Road, and several parcels of County-owned protected open space. The route enters the proposed Hornbaker Switching Station within a construction area for a new data center.

Option 1 Rejected Route 1 was presented to the public at an open house in August 2023. Commercial property owners in the Innovation District objected to the alternative's visual impacts on their businesses. The route would also result in visual impacts on the GMU campus, although the Company's existing transmission lines already cross GMU property. The County objected to the route due to the crossings of County-owned open space (protected via proffers associated with existing development). As a result, the Company rejected the route for further consideration.

Rejected Route 2

Option 1 Rejected Route 2 follows the same alignment as Option 1 Rejected Route 1 from the cut-in on the GMU campus for approximately 0.6 mile to a point just east of Innovation Drive. Whereas Option 1 Rejected Route 1 turns briefly northwest at Innovation Drive then southwest towards Hornbaker Road, Option 1 Rejected Route 2 instead turns briefly southwest to an alternate crossing of Prince William Parkway, then south for approximately 0.1 mile within a band of County-owned land adjacent to the Parkway. The route then turns southwest for approximately 0.2 mile on County-owned land along the planned-but-not-yet-constructed Challenger Court south of two commercial buildings. This segment crosses Discovery Boulevard and a corridor of forested land on County-owned protected open space and then turns north for 0.1 mile where it intersects Option 1 Rejected Route 1. The remainder of Option 1 Rejected Route 2 is the same as Option 1 Rejected Route 1.

Option 1 Rejected Route 2 was presented to the public at an open house in August 2023, resulting in opposition from commercial landowners and the County in Innovation Park like that described for Option 1 Rejected Route 1. Option 1 Rejected Route 2 would have the same or similar visual impacts and impacts on County-owned protected lands as Option 1. For these reasons, and as described above for Option 1 Rejected Route 1, the Company rejected the route for further consideration.

Rejected Route 3

Option 1 Rejected Route 3 follows the same alignment as Option 1 Rejected Route 1 from the cut-in on the GMU campus for about 0.3 mile to University Boulevard. From there, Option 1 Rejected Route 3 heads west along first the north side and then the south side of University Boulevard for approximately 0.3 mile, before turning south for approximately 0.1 mile along the edge of a

parking lot and forested area. From this point, the route turns southwest for 0.3 mile, crossing Prince William Parkway and two different bands of County-owned protected open space, passing south of the FBI Manassas Field Office. After crossing Discovery Boulevard, Option 1 Rejected Route 3 heads southeast and then south for approximately 0.4 mile across a parking lot and another band of County-owned protected open space and a commercial tract that could be redeveloped in the future. This segment also passes near and would require the relocation of a cell tower to an alternate site should. The route turns west and then southwest for about 0.4 mile to the proposed Hornbaker Switching Station, including the last 0.2 mile that follows the same alignment as Option 1 Rejected Routes 1 and 2.

Although it crosses the northern end of Innovation Park, thereby reducing some visual impacts compared to other Option 1 routes, Option 1 Rejected Route 3 has similar disadvantages as the other rejected Option 1 routes, such as visual impacts at GMU and County opposition to crossing protected open space with an overhead route. For these reasons, the Company rejected the route for further consideration.

Rejected Route 4

Option 1 Rejected Route 4 follows the same alignment as Option 1 Rejected Route 3 for about 1.0 mile from the cut-in on the GMU campus to a point just west of Discovery Boulevard. From there, Option 1 Rejected Route 4 continues to the southwest and then south for approximately 0.5 mile between commercial and industrial properties adjacent to Assett Loop, across forested and open land on a County-owned parcel. Part of this land is County-owned protected open space, while the County is marketing the remainder for sale and development. After exiting the County-owned land, the route crosses Hornbaker Road, then continues about 0.1 mile into the proposed Hornbaker Switching Station.

Although it crosses the northern end of Innovation Park, thereby reducing some visual impacts compared to other Option 1 routes, Option 1 Rejected Route 4 has similar disadvantages as the other rejected Option 1 routes, such as visual impacts at GMU and County opposition to crossing protected open space with an overhead route. In addition, the County opposed the crossing of its lands along this alignment due to the land's development potential and the County's ongoing marketing of the parcel east of Hornbaker Road. For these reasons, the Company rejected this route for further consideration.

Rejected Route 5

Option 1 Rejected Route 5 originates at a cut-in south of the Company's existing Wellington Substation. From here, it runs north-northwest parallel to and collocated to the west of the Company's existing Lines #2187/#172 for about 0.1 mile to Wellington Road. The route then heads west-southwest for about 0.3 mile along the south side of Wellington Road and crosses Prince William Parkway. Most of this segment crosses the northern end of the same planned mixed use residential and commercial development described for the Wellington–Pegasus Route (Section 4.5.1.1). Review of a site plan indicates sufficient space for both the transmission line and planned development in this area.

After crossing Prince William Parkway, Option 1 Rejected Route 5 turns and continues south-southeast along the west side of the Parkway for approximately 1.0 mile. The northernmost approximately 0.6 mile of this segment crosses a planned data center development (Hornbaker Testfit). At the time the alignment was established, the site plan for the Testfit data center was not publicly available. Based on review of the since-filed site plan, there is insufficient space for the transmission line along Prince William Parkway in this area without significant modification to the building plan for the new development. The remainder of this segment crosses County-owned lands, parts of which are being marketed for sale and development and parts of which are protected open space. After passing west of and adjacent to the federal land containing the FBI facility, the route intersects and then follows the same alignment as Option 1 Rejected Route 4 for the remaining approximately 0.8-mile distance to the proposed Hornbaker Switching Station.

Use of the alternative cut-in near the Wellington Substation allows Rejected Route 5 to approach the proposed Hornbaker Switching Station from the north, rather than the west or southwest, eliminating or reducing the potential for conflict and visual impacts on the GMU campus and in the Innovation Park development. These advantages notwithstanding, the alternative is not feasible, due to County opposition to overhead lines crossing its protected open space and other developable land, as well as the unresolvable conflict with the planned Hornbaker Testfit development. For these reasons, the Company rejected Option 1 Rejected Route 5 for further consideration.

Rejected Route 6

Option 1 Rejected Route 6 follows the same alignment as Option 1 Rejected Route 5 from the cut-in near the existing Wellington Substation for 1.5 miles to an intersection with Option 1 Rejected Route 3. From there, it then follows the same path as Rejected Route 3 for about 1.0 mile to the proposed Hornbaker Switching Station. As with the other Option 1 alternatives, Rejected Route 6 crosses County-owned protected and developable land, which the County opposes, and crosses the Hornbaker Testfit parcel, which has insufficient space to accommodate the Project. For these reasons, the Company rejected Option 1 Rejected Route 6 for further consideration.

Summary

Of the alternatives discussed above, Option 1 Rejected Routes 1 and 2 represent the shortest buildable paths crossing the most compatible land uses between the cut-in on the GMU campus and proposed Hornbaker Switching Station. Option 1 Rejected Routes 3 through 6 represent attempts to resolve visual impacts in the Innovation Park development. Each of these alternatives, however, crosses multiple parcels of County-owned protected open space and developable land. The County advised Dominion that it would not approve overhead routes on this land. For all these reasons, none of the Option 1 overhead routes are viable alternatives for the Project.

4.6.1.2 OPTION 2

Option 2 considered routes extending from a single cut-in along the Company's existing Lines #2196/#2230 east of and adjacent to the existing Hourglass Substation to the proposed

Hornbaker Switching Station. ERM developed four candidate overhead routes under this option (Figure 4.6-1, page 2), each of which uses a 100-foot-wide right-of-way.

Rejected Route 1

Starting from the west side of Hourglass Substation, Option 2 Rejected Route 1 heads northwest through forested and cleared land for about 0.4 mile adjacent to the northeast boundary of an existing data center complex. The remaining approximately 1.0 mile to the proposed Hornbaker Switching Station is the same as Option 1 Rejected Route 1. This segment includes crossings of County-owned protected open space. While Option 2 Rejected Route 1 utilizes an alternate cut-in, it still crosses Innovation Park and County-owned lands, resulting in similar or the same visual impacts and County opposition as described for Option 1. For these reasons, the Company rejected Option 2 Rejected Route 1 for further consideration.

Rejected Route 2

Option 2 Rejected Route 2 follows the same alignment as Option 2 Rejected Route 1 for about 0.3-mile northwest. It then heads south-southwest for about 0.2 mile through forested and cleared land along the northern boundary of the data center campus before intersecting Option 1 Rejected Route 2. The remaining approximately 0.9 mile to the proposed Hornbaker Switching Station is the same as Option 1 Rejected Route 2. This segment includes crossings of County-owned protected open space. While Option 2 Rejected Route 2 uses an alternate cut-in, it still crosses Innovation Park and County-owned lands, resulting in similar or the same visual impacts and County opposition as described for Option 1. For these reasons, the Company rejected Option 2 Rejected Route 2 for further consideration.

Rejected Route 3

From the cut-in, Option 2 Rejected Route 3 follows the south, southeast, and east boundaries of the data center campus and ramps associated with the Prince William Parkway/Rt. 28 interchange for approximately 0.6 mile. The route then runs west-southwest for about 0.3 mile, crossing the parkway and County-owned land along the south side of a planned future road, Challenger Court. The County's Economic Development department advised Dominion that its land in this area is for sale for future development. The route next runs northwest for about 0.1 mile across Discovery Boulevard and another parcel of County-owned protected open space before intersecting and following the same alignment as Option 1 Route 2 for about 0.5 mile to the proposed Hornbaker Switching Station.

While Option 2 Rejected Route 3 uses an alternate cut-in and runs south of Innovation Park, it would still be visible from Innovation Park and would cross and County-owned lands, resulting in similar or the same visual impacts and County opposition as described for Option 1. Therefore, the Company rejected Option 2 Rejected Route 3 for further consideration.

Rejected Route 4

Option 2 Rejected Route 4 follows the same alignment as Option 2 Rejected Route 3 from the cut-in for about 0.5 mile and west southwest around the southern end of the data center campus. The route then turns southwest for about 0.3 mile, crossing Prince William Parkway, one of the ramps

in the Parkway's interchange with Rt. 28, and an adjacent parcel planned for use as a distillery. After crossing Discovery Boulevard, the route runs northwest for approximately 0.3 mile, crossing two parcels of County-owned protected open space and Discovery Boulevard (for a second time), before intersecting and following the same alignment as Option 1 Rejected Route 2 for about 0.5 mile to the proposed Hornbaker Switching Station.

While Option 2 Rejected Route 4 uses an alternate cut-in and runs south of Innovation Park, it would still be visible from Innovation Park and would cross County-owned lands, resulting in similar or the same visual impacts and County opposition as described for Option 1. In addition, the right-of-way for the segment that crosses the planned distillery site runs through two planned buildings within the distillery development (based on a site plan not available when the route was initially developed), requiring developers to reorient and move the planned buildings within the property. Therefore, the Company rejected Option 2 Rejected Route 4 for further consideration.

Summary

The Option 2 routes utilize an alternate cut-in and largely run through compatible land use types (developed lands and across roads) to reduce impacts, including visual impacts in Innovation Park. Nonetheless, in addition to disadvantages specific to each route, all Option 2 routes crosses County-owned protected lands in an overhead configuration, which the County opposes for the Project. For all these reasons, none of the Option 2 overhead routes are viable alternatives for the Project.

4.6.1.3 OPTION 4

Option 4 considered routes extending from a single cut-in along the Company's existing transmission lines near the existing Godwin Delivery Point (DP) southwest to the proposed Hornbaker Switching Station. ERM developed four overhead routes under this option (Figure 4.6-1, page 3), each of which are like Option 1 Routes 3 or 4, with an alternate cut-in location. Each route uses a 100-foot-wide right-of-way.

Rejected Route 1

From the cut-in, Option 4 Rejected Route 1 heads south for approximately 0.4 mile through wooded areas along Cannon Branch and east of a parcel of state-owned land. The route then runs west for approximately 0.3 mile west along the south side of the existing QTS Manassas data center. At the intersection of Freedom Center and University boulevards, the route joins and then follows Option 1 Rejected Route 4 for approximately 1.3 miles southwest to the proposed Hornbaker Switching Station.

While utilizing an alternate cut-in and avoiding direct impacts on the GMU campus, Option 4 Rejected Route 1 shares the same disadvantages as Option 1 Rejected Route 4 relative to crossings of County-owned protected lands and lands planned or being marketed for future development. For these reasons—particularly the crossings of County-owned lands, which the County opposes—the Company rejected Option 4 Rejected Route 1 for further consideration.

Rejected Route 2

Option 4 Rejected Route 2 follows the same alignment as Option 4 Rejected Route 1 for approximately 0.7 mile, then follows the same alignment as Option 1 Rejected Route 3 for approximately 1.5 miles to the proposed Hornbaker Switching Station. It shares the same disadvantages as this alternative relative to crossings of Innovation Park and County-owned protected and developable land, which the County opposes. Therefore, the Company rejected Option 4 Rejected Route 2 for further consideration.

Rejected Route 3

From the cut-in near Godwin DP, Option 4 Rejected Route 3 follows the same alignment as Option 4 Route 1 for approximately 0.5 mile to the south and west. It then continues to the southwest and west for approximately 0.5 mile, crossing University Boulevard, parking lots adjacent to buildings in Innovation Park, and forested land along a tributary to Cannon Branch. At this point, the route then intersects and follows the same alignment as Option 1 Rejected Route 4 for approximately 0.9 mile southwest to the proposed Hornbaker Switching Station.

Option 4 Rejected Route 3 shares the same disadvantages as Option 1 Rejected Route 4 relative to crossings of Innovation Park and County-owned protected and developable land, which the County opposes. Therefore, the Company rejected Option 4 Rejected Route 3 for further consideration.

Rejected Route 4

Option 4 Rejected Route 4 follows the same alignment as Option 4 Rejected Route 3 for approximately 0.9 mile to the southwest, then the same alignment as Option 1 Rejected Route 3 for approximately 1.0 mile southwest to the proposed Hornbaker Switching Station. This route shares the same disadvantages relative to crossings of Innovation Park and County-owned protected and developable land, which the County opposes, as the other alternatives. Therefore, the Company rejected Option 4 Rejected Route 3 for further consideration.

Summary

The Option 4 routes use an alternate cut-in, which would eliminate direct impacts on the GMU campus. Like the other rejected alternatives discussed above, the routes cross County-owned protected and developable lands in an overhead configuration, which the County opposes for the Project. Therefore, none of the Option 4 overhead routes are viable alternatives for the Project.

4.6.1.4 OPTION 5

Option 5 represents an effort to avoid crossings of County-owned lands with an overhead configuration, which the County opposes for the Project. ERM developed three overhead route alternatives for Option 5 starting from a cut-in on Dominion's existing Lines #2187, approximately 0.2 mile north of the existing Wellington Substation (Figure 4.6-1, page 4)—the same cut-in point described for the Wellington–Pegasus Route in Section 4.5.1.1. Each route uses a 100-foot-wide right-of-way.

Rejected Route 1

From the cut-in, Option 5 Rejected Route 1 follows the same alignment as the Wellington–Pegasus Route for approximately 0.3 mile, crossing a storage yard, Thong Pan Road, a forested parcel, Wellington Road, a portion of a parcel containing a planned mixed-use development, and Prince William Parkway. As stated for the Wellington–Pegasus Route, the approved site plan for the planned development, which is under construction, includes sufficient space for the transmission line along Wellington Road.

The route next follows the west side of Prince William Parkway in the same alignment as Option 1 Rejected Route 5 for approximately 0.5 mile, crossing the Testfit data center property (which has insufficient space for the transmission line). As described for Option 1 Rejected Route 5, the site plan for the Testfit data center was not publicly available at the time this alignment was established. The route next turns west for approximately 0.5 mile, crossing Hornbaker Road, forested parcels, and parking lots and storage yards in the Hornbaker Industrial Park. The route then runs generally south-southeast for about 1.1 mile to the proposed Hornbaker Switching Station. This segment crosses University Boulevard and runs through industrial and commercial land uses along and adjacent to Hornbaker Road.

Although Option 5 Rejected Route 1 avoids County-owned land, the lack of sufficient space within the Testfit data center development makes this alternative unbuildable. For this reason, the Company rejected Option 5 Rejected Route 1 from further consideration for the Project. Segments of the route were incorporated into the Wellington–Pegasus and Hourglass–Hornbaker components of the Project, including the initial 0.3-mile-long segment from the cut-in to the crossing of Prince William Parkway and the last 0.4-mile-long segment along Hornbaker Road into the Hornbaker Switching Station site.

Rejected Route 2

Option 5 Rejected Route 2 is identical to Rejected Route 1, except for an approximately 0.3-mile-long segment south of University Boulevard. Whereas Option 5 Rejected Route 1 heads due south then southeast across a commercial/industrial area along Industrial Road, Option 5 Route 2 instead goes around this area by continuing approximately 0.1 mile on the south side of University Boulevard, then turning south for approximately 0.2 mile. Although this alternative would minimize conflicts with existing land uses along Industrial Road in addition to avoiding County-owned land, it crosses the same Testfit development that led to the rejection of Option 5 Rejected Route 1. Therefore, the Company rejected Option 5 Rejected Route 2 from further consideration.

Rejected Route 3

Option 5 Rejected Route 3 is identical to Option 5 Rejected Route 1, except for an approximately 0.5-mile-long segment that avoids crossing the Hornbaker Industrial Park. The route follows the same alignment as Option 5 Rejected Route 1 for the first approximately 0.8 mile to the point where Option 5 Rejected Route 1 turns west-southwest away from Prince William Parkway. From this point, Option 5 Rejected Route 3 continues south along the west side of the Parkway for approximately 0.1 mile, then runs southwest for approximately 0.4 mile, crossing forested land, Hornbaker Road, and adjacent developed land. This segment passes east of Hornbaker Industrial

Park. The route next intersects Option 5 Rejected Route 2 on the south side of University Boulevard and follows the same alignment from this point south to the proposed Hornbaker Switching Station.

While Option 5 Rejected Route 3 would minimize conflicts with existing land uses along Industrial Road and in Hornbaker Industrial Park in addition to avoiding County-owned land, it crosses the same Testfit development that led to the rejection of Option 5 Rejected Routes 1 and 2. Therefore, the Company rejected Option 5 Rejected Route 3 from further consideration.

Summary

The Option 5 routes each use a segment of undeveloped land along Prince William Parkway. The Company became aware of a conflict with the Testfit data center development in this area after the routes were identified. Because this conflict cannot be resolved, the Company Rejected the Option 5 routes from further consideration. Segments of the routes were incorporated into the Wellington–Pegasus and Hourglass–Hornbaker components of the Project, as noted above.

4.6.2 HORNBAKER UNDERGROUND AND HYBRID ROUTES

ERM developed underground and/or hybrid alternatives under the Options 1 and 4 scenarios described in Section 4.6.1, as well as a hybrid solution (Option 3). ERM began by reviewing complete underground route options to determine if substations along Dominion's existing Lines #2187/#172 could support the starting point of an underground route. Due to space constraints at the existing Rixlew, Godwin, and Pioneer substations, ERM and the Company determined early in the review process that a complete underground route could not originate from these substations. The Hourglass Substation was under construction during the early stages of the routing process. The Company worked internally with the substation design group on a potential solution to an underground route originating at the Hourglass Substation but determined there is insufficient space at this substation to accommodate the footprint necessary for the origin point of an underground route.

4.6.2.1 OPTION 1

As noted above, Option 1 considered cut-ins along existing Lines #2187 and #172 between the exiting Pioneer and Wellington substations. ERM developed three hybrid routes and one underground route under this option. Two hybrid routes and the underground route start at the cut-in on the GMU campus west of Freedom Center Drive and one hybrid route starts from the cut-in south of the existing Wellington Substation (Figure 4.6-2, page 1). The routes use a 100-foot-wide right-of-way for overhead segments and a 75-foot-wide right-of-way for underground segments. Overhead alternatives developed under Option 1 are discussed in Section 4.6.3.3.

Rejected Route 7

Option 1 Rejected Route 7 originates in an overhead configuration starting from the cut-in near the existing Wellington Substation. From there, it follows the same alignment as Option 1 Rejected Route 5 for approximately 1.5 miles east and south along Wellington Road and Prince William Parkway. From this point, Option 1 Rejected Route 7 continues south for approximately 0.1 mile, entering a parcel of County-owned land that the County indicated could be made

available to Dominion for a switching station to accommodate an underground route through the Innovation Park development. The switching station would be west of Prince William Parkway and north of an extension of Discovery Boulevard currently under construction. Option 1 Rejected Route 7 exits the switching station site in an underground configuration, following substantially the same alignment as Option 1 Rejected Route 6 for approximately 1.3 miles south and southwest to the proposed Hornbaker Switching Station.

While the County indicated it would work with Dominion on an underground route segment crossing County-owned lands through and near Innovation Park, the overhead portion of the route would cross the Testfit data center property, which has insufficient space to accommodate the new transmission line. For this reason, the Company rejected Option 1 Rejected Route 7 for further consideration.

Rejected Route 8

Option 1 Rejected Route 8 follows the same alignment as Option 1 Rejected Route 7 in an overhead configuration from the cut-in near Wellington Substation for approximately 1.1 miles to the potential switching station site along Prince William Parkway. It continues following the same alignment as Option 1 Rejected Route 7 in an underground configuration for another approximately 0.4 mile south-southeast, then continues for an additional approximately 0.4 mile south-southeast along the Parkway. From this point, the route runs west-southwest for approximately 0.3 mile, paralleling the planned Challenger Court on a parcel of County owned land, crossing Discovery Boulevard, and crossing a second parcel of County land. The route then follows the same alignment as Option 1 Rejected Route 7 for approximately 0.4 mile to the proposed Hornbaker Switching Station.

While the County indicated it would work with Dominion on an underground route segment crossing County-owned lands through and near Innovation Park, and preferred an underground alignment along the future Challenger Court, the overhead segment would cross the Testfit data center property, which has insufficient space to accommodate the transmission line. For this reason, the Company rejected Option 1 Rejected Route 8 for further consideration.

Rejected Route 9

From the cut-in adjacent to the northwest side of Freedom Center Boulevard on the GMU Campus, Option 1 Rejected Route 9 follows a similar alignment as Option 1 Route 1 for approximately 0.5 mile southwest (including a crossing of County-owned land), where it enters a switching station site on a parcel north of the data center campus. The route exits the site in an underground configuration following the northwestern boundary of the parcel for approximately 0.3 mile to a trenchless crossing of Prince William Parkway. The route then intersects Option 1 Rejected Route 8 and follows the same alignment for approximately 0.7 mile to the proposed Hornbaker Switching Station.

Like other routes originating on the GMU campus, the overhead segment of Option 1 Rejected Route 9 would result in direct physical impacts on the campus in addition to visual impacts. It also crosses County-owned lands, which the County opposes. Due primarily to the crossing of County land, the Company rejected the overhead segment of Option 1 Rejected Route 9 for further

consideration. The underground segment is a viable alternative and was further refined and developed into the Hourglass–Hornbaker Component of the Project, discussed in Section 4.5.1.2.

Rejected Route 10

Option 1 Route 10 is an entirely underground route that originates at a potential transition station site north of the existing Wellington Substation in the area between Wellington Road, J.D. Reading Drive, and Vulcan Lane. From there, it follows essentially the same alignment as Option 1 Rejected Route 6 for approximately 2.5 miles to the proposed Hornbaker Switching Station. The route crosses County-owned land, in response to the County's willingness to work with Dominion on underground routes, particularly on crossings within and near Innovation Park. Nonetheless, the route crosses the Testfit data center property, where insufficient space exists for a transmission line (whether overhead or underground). For this reason, the Company rejected Option 1 Rejected Route 10 from further consideration.

Summary

The Option 1 hybrid and underground routes would each use a segment of undeveloped land along Prince William Parkway within the Testfit data center development, where insufficient space exists to construct an overhead or underground transmission line. In addition, the two hybrid routes would have physical and visual impacts on the GMU campus. As a result, the Company Rejected the Option 1 hybrid and underground routes from further consideration. The underground segment of the route was incorporated into the Hourglass–Hornbaker components of the Project, as noted above.

4.6.2.2 OPTION 3

ERM identified one hybrid alternative route for this option, as described below and shown on Figure 4.6-2, page 2.

Rejected Route 1

Option 3 Rejected Route 1 originates as an overhead route that taps Dominion's existing Line #2184 approximately 0.3 mile south of the Norfolk Southern Railroad, on the east side of Prince William Parkway, and crosses to a proposed transition station on the west side of the Parkway. The route extends north from the transition station in an underground configuration along the west side of Prince William Parkway and the southernmost ramp of the Parkway's interchange with Rt. 28 for approximately 0.8 mile (including a trenchless crossing of the railroad). The route then crosses Rt. 28 in a trenchless crossing, turns west, and runs parallel to the north side of Rt. 28 for approximately 0.4 mile. At Hornbaker Road, the route turns north, enters the roadway, and continues within the road right-of-way for approximately 0.4 mile before turning west and terminating at the proposed Hornbaker Switching Station.

ERM and Dominion identified five routing concerns for Option 3 Rejected Route 1, as described below.

- The trenchless crossing of the Norfolk Southern Railroad requires a right-of-way up to 300 feet wide. This expanded right-of-way would encroach on the Cannon Branch Fort Site (a VDHR easement) on the north side of the railroad, with no option to avoid impacts on the easement.

- The right-of-way for the segment of the route parallel to the Prince William Parkway/Rt. 28 interchange would cross the edge of a City of Manassas-owned tract. City representatives told Dominion that this parcel is one of their few remaining larger economic development parcels. While no plans are currently in place for development, the city would be unlikely to approve a crossing of this parcel, due to anticipated high demand for future development.
- The route would require removal of a small building (located within the potential right-of-way) on the south side of Rt. 28, east of where the route crosses Rt. 28. The only way to avoid this building would be to cut through the parking lots of businesses on the west side of Capital Court, causing greater impacts on the City of Manassas-owned parcel mentioned above.
- The route crosses a large County-owned parcel on the north side of Rt. 28. The crossing length is approximately 0.4 mile, which would result in a substantial impact on the County-owned land.
- The route requires approximately 0.6 mile of construction within Hornbaker Road, which would require a VDOT permit. VDOT representatives expressed a preference to avoid in-road construction, due to the extent of other construction and road projects in the area, as well as high existing and future traffic volumes.

For these reasons, the Company rejected Option 3 Rejected Route 1 from further consideration.

4.6.2.3 OPTION 4

As noted above, Option 4 considered routes extending from the cut-in along the Company's existing transmission lines near the existing Godwin DP southwest to the proposed Hornbaker Switching Station. ERM developed two hybrid routes, which are variations of the same alignment, with potential switching station sites on adjacent parcels (Figure 4.6-2, page 3).

Rejected Route 5

From the cut-in, Option 4 Rejected Route 5 heads south for approximately 0.5 mile in an overhead configuration, crossing primarily forested land along Cannon Branch, including a segment adjacent to an existing QTS Manassas data center complex. It then runs west and southwest for approximately 0.5 mile, crossing University Boulevard; a forested parcel along a tributary to Cannon Branch, part of which is County-owned; and the northern portion of the data center campus to an area the developer made available to the Project for a switching station. The route exits the switching station site in an underground configuration, running west for approximately 0.2 mile, crossing Prince William Parkway in a trenchless configuration and running parallel to the future Challenger Road on a County-owned parcel. The route then runs west for approximately 0.5 mile, crossing forested land on a County-owned parcel, a tract of developed land, and Hornbaker Road, terminating at the proposed Hornbaker Switching Station.

The overhead segment of Option 4 Rejected Route 5 crosses County-owned land, which the County opposes; therefore, the Company rejected this segment for further consideration on the Project. The underground segment is a viable alternative and was further refined and developed into the Hourglass–Hornbaker Component discussed in Section 4.5.1.2.

Rejected Route 6

Option 4 Rejected Route 6 follows the same alignment as Option 4 Rejected Route 5, except for small variations to access a different transition station site and a slightly different crossing of Hornbaker Road before entering the proposed Hornbaker Switching Station. The switching station site for this route is north of and adjacent to the data center campus. The crossing of Hornbaker Road for this route is less than 300 feet south of the crossing for Option 4 Rejected Route 5.

Because the overhead segment of Option 4 Rejected Route 6 crosses County-owned land, which the County opposes, the Company rejected this section for further consideration on the Project. The underground segment is a viable alternative and was further refined and developed into the Hourglass–Hornbaker Component discussed in Section 4.5.1.2.

Summary

The overhead segments of the Option 4 hybrid routes would each cross County-owned land, which the County opposes. As a result, the Company Rejected the Option 4 hybrid routes from further consideration. The underground route segment was incorporated into the Hourglass–Hornbaker components of the Project, as noted above.

4.6.3 DEVLIN-HORNBAKER OVERHEAD ROUTES

Multiple existing linear features extend generally between the proposed Devlin and Pegasus Switching Stations, including Prince William Parkway, the Norfolk Southern Railroad, Dominion's existing Lines #2163/#2151, Linton Hall Road, and University Boulevard. Southeast of Devlin Road, residential homes are located on both sides of Linton Hall Road, many of which are built up to the edge of the road right-of-way. Similarly, residential development borders both sides of University Boulevard between Devlin Road and Sudley Manor Drive. Any transmission line along either Linton Hall Road or University Boulevard east of Devlin Road would require removal of multiple homes. As a result, the Company removed from consideration any routes paralleling Linton Hall Road and University Boulevard.

ERM developed 11 potential route options between the Devlin Switching Station and the Pegasus Switching Station or the Pegasus Switching Station and the Hornbaker Switching Station that were ultimately rejected for further consideration (Figure 4.6-3). Devlin-Hornbaker Rejected Routes 1 through 3 would run from the proposed Devlin Switching Station to the proposed Pegasus Switching Station. Rejected Routes 4 through 11 would run from the proposed Pegasus Switching Station to the proposed Hornbaker Switching Station.

Rejected Route 1

Rejected Route 1 extends north parallel to Dominion's existing transmission right-of-way for existing Lines #569/#535 for approximately 0.8 mile from the proposed Devlin Switching Station to Prince William Parkway. The route then would turn to the east and parallel Prince William Parkway for approximately 2.8 miles south to the Pegasus Switching Station. Routing concerns identified for this route include:

- County-owned land south of the existing Gainesville Substation (near the intersection of existing Lines #569/535 and the Norfolk Southern Railroad) houses the County's Balls Ford

Road Compost Facility and the County Transportation Center. Routing through these facilities would require a reorganization of the layout of the compost facility or the Transportation Center.

- VDOT owns land at the intersection of Prince William Parkway and Balls Ford Road, parcels on both sides of the road are owned by VDOT. East of this intersection, the road right-of-way is 500 to 1,000 feet wide. Routing through this area would require approval from VDOT or outright purchase of the parcels.
- Existing and planned data center development is located on both sides of Prince William Parkway where it is crossed by existing Lines #2163/#2151. This would restrict placement of the proposed right-of-way and would likely require removal of vegetative buffers between the data centers and the parkway.

For these reasons, the Company removed Devlin-Hornbaker Rejected Route 1 from further consideration.

Rejected Route 2

Rejected Route 2 extends north paralleling Dominion's existing transmission right-of-way for existing Lines #569/#535 for approximately 0.7 mile to the Norfolk Southern Railroad. The route would then turn to the east and parallel the railroad for approximately 2.0 miles before turning south through largely undeveloped land for approximately 0.8 mile, joining Wellington–Pegasus Route 1 (Section 4.5.1.1), and terminating at the proposed Pegasus Switching Station. Routing concerns identified for this route are the same as described above for Devlin-Hornbaker Rejected Route 1 along the right-of-way for existing Lines #569/#535. In addition, ERM and Dominion identified the following routing concerns:

- Due to the right-of-way constraints along existing Lines #569/535, the Company evaluated the possibility of moving the origin of the route at the Gainesville Substation; however, spatial constraints at the substation preclude the expansion necessary to accommodate the new route.
- The route would need to run along the north side of the railroad to avoid existing buildings adjacent to the south side of the railroad right-of-way. East of Balls Ford Road, VDOT owns the parcels on the north side of the railroad. Routing through this area would require approval from VDOT or outright purchase of the parcels.
- An existing building east of Prince William Parkway and north of the railroad would require the route to move to the south side of the railroad, which would conflict with existing distribution lines and would cross parcels that are planned for development.

For these reasons, the Company removed Devlin-Hornbaker Rejected Route 2 from further consideration.

Rejected Route 3

Rejected Route 3 extends north paralleling Dominion's existing transmission right-of-way for existing Lines #569/#535 for approximately 0.4 mile to the right-of-way for existing Lines #2151/#2163. The route would then parallel existing Lines #2151/#2163 for 3.0 miles before joining Wellington–Pegasus Route 1 (Section 4.5.1.1) and terminating at the proposed Pegasus

Switching Station. Existing commercial development along the right-of-way for existing Lines #2151/#2163 east of Balls Ford Road leaves no space for expansion of the existing right-of-way. There is also no space to route around this congested area due to other commercial developments in the area. For these reasons, the Company removed Devlin-Hornbaker Rejected Route 3 from further consideration.

Rejected Route 4

From the Pegasus Switching Station, Rejected Route 4 crosses Hornbaker Road to the east then runs south, parallel to the east side of Hornbaker Road south for approximately 0.2 mile then turns east and then south, running parallel to the west side of Prince William Parkway for approximately 0.6 mile. The route then turns to the east and generally follows the alignment described for Hornbaker Overhead Route Option 1 Rejected Route 4 (see Section 4.6.1.1). Routing concerns identified for this route include:

- Planned development located on the parcel east of Pegasus Switching Station, which would leave insufficient space for a transmission line corridor; and
- Crossing County-owned land, which the County opposes, south of the planned development parcel, as well as south of University Boulevard and east of Hornbaker Road, near the proposed Hornbaker Switching Station.

For these reasons, the Company removed Devlin-Hornbaker Rejected Route 4 from further consideration.

Rejected Route 5

From the Pegasus Switching Station, Rejected Route 5 crosses Hornbaker Road to the east then runs south, parallel to the east side of Hornbaker Road south for approximately 0.6 mile before crossing back over Hornbaker Road and paralleling the west side of the road for approximately 0.6 mile to the proposed Hornbaker Switching Station. The route would be constrained by the same planned development and County-owned parcels east of Pegasus Switching Station described for Devlin-Hornbaker Rejected Route 5. For these reasons, the Company removed Devlin-Hornbaker Rejected Route 5 from further consideration.

Rejected Route 6

From the Pegasus Switching Station, Rejected Route 6 follows the same alignment as Devlin-Hornbaker Rejected Route 5 for the first approximately 0.4 mile. At this point, the route turns west, crosses Hornbaker Road, and then turns south adjacent to the east side of two large commercial buildings. After crossing University Boulevard, the route crosses through the eastern portion of Broad Run Industrial Park. This area of the Industrial Park includes parking areas for commercial vehicles, storage yards, and open graveled areas. The use of mobile cranes in these areas (used to move heavy equipment in the exiting storage yards) would be restricted and/or prohibited, within the right-of-way. This route would also be constrained by the planned development east of Pegasus Switching Station. For these reasons, the Company removed Devlin-Hornbaker Rejected Route 6 from further consideration.

Rejected Route 7

From the Pegasus Switching Station, Rejected Route 7 follows the same alignment as Rejected Route 5 for the first approximately 0.2 mile. At this point, the route turns west, crosses Hornbaker Road, and extends for approximately 0.4 mile through the Hornbaker Industrial Park before turning south and crossing University Boulevard. After crossing University Boulevard, the route turns to the southeast and parallels the south side of University Boulevard for approximately 0.3 mile, before turning south then southeast for 0.6 mile terminating at the proposed Hornbaker Switching Station. The route would cross the same eastern portion of Broad Run Industrial Park described for Devlin-Hornbaker Rejected Route 6. The use of mobile cranes in these areas (used to move heavy equipment in the exiting storage yards) would be restricted and/or prohibited, within the right-of-way. The segment of the route through Hornbaker Industrial Park would be close to multiple buildings and would cross large storage yards associated with business in the industrial park. The route would also be constrained by the planned development east of Pegasus Switching Station. For these reasons, the Company removed Devlin-Hornbaker Rejected Route 7 from further consideration.

Rejected Route 8

From the Pegasus Switching Station, Rejected Route 8 follows the same alignment as Pegasus–Hornbaker Route 1 (Section 4.5.2.3) for the first approximately 0.3 mile. The route then turns south for approximately 0.6 mile, crossing the Hornbaker Industrial Park, University Boulevard, and Broad Run Industrial Park. At this point, the route turns southeast and follows the same alignment as the Pegasus–Hornbaker Route 1 for approximately 0.7 mile to the Hornbaker Switching Station. The route crosses directly through the Broad Run Industrial Park and impacts multiple parcels. The Pegasus–Hornbaker Route 1 is a superior alternative to this route. For this reason, the Company removed Devlin-Hornbaker Rejected Route 8 from further consideration.

Rejected Route 9

From the Pegasus Switching Station, Rejected Route 9 follows the same alignment as Pegasus–Hornbaker Route 1 for the first approximately 0.8 mile. The route then turns east, paralleling the northern property boundary of Broad Run Industrial Park for approximately 0.3 mile and then south and southeast for approximately 0.4 through the Broad Run Industrial Park. At this point the route turns southeast and follows the same alignment as the Pegasus–Hornbaker Route 1 for approximately 0.4 mile to the proposed Hornbaker Switching Station. This area of the Broad Run Industrial Park crossed by the route includes parking areas for commercial vehicles and storage yards. The use of mobile cranes in these areas (used to move heavy equipment in the exiting storage yards) would be restricted and/or prohibited, within the right-of-way. The Pegasus–Hornbaker Route 1 is a superior alternative to this route. For this reason, the Company removed Devlin-Hornbaker Rejected Route 9 from further consideration.

Rejected Route 10

From the Pegasus Switching Station, Rejected Route 10 follows the same alignment as Pegasus–Hornbaker Route 1 for the first approximately 1.1 miles. The route then turns to the southwest/south, crossing through the southern portion of the Broad Run Industrial Park and onto

proposed data center property. The route extends south adjacent to Broad Run and planned data center buildings for approximately 0.7 mile. The route then turns east, paralleling the southern side of a proposed data center building and enters the proposed Hornbaker Switching Station from the east. As discussed in more detail in Section 5.1.10, the Federal Aviation Administration (FAA) determined—based on airspace restrictions for Manassas Regional Airport—that the southernmost structure of this route would need to be lowered to a height that made this route not constructible. All other variations of this route would also require an infeasibly low transmission structure at the southernmost extent of this route. As a result, the route was determined to be unbuildable and the Company removed Devlin-Hornbaker Rejected Route 10 from further consideration.

Rejected Route 11

From the Pegasus Switching Station, Rejected Route 11 follows the same alignment as Pegasus–Hornbaker Route 1 for the first approximately 0.7 mile. The route then extends south through Broad Run Industrial Park for approximately 0.7 mile, crosses Broad Run and runs parallel to the west side of the river for approximately 0.3 mile before crossing back over Broad Run, extending approximately 0.2 mile east, and joining the alignment for Devlin-Hornbaker Rejected Route 10 to the proposed Hornbaker Switching Station. Due to the need to cross Broad Run twice and the FAA restrictions described for Devlin-Hornbaker Rejected Route 10, the Company removed Devlin-Hornbaker Rejected Route 11 from further consideration.

Summary

Devlin-Hornbaker Rejected Routes 1 through 3 each cross land owned by the County and VDOT, including some that are in active usage. Rejected Routes 4 through 11 would also cross land designated for future development, including east of the proposed Pegasus Switching Station and within the Broad Run Industrial Park. Several routes would be unbuildable due to FAA and other restrictions. Based on these considerations, the Company rejected these routes from further consideration.

4.6.4 DEVLIN-HORNBAKER UNDERGROUND AND HYBRID ROUTES

4.6.4.1 DEVLIN-HORNBAKER TRANSITION STATION LOCATIONS

ERM and the Company reviewed underground and/or hybrid route options for the Devlin–Pegasus–Hornbaker routes. The Company initially looked at underground routes that would originate at either the proposed Devlin Switching Station (complete underground route) or the proposed Pegasus Switching Station (hybrid route). Spatial constraints with the approved switching station pads prevent an underground route from originating at either of these stations. Through coordination with the developers of both sites, Dominion determined that expansion of the switching stations—both of which are within planned data center developments—was not possible due to space constraints associated with the developments. This then required ERM and the Company to determine if there were any locations in the surrounding areas to accommodate at transition station. The section below discusses the two potential transition station locations, as well as the rejected underground and hybrid routes associated with those facilities, as shown on Figure 4.6-4.

Potential Transition Station 1

ERM evaluated two undeveloped parcels east of Devlin Road, approximately 0.3 mile east of the proposed Devlin Switching Station, as possible transition station locations. In June 2024, the Company was made aware of a new planned development on these parcels. The site plan submitted to the County for these parcels shows development of nearly all the current open space on these parcels. ERM reviewed the surrounding areas to determine if any other possible transition station locations existed. Due to the dense development of the area, no other potential locations were identified in the area. For these reasons, the Company rejected this transition station location.

Potential Transition Station 2

ERM identified a forested area approximately 0.4 mile southeast of the proposed Pegasus Switching Station as a potential transition station location. The potential station is located on County owned land, which is located south of a narrow north/south elongated parcel situated between Prince William Parkway and Hornbaker Road, north of University Boulevard. In June 2024 the Company was made aware of new planned development on the parcel directly north of the potential transition station site. Due to the narrow geometry of the parcel and the steep slope down to Prince William Parkway on the east side of the parcel, the planned development would occupy most of the parcel. This did not allow enough space for an overhead route to extend south from Pegasus Switching Station along the edges of either side of the parcel. Additionally, existing buildings on the west side of Hornbaker Road are located too close to Hornbaker Road to allow for an overhead route in this area. For these reasons, the Company rejected this transition station location.

4.6.4.2 DEVLIN-HORNBAKER UNDERGROUND AND HYBRID ROUTES

ERM developed four potential underground and hybrid route options between the proposed Devlin Switching Station and the proposed Pegasus Switching Station or the Pegasus Switching Station and the proposed Hornbaker Switching Station that were ultimately rejected for further consideration (Figure 4.6-4).

Underground Rejected Route 1

Underground Rejected Route 1 extends from the proposed Devlin Switching Station to the proposed Pegasus Switching Station to the Hornbaker Switching Station. The route between the Devlin and Pegasus Switching Stations generally follows the southern edge of industrial and commercial parcels that front on Wellington Road. The segment between the Pegasus and Hornbaker Switching Stations parallels the western edge of Prince William Parkway before joining the general alignment of Option 1 Rejected Route 4 (Section 4.6.1.1) to the proposed Hornbaker Switching Station. As mentioned above, spatial constraints and the absence of a suitable location for a transition station prevent installation of an underground route between the Devlin and Pegasus Switching Stations. For these reasons, the Company rejected this route from further consideration.

Hybrid Rejected Route 2

Hybrid Rejected Route 2 is a hybrid route that begins as an overhead route and follows the same alignment as Devlin–Pegasus Route 1 from the proposed Devlin Switching Station to the proposed Pegasus Switching Station. The route exits Pegasus Switching Station to the east and then south, paralleling the western side of Prince William Parkway to Potential Transition Station 2. From the transition station, the route continues south as an underground route, following the general alignment of Option 1 Rejected Route 6 (Section 4.6.1.1) to the proposed Hornbaker Switching Station. For the reasons discussed for Potential Transition Station 2, as well as the potential need for a temporary construction easement on the FBI site, due to additional space needed for the underground crossing of University Boulevard, the Company rejected this route from further consideration.

Hybrid Rejected Route 3

Hybrid Rejected Route 3 follows the same alignment as Hybrid Rejected Route 2 from the proposed Devlin Switching Station to Potential Transition Station 2. From the transition station, the route continues south as an underground route, crosses University Boulevard, and turns west, south of the FBI building. The route continues west for approximately 0.4 mile, then turns south/southwest crossing through County owned land before crossing Hornbaker Road and terminating at the proposed Hornbaker Switching Station. The County plans to develop the parcel on the east side of Hornbaker Road. Based on initial design plans, Hybrid Rejected Route 3 would need to be routed through an unnamed stream to avoid buildings associated with the planned development. For this reason, as well as the reasons discussed above in Potential Transition Station 2, the Company rejected this route from further consideration.

Hybrid Rejected Route 4

Hybrid Rejected Route 4 follows the same alignment as Hybrid Rejected Route 2 from the proposed Devlin Switching Station to Potential Transition Station 2. From the transition station, the route extends south paralleling the east side of Hornbaker road for approximately 0.8 mile before turning southwest across Hornbaker Road to terminate at the proposed Hornbaker Switching Station. From the transition station, the route primarily crosses County owned land. As discussed above in Hybrid Rejected Route 3, the County plans to develop the parcel on the east side of Hornbaker Road, north of the Hornbaker Switching Station. Of the three routes that originated from Potential Transition Station 2, the County was most open to considering this route; however, due to the reasons discussed above in Potential Transition Station 2, the Company rejected this route from further consideration.

5. RESOURCES AND IMPACTS

ERM developed a list of features to consider and assess as part of the routing process to provide a basis for comparing route alternatives (Table 5-1). These include constraints (e.g., land uses, planned developments, and biological resources) and opportunities (e.g., existing transmission lines, roads, and other linear features). ERM inventoried existing conditions, constraints, and opportunities using information from publicly available GIS and other databases; agency websites; published documents, such as county or municipal land use plans; communication with agency and County staff, stakeholders, and elected officials; and field reconnaissance. In cases where GIS data were not available for a particular environmental resource or other feature, ERM obtained the best available hard-copy or online map and hand digitized the information needed to complete the study.

The features in the study area and along the route alternatives are discussed by subsection below, with a summary of the features crossed by each route provided in the Features Crossing Table attached as Appendix C.

TABLE 5-1 FEATURES CONSIDERED FOR ROUTING

Feature Type	Description
Existing Corridors	
Existing electric facilities	Transmission or distribution lines, substations, and switching stations
Other utilities	Pipelines
Transportation infrastructure	Highways, roads, railroads, and related corridors
Land Uses	
Land ownership	• Federal, state, and local lands • Private lands
Land uses and cover types	• Cover types (e.g., forested, agricultural, developed, open) • Subdivisions and residential areas • Churches, schools, and cemeteries
Recreational areas	• Federal, state, county, or municipal parks or other managed recreation areas • Golf courses • Interpreted historic sites • Trails (e.g., for biking, hiking, birding, or wildlife viewing)
Land use planning and zoning	• Zoning districts • County Comprehensive Plan and related planning documents
Planned developments	• Planned, proposed, or conceptual residential, commercial, or industrial developments
Conservation lands and easements	• VDCR conservation lands and easements • VOF easements • County conservation easements • Wetland mitigation banks • Other conservation lands

Feature Type	Description
Transportation	• Road and railroad crossings • Public and private airport facilities
Natural Resources	
Surface waters	• Wetlands • Waterbodies
Protected or managed areas	• Resource Protection Areas and Resource Management Areas • Conservation sites • Wildlife management areas • Ecological cores
Protected species	• Natural heritage resources • T&E species and potential habitat • Bald eagles
Vegetation	• Vegetation characteristics • Forested land
Visual Resources	
Visual resources	• Viewsheds to and from visually sensitive areas • Scenic rivers and byways
Cultural Resources	
Cultural resources	• Archaeological sites • Historical or architectural sites and districts • NRHP-listed and eligible properties • Battlefields • VDHR easements • Locally significant resources
Environmental Justice	
Environmental Justice Groups	• Low-income populations • Minority populations • Age groups (under age 5 and over age 64) • Linguistically isolated communities
Geological Resources	
Mineral resources	Mines or quarries

NRHP = National Register of Historic Places; T&E = threatened and endangered; VDCR = Virginia Department of Conservation and Recreation; VDHR = Virginia Department of Historic Resources; VOF = Virginia Outdoors Foundation.

5.1 LAND USE

5.1.1 LAND OWNERSHIP AND PUBLIC LANDS

ERM reviewed land ownership information in the study area using publicly available GIS databases and digital parcel data obtained from Prince William County (Prince William County 2024a) to identify parcel ownership. Most parcels within the study area are privately owned; however,

several county- and state-owned parcels and one federally-managed parcel are within the study area. Parcels within the study are primarily developed, with commercial and industrial uses concentrated along Prince William Parkway in the north and eastern portions and residential subdivisions in the western portion along Sudley Manor Drive and Linton Hall Road. Figure 5.1-1 depicts land ownership within the study area.

State and Federal Lands

ERM identified several state-owned parcels within the study area, including several undeveloped parcels owned by VDOT, one owned by the Virginia Department of Forensic Science, and one associated with GMU (Figure 5.1-1). One parcel approximately 0.3 mile from Pegasus–Hornbaker Route 2, southeast of the intersection of University Boulevard and Discovery Boulevard appears to be privately owned but hosts the FBI Manassas Field Office. Table 5.1-1 lists existing VDOT-owned lands within 0.25 mile of the route alternatives.

TABLE 5.1-1 VDOT LANDS WITHIN 0.25 MILE OF THE ROUTE ALTERNATIVES

Parcel	Approximate Acreage	Description	Approximate Distance and Direction from Route Alternatives
7596-75-4023	0.9	Undeveloped	0.3 mile northeast of DP2 (MP 2.1)
7596-73-4488	12.0	Undeveloped, forested	0.2 mile southeast of DP2 (MP 2.2); 300 feet north of WP (MP 0.4)
7596-63-8134	0.7	Undeveloped, forested	200 feet north of DP1 (MP 2.1) and DP2 (MP 2.5)
7596-73-2826	2.8	Undeveloped	Less than 100 feet north of DP1 (MP 2.2) and DP2 (MP 2.6); approximately 300 west of WP (MP 0.4)
7596-84-2107	3.6	Undeveloped	Less than 0.1 mile north of WP (MP 0.3)
7596-84-2198	1.9	Undeveloped	0.2 mile north of WP (MP 0.3)
7596-84-0874	4.6	Undeveloped	0.2 mile north of WP (MP 0.3)
7596-74-6675	0.4	Undeveloped	0.3 mile north of WP (MP 0.4)
7596-75-4023	0.9	Undeveloped	0.3 mile northeast of DP2 (MP 2.1)

DP1 = Devlin–Pegasus Route 1; DP2 = Devlin–Pegasus Route 2; MP = milepost; VDOT = Virginia Department of Transportation; WP = Wellington–Pegasus Route 1.

Local Lands

County-owned lands in the study area include several undeveloped parcels owned by the Prince William County Board of Supervisors concentrated near the intersections of University Boulevard/Discovery Boulevard and Prince William Parkway. The County has identified these parcels as potential growth areas for future development (see Sections 5.1.3 and 5.1.5). Other County-owned land within the study area includes forested parcels near Broad Run associated with Broad Run Linear Park, Chris Yung Elementary School located west of Devlin Road, two Prince William Water parcels associated with the Wellington Operations Facility south of Wellington Road,

and various parcels owned by the Prince William County Board of Supervisors including existing and future roads that will eventually become VDOT-maintained roadways.

Table 5.1-2 lists County-owned lands within 0.25 mile of the route alternatives.

Section 5.1.6 provides more information about recreational uses of Broad Run Linear Park. Section 5.1.7 provides more information about schools.

5.1.1.2 IMPACT ASSESSMENT

The Project's impacts on parcels crossed would include temporary noise or traffic impacts during the construction and installation, tree clearing within the right-of-way, and visual impacts of transmission infrastructure. Additional coordination with the County and VDOT may be required to minimize temporary impacts from construction, such as required road closures, and future impacts associated with operations and maintenance. Section 5.2.5 discusses tree clearing impacts. Lands with views of the Project may also be visually impacted. The magnitude of visual impacts depends on factors such as surrounding tree cover, landscaping, orientation of development in relation to transmission infrastructure, topography, and screening from other objects. Section 5.3 discusses visual impacts in more detail.

Table 5.1-3 lists the number and types of parcels crossed by each route alternative. The proposed Hornbaker Switching Station is located entirely on private land. None of the route alternatives cross federal- or state-owned lands. The remainder of this section discusses County-owned lands crossed by the Project.

Wellington–Pegasus Route 1

Wellington–Pegasus Route 1 would cross two parcels owned by the Prince William County Board of Supervisors associated with existing and planned road rights-of-way. One at MP 0.2 is a proposed road right-of-way on the south side of Wellington Road, east of Prince William Parkway, near two proposed developments (Millwood Market Fuel Station and Innovation Town Center; see Section 5.5, Planned Developments). The other parcel is the Zelkovia Drive right-of-way at MP 0.6, located west of Hornbaker Road near the proposed Pegasus Switching Station. Wellington–Pegasus Route 1 would cross less than 0.1 acre of each of the County parcels where they join Hornbaker and Wellington Roads. Wellington–Pegasus Route 1 would have no impact on the long-term use and operations of either of the County-owned parcels/road rights-of-way.

TABLE 5.1-2 COUNTY-OWNED LANDS WITHIN 0.25 MILE OF THE ROUTE ALTERNATIVES

Facility or Parcel	Parcel Owner	Approximate Acreage and Description	Approximate Distance and Direction from Route Alternatives
Wellington Operations Center	PWW	9.4-acre industrial water facility at 8410 Virginia Meadows Drive	100 feet north of DP1 and DP2 (MP 1.1); 100 feet west of DP2 (MP 1.3)
Broad Run Linear Park	BOS	26.9-acre portion of Broad Run Linear Park and Broad Run Greenway north of Rt. 28 and west of Hornbaker Road	0.2 mile south of proposed Hornbaker Switching Station
7496-98-1336	BOS	0.1-acre planned road right-of-way, adjacent to the existing Devlin Road right-of-way	Crossed by DP1 and DP2 (100 feet south of MP 0.1)
7496-98-2732	BOS	0.3-acre planned road right-of-way, adjacent to the Devlin Road and Hansen Farm Road rights-of-way	Crossed by DP1 and DP2 (between MP 0.1 and 0.2)
7496-98-2718	BOS	0.7-acre planned road right-of-way adjacent to the Devlin Road and Hansen Farm Road rights-of-way	Crossed by DP1 and DP2 (MP 0.2)
7496-98-5962	BOS	4.3-acre parcel for the Balls Ford Road right-of-way	Crossed by DP1 and DP2 (MP 0.2)
7496-98-3801	BOS	0.2-acre parcel associated with the Devlin Road right-of-way	100 feet south of DP1 and DP2 (MP 0.3) near the intersection of Devlin Road and Hansen Farm Road
7496-99-2135	BOS	2.0-acre undeveloped, cleared parcel southeast of the intersection of Wellington Road and Hansen Farm Road	Less than 0.1 mile north of DP1 and DP2 (MP 0.1)
7496-97-1777	BOS	0.6-acre parcel adjacent to the Devlin Road right-of-way	0.1 mile southwest of DP1 and DP2 (MP 0.3)
7496-97-1464	BOS	0.2-acre parcel with portions of a residential driveway and road frontage, adjacent to the Devlin Road right-of-way	0.1 mile southwest of DP1 and DP2 (MP 0.3)
7496-97-0850	BOS	0.2-acre parcel with portions a residential driveway and road frontage, adjacent to the Devlin Road right-of-way	0.1 mile southwest of DP1 and DP2 (MP 0.3)
7496-97-0337	BOS	0.2-acre parcel with portions of a residential driveway and road frontage, adjacent to Devlin Road right-of-way	0.1 mile southwest of DP1 and DP2 (MP 0.3)
7496-87-9930	BOS	0.1-acre parcel adjacent to the Devlin Road right-of-way, near the intersection with Jennell Road	0.2 mile southwest of DP1 and DP2 (MP 0.3)
7496-87-9420	BOS	0.3-acre parcel adjacent to the Devlin Road right-of-way, near the intersection with Jennell Road	0.2 mile southwest of DP1 and DP2 (MP 0.3)

Facility or Parcel	Parcel Owner	Approximate Acreage and Description	Approximate Distance and Direction from Route Alternatives
7496-86-8496	BOS	0.3-acre undeveloped parcel adjacent the Devlin Road right-of-way, south of the intersection with Jennell Road	0.2 mile southwest of DP1 and DP2 (MP 0.3)
7496-86-7473	BOS	0.2-acre parcel with a residential driveway and is adjacent to the Devlin Road right-of-way, south of the intersection with Jennell Road	0.2 mile south of DP1 and DP2 (MP 0.4)
7496-99-8740	BOS	0.1-acre parcel is adjacent to the Devlin Road right-of-way, south of Wellington Road	0.2 mile north of DP1 and DP2 (MP 0.2)
7496-99-9934	BOS	0.1-acre parcel is adjacent to the Devlin Road right-of-way, south of Wellington Road	0.2 mile north of DP1 and DP2 (MP 0.2)
7596-27-8519	BOS	0.2-acre parcel with a business driveway, south of the Wellington Road right-of-way	0.2 mile north of DP1 and DP2 (MP 1.0)
7596-76-4603	BOS	6.0-acre undeveloped, forested parcel	0.3 mile north of DP2 (MP 2.0)
7596-64-8677	BOS	0.2-acre non-addressed right-of-way parcel, located adjacent to the Sudley Manor Drive right-of-way	0.1 mile east of DP2 (MP 2.1)
7596-74-2370	BOS	1.7-acre parcel is adjacent to the Sudley Manor Drive and Prince William Parkway rights-of-way	0.1 mile east of DP2 (MP 2.2)
7596-72-4043	BOS	3.2-acre parcel is the road right-of-way for Zelkovia Drive and Mike Garcia Drive	Crossed by DP1 (MP 2.4) and DP2 (MP 2.8), HH (MP 0.6) and WP (MP 0.2)
7596-73-8579	BOS	0.8-acre forested and cleared parcel located at the intersection of Wellington Road and Prince William Parkway	200 feet north of WP (MP 0.4); 0.2 mile northeast of DP1 (MP 2.3) and DP2 (MP 2.7)
7596-91-9540	BOS	7.7-acre parcel is the road right-of-way associated with Katherine Johnson Avenue	Crossed by WP (MP 0.2)
7596-74-6689	BOS	1.9-acre primarily undeveloped parcel located at the intersection of Sudley Manor Drive and Prince William Parkway. The southern extents of the parcel contain temporary storage	0.2 mile northwest of WP (MP 0.3)
7596-75-7104	BOS	1.0-acre undeveloped parcel located between Sudley Manor Drive and Five Forks Road	0.3 mile northwest of WP (MP 0.1)
7595-79-4042	BOS	0.3-acre parcel located north of University Boulevard, adjacent to commercial development	0.2 mile northeast of PH (MP 0.9)

Facility or Parcel	Parcel Owner	Approximate Acreage and Description	Approximate Distance and Direction from Route Alternatives
7595-88-2202	BOS	2.9-acre undeveloped parcel located east of Hornbaker Road	Less than 0.1 mile east of PH (MP 1.5)
7595-87-3529	BOS	5.0-acre undeveloped, forested parcel located east of Hornbaker Road and Inspiration Court	0.2 mile east of PH (MP 1.5); 0.1 mile northwest of HH (MP 1.2)
7595-87-3038	BOS	6.3-acre, open, undeveloped parcel located east of Hornbaker Road	0.1 mile east of PH (MP 1.5); 0.3 mile north of HH (MP 1.3)
7595-86-3280	BOS	6.6-acre, open, undeveloped parcel located east of Hornbaker Road	0.1 mile northeast of PH (MP 1.6); 0.1 mile north of HH (MP 1.3)
7595-96-9331	BOS	19.7-acre undeveloped parcel with forested area and a stream, is located east of Hornbaker Road and west of Discovery Boulevard	Crossed by HH (MPs 0.9 to 1.0); 0.2 mile northeast of PH (MP 1.5)
7695-16-0413	BOS	23.5-acre parcel with cleared, undeveloped, and developed areas near Discovery Boulevard and Challenger Court	Crossed by HH (MPs 0.7 to 0.9)
7695-06-7332	BOS	This 1.5-acre parcel is the road right-of-way associated with Challenger Court	Crossed by HH (MP 0.8)
7695-04-7375	BOS	103.9-acre undeveloped parcel located along Prince William Parkway. The southern portion of the parcel is adjacent to the Discovery Boulevard right-of-way	0.1 mile south of HH (MP 0.8)
7695-19-6716	BOS	3.0-acre undeveloped, forested parcel located south of University Boulevard and east of Innovation Drive	0.3 mile north of HH (MP 4.0)
7695-27-8583	BOS	4.0-acre undeveloped parcel with forest and stream areas, located west of University Boulevard	0.1 mile north of HH (MP 0.3)
7695-37-1454	BOS	This 0.9-acre parcel is the road right-of-way associated with Innovation Drive, south of University Boulevard	Crossed by HH (MP 0.2)
7695-37-2288	BOS	0.2-acre undeveloped parcel located southwest of University Boulevard	0.1 mile north of HH (MP 0.2)

BOS = Prince William County Board of Supervisors; HH = Hourglass–Hornbaker Route 1 (Hybrid); MP = milepost; PWW = Prince William Water; DP1 = Devlin–Pegasus Route 1; DP2 = Devlin–Pegasus Route 2; VDOT = Virginia Department of Transportation; WP = Wellington–Pegasus Route 1.

TABLE 5.1-3 NUMBER OF PARCELS CROSSED BY THE ROUTE ALTERNATIVES

Parcel Type [a]	Wellington–Pegasus Route 1	Pegasus–Hornbaker Route 1 [b]	Hourglass–Hornbaker Route 1 (Hybrid) [c]	Devlin–Pegasus Route 1	Devlin–Pegasus Route 2
Total parcels crossed by right-of-way	8	34	15	33	33
Privately-owned parcels crossed by right-of-way	6	32	11	28	28
County-owned parcels crossed by right-of-way	2 [e]	2 [e]	4	5 [e]	5 [e]

[a] The Project would not cross any federal- or state-owned lands.
[b] Includes the proposed Hornbaker Switching Station.
[c] Includes of the proposed transition station.
[e] Crossings only include parcels associated with existing/future roads.

Pegasus–Hornbaker Route 1

Pegasus–Hornbaker Route 1 would cross two adjacent parcels owned by the Prince William County Board of Supervisors between MPs 0.1 and 0.2. The parcels contain the road right-of-way of Mike Garcia Drive, west of Hornbaker Road near the proposed Pegasus Switching Station. The route would cross approximately 0.1 acre of Mike Garcia Drive at a perpendicular angle. Pegasus–Hornbaker Route 1 would have no impact on the long-term use and operations of the County-owned parcel/Mike Garcia Drive.

Hourglass–Hornbaker Route 1 (Hybrid)

Hourglass–Hornbaker Route 1 would cross four parcels owned by the Prince William County Board of Supervisors, as described below.

- Approximately 0.2 acre of a parcel between MPs 0.2 and 0.3 owned by the Prince William County Board of Supervisors associated with the Innovation Drive right-of-way. The route would cross at a perpendicular angle in an overhead configuration.
- Approximately 2.9 acres on three parcels west of Prince William Parkway (from MPs 0.7 to 1.0) on both sides of Discovery Boulevard. These include approximately 1.8 acre of a County-owned parcel currently under development; less than 0.1 acre of County-owned land within the Challenger Court right-of-way; and approximately 0.9 acre of forested County-owned land west of Discovery Boulevard. The route would cross these parcels through an underground configuration.

Hourglass-Hornbaker Route 1 would have no impact on the long-term use and operations of the County-owned parcel associated with the road right-of-way for Innovation Drive. Coordination with the County would be required for construction, operations, and maintenance schedules, especially if construction requires temporary road closures of Challenger Court and Discovery Boulevard. The underground portion of the route would minimize visual impacts; however, the presence of an

underground utility right-of-way would limit the type and location of development on these parcels.

Devlin–Pegasus Route 1

Devlin–Pegasus Route 1 would cross five parcels owned by the Prince William County Board of Supervisors, including four parcels (totaling approximately 0.4 acre) between MPs 0.2 and 0.3 associated with the Hansen Farm Road and Balls Ford Road rights-of-way and one parcel (totaling approximately 0.2 acre) associated with the Zelkovia Drive right-of-way near MP 2.4. The route would have no impact on the long-term use of these parcels.

Devlin–Pegasus Route 2

Devlin–Pegasus Route 2 would cross the same five County-owned parcels described above for Devlin–Pegasus Route 1.

5.1.2 LAND USE AND LAND COVER

ERM identified land use and land cover in the study area using a combination of the state-wide VGIN Land Cover Dataset and aerial photo interpretation to identify the most current uses within the Project area (NAIP 2023; VGIN 2024). Land use and land cover in the study area are broken down into the five main categories described below.[4]

- **Developed lands**: These are areas characterized by medium to high-density constructed buildings, such as certain residential subdivisions, industrial uses, commercial areas, and impervious surfaces.
- **Open space**: These are areas primarily covered by planted grasses, including vegetation planted in developed settings for erosion control or aesthetic purposes, but also natural herbaceous vegetation and undeveloped land, parks, and open space recreational facilities.
- **Forested lands**: These are areas where land cover consists of natural or maintained woody vegetation.
- **Agricultural lands**: These are areas used for commercial farming (e.g., commercial row crops or specialized agricultural activities) or grazing.
- **Open water**: These are open water features, including rivers, streams, lakes, canals, waterways, reservoirs, and ponds.

FIGURE 5.1-2 DEPICTS LAND USE/LAND COVER WITHIN 0.25 MILE OF THE ROUTE ALTERNATIVES AND

[4] For purposes of land use/land cover, wetland areas have been classified as open space, forested land, or open water depending on wetland type. Wetlands near the routes are discussed separately in Section 5.2.1

summarizes land use and land cover crossed by the route alternatives. The predominant land use/land cover in the study area is developed land. Developed land uses such as industrial warehousing, data centers, and commercial buildings, are in the northern and eastern portions of the study area along Prince William Parkway, Wellington Road, and University Boulevard. In the western part of the study area, developed lands include educational uses and medium-density residential areas. Forested land is dispersed throughout the developed areas. There are no agricultural lands within the study area.

TABLE 5.1-4 LAND USE/LAND COVER CROSSED BY THE ROUTE ALTERNATIVES

Land Use / Land Cover	Unit [a]	Wellington–Pegasus Route 1	Pegasus–Hornbaker Route 1 [b]	Hourglass–Hornbaker Route 1 Overhead [c]	Hourglass–Hornbaker Route 1 Underground [d]	Devlin–Pegasus Route 1	Devlin–Pegasus Route 2
Total right-of-way	miles	0.6	1.9	0.8	0.5	2.4	2.8
	acres	7.2	28.2	9.4	7.7	28.6	33.4
Forested	acres	2.2	5.6	.4	1.5	11.5	14.0
Agricultural	acres	0.0	0.0	0.0	0.0	0.0	0.0
Developed	acres	3.2	12.5	8.5	4.8	5.4	7.2
Open space	acres	1.8	6.6	0.5	1.5	11.3	12.2
Open water	acres	0.0	0.0	0.0	0.0	0.4	0.0

Sources: NAIP 2023, VGIN 2024, with aerial photo interpretation by ERM.

[a] Acreage totals may not match the sum of the addends due to rounding.
[b] Includes the proposed 2.3-acre Hornbaker Switching Station.
[c] Includes the proposed 3.1-acre transition station.
[d] Includes the 0.7-acre temporary workspace.

5.1.2.1 IMPACT ASSESSMENT

Except for the placement of transmission structures, the overhead Project facilities would have no direct impacts on open space, developed land, or open water land use types. Forested land use within the selected right-of-way would be converted to maintained herbaceous land. Section 5.2.5 evaluates the Project's impacts on forests. All of the route alternatives and the proposed Hornbaker Switching Station cross primarily developed land, including planned developments, as discussed in Section 5.1.5. Except for road rights-of-way, all land within the underground portion of Hourglass–Hornbaker Route 1 would be converted to (as needed) and maintained as herbaceous land—equivalent to the open space category in Table 5.1-4.

5.1.3 LAND USE PLANNING AND ZONING

5.1.3.1 LAND USE PLANNING

Section 15.2-2223 of the Va. Code requires each local planning commission to adopt a comprehensive plan that provides guidance for the physical development within its jurisdiction. Comprehensive plans assess existing and future land uses, anticipate development trends, and make recommendations for guiding the long-term development decisions of a city or county. Virginia also requires that a comprehensive plan be reviewed at least once every 5 years to adjust to actual or projected changes in land use conditions or needs (Va. Code Section 15.2-2230).

The Project is located entirely within Prince William County.

The Prince William County 2040 Comprehensive Plan (the Comprehensive Plan) guides the County's future growth, redevelopment, and preservation of the County, as well as future investments in public infrastructure (Prince William County Planning Office 2022). The Comprehensive Plan was updated in 2022 when the County Board of Supervisors approved major updates to its land use, mobility, housing, sanitary sewer, and electrical utility services sections. The 2022 updates to the Electrical Utility Services Plan provide guidance on siting and design of new infrastructure and acknowledges the growing need for electrical facilities to support ongoing and future development in an area with limited available land. The Comprehensive Plan encourages efficient, sustainable development while promoting equitable, diverse communities. Planned land use in the study area is predominately industrial and mixed-use development. The Comprehensive Plan identifies activity centers as areas predicted to provide supplemental future growth and help achieve the goals outlined in the Comprehensive Plan. The Breamar Activity Center, Bristow Activity Center, and Innovation Park Small Area are located within the study area. One purpose of the Project (see Section 1.1) is to help to meet growing demand for electricity in these areas.

5.1.3.2 ZONING

Local governments use zoning to formally designate land use districts, identify intended and compatible land uses in those districts, establish standards to guide orderly and efficient land use and development, and implement the objectives of their comprehensive plan. A zoning ordinance may be modified by the local Board of Supervisors and governing bodies or through requests from residents or businesses to change zoning designations and approve new uses.

Under Virginia law, public utilities planning to construct any transmission line of 138 kV or higher may either obtain a CPCN from the SCC or obtain the applicable local zoning ordinance approvals (Va. Code § 56-265.2). The SCC's issuance of a CPCN would preempt local zoning ordinances. Because Dominion is applying to the Virginia SCC for a CPCN for the Project, this study does not include a discussion of Prince William County zoning districts.

In addition to "base" zoning districts, the Prince William County Zoning Ordinance identifies overlay districts that add requirements or identify permitted uses that apply in addition to those of the underlying district (Prince William County Planning Office 2024). This section discusses relevant overlay districts in the study area, because they are important for understanding the County's vision for current and future land uses within the study area, and thus affect electrical transmission line routing and siting.

Data Center Opportunity Zone Overlay District

The Prince William County Data Center Opportunity Zone Overlay District (DCOZOD) promotes the development of data centers while supporting the protection of private property, historical resources, and commercial interests. The DCOZOD promotes the siting of data centers where existing infrastructure could adequately support the proposed use. It has been applied primarily to the industrial zones of the County where water, sewer, and power infrastructure are already in place. The entire study area east of the residential subdivisions (about 45 percent of the study area) is within the DCOZOD, as are other commercial and industrial developments and utility infrastructure.

Airport Safety Overlay District

Nearly the entire study area is within the Airport Safety Overlay District, which was established to address potential airport-related hazards and obstructions that could reduce the utility of Manassas Regional Airport by limiting the airspace available for aircraft takeoff, landing, and maneuvering. The County limits the height of structures and trees within the district and requires consultation with the FAA, the Virginia Department of Aviation, or the Manassas Regional Airport board when construction is proposed within an approach surface, a runway clear zone, or a transition surface area within the district, or if a proposed structure would be greater than 90 feet tall. While the study includes some of the airport's approach surfaces and transitional surfaces, the airport itself is approximately 1.3 mile south of the Project. Section 5.1.10 describes the Project's impacts on airports, as well as Dominion's coordination activities related to airspace.

5.1.3.3 LANDSCAPING AND BUFFERING

A number of parcels within the study area—both privately held and publicly owned—have vegetated buffers, implemented through provisions of the Prince William County Ordinance, Design and Construction Standards Manual (DCSM) or through development proffers. Buffers are designed to provide visual screening between land uses and/or create a natural barrier around environmentally sensitive features. Section 800 of the DCSM defines buffers as areas of existing vegetation or landscaping that may include other features such as a fence or berm located along property lines (Prince William County Government 2014). The DCSM provides regulations for plant

species and planting density, encourages the use of plant species native to Virginia, and emphasizes the use of both deciduous and evergreen trees.

The density of development in the study area necessitated routing several segments of the Project's route alternatives either along or across buffer areas. In these locations, trees within existing buffers would need to be permanently removed and planned buffers would need to be modified to accommodate the construction of the transmission line. Table 5.1-5 lists the parcels with known buffers crossed by the route alternatives.

Although the Project would be exempt from local ordinances, as discussed above, the Company has been working with affected developers and the County to enable landowners and developers to remain in compliance with buffer requirements and commitments on their parcels.

The Company and ERM have held meetings with Prince William County staff and affected developers along the route alternatives since August 2023 to discuss the impacts of the Project on existing or proposed landscape buffers. The Company continues to consult with Prince William County and the affected landowners and developers to come to a mutually agreeable solution to this issue. The Company maintains an approved list of vegetated species that can safely be planted and maintained in the rights-of-way for overhead transmission lines.

TABLE 5.1-5 PARCELS WITH BUFFER REQUIREMENTS CROSSED BY THE ROUTE ALTERNATIVES

Parcel ID	Proffer Requirement	Routes Crossed
7496-88-1217	20-foot landscape buffer, 50-foot undisturbed buffer, and 20-foot evergreen planting strip.	D-P1, D-P2
7596-08-8204	40 setback line and buffer strip along the southern boundary.	D-P1, D-P2
7596-17-3979	50-foot buffer along southern portion of property, 6-foot chain link fence required per proffers.	D-P1, D-P2
7596-17-0706	50-foot buffer along southern portion of property, 6-foot chain link fence required per proffers (possible location underneath future transmission line).	D-P1, D-P2
7596-26-8037	50-foot-wide buffer along the common property line bordering agricultural or residential property unless waivers are obtained.	D-P1, D-P2
7596-35-0767	A 50-foot-wide buffer along the common property line bordering agricultural or residential property unless waivers are obtained.	D-P1, D-P2
7596-35-5547	100-foot buffer along RPA, adjacent to Dawsons Branch. Areas within the floodplain to remain undisturbed.	D-P1, D-P2
7596-34-4685	100-foot buffer along RPA, adjacent to Dawsons Branch. Areas within the floodplain to remain undisturbed.	D-P1
7596-35-9200	Multiple development proffers to include landscaping, streetscape and landscaping plan. Minimum 25-foot setback to building and parking lot on both sides of Sudley Manor Drive. Open space area for recreational purposes and 100-foot RPA buffer.	D-P1

Parcel ID	Proffer Requirement	Routes Crossed
7596-44-4288	50-foot buffers on western and southern property boundaries. Transmission line location runs through buffers and potential open space conservation area.	D-P1
7596-54-4132	Future data center campus. Tree preservation, reforestation, buildable area, and landscaping proposed in location of transmission line.	D-P1, D-P2
7596-63-6606	Future data center campus. Tree preservation, reforestation, buildable area, and landscaping proposed in location of transmission line.	D-P1, D-P2
7596-45-7690	60-foot buffer along south side of Wellington Road, 50-foot buffer along north side of Wellington Road, and 30 foot along Sudley Manor Dr.	D-P2
7596-57-4735	10-foot and 50-foot buffers required around perimeter; small tree preservation area required along frontage.	D-P2
7596-56-1578	10-foot and 50-foot buffers required around perimeter; small tree preservation area required along frontage.	D-P2
7596-66-0725	10-foot and 50-foot buffers required around perimeter; small tree preservation area required along frontage.	D-P2
7596-55-9338	Future data center campus. Tree preservation, RPA buffer, and landscaping proposed in location of transmission line.	D-P2
7596-61-9286	Future Pegasus Switching Station proposed on site. Existing proffer requires 50-foot buffer along Hornbaker Road and retention of land area in RPA with no disturbance.	D-P1, D-P2, PH, WP
7595-69-2565	Conservation easement is required along stream. 15-foot landscape buffer required along University Blvd.	PH
7595-59-7124	Landscape buffer along parcel frontage on Industrial Drive.	PH
7595-67-3583	50-foot buffer on all lots adjoining residential land use along the westerly property line; landscaped area of 100 foot on all lots adjoining the northwesterly and portion of westerly property line.	PH
7595-67-8986	50-foot buffer easement.	PH
7595-66-9366	50-foot and 35-foot landscaping around perimeter.	PH
7595-77-5466	30-foot and 15-foot landscape buffers.	PH
7595-76-6546.01	50-foot and 35-foot landscaping around perimeter.	PH
7595-85-1099	Future Hornbaker Switching Station proposed on site. 50-foot and 35-foot landscaping around perimeter.	HH, PH
7596-83-5748	The applicant shall not locate utilities or utility easements with the 25-foot or 30-foot buffers as shown on the SUP Plan; tree preservation plan; open space requirements.	WP
7596-81-5396	100-year floodplain shall be conveyed to the County BOS at the time of approval for the first site plan; cemetery preservation to include 25-foot buffer provided adjacent to the permitter of the cemetery with pedestrian access to the cemetery.	WP

Parcel ID	Proffer Requirement	Routes Crossed
7695-36-6111	100-foot buffer along the eastern property line.	HH
7695-36-1324	50-foot buffer along northern property line.	HH
7695-26-7645	50-foot buffer along northern property line.	HH
7695-26-4469	50-foot and 15-foot buffers along the northern property line. 100-foot tree conservation areas on the western and southern property lines.	HH
7695-17-9607	100-foot tree conservation areas on the western and southern property lines.	HH
7595-85-6929	50-foot landscape buffer and 50-foot utility easement.	HH
7595-85-3439	50-foot landscape buffer and 50-foot utility easement.	HH

D-P1 = Devlin–Pegasus Route 1; D-P2 = Devlin–Pegasus Route 2; HH = Hourglass–Hornbaker Route 1 (Hybrid); PH =Pegasus–Hornbaker Route 1; RPA = Resource Protection Area; SUP = special use permit; WP = Wellington–Pegasus Route 1

5.1.3.4 IMPACT ASSESSMENT

ERM and the Company designed the routes to minimize impacts on existing and planned land use patterns and planned development to the degree possible through collocation with existing infrastructure, coordination with developers, following the edges of parcel boundaries, and mitigating impacts on vegetated buffers.

All route alternatives would generally have the same impacts on existing and future land use. The route alternatives primarily cross land designated for commercial and industrial uses. Transmission lines and associated facilities are generally less impactful to industrial areas than residential or rural areas. The routes further support the goals of the Plan by serving industrial and data center development within the DCOZOD and activity centers. Based on review of land planning objectives and coordination with County planning staff, the route alternatives would not conflict with the land planning objectives outlined in the Plan.

As stated above, issuance of a CPCN for the Project would preempt the need for compliance with local zoning provisions. The Project would generally be compatible with industrial and commercial zoning in the study area.

The Company continues to coordinate with County staff and affected landowners and developers to address the Project's potential impacts on vegetated buffers in a way that allows affected properties to remain in compliance with County requirements and other developer commitments.

5.1.4 RESIDENTIAL DWELLINGS AND NON-RESIDENTIAL BUILDINGS

ERM identified residential dwellings and non-residential buildings within 60 feet of the rights-of-way and within 100, 250, and 500 feet of the centerline of each route through review of digital datasets, maps, recent digital aerial photography (NAIP 2023), and building footprint data from the Prince William County Interactive Data Portal (Prince William County GIS Data Portal 2020). Residential dwellings refer to single-family detached residences and multi-family complexes. Non-

residential buildings include commercial structures, outbuildings, and non-residential structures on residential-use parcels (sheds, barns, garages, etc.).

Table 5.1-6 lists the number of buildings within 60 feet of the right-of-way and within 100, 250, and 500 feet of the centerline of each route alternative. Figure 5.1-3 depicts locations of residential and non-residential buildings along the routes. There are no commercial buildings within the right-of-way of any of the route alternatives.

Most residences within the study area are single-family dwellings within residential subdivisions, particularly along Linton Hall Road, Sudley Manor Drive, Wellington Road and University Boulevard. There are multi-family apartment complexes and townhouses scattered throughout the area, including Abberly Avera Apartment Homes, Arcadia Run, and The Regency Apartment Homes, which are located adjacent to planned and existing industrial and commercial land uses.

Commercial and industrial areas in the study area are concentrated mainly along Prince William Parkway and the eastern portion of the study area, with additional developments located throughout the westernmost residential areas. Uses in these areas include, but are not limited to, a compost facility, a wedding venue, automotive rentals, data and distribution centers, and show rooms.

TABLE 5.1-6 RESIDENTIAL AND NON-RESIDENTIAL BUILDINGS NEAR THE ROUTE ALTERNATIVES

Environmental Feature	Unit	Wellington–Pegasus Route 1	Pegasus–Hornbaker Route 1	Hourglass–Hornbaker Route 1 (Hybrid)	Devlin–Pegasus Route 1	Devlin–Pegasus Route 2
Dwellings within 60 feet of right-of-way	Number	0	0	0	4	0
Dwellings within 100 feet of centerline	Number	0	0	0	3	0
Dwellings within 250 feet of centerline	Number	0	2	0	24	6
Dwellings within 500 feet of centerline	Number	0	6	0	92	34
Non-residential buildings (commercial and outbuildings) within right-of-way	Number	0	0	0	0	0
Non-residential buildings (commercial and outbuildings) within 250 feet of centerline	Number	7	32	10	23	27
Non-residential buildings (commercial and outbuildings) within 500 feet of centerline	Number	17	58	20	57	58

5.1.4.1 IMPACT ASSESSMENT

In accordance with the SCC Guidelines, routing through commercial and industrial areas, when practicable, is preferred to crossing residential areas to minimize potential conflicts with existing and planned land uses. Except for temporary impacts such as noise, traffic, or road closures during construction, the Project would have no direct impacts on the operation or use of any buildings. Dominion would coordinate directly with any landowners affected by temporary road closures.

In developing the routes alternatives, the Company attempted to minimize visual impacts on residences and residential areas to the extent practicable by using existing tree cover and land features to visually obscure transmission infrastructure from existing residences and by routing away from these areas to keep other commercial/industrial buildings between homes and the Project facilities. Section 5.3 discusses the Project's visual impacts.

There are no dwellings within 500 feet of Hourglass–Hornbaker Route 1 and Wellington–Pegasus Route 1. The remainder of this section discusses the impacts of the other route alternatives on buildings.

Pegasus–Hornbaker Route 1

The nearest existing dwellings to Pegasus–Hornbaker Route 1 are the Abberly Avera Apartment Homes, approximately 100 feet north of MP 0.4. An existing 50-foot vegetated buffer will remain in place after construction and will provide a visual buffer between the route alternative and apartment complex. Most other dwellings would be 0.2 mile or greater from the route alternative. Vegetation, topography, and development between these dwellings and Pegasus–Hornbaker Route 1 would partially or completely obstruct views of the route from these residences.

Devlin–Pegasus Route 1

The nearest dwellings to Devlin–Pegasus Route 1 are near MP 1.5, including the Arcadia Run multifamily apartment complex to the north of the route and the single-family homes on Webster Tavern Way to the south. These residential areas are both within 60 feet of the right-of-way. The route would require significant tree clearing in this area, leaving no vegetated screening for Arcadia Run and limited screening for Webster Tavern Way. The Project would not restrict use of these residential areas; however, the right-of-way would abut the most southern building in the Arcadia Run Apartment Complex and would overlap the parking lot, sidewalks, and internal roads in this area. Other dwellings (generally west of Lexington Valley Drive) could experience limited visual impacts, although existing vegetated buffers will remain.

Devlin–Pegasus Route 2

The nearest dwellings to Devlin–Pegasus Route 2 would be within Arcadia Run, approximately 200 feet south of MP 1.6. The route would require removal of trees in the far northern corner of the apartment parcel, potentially exposing residences in the northernmost building to views of the transmission line. Other vegetated buffers would remain in place; most views of the route from Arcadia Run would be across Wellington Road and through the vegetation that lines the east side of the road.

5.1.5 PLANNED DEVELOPMENTS

ERM obtained information about planned developments through publicly available data on the County website, the County development services website, and consultations with County planning officials and other stakeholders (Prince William County Planning Office 2024).

Table 5.1-7 lists the planned developments within 0.25 mile of the route alternatives. The remainder of this section discusses the status of these developments and the Project's impacts on them. Figure 5.1-4 depicts the planned developments in the study area. Section 5.1.9 discusses planned road expansions and other transportation projects.

TABLE 5.1-7 PLANNED DEVELOPMENTS WITHIN 0.25 MILE OF THE ROUTE ALTERNATIVES

Planned Development	Development Type	Status	Crossed by Routes
11318 and 11350 Industrial Road Rezoning	Commercial	Rezoning under review	None
Amazon Data Center	Data Center	Rezoning under review	DP1, DP2
Avanti Data Center (NVA02)	Data Center	Approved; Under construction	HH, PH
Avera II Rezoning	Planned Mixed Residential	Rezoning under review	None
Black Chamber Group Development	Data Center	Rezoning under review	DP1, DP2
Bristow Data Center Campus	Data Center, Hourglass Substation	Under review	DP1, DP2
Broad Run Industrial Park Lot 1A Storage Yard	Commercial	Rezoning approved February 2022; Site Plan listed as “Closed” August 2024	None
Broad Run Industrial Lot 1B Storage Tent	Commercial	Site plan approved July 2024	None
Cambria Lexington Valley	Commercial	Under construction; site plan approved in 2021	DP1
Corner Properties Storage Yard	Commercial	Rezoning Approved in 2022; site plan approved 2023; site development permit issued 2024	None
Firestone Park Center	Commercial	Under construction	DP1, DP2
Hayden Road Public Improvement Plan	Transportation	Approved	DP2
Hornbaker Testfit	Commercial	Under review	WP
Independence Parcel A1A and A1B	Commercial	Site plan approved November 2024	DP1, DP2
Innovation Covance Data Center	Data Center, Hornbaker Switching Station	Under construction	HH
Innovation South	Commercial	Rezoning Under Review	None

Planned Development	Development Type	Status	Crossed by Routes
Innovation Town Center (Katherine Johnson Avenue)	Commercial	Under construction	WP
Iron Mountain Data Center Campus	Data Center	Rezoning Approved; Under construction	DP2
JKF Rezoning	Commercial	Rezoning Approved in 2022	None
JK Redstone Data Center Campus	Data Center	Site plan under review	PH
Manassas Gateway	Commercial	In design	None
Microsoft Bristow	Data Center	Under review	DP1, DP2
Millwood Market Fuel Station	Commercial	Site plan under review	WP
MurLarkey Distillery Expansion	Commercial	Under construction	None
Prince William County Economic Development	Commercial	In design	None
QTS Project Hero	Commercial	Under construction	None
Republic Services Facility	Data Center	Under construction	None
Southpoint Phase II	Data Center	Under construction	DP1, DP2
Truck Enterprises Inc. building	Commercial	Site plan under review	PH
VA6 Iron Mountain Data Center	Data Center	Five operational facilities; two planned, under construction	DP2
Wellington Glen Data Center and Pegasus Switching Station	Data center	Under review	DP1, DP2, WP
Wellington Glen Technology Park (formerly Wellington Glen SDC)	Data center	Rezoning application under review	DP1, DP2
Youth for Tomorrow Data Center	Data Center	Rezoning approved in 2019; Modification approved in 2022; inactive	None

DP1 = Devlin–Pegasus Route 1; DP2 = Devlin–Pegasus Route 2; HH = Hourglass–Hornbaker Route 1 (Hybrid); PH =Pegasus–Hornbaker Route 1; WP = Wellington–Pegasus Route 1.

5.1.5.1 IMPACT ASSESSMENT

Depending on when they are built, planned developments crossed by Project facilities could experience temporary impacts such as noise, dust, and traffic during the construction period, as well as visual impacts during operations. Visual impacts only apply when planned developments have a line of site to the transmission line. In general, residents of planned residential development would be more sensitive to visual changes than users of planned commercial and especially industrial development. Section 5.3 discusses visual impacts in more detail.

Table 5.1-8 lists the acres of each applicable development within the right-of-way of the route alternatives for the Project. The remainder of this section addresses potential impacts—by route alternative—on planned developments that would be crossed by Project rights-of-way. Dominion would coordinate with site developers and agencies as needed to address impacts from construction activities, changes in vegetated buffers, and typical Project operations.

Hornbaker Switching Station

Avanti Data Center Campus (NVA02)

The Hornbaker Switching Station is located on the Avanti Data Center Campus. This campus encompasses multiple parcels and approximately 200 acres of land west of Hornbaker Road and north of Rt. 28. The Avanti Campus project was originally announced as a 125-acre campus in 2020 and has since evolved following land acquisition by the developer on adjacent parcels. The proposed Hornbaker Switching Station site is within the “NVA02” Campus. This part of the campus includes five data centers currently completed or under construction, as described below:

- NVA02A: approximately 227,000 square feet, with capacity for 40 MW;
- NVA02B: approximately 227,000 square feet, with capacity for 40 MW;
- NVA02C: approximately 15,000 square feet, with capacity for 2 MW;
- NVA02D: approximately 280,000 square feet, with capacity for 36 MW; and
- NVA02E: approximately 280,000 square feet, with capacity for 36 MW.

The NVA02 campus also includes five planned data centers with a total size of 1,300,00 square feet and the total capacity of 260 MW total. Although site plans were not publicly available, Dominion requested, and the developer provided, a June 2023 Combined Campus Master Plan to Dominion that details the existing and proposed data center locations.

The proposed Hornbaker Switching Station occupies approximately 2.3 acres within the NVA02 site southeast of NVA02D and NVA02E, adjacent to Hornbaker Road. The Hornbaker Switching Station site is adjacent to the Bristow Switching Station (proposed as part of a separate project), both of which will serve the data center campus. The Hornbaker Switching Station is necessary for the operation of the campus and has been accounted for in the Campus Master Plan. As such, construction and operation of the Hornbaker Switching Station would have no impact on the NVA02 data center campus.

TABLE 5.1-8 ACREAGE OF PLANNED DEVELOPMENTS CROSSED BY THE ROUTE ALTERNATIVES

Planned Development	Unit	Wellington–Pegasus Route 1	Pegasus–Hornbaker Route 1	Hourglass–Hornbaker Route 1 [b]	Devlin–Pegasus Route 1	Devlin–Pegasus Route 2
Planned Developments—total crossed	Number	4	4	2	10	11
Amazon Data Center	Acres	0.0	0.0	0.0	0.5	0.4
Avanti Data Center Campus (NVA02) [a]	Acres	0.0	6.2	1.1	0.0	0.0
Black Chamber Group Development	Acres	0.0	0.0	0.0	2.7	2.7
Cambria Lexington Valley	Acres	0.0	0.0	0.0	0.5	0.0
Firestone Park Center	Acres	0.0	0.0	0.0	0.2	0.2
Hayden Road Public Improvement Plan	Acres	0.0	0.0	0.0	0.0	0.5
Hornbaker Test Fit	Acres	2.7	0.0	0.0	0.0	0.0
Hourglass Sub and Innovation Covance Data Center [b]	Acres	0.0	0.0	9.8	0.0	0.0
Independence Parcel A1A & A1B	Acres	0.0	0.0	0.0	1.8	3.7
Innovation Town Center	Acres	< 0.1	0.0	0.0	0.0	0.0
Iron Mountain Data Center	Acres	0.0	0.0	0.0	0.0	4.9
JK Redstone Data Center Campus	Acres	0.0	6.2	0.0	0.0	0.0
Microsoft Bristow Data Center	Acres	0.0	0.0	0.0	1.1	1.1
Millwood Market	Acres	1.1	0.0	0.0	0.0	0.0
Southpoint Phase II	Acres	0.0	0.0	0.0	1.6	1.6
Truck Enterprises Inc. Building	Acres	0.0	0.4	0.0	0.0	0.0
Wellington Glen Data Center and Pegasus Switching Station	Acres	0.3	2.4	0.0	3.1	3.1
Wellington Glen Technology Park (formerly Wellington Glen SDC)	Acres	0.0	0.0	0.0	5.7	4.1

[a] includes acreage of the proposed Hornbaker Switching Station.

[b] includes acreage of the proposed transition station.

Wellington–Pegasus Route 1

Hornbaker Testfit

Hornbaker Testfit is a proposed data center development that includes two data center buildings on an approximately 40-acre parcel southwest of the intersection of Prince William Parkway and Wellington Road. The northern data center building is approximately 660,000 square feet and would have a capacity of 72 MW. The southern data center building is approximately 150,000 square feet and would have a capacity of 12 MW. During and following a May 2024 meeting, the Hornbaker Testfit developers informed Dominion that they had signed a contract to purchase the parcel in January 2024 and submitted a rezoning request to the County in November 2024. The developer also provided a May 2024 site layout to Dominion. The rezoning application for the Project is currently under review by the County.

Approximately 0.3 mile of Wellington–Pegasus Route 1—MPs 0.3 to 0.6—would cross the proposed data center campus occupying approximately 2.7 acres within the parcel boundary, adjacent to Wellington Road and Hornbaker Road. From MP 0.3 to MP 0.4, the route would cross an area shown on the site plan as vegetatied with no planned buildings. The driveway around the data center buildings would partially be in the right-of-way. There is potential for conflicts with crane equipment and transmission line height restrictions in this area, when the data center cooling units would need to be replaced. Due to existing County water and sewer lines located adjacent to Wellington Road and Hornbaker Road on the parcel, the Company was not able to move the route closer to the roads. The route's alignment along the property boundaries to the north and west and its collocation with Wellington Road and Hornbaker Road would minimize impact of the route on the property's development potential. The route would not impede the development of any currently planned structures on the parcel.

Innovation Town Center

The Innovation Town Center is part of the larger Innovation Park development identified in the December 2020 Innovation Park Small Area Plan from (Prince William County 2020). The Innovation Park Small Area Plan outlines the intention to rebrand the area into a sustainable and economically viable community and includes an Employment Center district, a Technology Center District, and a University Center district. The northern portion located near Wellington–Pegasus Route 1 is within the University Center district. Innovation Town Center encompasses approximately 132 acres on the east side of Prince William Parkway, between Wellington Road and University Boulevard (Prince William County 2021). The most recent approved special use permit for Town Center (case SUP2016-00031) includes up to 364 residential units and up to 331,000 square feet of non-residential uses. The October 2023 Innovation Town Center site plan shows several land bays and areas for development, including mixed-use residential and commercial development with ground floor commercial retail, community amenity spaces such as a clubhouse and pool, townhouses, small parks and pedestrian plaza, and multiuse trails.

Except for the proposed Millwood Market and Fuel Station (described below), the right-of-way would cross less than 0.1 acre of land within the Innovation Town Center, near MP 0.2. This crossing would affect a parcel owned by Prince William County Board of Supervisors, associated

with the proposed Katherine Johnson Avenue. The road—portions of which are currently under construction—will ultimately connect to Wellington Road to provide access to the larger Innovation Park area. No transmission line structures would be located within the road right-of-way, and the Wellington–Pegasus Route 1 centerline would not directly cross the Innovation Town Center parcel. As such, Wellington–Pegasus Route 1 would have no impact on the operations of Innovation Town Center or the larger Innovation Park area. The minimal area of Innovation Town Center within the right-of-way, the absence of structures within the property, and the collocation of the route with Wellington Road would minimize the Project's potential impacts on this property. Based on the Innovation Town Center site plan, the route would not impede the development of any planned structures or major development areas within the property.

Millwood Market Fuel Station

Millwood Market Fuel Station is a proposed fuel station and convenience store located on an approximate 5-acre parcel at the southeast corner of the Wellington Road/Prince William Parkway intersection. The facility, owned by Stanley Martin Homes, LLC, would have a fuel station, drive thru, and quick service convenience store on site. The County approved a special use permit for the Project in December 2023 and is reviewing the final site plan, submitted in March 2024. Dominion met with Stanley Martin Homes in August 2024 to review potential route options across the subject property and learn more about the current status of the site.

Approximately 0.1 mile of the Wellington–Pegasus Route 1 would cross the northern boundary of the Milwood Market site between MP 0.2 and 0.3. The right-of-way would occupy approximately 1.1 acre of the parcel, adjacent to the south side of Wellington Road, east of Prince William Parkway. The route would cross an area that is designated for a vegetated landscape buffer, a proposed multi-use trail, electrical vehicle charging stations, bicycle rack storage, dumpster locations and waste disposal, and parking. The route would not affect use of the shared use path, parking, charging stations, or waste disposal locations, all of which are permissible within a transmission line right-of-way. Any plantings within the buffer area would need to comply with Dominion standards, which may impact the development's proposed vegetative buffer. As discussed above, Dominion is working with developers and the County to ensure that previously approved buffers remain in compliance with relevant regulations. The Millwood Market site plan shows two electronic signs, used to display the price of gas at the station, within the transmission line right-of-way. Dominion plans to coordinate the design and placement of these signs with the developer.

Wellington Glen Data Center and Pegasus Switching Station

The Wellington Glen Data Center and Pegasus Switching Station development is a proposed data center development on an approximate 40.4-acre parcel west of Hornbaker Road and north of Robertson Drive. The property is owned by Wellington Glen LLC and has gone through numerous rezoning applications. The developer submitted a final site plan for the "Manassas Tech Center" located on the parcel in July 2023; the plan is currently pending (case SPR2024-00026). During the routing process, Dominion met with the site developer, TA Realty, and obtained a May 2024 full build plan for the site. This plan includes the proposed Pegasus Switching Station footprint, three two-story data center buildings, a three-story non-residential building, two stormwater pond

areas, forested buffers between the site and adjacent residential development, and easements along the southern parcel boundary for other utilities.

Less than 0.1 mile of the Wellington–Pegasus Route 1 would cross the Wellington Glen data center campus between MP 0.5 and the route terminus at the proposed Pegasus Switching Station. The right-of-way would occupy approximately 0.3 acre of the parcel, west of Hornbaker Road. Based on the full build plan, Wellington–Pegasus Route 1 would be located within the proposed Pegasus Switching Station and an area of open space, assumed to be for vegetated buffering along Hornbaker Road. The route would not cross proposed data center buildings or other permanent structures. Dominion would coordinate with TA Realty as needed during construction address impacts from construction equipment and typical Project operations.

Pegasus–Hornbaker Route 1

Avanti Data Center Campus (NVA02)

The Avanti Data Center Campus is described above for the Hornbaker Switching Station.

Approximately 0.4 mile of Pegasus–Hornbaker Route 1 would cross the northeast portion of the NVA02 campus (see above) between MP 1.5 and its terminus at the proposed Hornbaker Switching Station. The right-of-way would occupy approximately 4.4 acres of the parcel, adjacent to Hornbaker Road (3.1 acres total including the Hornbaker Switching Station). Based on the June 2023 Combined Campus Master Plan, the route would cross areas designated for underground utilities, vegetative buffers, and service roadways off Hornbaker Road. The route would not intersect any existing or proposed data center buildings on the site. Collocation with the western side of Hornbaker Road and the eastern boundary of the NVA02 site would minimize the impacts of Pegasus–Hornbaker Route 1 on the site. As described above, Dominion has coordinated the Project with the developer throughout the routing process to avoid conflicts with proposed data center buildings or operations.

JK Redstone Data Center Campus

The JK Redstone Data Center Campus plans to construct approximately eight data center buildings within the Broad Run Industrial Park, southwest of the intersection of University Boulevard and Hornbaker Road. The entire site is approximately 110 acres and is currently occupied by various commercial and industrial businesses. Dominion met with JK Land Holdings to learn more about the planned development, its current status, and obtain site plans that may impact routing within the Borad Run Industrial Park area. In January 2025, JK Land Holdings provided Dominion additional detail on its plans to develop the site. The plans include eight data center buildings, equipment yards, service roads, a stormwater pond, three substations, and three switching stations.

Approximately 0.7 mile of Pegasus–Hornbaker Route 1 would cross the proposed JK Redstone data center campus between MP 0.5 and MP 1.6. The right-of-way would occupy approximately 6.2 acres of the site. Based on the January 2025 site plan, the route would follow the western and southern site boundaries. The route centerline and right-of-way would not cross any proposed data center buildings; however, the route right-of-way would cross a designated 20-foot setback

along the western site boundary, an onsite service road (MP 0.7), and a portion of one of the proposed switching stations along the southeast site boundary (MP 1.4). Pegasus-Hornbaker Route 1 would cross approximately 0.1 mile of the proposed switching station. The route would overlap portions of setbacks on the site that may contain vegetated buffers, as such, Dominion would work with JK Land Holdings to determine permissible plantings within the right-of-way to ensure some sort of vegetation is maintained. Collocation with the western and southern parcel boundary would minimize the route's potential impacts on the data center campus, equipment yards, and service roads. Dominion will continue to work with JK Land Holdings on alignment of the route within its parcel to minimize conflicts with proposed uses of the site.

Truck Enterprises Inc.

Truck Enterprises Inc. plans to demolish an existing commercial building in the Broad Run Industrial Park and construct a new sales/service building and parking area on an approximate 11-acre parcel west of Hornbaker Road and south of Industrial Road. The developer submitted a sketch site plan for the development, which occupies land owned by Morgan Property Investment LLC, to the County in November 2023, received approval in January 2024, and submitted a final site plan in June 2024. The final site plan, currently under review by the County, includes a 35,000-square-foot building for truck maintenance and sales with customer parking and a smoking shelter and a dog run near the south entrance, a covered truck wash north of the building, and parking east of the building.

Approximately 140 feet (less than 0.1 mile) of Pegasus–Hornbaker Route 1 would cross the southwest corner of the parcel between MP 1.4 and MP 1.5. The right-of-way would occupy approximately 0.4 acres within the parcel boundary. Based on the June 2024 final site plan, the route would cross open areas along the border of the parcel. The right-of-way would overlap with a proposed employee parking area, but no structures would be located within the parking lot. No structures or transmission infrastructure would impact any proposed buildings or facilities on the site.

Dominion learned from JK Land Holdings in September 2024 of their intention to purchase a large portion of the Broad Run Industrial Park—including the Truck Enterprises site—for data center campus development. This plan would eliminate the Truck Enterprises Inc. project, and therefore any impacts to proposed open space. JK Land Holdings shared a site plan with Dominion in January 2025 and plans to file the development plans with the County in early 2025. Please refer to the JK Redstone Data Center Campus above for information regarding that proposed development. The final site plan application for Truck Enterprises Inc. is set to expire in February 2025. Given the status of the JK Redstone Data Center Campus development, it is anticipated the Truck Enterprises Inc. development would expire and no longer be applicable.

Wellington Glen Data Center and Pegasus Switching Station

The Wellington Glen Data Center and Pegasus Switching Station are described above for Wellington–Pegasus Route 1.

Approximately 0.3 mile of Pegasus–Hornbaker Route 1 would cross the proposed Wellington Glen data center campus (see above) between MP 0.0, where it exits the proposed Pegasus Switching

Station, and MP 0.4. The right-of-way would occupy approximately 2.4 acres of the parcel. Based on the full build plan, once the route exists the proposed Pegasus Switching Station it would turn west and follow the southern site boundary. The route centerline and right-of-way would not cross any data center buildings or other permanent structures; however, the site plan shows this area as forested, indicating a likely vegetated buffer established through proffer. Collocation with the southern parcel boundary would minimize the route's potential impacts on the data center campus. Dominion will work with TA Realty to determine the permissible plantings within the right-of-way and to address impacts from construction equipment and typical Project operations.

Hourglass–Hornbaker Route 1 (Hybrid)

Avanti Data Center Campus (NVA02)

The Avanti Data Center Campus is described above for the Hornbaker Switching Station.

Based on the June 2023 Combined Campus Master Plan, approximately 0.1 mile of the route would cross areas designated for a small service roadway off Hornbaker Road. The right-of-way would occupy approximately 1.1 acres of the parcel. Hourglass–Hornbaker Route 1 would not intersect any existing or proposed data center buildings on the site. Dominion has coordinated with the developer throughout the routing process to ensure any potential underground route crossings would not intersect proposed buildings or interfere with underground utilities or other operations. Dominion would continue to coordinate with the developer as needed.

Innovation Covance Data Center Campus

The Innovation Covance Data Center Campus is located on four adjacent parcels totaling approximately 78.2 acres east of Prince William Parkway, south of University Boulevard, and west of Godwin Drive. The campus houses four data center buildings, and the site is nearing construction completion. The site is adjacent to the existing Hourglass Substation. Although no site plans for the property are publicly available, the developer provided a February 2023 site plan to Dominion. The site plan details the four main data center buildings, equipment yards, parking and roadways on site, vegetated areas, and easements.

Approximately 0.7 mile of the Hourglass–Hornbaker Route 1—including the proposed transition station—would cross the parcel between MP 0.0, at the tap location just outside of the Hourglass Substation, and MP 0.7. The first 0.5 mile, from the Hourglass Substation to the proposed transition station would be in an overhead configuration. Approximately 200 feet of the route near MP 0.6 would be in an underground configuration exiting the transition station. The overhead right-of-way would occupy approximately 6.0 acres of the parcel. In addition, the proposed transition station, also located on the parcel, would occupy an additional 3.1 acres in the northwest corner of the parcel. During construction of the site, this area has been used as a parking/storage space. According to the final site plan, the overhead portion of the route would cross areas for vegetation, onsite service roadways, a portion of Innovation Drive, and open space. The overhead and underground route centerlines and rights-of-way would not cross any data center buildings would be crossed by the overhead portion of the route. The underground right-of-way would occupy approximately 0.3 acres along the southwestern boundary of the stie in areas that have been designated for vegetated buffers. As part of coordination meetings with

Dominion during route development, the developer agreed to allow Dominion to route the overhead portion of the route within the data center campus and offered space for the proposed transition station. Alignment of the overhead right-of-way along the northeast and northwest property boundaries further minimizes the route's impacts on the Innovation Covance Data Center Campus.

Devlin–Pegasus Route 1

Amazon Data Center

Amazon proposes to build a data center campus on two parcels owned by Amazon Data Services, Inc. southwest of Wellington Road, northeast of University Boulevard, and bisected by Sudley Manor Drive. The northern parcel is approximately 19.2 acres, and the southern parcel is approximately 34.7 acres. In September 2024, Amazon filed a rezoning case (REZ2025-00006) for the "Sudley Manor Drive Data Center" on the parcels. While no site plans were publicly available during the time of routing, Dominion met with representatives from Amazon and their civil consultants in June 2024. Amazon provided a May 2024 site plan and indicated that the northern parcel on the site is designated for the Sudley Substation (proposed as part of a separate project), while the southern parcel is intended for data center development. Amazon submitted the conceptual design for the data center property to the County in June 2024. The site plan shows a 440,000-square-foot data center building, access and service roads off Sudley Manor Drive, parking, and proposed stormwater management areas.

Less than 0.1 mile of Devlin–Pegasus Route 1 would cross the northeastern boundary of the parcel near MP 2.0. The right-of-way would occupy approximately 0.5 acre of the parcel. According to the site plan, the route centerline and right-of-way would not cross any buildings or permanent structures. The route centerline would cross the property outside of the security fence line, within a landscape buffer area. Dominion would coordinate with the site developer as needed to address impacts from construction equipment and typical Project operations.

Black Chamber Group Development

Black Chamber Group has proposed a data center development spanning four adjacent parcels totaling approximately 43 acres east of Balls Ford Road and south of Wellington Road. All four parcels are owned or under contract by Wellington Road Property LLC. The data center development would have three data center buildings. While the site plans were not publicly available at the time of routing, Dominion met with the Black Chamber Group in May and July 2024 to discuss the status of their site plan and gather additional information. Black Chamber Group stated that the southeastern parcel within the site was purchased for the proposed Hansen Farm Substation and that an existing warehouse, located on the northern portion of their site, would be demolished for the three data center buildings. The rezoning case for the property has been submitted to the County. Black Chamber Group provided the current data center campus site plan in July 2024, which shows the locations of the proposed three data center buildings.

Approximately 0.2 mile of Devlin–Pegasus Route 1 would cross the parcel from MP 0.2 to 0.5. The right-of-way would occupy approximately 2.7 acres along the southern property boundary. According to the site plan, the route centerline and right-of-way would not cross any of the data

center buildings. Dominion worked directly with Black Chamber Group on the alignment across the parcel, and Black Chamber Group agreed to the Devlin–Pegasus Route 1 alignment. Construction of the route along the southern site boundary would likely remove existing tall vegetation that screens views from residential areas along Jennell Drive and Devlin Road to the south, causing potential visual impacts for these properties. The route would have minimal impacts on operations of the data center property due to the location of the route along the parcel boundary. Dominion would coordinate with the site developer as needed to address impacts from construction equipment and typical Project operations.

Cambria Lexington Valley

Cambria Lexington Valley is a quartz showroom and distribution center under construction on a 5.3-acre parcel along Lexington Valley Drive, south of Wellington Road. Based on the publicly available site plan, the site includes a 25,000-square-foot warehouse, stormwater pond, parking, and service roads, and undeveloped areas.

Less than 0.1 mile of Devlin–Pegasus Route 1 would cross the property between MPs 1.4 and 1.5. The right-of-way would occupy approximately 0.5 acre of the parcel. Based on the approved site plan and existing facility, the route would cross the vegetated setback and stormwater management area along the southern boundary of the parcel. The transmission line would span the stormwater pond, with no structures located within the stormwater management facilities. Due to the routing along the southern parcel boundary—away from any day-to-day activities on the parcel, the Project would have no impact on this development.

Firestone Park Center

Firestone Park Center is a proposed distribution facility currently under construction on an approximate 6.3-acre parcel located on the east side of Buckeye Timber Drive, south of Wellington Road. The property is owned by CIOF I-VA1WO2 LLC, and the proposed Firestone Park Center development would include an approximately 91,000-square-foot distribution facility and associated parking.

The centerline of Devlin–Pegasus Route 1 does not cross the parcel; however, the right-of-way would occupy approximately 0.2 acre on the parcel between MPs 0.8 and 0.9. According to the site plan and aerial imagery, the right-of-way would cross a vegetated buffer area. No existing or proposed buildings or permanent structures are located within the Devlin–Pegasus Route 1 right-of-way. As a result, the Project would have no impact on operation of the development.

Independence Parcel A1A and A1B

Independence Parcel A1A and A1B, approved by the County in November 2024, includes three proposed industrial buildings on two adjacent parcels south of Wellington Road, along the west side of Lexington Valley Drive. The northern parcel is approximately 12.4 acres and owned by LVB 1 LLC, while the southern parcel is approximately 7.7 acres and is owned by LVB 2 LLC. The building on the northern parcel has approximately 70,000 gross square feet, with areas for an industrial warehouse and office building. The two buildings on the southern parcel have approximately 25,000 and 28,000 gross square feet, with areas for industrial warehouse and office uses. Each of the buildings has a surrounding parking area and onsite service roads.

Approximately 0.2 mile of Devlin–Pegasus Route 1 would cross the site between MPs 1.2 and MP 1.4. The right-of-way would occupy approximately 1.8 acres of the southern parcel. The route centerline and right-of-way would be located west of the planned buildings. The right-of-way would overlap access roads but would not affect use of the property.

Microsoft Bristow Data Center

The Microsoft Bristow Data center is a proposed data center development on an approximately 83-acre parcel located south of Wellington Road and west of Devlin Road. Microsoft proposes one data center building (MNZ03) approximately 250,00 square feet in size. According to a 2022 site plan, the site will also include an administration building, a NOVEC substation, and the proposed Devlin Switching Station (Zhang 2022). There are no publicly available site plans for the property; however, the County's Development Services ePortal lists a development project on this property, dating from October 2022 (Prince William County 2024a). Microsoft provided Dominion a May 2024 site plan detailing the locations of the proposed facilities. Dominion understands that the County is currently reviewing this project and that preliminary construction efforts, such as temporary construction trailers and retaining walls, are currently underway at the site. NOVEC completed and approved a Public Facilities Formal review (PFR2024-00003) for its proposed substation on the parcel in June 2024.

Approximately 0.1 mile of Devlin–Pegasus Route 1 would cross the proposed data center campus between MP 0.0, where it exits the proposed Devlin Switching Station, and MP 0.2. The right-of-way would occupy approximately 1.1 acres of the parcel. Outside of the Devlin Switching Station, the route would cross a service road located off Hansen Farm Road, as well as undeveloped land. The route centerline and right-of-way would not cross any structures. Microsoft also purchased a parcel between Hansen Farm Road and Devlin Road for use as a contractor yard housing a staging area and contractor trailers. Dominion worked with Microsoft to reduce impacts on both parcels to the extent feasible. Although the right-of-way crosses the proposed service road, Devlin–Pegasus Route 1 would have minimal impacts on the development, because transmission structures would be located outside of the roadway.

Southpoint Phase II

Southpoint Phase II is a data center development nearing completion on an approximate 22-acre parcel located on the west side of Buckeye Timber Drive, south of Wellington Road. As part of the routing process, Dominion met with the site's developer to discuss potential routing options and limitations. The developer provided a September 2023 site plan that shows two data center buildings with approximately 92,000 and 113,000 square feet of space. Both buildings have been completed and restoration of other portions of the site is ongoing.

Approximately 0.1 mile of Devlin–Pegasus Route 1 would cross the proposed data center campus between MP 0.7 and MP 0.8. The right-of-way would occupy approximately 1.6 acres in the southern portion of the parcel. Based on the September 2023 site plan, the right-of-way would be adjacent to the south side of the southern building and would overlap parking and onsite service roads. Based on coordination with the developer during the routing processes, the route would not impact a stormwater management area to the south of the right-of-way or the proposed data center buildings and equipment yards to the north.

Wellington Glen Data Center and Pegasus Switching Station

The Wellington Glen Data Center and Pegasus Switching Station are described above for Wellington–Pegasus Route 1.

Approximately 0.3 mile of Devlin–Pegasus Route 1 would cross the proposed Wellington Glen data center campus between MPs 2.2 and 2.5, where the route terminates at the proposed Pegasus Switching Station. The right-of-way would occupy approximately 3.1 acres along the northwestern edge of the parcel, west of Hornbaker Road. Based on the full build plan, the route would cross a stormwater pond, proposed service roads, and open space, but would not intersect data center buildings or other permanent structures or equipment yards. Dominion would place transmission structures outside of the stormwater pond and roads. Dominion coordinated extensively with the developer on routing across the parcel.

Wellington Glen Technology Park (formerly Wellington Glen SDC)

Wellington Glen Technology Park, formerly known as Wellington Glen SDC, is a proposed data center development on two parcels west of Wellington Road, southwest of the intersection of Wellington Road and Sudley Manor Drive, and bisected by Sudley Manor Drive. The northern parcel is approximately 30.9 acres and owned by PWC Prop 1 LLC, and the southern parcel is approximately 18.6 acres and owned by PWC Prop 2 LLC, for a total of approximately 49.5 acres. The developers submitted a rezoning case (REZ2024-00018) to the County to permit data center uses in December 2023. The case is pending review by the Board of Supervisors. The rezoning case does not detail specific building locations, but does include vegetated buffers, landscape areas, tree conservation areas, and the proposed Stone Crop Drive. As part of the routing process, Dominion met with representatives from the developers in May 2024. In correspondence with Dominion, the site developers stated that the northern parcel is intended for data center development, while the use of the southern parcel is being evaluated. A June 2024 site plan shows the proposed principal building locations on the northern parcel, Stone Crop Boulevard, and open development area to the south of Sudley Manor Drive.

Segments of Devlin–Pegasus Route 1 totaling approximately 0.5 mile would cross the Wellington Glen Technology Park between MPs 1.6 and 2.6. The right-of-way would occupy approximately 3.3 acres of the northern parcel and 2.4 acres of the southern parcel (5.7 acres total). Based on the site plan, the route would follow the southern border of the data center portion of the site, crossing internal access roads and open space. The route would not cross any proposed buildings. Devlin–Pegasus Route 1 would also cross land within the southern parcel where no buildings or other permanent structure locations have been identified.

Devlin–Pegasus Route 2

The impacts of Devlin–Pegasus Route 2 on the Amazon Data Center, Black Chamber Group, Firestone Park Center, Microsoft Bristow Data Center, Southpoint Phase II, and Wellington Glen Data Center and Pegasus Switching Station developments would be the same as described for Devlin–Pegasus Route 1. The remainder of this section discusses the impacts of Devlin–Pegasus Route 2 on other developments

Hayden Road Public Improvement Plan

The Hayden Road Public Improvement Plan is the proposed abandonment of Hayden Road preceding the construction of Iron Mountain data centers on their Data Center Campus site, southwest of Prince Willaim Parkway, northeast of Wellington Road, and north of Sudley Manor Drive. A site plan detailing the road abandonment was submitted in August 2022 and was approved in June 2023 (SPR2023-00056). Per the site plan, the County will coordinate the road abandonment with VDOT and will vacate the right-of-way for a potential extension of Wellington Glen Drive from existing Hayden Road to Wellington Road through the Iron Mountain property.

Devlin–Pegasus Route 2 would cross the existing Hayden Road near MP 1.7, where Hayden Road intersects Wellington Road. The proposed transmission right-of-way would occupy approximately 0.5 acre of the existing Hayden Road right-of-way. Because the County intends to remove Hayden Road for data center development, the Project would have no impact on the road abandonment. Impacts on the Iron Mountain Data Center Campus are discussed below.

Independence Parcel A1A & A1B

Independence Parcel A1A and A1B is described above for Devlin–Pegasus Route 1.

Approximately 0.3 mile of Devlin–Pegasus Route 2 would cross the proposed development between MPs 1.2 and 1.6. The right-of-way would occupy approximately 3.7 acres along the western and northern property boundaries. Based on the approved site plan, the route would cross an area of open space, underground utility easements, and an internal service road, but would not intersect the proposed building footprint or other infrastructure. Dominion would minimize impacts on the site by placing structures outside of the road or utility easements.

Iron Mountain Data Center Campus

Iron Mountain Data Center is a proposed data center campus located along the northeastern side of Wellington Road and north of Sudley manor Drive. The entire campus is approximately 142 acres and includes existing and planned data center facilities. Dominion met with Iron Mountain representatives throughout the routing process to discuss potential routing options and learn more about existing and planned underground easements, data center building locations, and other site information. While site plans are not publicly available, Iron Mountain provided Dominion with site plan drawings from May and July 2024. The full planned development includes seven total data center buildings, including two that are currently operational, three that are under construction, and two that are under review by the County. In addition to the data centers, the site shows stormwater pond locations and a large concentration of underground utilities adjacent to Wellington Road.

Approximately 0.4 mile of Devlin–Pegasus Route 2 would cross the Iron Mountain Data Center Campus between MPs 1.6 and 2.2. The right-of-way would occupy approximately 4.9 acres of the campus. Based on the site plan provided by Iron Mountain, the route would overlap internal service roads, vegetated buffers, and various underground utility easements. Devlin–Pegasus Route 2 would cross approximately 0.4 acre of a proposed stormwater pond between MPs 1.9 and 2.0; however, Dominion would place structures outside of the stormwater facilities and underground utility easements. As part of its coordination with Dominion during the routing

process, Iron Mountain indicated that the route would not impact any of the proposed or constructed data center buildings. Additional coordination with Iron Mountain may be needed during construction to ensure any impacts to construction equipment, daily operations, and maintenance are minimized.

Wellington Glen Technology Park (formerly Wellington Glen SDC)

Wellington Glen Technology Park is described above for Devlin–Pegasus Route 1.

Approximately 1.2 miles of Devlin–Pegasus Route 2 would cross the Wellington Glen Technology Park between MPs 1.6 and 2.8. The right-of-way would occupy approximately 4.1 acres total across the north and south parcels. Impacts of the segment between MPs 2.3 and 2.8 would be the same as described for Devlin–Pegasus Route MPs 1.9 to 2.4. The segment of Devlin–Pegasus Route 2 from MPs 1.6 to 2.3 would run along the east side of Wellington Road and north side of Sudley Manor Drive. According to the June 2024 site plan, the route would be outside of the data center development area and would not intersect any buildings.

5.1.6 RECREATIONAL RESOURCES

ERM collected information on recreational resources from digital datasets and maps, recent digital aerial photography, publicly available information on the Prince William County website, and consultation with County officials and other stakeholders (Prince William County 2024a). Table 5.1-9 summarizes recreational resources within 0.25 mile of the Project facilities. Figure 5.1-5 depicts these recreational resources.

TABLE 5.1-9 RECREATIONAL RESOURCES WITHIN 0.25 MILE OF THE ROUTE ALTERNATIVES

Recreational Resource	Recreational Type and Description	Status	Approximate Distance to Project Facilities
Broad Run Linear Park	Approximately 70-acre public park along Broad Run between Linton Hall Road and Hornbaker Road with six miles of natural surface trails. This park is part of the planned Broad Run Greenway	Active	• 0.2 mile south of Hornbaker Switching Station
Broad Run Greenway	Planned 17-mile trail connecting several parks throughout the County, to provide scenic, protected routes for cyclists and pedestrians. Six miles of the 17-mile trail (Broad Run Linear Park) are currently active.	Planned	• 0.2 mile south of Hornbaker Switching Station
Dawkins Branch Trail Linear Park	Planned 1.6-mile multi-surface trail from Wellington Road to just south of Sudley Manor Drive, terminating near Victory Elementary School	Planned	• Crossed by DP 1 and DP2 (MPs 1.1 to 1.2)
Devlin Road shared use path	A 1.1-mile mixed-use asphalt trail along Devlin Road south of Wellington Road to University Boulevard	Active	• Crossed by DP 1 and DP2 (MPs 0.2 to 0.3)
Hornbaker Road shared use path	Planned 2.1-mile asphalt mixed-use trail along Hornbaker Road from Wellington Road	Active, Planned	• Adjacent to WP (MPs 0.4 to 0.6)

Recreational Resource	Recreational Type and Description	Status	Approximate Distance to Project Facilities
	to Rt. 28. A portion of the path south of Discovery Boulevard is complete		• Adjacent to PH (MPs 1.5 to 1.7). • Crossed by HH (MPs 1.1 and 1.2)
Independence Community Center	Community Center with a pool, playground, and outdoor basketball court in the Independence planned community, for use by landowners	Active	• 600 feet south of DP2 at MP 1.6
Industrial Road paved shoulder	Paved shoulder for on-road cycling and other recreational use along 0.6 mile of Industrial Road, west of Hornbaker Road and east of Pump Station Way	Planned	• Crossed by PH (MPs 1.0 to 1.1)
Innovation Park Recreational Trail	Planned multi-surface trail network associated with the Innovation Park development (see Section 5.1.5) south of University Boulevard, west of Discovery Boulevard, and north of Rt. 28	Planned	• Crossed by PH (MPs 1.7 to 1.8). • Crossed by HH (MPs 0.9 to 1.0)
Katherine Johnson Avenue Bicycle Lanes	Planned 0.9 mile of on-road bicycle lanes through the center of Innovation Park (see Section 5.1.5)	Planned	• Less than 0.1 mile east of WP at MP 0.2
Prince William Parkway shared use path	Planned mixed-use trail on the eastern side of Prince William Parkway from Balls Ford Road to 0.5 mile south of University Boulevard	Planned	• Crossed by WP at MP 0.3
Sudley Manor Drive shared use path	4.4-mile mixed-use trail along Sudley Manor Drive from Chatsworth Drive to Vint Hill Road	Active	• Crossed by DP at MP 1.9 • 0.2 mile north of WP at MP 0.0.
The Regency Apartments Connector Park Recreational Trail	Planned recreational trail 0.3 mile west of Hornbaker Road and east of Broad Run Linear Park, providing access to the Broad Run Linear Park and Greenway network from the Regency Apartment Complex	Planned	• 0.2 mile south of PH between MPs 1.7 and Hornbaker Switching Station
Thomasson Barn Road shared use path	Planned 0.3-mile mixed-use asphalt path along Discovery Boulevard	Planned	• 0.1 mile south of HH at MP 0.9.
University Boulevard shared use path	1.0-mile mixed-use path along University Boulevard between Sudley Manor Drive and Hornbaker Road	Active	• Crossed by PH (MPs 0.5 to 0.6)

Recreational Resource	Recreational Type and Description	Status	Approximate Distance to Project Facilities
Wellington Road shared use path	Planned asphalt mixed-use path along Wellington Road, including 3.1 miles through the study area	Planned	• Adjacent to WP (MPs 0.2 to 0.4) • Crossed by DP2 twice (MPs 1.6 to 1.7 and MPs 2.1 to 2.2)

Sources: Prince William County 2022, 2023b; Prince William County Parks and Recreation 2024.

DP1 = Devlin–Pegasus Route 1; DP2 = Devlin–Pegasus Route 2; HH = Hourglass–Hornbaker Route 1 (Hybrid); MP = milepost; PH = Pegasus–Hornbaker Route 1; WP = Wellington–Pegasus Route 1.

5.1.6.1 IMPACT ASSESSMENT

All route alternatives would cross planned or existing recreational trails. Project construction may result in temporary impacts on recreational resources, such as noise and potential temporary road or trail closure. Dominion would coordinate with the County as needed to mitigate access issues. Permanent impacts would be limited to tree clearing within the selected route right-of-way and visual impacts from the presence of new transmission line infrastructure. No structures would be placed within recreational path footprints. These impacts would not prevent or otherwise affect the ability to use recreational resources. Visual impacts are assessed in Section 5.3.

Wellington–Pegasus Route 1

Wellington–Pegasus Route 1 would cross three planned shared use paths: Hornbaker Road, Wellington Road, and the Prince William Parkway. The route would cross and be collocated with approximately 0.2 mile of the planned Hornbaker Road shared use path between MPs 0.4 and 0.6 and would perpendicularly cross (approximately 100 feet) between MPs 0.5 and 0.6. The route would be collocated with the planned Wellington Road shared use path for approximately 0.2 mile from MPs 0.2 to 0.4. Route 1 would diagonally cross approximately 100 feet of the Wellington Road shared use path at MP 0.2. The route would perpendicularly cross the planned Prince William Parkway shared use path at approximately MP 0.3. While the use and operations of the shared use paths would not be impacted by Wellington–Pegasus Route 1, routing along the right-of-way of the Wellington Road shared use path would eliminate existing and proposed vegetative buffers between Wellington Road, the path, and planned development south of Wellington Road.

Pegasus–Hornbaker Route 1

Pegasus–Hornbaker Route 1 would cross one existing and one planned shared use path: a perpendicular crossing (approximately 100 feet) of the existing University Boulevard path and an angled crossing of the planned Innovation Park Recreational Trail (approximately 100 feet) along Industrial Boulevard. The route would cross the existing University Boulevard shared use path from MPs 0.5 to 0.6 and the Innovation Park Recreational Trail between MPs 1.7 and 1.8. Pegasus–Hornbaker Route 1 would also diagonally cross approximately 100 feet of the planned

paved shoulder along Industrial Road. Project construction would require tree clearing on the north side of the existing University Boulevard trail. No vegetation would be cleared at the crossing of the planned Innovative Park Recreational Trail or Industrial Road paved shoulder.

Approximately 500 feet of the planned Innovation Park Recreational Trail runs through the proposed Hornbaker Switching Station footprint. ERM reviewed the Prince William Countywide Trails Plan and the Innovation Park Small Area Plan for additional information regarding the planned shared use path and was unable to identify the approximate timeline of the construction of the planned shared use path. Because the County has approved the Avanti Data Center Campus site plan, which included the planned location for the Hornbaker Switching Station pad, it is likely that the developer or County will propose a reroute of this trail. As currently planned, the Hornbaker Switching Station would prevent construction of the shared use path in that location. Dominion will coordinate with the County regarding the proposed trail.

Hourglass–Hornbaker Route 1 (Hybrid)

There are no existing parks or shared use paths within 0.25 mile of Hourglass–Hornbaker Route 1. This route would cross two planned shared use paths: approximately 100 feet of the planned Innovation Park Recreational Trail and approximately 200 feet of the planned Hornbaker Road shared use path. Project construction would require tree clearing on both sides of the planned Innovation Park Recreational Trail. The crossing of the Hornbaker Road path would be underground and therefore there would be no visual impacts on the resource.

Devlin–Pegasus Route 1

Devlin–Pegasus Route 1 would cross two existing shared use paths and one planned park recreational trail. The route would perpendicularly cross approximately 100 feet of the existing Sudley Manor Drive shared use path at MP 1.9 and would cross approximately 100 feet of the existing Devlin Road shared use path between MPs 0.2 and 0.3. The route would cross approximately 100 feet of the planned Dawkins Branch Trail Park recreational trail between MPs 1.1 and 1.2. Project construction would require tree clearing along the east and west side of the planned Dawkins Branch Trail Park where the route would perpendicularly cross the eastern side of the existing Sudley Manor Drive shared use path. No vegetation would be removed at the crossing of the Devlin Road shared use path due to the existing Devlin Road and Balls Ford Road right-of-way. Independence Community Center, within the Independence neighborhood, is approximately 0.1 mile south of Devlin–Pegasus Route 1; however existing residences located between the community center and the route would minimize potential visual impacts on this site.

Devlin–Pegasus Route 2

Devlin–Pegasus Route 2 would cross two existing shared use paths, one planned park recreational trail, and one planned shared use path. These include the crossings of the existing Sudley Manor Drive shared use path (MP 1.9), existing Devlin Road shared use path (MPs 0.2 to MP 0.3), and planned Dawkins Branch Trail Park (MPs 1.1 to MP 1.2) described for Devlin–Pegasus Route 1. Additionally, Devlin–Pegasus Route 2 would cross the planned Wellington Road shared use path at two different locations. This includes approximately 100-foot crossings between MPs 1.6 to 1.7 and MPs 2.1 to 2.2. The route would be adjacent to and parallel the south side of the Wellington

Road planned shared use path from MPs 1.4 to 1.6 and the north side of the path from MPs 1.7 to 2.1. Project construction would require tree removal on the south side of the planned Wellington Road shared use path at MP 1.6 and potentially both sides of the path near MP 2.1.

5.1.7 CEMETERIES, SCHOOLS, AND PLACES OF WORSHIP

ERM reviewed the following sources to identify cemeteries, schools, and places of worship within 0.25 mile of the right-of-way of each route alternative:

- Recent and historic topographic maps (USGS 2022a,b);
- Recent and historic digital aerial photography (NAIP 2023; Google, LLC 2024);
- Cemetery and burial data (Find a Grave 2024);
- Publicly accessible County datasets (Prince William County 2024);
- Cultural resource data from the VCRIS (VDHR 2023); and
- Information from open house attendees.

5.1.7.1 EXISTING CONDITIONS

Cemeteries

Based on the review of the sources identified above, ERM identified two cemeteries within 0.25 mile of the route alternatives (Figure 5.1-6).

The Gaskins Slave cemetery is an abandoned family cemetery along Wellington Road, south of Sudley Manor Drive. Aerial imagery shows the cemetery site as forested. The cemetery parcel is part of a data center development currently under construction, although the cemetery will remain undisturbed and buffered from the development. The cemetery contains over 100 tombstones, fieldstones, or unmarked burials, and is not maintained (Historic Prince William 2021).

The Utterback-Larkin Cemetery is an approximately 0.2-acre family cemetery approximately 0.5 mile south-southwest of the intersection of Lexington Valley Drive and Rayborn Creek Drive in the Webster Tavern Way residential development. The cemetery is forested and bordered by a wooden fence and is surrounded by residential homes. The cemetery is not maintained and contains approximately 20 burials, including one marked burial, several fieldstone markings and unmarked burials, and several indentations (Historic Prince William 2021).

Schools

Based on a review of the sources identified above, there are no schools within 0.25 mile of the route alternatives. The nearest schools (Chris Yung Elementary School and Victory Elementary School) are more than 0.5 mile from Project facilities.

Places of Worship

Based on a review of the sources identified above, there are no places of worship within 0.25 mile of the route alternatives. The nearest places of worship (Chapel Springs Church, Grace Life Community Church, and St. Benedict Monastery) are more than 0.9 mile from Project facilities.

5.1.7.2 IMPACT ASSESSMENT

No schools or places of worship are located within 0.25 mile of the route alternatives. Of the route alternatives, only Wellington–Pegasus Route 1 and Devlin–Pegasus Routes 1 and 2 have cemeteries within 0.25 mile of the routes.

The Gaskins Slave cemetery is located approximately 900 feet northwest of Wellington–Pegasus Route 1 at MP 0.4 and approximately 800 feet northeast of Devlin–Pegasus Route 1/Route 2 shared segment (Route 1 MP 2.0 and Route 2 MP 2.5). Due to distance between the Project routes and the cemeteries, existing vegetation, and the presence of residential homes near between the routes and the Utterback-Larkin Cemetery, minimal to no views of the Project would be possible from either cemetery. As a result, the Project would not affect use of the cemeteries and would have minimal visual impacts on these resources.

5.1.8 CONSERVATION EASEMENTS AND LANDS

Land conservation easements help preserve Virginia's heritage, provide recreational opportunities, and improve water and habitat quality and overall quality of life. In addition to managing lands under its jurisdiction, the VDCR helps landowners, land trusts, and localities by serving as a clearinghouse, keeping an inventory of protected lands, and providing grants and information on easements and land protection. The agency also helps by identifying important open space and lands rich with plant and animal diversity.

Based on VDCR's Managed Conservation Lands Database, ERM identified easement types, individual easements, and conservation lands within the study area (VDCR 2024a). No Virginia Natural Area Preserves are present within the study area. ERM identified two DHR conservation easements in the study area, including the Bristoe Station Battlefield Heritage Park and an unnamed conservation easement, both located in the southern portion of the study area (Figure 5.1-7).

The approximately 133-acre Bristoe Station Battlefield Heritage Park, considered one of the most endangered historical sites in Virginia in 2014 and 2023, is held in a VDHR conservation easement that protects the battlefield from encroaching commercial development (VDHR 2024). The easement is approximately 1.2 mile south of the Hornbaker Switching Station.

The approximately 11-acre Cannon Branch Fort Site conservation easement is located between Gateway Boulevard and the Norfolk Southern Railway, approximately 0.8 mile south of the underground portion of Hourglass–Hornbaker Route 1.

Based on a review of existing site plans and County documents, ERM identified the following individual conservation areas, tree preservation areas, and other proffered vegetative buffers or easements:

- A permanent conservation area was identified near the intersection of Industrial Road and Industrial Court. The property title (GPIN 7595-59-7124) includes a "permanent conservation area" granted in December 2020 for the northern and southern extents of the parcel by a deed of easement and vacation (recorded as Instrument No. 202012090118633 and Instrument No. 202012090118634). This easement prohibits the development or use of the permanent

conservation area without specific authorization from the Prince William County Department of Public Works (Prince William County Board of Supervisors 2020).

- Numerous parcels within the study area have proffered vegetative buffers or preservation areas as part of their site development. Section 5.1.3.3 provides additional information on proffered vegetative buffers and planned developments.

In addition to VDCR managed conservation lands and County conservation easements, Prince William County is subject to the Chesapeake Bay Preservation Act (CBPA). Virginia enacted the CBPA in 1988 (Va. Code §62.1-44.15:67) to protect the water quality of the Chesapeake Bay, its tributaries, and other State waters. The Act requires municipalities to implement water quality protection measures in zoning and planning ordinances, reduce non-point source pollution to State waters, and designate Chesapeake Bay Preservation Areas—lands that would adversely impact water quality in the Chesapeake Bay and its tributaries if improperly developed. Chesapeake Bay Preservation Areas are composed of Resource Protection Areas (RPAs) that identify lands considered necessary to protect the quality of state waters and Resource Management Areas that include lands that could degrade water quality or the value of RPAs if disturbed.

Prince William County enacted the Chesapeake Bay Preservation Ordinance to implement the CBPA and has designated several RPAs around perennial waterbodies and associated wetland areas. The RPAs in the study area include Dawkins Branch and several unnamed, intermittent tributaries to Broad Run.

The Prince William County Department of Public Works, Environmental Services Division of Public Works requires a permit prior to any land disturbance activity within an RPA. Land disturbance activities related to new development, parking lots, clear-cutting trees, and filling and grading activities are not permitted in the RPA and its 100-foot buffer. Construction, installation, operation, and maintenance of electric transmission lines are conditionally exempt from the CBPA, pursuant to Title 9, Section 25-830-150 of the Virginia Administrative Code (9 VAC 25-830-150) as well as Article V of Prince William County's Zoning Ordinance.

5.1.8.1 IMPACT ASSESSMENT

Dominion understands that properties are placed under easements throughout the year, and that additional easements could be identified in the study area as the Project moves forward. Dominion will continue to consult with the various land managing entities and conservation agencies for the study area regarding potential new easements along the routes. All route alternatives except for Pegasus–Hornbaker Route 1 are more than 0.25 mile from any identified conservation easements. Pegasus–Hornbaker Route 1 would be more than 100 feet (at MP 0.9) from the permanent conservation area near the intersection of Industrial Road and Industrial Court (described above) but does not cross the permanent conservation area. As a result, the Project would have no impact on this conservation easement.

Table 5.1-10 lists the RPAs crossed by proposed Project facilities. Because transmission infrastructure is exempt from the CBPA, the Company will use best management practices (BMPs) to limit impacts to RPAs to the minimum extent possible while safely and effectively constructing and maintaining the proposed transmission infrastructure.

TABLE 5.1-10 RPAS CROSSED BY PROJECT FACILITIES

RPA	Project Facility
Unnamed RPA south of University Boulevard	• PH (MPs 0.6 to 0.7)
Unnamed tributary to Dawkins Branch	• D-P1 (MPs 1.8 to 1.9) • D-P2 (MPs 2.0 to 2.1, MPs 2.2 to 2.3)
Unnamed tributary to Dawkins Branch	• D-P1 (MPs 1.5 to 1.6)
Dawkins Branch	• D-P1 (MPs 1.1 to 1.3) • D-P2 (MPs 1.1 to 1.4)

D-P1 = Devlin–Pegasus Route 1; D-P2 = Devlin–Pegasus Route 2; PH = Pegasus–Hornbaker Route 1; RPA = Resource Protection Area.

5.1.9 TRANSPORTATION INFRASTRUCTURE

5.1.9.1 EXISTING AND PLANNED TRANSPORTATION INFRASTRUCTURE

The road network in the study area includes a variety of road types, such as principal arterials (Prince William Parkway), minor arterials (University Boulevard, Sudley Manor Drive, Linton Hall Road, and Wellington Road), minor collectors (Hornbaker Road), and local roads. Figure 5.1-8 shows the existing roads and planned road projects and extensions along and near the routes (within 0.25 mile). Table 5.1-11 summarizes planned road projects within the study area.

ERM reviewed the Transportation Plan section of the Comprehensive Plan, the Prince William County Department of Transportation Current Mobility Projects website and webmap, and the VDOT Northern Virginia District project website for upcoming and active transportation projects within the study area (Prince William County 2024b; VDOT 2024a).

TABLE 5.1-11 PLANNED IMPROVMENTS IN THE STUDY AREA

Road	Planned Improvement	Agency	Status (Completion Date) [a]
Prince William Parkway	Prince William Parkway interchange at Sudley Manor Road (including modifications at Wellington Road intersection)	VDOT	Planned (2032)
University Boulevard	Construct 4-lane road, sidewalks, and shared use path from Devlin Road to Wellington Road	VDOT	Planning (2027)
	Add 2 lanes between Edmonston Lane and Sudley Manor Drive	PWC	Construction
Sudley Manor Drive	Add 2 lanes east of Prince William Parkway to Sudley Manor Road	PWC	Planned
	Construct sidewalk between Linton Hall Road and Victory Lakes Loop	PWC	Planned
Prince William Parkway	Add 2 lanes between Balls Ford Road and Rt. 28	PWC	Planned

Road	Planned Improvement	Agency	Status (Completion Date) [a]
	Intersection improvements at University Boulevard	PWC	Construction
Devlin Road	Add 2 lanes from Linton Hall Road to University Boulevard	VDOT	Planned (2028)
	Add 2 lanes from Balls Ford Road to University Boulevard	PWC, VDOT	Construction (Summer 2025)
Wellington Road	Add 2 lanes between University Boulevard and Sudley Manor Drive	PWC	Planned

Sources: NVTA 2023; Prince William County 2024b; VDOT 2024a, 2024b.

PWC = Prince William County; VDOT = Virginia Department of Transportation.

[a] Indicates status as of late 2024.

The Norfolk Southern Railroad crosses the northern and northeastern portions of the study area but is not crossed by any of the route alternatives. ERM did not identify any planned railroad improvements.

Section 5.1.10 discusses air transportation facilities.

5.1.9.2 IMPACT ASSESSMENT

Project construction would result in temporary road closures and possible increased traffic during construction. Section 5.3 discusses the Project's visual impacts on road users. Dominion would coordinate with the County and VDOT in cases where construction activities require temporary road closures. Table 5.1-12 summarizes the number of roads crossed and miles of road collocation for each route alternative. Table 5.1-13 lists the roads crossed by each route alternative.

TABLE 5.1-12 ROADS CROSSED AND ROAD COLLOCATION

	Wellington–Pegasus Route 1	Pegasus–Hornbaker Route 1	Hourglass–Hornbaker Route 1 (Hybrid)	Devlin–Pegasus Route 1	Devlin–Pegasus Route 2
Road Crossings (number)	4	7	4	7	10
Road Collocation (miles)	0.3	0.6	0.2	0.1	0.8

TABLE 5.1-13 ROAD CROSSINGS

Road Name	Route Alternative	Crossing Type [a]
Prince William Parkway	HH (MP 0.7)	Angled [a]
	WP (MP 0.3)	Perpendicular
Hornbaker Road	HH (MP 1.2)	Angled [a]
	WP (MP 0.6)	Angled
Sudley Manor Drive	D-P1/D-P2 (MP 1.9/2.3)	Angled

Road Name	Route Alternative	Crossing Type [a]
University Boulevard	PH (MP 0.6)	Perpendicular
Wellington Road	WP (MP 0.2)	Angled
	D-P2 (MP 1.6)	Angled
	D-P2 (MP 2.1)	Angled
Devlin Road	D-P1/D-P2 (MP 0.2)	Angled
Discovery Boulevard	HH (MP 0.9)	Perpendicular
Innovation Drive	HH (MP 0.2)	Perpendicular
Lexington Valley Drive	D-P1 (MP 1.5)	Angled
	D-P2 (MP 1.5)	Angled
Virginia Meadows Drive	D-P1/D-P2 (MP 1.1)	Angled
Buckeye Timber Drive	D-P1/D-P2 (MP 0.9)	Angled
Hansen Farm Road	D-P1, D-P2 (MP 0.2)	Angled
Hayden Road	D-P2 (MP 1.7)	Angled [b]
Hawkins Drive	PH (MP 1.1, MP 1.2)	Perpendicular
Industrial Court	PH (MP 0.9)	Angled
Industrial Road	PH (MP 1.0)	Angled
Mike Garcia Drive	PH (MP 0.2)	Perpendicular
Thong Pan Road	WP (MP 0.1)	Angled
Zelkovia Drive	D-P1/D-P2 (MP 2.4/2.8)	Angled

D-P1 = Devlin–Pegasus Route 1; D-P2 = Devlin–Pegasus Route 2; HH = Hourglass–Hornbaker Route 1 (Hybrid); MP = milepost; PH = Pegasus–Hornbaker Route 1; WP = Wellington–Pegasus Route 1.
[a] Crossed by the underground segment of Hourglass–Hornbaker Route 1 (Hybrid).
[b] Hayden Road is planned for abandonment—see Section 5.1.5.

VDOT guidelines indicate a preference for perpendicular road crossings, which reduce the distance spanned and the visual impacts of a crossing. VDOT also prefers that transmission structures are placed outside their rights-of-way to avoid conflicts with future road improvements. The route alternatives include perpendicular crossings where possible; however, most road crossings are not perpendicular, due to constraints associated with planned developments, conservation areas, and landowner preferences for routes that follow parcel boundaries where feasible. Dominion would minimize impacts on roads by installing transmission structures for the route alternatives outside of existing and planned road rights-of-way.

Three route alternatives would cross planned road projects. Dominion would coordinate with the County and VDOT to avoid impacts on these planned road projects crossed by the route alternatives. None of the route alternatives cross any existing or planned railroads within the study area. The remainder of this section discusses road crossings and collocation by route alternative.

Wellington–Pegasus Route 1

Wellington–Pegasus Route 1 would collocate with Wellington Road for approximately 0.2 mile (MPs 0.2 to 0.4) and with Hornbaker Road for approximately 0.1 mile (MPs 0.4 to 0.5). Wellington–Pegasus Route 1 would cross the planned Prince William Parkway Expansion between Balls Ford Road and Rt. 28 at Wellington Road. The route would cross Prince William Parkway nearly perpendicular.

Pegasus–Hornbaker Route 1

Pegasus–Hornbaker Route 1 would collocate with the eastern side of Industrial Court for approximately 0.2 mile (MPs 0.8 to 1.0), the eastern side of Hawkins Drive for approximately 0.1 mile (MPs 1.1 to 1.2), and the western side of the Hornbaker Road for approximately 0.2 mile (MPs 1.6 to 1.8). The route includes a perpendicular crossing of the segment of University Boulevard that is planned for widening to four lanes.

Hourglass–Hornbaker Route 1 (Hybrid)

Hourglass–Hornbaker Route 1 would collocate with the south side of Challenger Court for approximately 0.2 mile (MP 0.7 to 0.9). Hourglass–Hornbaker Route 1 would cross Prince William Parkway, Discovery Boulevard, and Hornbaker Road in an underground configuration via a trenchless crossing (the jack and bore method). This crossing technique would require a wider right-of-way (approximately 125 feet) under the road but would not affect the road surface itself. Dominion selected trenchless crossings after coordination with VDOT, which prefers to avoid open cut crossings of their roads. Dominion will continue to coordinate with VDOT regarding potential installation methods, workspace requirements, and VDOT standards that must be met to cross these roadways. The underground portion of Hourglass–Hornbaker Route 1 would collocate with the southern side of Challenger Court for approximately 0.1 mile between MP 0.7. and MP 0.9. The route does not cross any active or planned road projects.

Devlin–Pegasus Route 1

Devlin–Pegasus Route 1 (and Route 2) would collocate with the western side of Hornbaker Road for approximately 0.1 mile (MPs 2.3 to 2.4). Route 1 would not cross any active or planned road projects.

Devlin–Pegasus Route 2

In addition to the collocation along Hornbaker Road described above, Devlin–Pegasus Route 2 would collocate with the south side of Wellington Road for approximately 0.1 mile (MPs 1.4 to 1.5), the north side of Wellington Road for approximately 0.4 mile (MPs 1.7 to 2.1), and Sudley Manor Drive for approximately 0.2 mile (MPs 2.1 to 2.3). The route would cross a portion of the VDOT-planned Prince William Parkway and Sudley Manor Drive Interchange project (specifically, near the intersection of Sudley Manor Drive and Wellington Road) area but does not cross interchange area itself. The route would also cross the planned Wellington Road Expansion Project.

Summary

The route alternatives would cross existing and planned roads perpendicularly where possible. Regardless of the crossing angle, Dominion would install transmission structures for the route alternatives outside of existing and planned road rights-of-way. As stated above, Dominion would work with the County and VDOT to mitigate temporary impacts on roads (i.e., access limitations, closures, and increased traffic) during Project construction. As a result, the Project would have minor impacts on existing and planned roads and no impact on railroads.

5.1.10 AIRPORTS AND HELIPORTS

5.1.10.1 AIRPORT FACILITIES

Transmission line structures have the potential to affect airspace in and around airports. This section describes the airports in the vicinity of the study area, the airspace regulations that could impact the Project, and potential impacts of transmission line structures on airports and navigable airspace.

ERM reviewed The FAA's 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 (FAA n.d.-a, FAA n.d.-b). Based on this review, ERM identified 12 airports, private airstrips, or heliports within 10 nautical miles of the proposed facilities (Figure 5.1-9). Table 5.1- lists these facilities and the airport identification (ID) number, distance and direction from the nearest Project infrastructure to the nearest runway or heliport, type of use, and maximum runway length of each.

TABLE 5.1-14 AIRPORTS AND HELIPORTS LOCATED WITHIN 10 NAUTICAL MILES OF THE PROJECT

Airport/Heliport Name	FAA ID	Approximate Distance and Direction to Nearest Project Facility (nautical miles) [a]	Use	Maximum Runway Length (feet)
Building 250 Heliport	52VA	• 0.8 nm northeast of HH (MP 0.1)	Private	NA
LM Building 110 Heliport	66VA	• 0.9 nm northeast of HH (MP 0.1)	Private	NA
Manassas Regional Airport (Harry P Davis Field)	HEF	• 1.1 nm south of HH (MP 0.9) • 1.3 nm south of PH (MP 1.8) and Hornbaker Switching Station • 2.3 nm south of WP (MP 0.6) • 2.3 nm south of D-P1 (MP 2.4) and D-P2 (MP 2.8)	Public	6,200
UVA Health/ Prince William Medical Center Heliport	27VA	• 1.7 nm northeast of HH (MP 0.0)	Private	NA
Rychlk Heliport	2VG6	• 3.2 nm southeast of D-P1 (MP 0.3)	Private	NA
Skyview Airport	51VA	• 4.8 nm southwest of PH (MP 1.2)	Private	2,000

Airport/Heliport Name	FAA ID	Approximate Distance and Direction to Nearest Project Facility (nautical miles) [a]	Use	Maximum Runway Length (feet)
Breeden Airport	VA66	• 8.3 nm south of PH (MP 1.8) and Hornbaker Switching Station	Private	1,000
Maples Field Airport	VG57	• 8.4 nm south of PH (MP 1.8) and Hornbaker Switching Station	Private	2,450
Fairfax County Police Heliport	26VA	• 8.9 nm northeast of WP (MP 0.0)	Private	NA
Stonesprings Heliport	6VG4	• 9.6 nm north of D-P1 (MP 0.0)	Private	NA
Glascock Heliport	98VA	• 9.8 nm north of D-P1 (MP 0.0)	Private	NA
Inova Fair Oaks Hospital Heliport	74VA	• 9.9 nm northeast of WP (MP 0.0)	Private	NA

D-P1 = Devlin–Pegasus Route 1; D-P2 = Devlin–Pegasus Route 2; FAA = Federal Aviation Administration; HH = Hourglass–Hornbaker Route 1 (Hybrid); ID = identification; MP = milepost; NA = not applicable; nm = nautical mile; PH = Pegasus–Hornbaker Route 1; WP = Wellington–Pegasus Route 1.
[a] Includes only overhead transmission route alternatives.

5.1.10.2 FAA REGULATIONS

The FAA oversees air transportation in the U.S. The FAA focuses on air transportation safety, including the enforcement of safety standards for aircraft manufacturing, operation, and maintenance. The FAA also manages air traffic in the U.S. and evaluates physical objects that may affect the safety of aeronautical operations through an obstruction evaluation. The prime objective of an FAA obstruction evaluation is to ensure the safety of air navigation and the efficient utilization of navigable airspace by aircraft.

The regulations that govern objects that may affect navigable airspace are codified in the Code of Federal Regulations (CFR), Title 14, Part 77 (14 CFR Part 77). A summary of the rule as it relates to the Project is provided below, and the full rule is available online at https://www.ecfr.gov/current/title-14/chapter-I/subchapter-E/part-77.

The FAA only regulates public use airports. Of the public use airports identified in Table 5.1-15, only the Manassas Regional Airport is within close enough proximity to the Project for route structures to impact airspace.

5.1.10.3 CIVIL AIRPORT IMAGINARY SURFACES

Civil airport imaginary surfaces have been established with relation to each airport and each runway, pursuant to 14 CFR Part 77. Imaginary surfaces are intended to prevent existing or proposed objects from extending from the ground into navigable airspace. Below is a description of the civil imaginary surfaces.

Manassas Regional Airport has two parallel runways in a northwest/southeast alignment (true headings 151° to 331°). The longer of the two runways is referred to as Runway 16L/34R and is northeast of Runway 16R/34L. The northwestern approaches of these runways point toward the

Project area and are designated as Approach 16L and Approach 16R. Approaches 34R and 34L extend to the southeast and do not overlap with any Project component. The follow imaginary surface descriptions for Manassas Regional Airport are based on obstruction categories assigned to each runway by the FAA in the Airport Data and Information Portal (FAA n.d.-b). Figure 5.1-10 depicts the imaginary surfaces associated with the Manassas Regional Airport.

- **Horizontal surface:** This surface is a horizontal plane 150 feet above the established airport elevation, the perimeter of which is constructed by swinging arcs of specified radii from the center of each end of the primary surface of each runway and connecting the adjacent arcs by lines tangent to those arcs. Manassas Regional Airport is located at a surveyed elevation of 192.2 feet above mean sea level (AMSL); therefore, the horizontal surface for Manassas Regional Airport is 342.2 feet AMSL.
- **Conical surface:** This is a surface extending outward and upward from the periphery of the horizontal surface at a slope of 20 to 1 for a horizontal distance of 4,000 feet. For Manassas Regional Airport, the conical surface extends from 342.2 feet to 542.2 feet AMSL.
- **Primary surface:** This is a surface longitudinally centered on a runway that extends 200 feet beyond the end of each runway. The elevation of any point on the primary surface is the same as the elevation of the nearest point on the runway centerline. This surface is 250 feet wide for visual approach runways, 500 feet wide for runways with non-precision instrument approaches, and 1,000 feet wide for precision instrument runways. For Manassas Regional Airport:
  - Runway 16L/34R has a primary surface ranging from 177.4 feet AMSL at the southeastern approach (34R) to 192.2 feet AMSL at the northwestern approach (16L). Runway 16L/34R has a precision approach procedure; therefore, its primary surface is 1,000 feet wide.
  - Runway 16R/34L has a primary surface ranging from 175.1 feet AMSL at the southeastern approach (34L) to 185.7 feet AMSL at the northwestern approach (16R). Runway 16R/34L has a non-precision approach procedure; therefore, its primary surface is 500 feet wide.
- **Approach surface:** This is a surface longitudinally centered on the extended runway centerline and extending outward and upward from each end of the primary surface. An approach surface is applied to each end of each runway based upon the type of approach available or planned for that runway end (e.g., precision instrument approach, non-precision approach, visual approach). For Manassas Regional Airport, the inner edge of the approach surfaces on both ends of Runways 16L/34R and 16R/34L are the same width as the primary surface (1,000 feet and 500 feet, respectively); however:
  - Runway 16L has a precision instrument approach procedure, with an approach surface that extends uniformly from the primary surface (1,000 feet wide; elevation 192.2 feet AMSL) outward and upward at a slope of 50 to 1 for a horizontal distance of 10,000 feet and at a slope of 40 to 1 for an additional 40,000 feet. The surface terminates at a width of 16,000 feet at a distance of 50,000 feet from the end of the Primary Surface.
  - Runway 34R has a non-precision instrument approach procedure, with an approach surface extending uniformly from the primary surface (1,000 feet wide; elevation 177.4 feet AMSL) for a horizontal distance of 10,000 feet to a width of 3,500 feet at a slope of 34 to 1.

  - Runway 16R has a non-precision instrument approach procedure, with an approach surface extending uniformly from the primary surface (500 feet wide; elevation 185.7 feet AMSL) for a horizontal distance of 10,000 feet to a width of 3,500 feet at a slope of 34 to 1.
  - Runway 34L has a visual approach procedure, with an approach surface that extends uniformly from the primary surface (500 feet wide; elevation 175.1 feet AMSL) for a horizontal distance of 5,000 feet to a width of 1,500 feet at a slope of 20 to 1 (FAA n.d.-b). However, Prince William County's Airport Safety Overlay District zoning restrictions apply the approach dimensions of a non-precision instrument approach runway for obstruction analysis (see Section 5.1.10.6).
- **Transitional surface:** These surfaces extend outward and upward at right angles to the runway centerline and the runway centerline extended at a slope of 7 to 1 from the sides of the primary surface and from the sides of the approach surfaces. Transitional surfaces for those portions of the precision approach surface that project through and beyond the limits of the conical surface extend 5,000 feet measured horizontally from the edge of the approach surface and at right angles to the runway centerline. For Manassas Regional Airport, the minimum transitional surface elevation is equal to its nearest connection to the primary or approach surface periphery.
- Figure 5.1-10 provides a visual representation of the imaginary surfaces for Manassas Regional Airport.

5.1.10.4 TERMINAL INSTRUMENT PROCEDURES

In addition to the civil and military airport imaginary surfaces, FAA Order 8260.3G establishes imaginary surfaces associated with Terminal Instrument Procedures (TERPs). TERPs are guidelines created by the FAA that prescribe standardized methods for designing and evaluating airport specific Instrument Flight Procedures (IFPs), including approach and departure procedures, for civil and military airports. IFPs detail required flight paths, altitude restrictions and maximum descent and takeoff gradients that guide aircraft through approach airspace and provide protocols for missed approaches. IFPs consider obstructions around the airport, including natural topography and manmade structures, to establish Minimum and Required Obstacle Clearance Surfaces. This facet of TERPs allows safe aeronautical navigation in poor visibility conditions.

Pursuant to 14 CFR Part 77, an existing object (including a mobile object) is, and a future object would be an obstruction to air navigation if it is of greater height than any of the following heights or surfaces:

- 499 feet above ground level at the site of the object;
- 200 feet above ground level or above the established airport elevation, whichever is higher, within 3 nautical miles (nm) of the established reference point of an airport (excluding heliports) where the longest runway is more than 3,200 feet in actual length. That height increases in the proportion of 100 feet for each additional nautical mile from the airport up to a maximum of 499 feet;
- A height within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area, that would result in the vertical distance

between any point on the object and an established minimum instrument flight altitude within that area or segment to be less than the required obstacle clearance;

- A height within an enroute obstacle clearance area, including turn and termination areas, of a Federal Airway or approved off-airway route, that would increase the minimum obstacle clearance altitude; or
- The surface of a takeoff and landing area of an airport or any imaginary surface established under 14 CFR §§ 77.19, 77.21, or 77.23.

5.1.10.5 REQUIREMENTS AND TIMING

Construction of any structure that exceeds any of the surfaces or heights identified in the previous sections requires notice to the FAA. In addition, pursuant to 14 CFR Part 77.9, a notice must be filed with the FAA for the following:

- Any construction or alteration that is more than 200 feet above ground level at its site.
- Any construction or alteration that exceeds an imaginary surface extending outward and upward from the primary surface at the following slopes:
  - 25 to 1 for a horizontal distance of 5,000 feet from the nearest point of the nearest landing and takeoff area of each heliport; or
  - 50 to 1 for a horizontal distance of 10,000 feet from the nearest point of the nearest runway that is no more than 3,200 feet in actual length; or
  - 100 to 1 for a horizontal distance of 20,000 feet from the nearest point of the nearest runway that is more than 3,200 feet in actual length; or
- If requested by the FAA.

Construction or alteration of any structure that meets the notification requirements set forth above requires submittal of a FAA Form 7460-1, Notice of Proposed Construction or Alteration, to the FAA regional office with jurisdiction over the area, or submitted electronically via the FAA website. The information that needs to be provided with the notice includes the coordinates, site elevation, and structure height above ground level for each pole/structure and the height of construction equipment, such as cranes.

5.1.10.6 STATE AND LOCAL AVIATION REGULATIONS

Section 5.1-25.1 of the Va. Code states it is unlawful for a person to erect any structure that penetrates into or through any licensed airport's clear zone, approach zone, imaginary surface, obstruction clearance surface, obstruction clearance zone, or surface or zone as described in regulations of the Virginia Department of Aviation or the FAA without first securing a permit from the Board of Aviation. This requirement does not apply to structures to be erected in a jurisdiction that has an ordinance regulating the height of such structures to prevent the penetration of zones and surfaces provided for in 14 CFR Part 77 and Rule 19 of the Virginia Department of Aviation.

State law (Va. Code §§15.2-2280, 15.2-2282, 15.2-2293, and 15.2-2294) gives local jurisdictions the power to establish and regulate zoning districts, make airspace subject to their zoning ordinance, and establish airport safety zoning. Prince William County's Airport Safety Overlay District (Article V, Part 505 of the County's Zoning Ordinance) regulates and restricts the height of

structures and the use of property in the vicinity of Manassas Regional Airport that may cause obstruction to aviation navigation and increase the potential for endangering the lives and property of users of the airport and residents in the County.

The district overlays all other established zoning districts within its boundaries, which are the same as the standard FAA Civil Airport Imaginary Surfaces discussed in Section 5.1.10.2, exception for the approach surface for Runway 34L. As stated above, Runway 34L has a Visual Approach Procedure; however, the County applies non-precision instrument approach dimensions to this runway, pursuant to the Airport Safety Overlay District provisions. This method is likely used to prevent installation of obstructions that would exceed non-precision approach criteria if Runway 34L is ever modified for instrument approach capabilities.

The Airport Safety Overlay District also establishes a Runway Safety Area, which comprises each runway's primary surface and established Runway Clear Zones. No uses except agricultural and open space uses not involving concentrations of people, are permitted in the safety area. The Runway Clear Zones begin at the end of each runways primary surface and extend horizontally with the width of each runway approach surface as described below.

- North end of runway 16L-34R: 1,000 feet wide where it connects to the primary surface, 1,750 feet wide at its northern edge and extending south/north for 2,500 feet.
- South end of runway 16L-34R: 1,000 feet wide where it connects to the primary surface, 1,425 feet wide at its southern boundary and extending 1,700 feet north/south.
- North end of runway 16R-34L: 500 feet wide where it connects to the primary surface, 1,010 feet wide at its northern boundary and extending 1,700 feet south/north.
- South end of runway 16R-34L: 500 feet wide where it connects to the primary surface, 1,010 feet wide at its southern boundary and extending 1,700 feet north/south.

None of the Project infrastructure is in the Runway Safety Areas described above; however, all Project infrastructure is located within the Airport Safety Overlay District (Figure 5.1-10). Because the overlay district surfaces are the same as the standard FAA imaginary surfaces (exception for Runway 34L, which does not point toward the Project area), the 14 CFR Part 77 airspace restrictions apply to the Project rather than the local ordinance. Dominion will nonetheless coordinate with Prince William County, Manassas Regional Airport, and the FAA as appropriate to avoid impacts on air travel.

5.1.10.7 IMPACT ASSESSMENT

ERM conducted an airport analysis to review the height limitations associated with the FAA-defined imaginary surfaces for all runways at the airports identified in Table 5.1. As part of a typical airport analysis, ERM conducts preliminary evaluations of transmission infrastructure heights and locations using the FAA defined Civil and Department of Defense Airport Imaginary Surfaces, and applied standard GIS tools, including ESRI's ArcGIS Pro software with Spatial Analyst, 3D Analyst, and Aviation Airports Extensions, to create and georeference imaginary surfaces in space and in relationship to transmission structures. ERM derived ground surface data for the study area from a U.S. Geological Survey (USGS) 10 Meter Digital Elevation Model.

Of the 12 airports and heliports identified within 10 nautical miles of all the Project, one is a public use airport, three are private use airports, and eight are private use heliports. There are no military airports within 10 nautical miles of the Project. Private airports and heliports are not regulated by the FAA and none of the private facilities listed in Table 5.1-14 would conflict with the proposed route alternatives.

Only the Manassas Regional Airport is close enough to the Project area for route structures to potentially impact airspace. All Project routes are located within the airport's approach surfaces, as shown on Figure 5.1-10. The established airport elevation at Manassas Regional Airport is 192.2 feet AMSL. Table 5.1-15 summarizes the relationship of Project facilities to the airport's elevation and approach surfaces.

TABLE 5.1-15 RELATIONSHIP OF PROJECT FACILITIES TO MANASSAS REGIONAL AIRPORT IMAGINARY SURFACES

Route Alternative	Elevation Range (feet AMSL)	Relationship to Manassas Regional Airport Imaginary Surfaces
Devlin–Pegasus Route 1	218–320	• Runway 16L: Partially within extended approach surface
Devlin–Pegasus Route 2	220–320	
Hourglass–Hornbaker Route 1 (overhead segment) [a]	198–222	• Within transitional surface
Pegasus–Hornbaker Route 1	214–306	• Within transitional surface • Runway 16L: within approach and extended approach surfaces • Runway 16R: partially within approach surface
Wellington–Pegasus Route 1	306–312	• Within transitional surface • Runway 16L: Partially within extended approach surface

AMSL = above mean sea level.

[a] Elevation of the Hornbaker Switching Station is 218 feet AMSL.

All Project components south of Sudley Manor Drive are within 3 nm of the established reference point of Manassas Regional Airport and are also restricted by the TERPs horizontal plane located 200 feet above the established airport elevation (392.2 feet AMSL). Beyond 3 nm (north of Sudley Manor Drive), the Devlin-Pegasus Routes 1 and 2 are restricted by this plane; however, the height of the plane increases by 100 feet for every 1 nm past the initial 3 nm buffer.

Because the Project area is at a higher ground elevation than the Manassas Regional Airport, the Company and ERM identified early in the process that some structures associated with the route alternatives would penetrate various imaginary surfaces for Manassas Regional Airport (specifically, the approach surface, horizontal surface, conical surface and the 200-foot TERPs surface). The Company and ERM met with representatives from Manassas Regional Airport in July 2024 to discuss the Project. During the discussion, airport representatives recommended the Company coordinate structure locations and heights with the FAA, which is solely responsible for conducting obstruction analyses and determining if airport flight surface would require alteration

due to the proposed Project. The Company then prepared and submitted a Form 7460-1 (Notice of Proposed Construction or Alteration) with the FAA, based on the structure locations and heights known at the time.

The FAA's review of the Project found that several structures along the route alternatives would penetrate imaginary surfaces and TERPs surfaces. To address these impacts, structures within this surface would be constructed at or below the affected surfaces. Due to the proximity of Project structures to other imaginary surfaces referenced above, it is likely that some of the Project structures will require lighting and marker balls to receive a "no effect to air navigation" determination from the FAA. The Company will continue to coordinate with the FAA on required structure heights and lighting/marking requirements as appropriate.

5.2 NATURAL RESOURCES

5.2.1 SURFACE WATERS

ERM identified and mapped watersheds, wetlands, and waterbodies (e.g., lakes, streams, ponds, and stormwater features) within the study area using publicly available desktop sources, including:

- Recent aerial imagery, taken in October of 2023 (NAIP 2023);
- Prince William County Geospatial Technology Services (Prince William County 2024c);
- Google Earth Aerial Imagery (Google LLC 2024);
- Prince William County GIS Data Portal 2-Foot contour intervals (Prince William County GIS Data Portal 2018)
- NWI maps from the USFWS online data mapping portal (USFWS 2024);
- The National Hydrography Dataset (NHD) Plus High Resolution (USGS 2024); and
- Soil Survey Geographic Database soils data from the U.S. Department of Agriculture-Natural Resources Conservation Service (USDA-NRCS 2024).

Figure 5.2-1 shows the locations of NWI-mapped wetlands, NHD-mapped waterbodies, and watershed boundaries in the study area.

5.2.1.1 WATERSHEDS

Watersheds are used to define the geographic area within the boundaries of drainage divides throughout the country. For purposes of classifying watersheds, the U.S. is divided into hydrologic units in four levels—regions, subregions, accounting units, and cataloging units—which may contain an entire or part of a watershed. Each level is identified by a hydrologic unit code (HUC). The first level of the code, the 2-digit HUC, is a major geographic area or region containing several rivers or the drainage area of a major river. Subsequent levels encompass progressively smaller areas based on the drainage divides of lower order waterbodies.

The study area is within the following HUC areas:

- The Mid-Atlantic HUC 2-digit (02) region, which discharges into the Atlantic Ocean, Long Island Sound, and the Riviere Richelieu, a tributary of the St. Lawrence River;

- The Potomac HUC 4-digit (0207) subregion, which drains about 14,600 square miles within the Potomac River basin, including Washington D.C., Maryland, Pennsylvania, Virginia, and West Virginia;
- The Middle Potomac-Anacostia-Occoquan (02070010) HUC 8-digit watershed, which drains about 1,280 square miles into the Potomac River; and
- The Broad Run (0207001005) HUC 10-digit watershed (USGS 2023).

The study area is further split into the smaller HUC 12-digit watersheds, with most of the study area and all the Project infrastructure located within the Rocky Branch-Broad Run (020700100504). Approximately 209 acres (2.7%) of the northern edge of the study area is within the Middle Bull Run (020700100703) watershed. Named waterbodies within the study area include Dawkins Branch, Cannon Branch, and Broad Run, as well as unnamed intermittent and perennial tributaries. Surface water in the study area generally flows north to south/southeast, converging into Broad Run and ultimately to the Occoquan River and Lake Jackson.

5.2.2 WETLANDS

5.2.2.1 EXISTING CONDITIONS

ERM identified wetlands within the rights-of-way for the route alternatives (inclusive of the proposed Hornbaker Switching Station site) based on ERM's desktop wetland and waterbody probability analysis, described in the Wetland and Waterbody Desktop Summary (Appendix D). ERM did not conduct onsite delineation of wetlands or waterbodies along the route alternatives. Wetlands and waterbodies are classified based on the Cowardin classification system as described below:

- Palustrine emergent (PEM) wetlands—characterized by erect, rooted, herbaceous hydrophytes (i.e., aquatic plants) and woody species less than 3 feet in height, excluding mosses and lichens;
- Palustrine scrub-shrub (PSS) wetlands—characterized by woody vegetation, excluding woody vines, approximately 3 to 20 feet in height;
- Palustrine forested (PFO)—wetlands characterized by woody vegetation, excluding woody vines, approximately 20 feet or more in height and 3 inches or larger diameter at breast height;
- Palustrine unconsolidated bottom (PUB) open waters—characterized by bottom substrate particles smaller than stones (less than 10 inches in diameter) covering greater than 25% of the area, with plants covering less than 30% of the area; and
- Riverine streams—channels containing periodically or continuously moving water (USFWS 2013).

Wetlands provide a wide range of ecological functions, including flood storage and groundwater recharge, nutrient and sediment capture, erosion control, filtration of pollutants from adjacent waterbodies, and diverse fish and wildlife habitat. PFO wetlands are of especially high value because of their habitat biodiversity and carbon sequestration functions, as well as their increased filtration capabilities.

Most wetlands in the study area are adjacent to or contiguous with streams (Dawkins Branch, Cannon Branch, and Broad Run) and associated tributaries that may be regulated by the U.S. Army Corps of Engineers (USACE) and/or the Virginia Department of Environmental Quality (VDEQ) under Sections 404 and 401 of the Clean Water Act (CWA).

ERM calculated acreages within the study areas that have high, medium-high, or medium probability of containing wetlands or waterbodies, based on the probability analysis described in Appendix D. Table 5.2-1 summarizes the acres of wetlands identified within the right-of-way of each route alternative. Attachment 2 of Appendix D provides maps depicting the identified wetlands and waterbodies and their probabilities. Section 5.2.3 addresses Riverine (stream) and PUB (open water) features.

TABLE 5.2-1 HIGH, MEDIUM-HIGH, AND MEDIUM PROBABILITY WETLANDS AND WATERBODIES WITHIN THE PROJECT FOOTPRINT

Surface Waters Crossed	Units [a]	Wellington–Pegasus Route 1	Pegasus–Hornbaker Route 1 [b]	Hourglass–Hornbaker Route 1 (Hybrid) [c]	Devlin–Pegasus Route 1	Devlin–Pegasus Route 2
Total	Acres	<0.1	1.1	0.7	6.3	5.3
Palustrine Forested	Acres	NA	0.4	0.6	4.7	4.1
Palustrine Scrub-shrub	Acres	NA	NA	NA	NA	NA
Palustrine Emergent	Acres	<0.1	0.1	NA	0.5	0.5
Palustrine Unconsolidated Bottom	Acres	NA	0.5	0.1	0.7	0.3
Riverine	Acres	NA	0.2	<0.1	0.5	0.5

NA = Not applicable due to absence of a wetland type within the route alternative footprint
[a] Totals may not reflect the sum of addends, due to rounding. A value of 0.0 indicates less than 0.05 acre of the wetland is present.
[b] Includes the proposed 2.3-acre Hornbaker Switching Station.
[c] Includes the proposed 3.1-acre transition station.

5.2.2.2 IMPACT ASSESSMENT

Most wetlands in the study area, specifically the wetlands crossed by Devlin–Pegasus Routes 1 and 2, Hourglass–Hornbaker Route 1 (Hybrid), and Pegasus–Hornbaker Route 1 are PFO associated with Dawkins Branch, Cannon Branch, Broad Run, and their tributaries, and generally flow north to south. No wetlands were identified within the proposed Hornbaker Switching Station footprint. Based on the methodologies described above, most wetland impacts would be within the proposed rights-of-way of Devlin–Pegasus Routes 1 and 2. Wetlands crossed by each route alternative are described below.

Wellington–Pegasus Route 1

The Wellington–Pegasus Route 1 right-of-way encompasses approximately less than 0.1 acre of PEM wetlands between MPs 0.1 and 0.2.

Pegasus–Hornbaker Route 1

The Pegasus–Hornbaker Route 1 right-of-way, inclusive of the 2.3-acre proposed Hornbaker Switching Station, encompasses approximately 1.1 acres of wetlands. Locations of larger areas of wetlands along the route are described below.

- PEM wetlands between MPs 0.1 and 0.2 and between MPs 0.5 and 0.6; and
- PFO wetlands between MPs 0.5 and MP 0.7.

If this route is selected for the Project, construction and operation of the transmission lines would convert the approximately 0.4 acre of PFO to PEM-type wetlands within the maintained right-of-way.

Hourglass–Hornbaker Route 1 (Hybrid)

The Hourglass–Hornbaker Route 1 (Hybrid) right-of-way encompasses approximately 0.6 acre of PFO wetlands between MPs 0.9 and 1.0.

If this Route is selected for the Project, construction and operation of the transmission lines would convert the approximately 0.6 acres of PFO to PEM-type wetlands within the maintained right-of-way.

Devlin–Pegasus Route 1

The Devlin–Pegasus Route 1 right-of-way encompasses approximately 6.3 acres of wetlands and waterbodies. Locations of larger areas of wetlands along the route are described below.

- PFO and PEM wetlands between MPs 0.2 and 0.4, MPs 0.6 and 0.7, and MPs 0.8 and 1.0;
- PFO wetlands associated with Dawkins Branch between MPs 1.0 and 1.2, MPs 1.3 and 1.1, and between MPs 1.8 and 1.9; and
- PFO and PEM wetlands between MPs 2.1 and 2.4.

If this Route is selected for the Project, construction and operation of the transmission lines would convert the approximately 4.7 acres of PFO to PEM-type wetlands within the maintained right-of-way.

Devlin–Pegasus Route 2

The Devlin–Pegasus Route 2 right-of-way would encompass approximately 5.3 acres of wetlands and waterbodies. The Devlin–Pegasus Route 2 right-of-way shares an alignment with Devlin–Pegasus Route 1 from MPs 0.0 (Devlin Switching Station) to 1.2 and MPs 2.3 to the Pegasus Switching Station. Between MPs 1.2 and MP 2.3, locations of larger areas of wetlands along Route 2 are described below.

- PFO wetlands associated with Dawkins Branch between MPs 1.2 and 1.4, at approximate MP 1.9, between MPs 2.0 and 2.1, and at approximate MP 2.3; and
- PEM wetlands at approximate MP 1.6.

From MPs 0.0 to 1.2 and 2.3 to the Pegasus Switching Station (MP 2.8), wetlands crossed are the same as those for Devlin–Pegasus Route 1 between MP 0.0 and 1.2 and 1.8 and the Pegasus Switching Station (MP 2.4), described above.

If this Route is selected for the Project, construction and operation of the transmission lines would convert the approximately 4.1 acres of PFO to PEM-type wetlands within the maintained right-of-way.

Summary

To minimize impacts on wetland areas, the Project has been designed to span or avoid wetlands, keeping transmission structures outside of wetland boundaries to the extent practicable. Most direct impacts on wetlands from Project construction would be temporary in nature. The Company would use temporary timber matting 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 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 preexisting conditions.

Permanent direct impacts to wetlands would be limited to placement of structures within wetlands, if unavoidable, and, due to the necessity of removing trees and shrubby vegetation from the right-of-way, the permanent conversion of PSS/PFO wetlands within the right-of-way to PEM type wetlands. 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.

Where the removal of trees or shrubby vegetation occurs within wetlands, Dominion 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.

No change in contours of wetlands and waterbodies, or redirection of the flow of water, is anticipated and the amount of spoil from foundation and structure placement would be minimal. Excess spoil in wetlands generated through foundation construction would be controlled through construction BMPs (e.g., the implementation erosion and sediment controls).

Upon SCC approval of a route and final line engineering, Dominion will obtain the appropriate permits from the USACE and VDEQ for work within wetlands and waterbodies to ensure full compliance with Section 404 and 401 of the CWA and minimize potential impacts on aquatic resources within the approved transmission line corridor.

5.2.3 WATERBODIES

ERM identified and mapped waterbodies, including streams, rivers, and other open waterbody features (e.g., reservoirs, lakes, impoundments, ponds, and stormwater features) within the study area using the publicly available GIS databases identified above. As noted above, waterbodies within the study area include the named perennial streams, Dawkins Branch, Cannon Branch, and Broad Run; as well as unnamed perennial and intermittent tributaries, and open waterbody features (generally stormwater ponds). Waterbody crossings are regulated by the USACE and VDEQ under Sections 404 and 401 of the CWA and the Virginia Water Protection permit program.

The Project does not cross navigable waters; therefore, Rivers and Harbors Act Section 10 authorization from the USACE is not required for the Project.

Wellington–Pegasus Route 1 does not cross any waterbodies. Devlin–Pegasus Routes 1 and 2 cross the perennial Dawkins Branch. All alternatives except for Wellington–Pegasus Route 1 cross unnamed perennial and intermittent tributaries associated with Dawkins Branch and Broad Run, as well as open waterbody features that appear to be stormwater ponds. Hourglass–Hornbaker Route 1 (Hybrid) crosses an unnamed intermittent tributary associated with Cannon Branch. Table 5.2-2 provides the number of waterbody crossings for each route alternative, with the locations of crossings described for each route below. Appendix D provides a general location map illustrating waterbodies crossed by each route.

TABLE 5.2-2 WATERBODIES CROSSED BY THE ROUTE ALTERNATIVES

Waterbodies Crossed	Unit	Wellington–Pegasus Route 1	Pegasus–Hornbaker Route 1 [a]	Hourglass–Hornbaker Route 1 (Hybrid) [b]	Devlin–Pegasus Route 1	Devlin–Pegasus Route 2
Total	Number	0	4	2	16	17
NHD-mapped Perennial Streams	Number	0	0	0	3	3
NHD-mapped Intermittent Streams	Number	0	2	1	8	9
NHD-mapped Perennial Lakes/Ponds	Number	0	1	1	3	3
Non-NHD Mapped Intermittent Streams [c]	Number	0	1	0	2	2

Source: USGS NHD (USGS 2024).

[a] Includes the proposed 2.3-acre Hornbaker Switching Station.

[b] Includes the 3.1-acre transition station.

[c] Non-NHD mapped intermittent streams listed in the table were identified via current (2023) aerial imagery during desktop analysis rather than mapped by the NHD (NAIP 2023).

5.2.3.1 PEGASUS–HORNBAKER ROUTE 1

The Pegasus–Hornbaker Route 1 right-of-way, inclusive of the 2.3-acre proposed Hornbaker Switching Station, crosses four waterbodies. Three are NHD-mapped waterbodies: two unnamed intermittent streams and one unnamed open waterbody feature. Based on historic aerial imagery, the NHD-mapped intermittent stream near MP 1.1 appears to be eliminated or diverted underground, therefore there is no above ground stream crossing in this location (Google LLC 2024). Based on recent (2023) aerial imagery, the NHD-mapped intermittent stream and open waterbody feature within the footprint of the proposed Hornbaker Switching Station have been diverted around the switching station underground. There is no longer a PUB open waterbody feature, and the stream crossing within the route right-of-way near MP 1.8 is now below-ground. As a result, no waterbodies are within the proposed switching station footprint (NAIP 2023). Additionally, one unnamed, unclassified stream associated with Broad Run was identified using recent (2023) aerial imagery near approximate MP 0.7 (NAIP 2023). Based on ERM's wetland

desktop methodology, the Pegasus–Hornbaker Route 1 right-of-way would encompass approximately 0.2 acre of riverine streams and 0.5 acre of PUB open water features, however, as described above, the PUB feature has been eliminated.

5.2.3.2 HOURGLASS–HORNBAKER ROUTE 1 (HYBRID)

The Hourglass–Hornbaker Route 1 (Hybrid) right-of-way crosses one NHD-mapped unnamed, intermittent stream between MPs 0.9 and 1.0. The right-of-way would encompass approximately less than 0.1 acre of riverine streams. The NHD includes a 0.3-acre open waterbody feature between MP 1.2 and the proposed Hornbaker Switching Station; however, as noted above under Pegasus–Hornbaker Route 1, based on recent (2023) aerial imagery, the area has been developed and the feature is no longer present.

5.2.3.3 DEVLIN–PEGASUS ROUTE 1

The Devlin–Pegasus Route 1 right-of-way would cross 16 waterbodies, of which 14 are NHD-mapped, including three perennial waterbodies (Dawkins Branch and two unnamed perennial streams), eight unnamed intermittent streams, and three lake/ponds. ERM also identified two unnamed, unclassified streams within the right-of-way using recent aerial imagery (NAIP 2023). The right-of-way would encompass approximately 0.5 acre of riverine streams and 0.7 acre of PUB open water features. Waterbody crossing locations are summarized below.

- An unnamed, intermittent and an unnamed perennial tributary to Broad Run between MPs 0.2 and 0.4:
- An open waterbody feature between MPs 0.6 and 0.7;
- An unnamed, intermittent tributary to Dawkins Branch between MPs 0.9 and 1.2;
- Perennial Dawkins Branch at approximate MP 1.2;
- A perennial lake/pond at approximate MP 1.4;
- An unnamed, intermittent stream associated with Dawkins Branch between MPs 1.5 and 1.6;
- An unnamed perennial tributary to Broad Run between MPs 1.8 and 1.9; and
- An unnamed, intermittent Broad Run tributary between MPs 2.1 and 2.2 and MPs 2.2 and 2.4

5.2.3.4 DEVLIN–PEGASUS ROUTE 2

The Devlin–Pegasus Route 2 right-of-way would cross 17 waterbodies, of which 15 are NHD-mapped, including three perennial waterbodies (Dawkins Branch and two unnamed perennial streams), nine unnamed intermittent streams, and three lake/ponds. ERM also identified two unmapped, unclassified streams were identified within the right-of-way using recent aerial imagery (NAIP 2023). The right-of-way for Route 2 would encompass approximately 0.5 acre of riverine streams and 0.3 acre of PUB open water features. The Devlin–Pegasus Route 2 right-of-way shares an alignment with Devlin–Pegasus Route 1 between MP 0.0 (Devlin Switching Station) and MP 1.2 and from MP 2.3 to the Pegasus Switching Station. Waterbody crossing locations for

Devlin–Pegasus Route 2 MPs 1.2 to MP 2.3 (the segment not shared with Route 1) are summarized below.

- Unnamed, intermittent tributaries to Dawkins Branch between MPs 1.3 and 1.5 and between MPs 1.8 and 1.9; and
- Unnamed perennial Broad Run tributaries between MPs 2.0 and 2.1 and near MP 2.3.

5.2.3.5 IMPACT ASSESSMENT

All route alternatives except Wellington–Pegasus Route 1 cross tributaries associated with Broad Run. Devlin–Pegasus Routes 1 and 2 cross Dawkins Branch and associated tributaries. Dominion would span the waterbodies crossed by the route alternatives to the extent practicable, with permanent impacts on waterbodies limited to riparian buffer transition from tree cover to herbaceous vegetation within the maintained right-of-way. 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 changes due to loss of shading. The right-of-way would be maintained with a cover of herbaceous vegetation during operations, which would provide some filtration and stabilization to protect waterbodies from runoff.

Where removal of trees and/or woody shrubs is required, clearing within 100 feet of a stream would be conducted by hand. Vegetation would be cut at or slightly above ground level and there would be no grubbing of stumps. Dominion would use sediment barriers along waterways and steep slopes during construction to protect waterways from soil erosion and sedimentation.

Temporary, minor impacts on water quality could occur during construction from disturbed soils transported by storm water into adjacent surface waters during rain events. Increased turbidity and localized sedimentation of stream bottoms may occur because of runoff. Potential impacts would be mitigated by the implementation of erosion control measures.

Waterways crossed by the Project would be maintained for proper drainage using culverts or other crossing devices in accordance with Dominion's standard policies. If a section of line cannot be accessed from existing roads, Dominion may need to install a culvert or temporary bridge to cross small streams. In such cases, temporary fill may be required. Fill would be placed on erosion control fabric and removed when work is completed, returning the surface to original contours.

Upon SCC approval of a route and final line engineering, Dominion will obtain the appropriate permits from the USACE and VDEQ for work within wetlands and waterbodies to ensure full compliance with Section 404 and 401 of the CWA and minimize potential impacts on aquatic resources within the approved transmission line corridor.

5.2.4 NATURAL HERITAGE RESOURCES

The Virginia Natural Area Preserves Act of 1989 defines NHRs as habitats of rare, threatened, or endangered plant and animal species; rare or state-significant natural communities or geologic sites; and similar features of scientific interest benefiting the welfare of the citizens of the Commonwealth (Va. Code § 10.1-209 through 217). VDCR assigns a state rank (an "S-ranking") to the species, natural communities, and geologic features categorized by NHRs to indicate their

conservation status and rarity within the Commonwealth of Virginia. State rankings range from S1 to S5, as follows (VDCR 2021a):

- Critically imperiled (S1);
- Imperiled (S2);
- Vulnerable (S3);
- Apparently secure (S4); or
- Secure (S5).

ERM consulted the VDCR's Natural Heritage Program (NHP) and requested an environmental review of the routes to identify NHRs along and near each alternative. ERM also reviewed the NHP's ecological datasets for the area within 1.0 mile of the rights-of-way for each route alternative. The requested NHP review included natural area preserves, conservation sites, stream conservation sites (SCSs), and ecological cores (VDCR 2024b).

The VDCR responded to ERM's request for environmental review of the Project in a letter dated September 29, 2024 (attached as Appendix E). The VDCR letter indicates that no natural area preserves or state-listed insects are present along the routes; therefore, no further discussion of these resource types is provided in this study. The VDCR's review identified several NHRs along the routes, including a conservation site, a SCS, and ecological cores. Each type of NHR is described below.

5.2.4.1 CONSERVATION SITES

Conservation sites identify a planning boundary delineating the NHP's best determination of the land and water area occupied by one or more rare, threatened, or endangered species; rare or significant natural communities, or geologic sites, and are necessary to maintain ecological processes that will facilitate long-term survival of these resources. The size and dimensions of a conservation site are based on the habitat requirements of the rare, threatened, or endangered plant and animal species or natural communities present and the physical features of the surrounding landscape. Features taken into consideration include hydrology, slope, aspect, vegetation structure, current land uses, and potential threats from invasive species. Conservation sites do not necessarily preclude human activities, but a site's viability may be greatly influenced by human activities. Conservation sites may require ecological management, such as invasive species control or water management, to maintain or enhance their viability.

Each conservation site is given a biodiversity significance ranking (a "B-ranking") by VDCR based on rarity, quality, and number of NHRs it contains. Conservation site rankings range from B1 to B5 as follows (VDCR 2021a):

- Outstanding significance (B1);
- Very high significance (B2);
- High significance (B3);
- Moderate significance (B4); or
- General significance (B5).

Rankings for conservation sites can also include indicators of the presence/absence of federal-listed species, state-listed species, or no listed species.

VDCR identified one conservation site within the Project study area, the Vulcan Gainesville Tract Conservation Site, which is described below. Figure 5.2-2 depicts the location of the site.

Vulcan Gainesville Tract Conservation Site

The Vulcan Gainesville Tract Conservation Site consists of 460 acres of land with a B3 ranking, indicating a site of high significance. Approximately 92.0 acres of the conservation site are within the northwestern portion of the study area, north of Linton Hall Road, west of Devlin Road, south of Gainsford Industrial Park, and east of the existing Rollins Ford Substation. Approximately 29.0 acres of the conservation site are cleared and maintained rights-of-way of the Company's existing Lines #2163, #535, #2114, #2222, and #569, which bisect the site. The remaining 63.0-acre portion of the conservation site within the study area is mostly forested with areas of scrub/shrub cover.

VDCR has identified one T&E plant species and three rare plant species associated with the Vulcan Gainesville Tract Conservation Site. These include: Torrey's mountain-mint (*Pycnanthemum torreyi*, state-listed), Earleaf false foxglove (*Agalinis auriculata*), Hairy nutrush (*Scleria ciliata var. ciliata*), and Stiff goldenrod (*Solidago rigida var. rigida*). Section 5.2.5 provides more detailed habitat descriptions for these species.

Impact Assessment

No route alternatives cross the Vulcan Gainesville Tract Conservation Site. The closest route alternative to the site is Devlin–Pegasus Routes 1 and 2 at MP 0.0, which are approximately 0.2 mile east of the conservation site. Based on the distance, the Project would have no impact on the Vulcan Gainesville Tract Conservation Site.

5.2.4.2 STREAM CONSERVATION SITE

Stream conservation sites "encompass stream/river reaches, waterbodies, and terrestrial contributing areas containing or associated with aquatic or semi-aquatic resources, including upstream and downstream reaches and tributaries up to 3-kilometer stream distance from the aquatic resources" (VDCR 2024c). The VDCR considers hydrology of the waterway and surrounding landscape, dam locations, and determination of tidal waterways to determine the size and dimensions of a SCS. The SCS can be used to identify land management needs, protection priorities, and potential conflicts with development activities.

VDCR assigns a B-ranking to SCSs using the same scale as described for conservation sites in Section 5.2.4.1. VDCR identified one SCS within the Project study area, the Broad Run-Cannon Branch Stream Conservation Site, which is described below. Figure 5.2-2 depicts the location of the site.

Broad Run-Cannon Branch Stream Conservation Site

The Broad Run-Cannon Branch SCS consists of approximately 1,849 acres of land with a B4 ranking, indicating a site of moderate significance. This SCS is in the southwestern portion of the

study area. Most of the SCS comprises forested land that surrounds riparian communities of the Broad Run tributary.

VDCR identified the Brook floater (*Alasmidonta varicose*) as a species associated with the Broad Run-Cannon Branch SCS (VDCR 2024c). This mussel species is state-listed as endangered. Section 5.2.5 provides additional information on all T&E species.

Impact Assessment

Two route alternatives would cross the Broad Run-Cannon Branch SCS. Pegasus–Hornbaker Route 1 would cross the SCS between MPs 1.1 and 1.3 and between MPs 1.7 and 1.8 (approximately 9.1 acres), and Hourglass–Hornbaker Route 1 (Hybrid) would cross the SCS between MPs 1.2 and 1.3 (approximately 1.2 acres). Aerial imagery indicates that the areas of the SCS that are crossed by the routes have been cleared and developed prior to this Project; therefore, no new impacts on the SCS are anticipated from the construction or operation of the Project.

5.2.4.3 ECOLOGICAL CORES

Ecological cores are areas of at least 100 acres of continuous, interior, natural cover (e.g., forests or woodlands) that provide habitat for a wide range of species, from interior-dependent forest species to habitat generalists, as well as species that use marsh, dune, and beach habitats. Interior ecological core areas begin 100 meters inside the nearest core edges and continue to the deepest parts of the ecological core. Smaller areas of continuous interior cover (i.e., 10 to 99 acres), called habitat fragments, support ecological cores and provide similar functions and values. Ecological cores and habitat fragments together provide natural and economic benefits of open space, recreation, water quality (including erosion prevention and drinking water recharge and protection), and air quality (including carbon sequestration and oxygen production). VDCR ranks the integrity of ecological cores from C1 to C5 using nine prioritization criteria, including the NHR habitats within the cores. Habitat fragments are similarly classified, although none are ranked above C3 (VDCR 2023a, 2024c).

The VDCR ranking system for the integrity of ecological cores includes the following categories:

- Rank C1—Outstanding
- Rank C2—Very High
- Rank C3—High
- Rank C4—Moderate
- Rank C5—General

Generally, VDCR assigns a higher ranking (e.g., C1 or C2) to larger and more biologically diverse ecological cores. Ecological integrity can be considered enhanced if the core is part of a larger complex of natural lands, or if the core contributes to water quality enhancement. Ecological cores ranked C1 and C2 are typically connected by extended landscape corridors with forests that comprise a statewide network of natural lands. Therefore, the VDCR recommends avoidance of ecological cores ranked C1 or C2 and a formal impact analysis to minimize impacts if they are unavoidable (Gustafson 2024). Lower ranked ecological cores may have smaller fragments of forested habitat (10 to 99 acres of contiguous landcover); however, the VDCR notes that habitat

fragments can also provide important ecological functions and values and recommends avoiding impacts to habitat fragments when feasible.

Existing Conditions

The VDCR review of the Project found that Devlin–Pegasus Routes 1 and 2 intersect one ecological core with a ranking of C5 (Core ID 36865) along their shared alignment between MPs 0.0 (Devlin Switching Station) and MP 0.1 (approximately 1.0 acre). Because the route alternatives do not cross any ecological cores ranked C1 or C2, no formal impact analysis is provided for the ecological core crossed, per the recommendation of VDCR (Gustafson 2024, VDCR 2024c, see Appendix E). Figure 5.2-3 shows the locations of the ecological core unit crossed by the Project route alternatives.

Impact Assessment

Impacts on ecological cores occur when their natural cover is partially or completely converted to developed land uses. Habitat conversion can result in changes that reduce ecosystem processes, biodiversity, population viability, and habitat quality (VDCR 2024c). The Project would affect one ecological core ranked C5 through tree clearing for the new transmission right-of-way (VDCR 2024c).

ERM calculated the potential impact on the ecological core by estimating the amount of tree clearing that would be required for each route alternative. Devlin–Pegasus Routes 1 and 2 are the only route alternatives that would impact the C5 ecological core (Core ID 36865). The core is sparsely forested and was cleared between 2016 and 2017 (Google LLC 2024). Both routes intersect the northern portion of the core for approximately 0.1 mile (1.0 acre). The Project would not have significant impacts on the core, due to recent clearing, sparse forest regrowth, and future development of the area.

5.2.5 PROTECTED SPECIES

Protected species are generally defined as animal and plant species that are protected under state or Federal law. ERM reviewed protected species according to regulations under the following state and Federal laws:

- Federal- and state-listed T&E species protected under the federal Endangered Species Act (ESA) enacted in 1973 and administered by the USFWS and the National Oceanic and Atmospheric Administration, in cooperation with the Virginia Department of Wildlife Resources (VDWR), and also protected under the Virginia Endangered Plant and Insect Species Act administered by the Virginia Department of Agriculture and Consumer Services in cooperation with the VDCR;
- Bald eagles (*Haliaeetus leucocephalus*) protected under the federal Bald and Golden Eagle Protection Act enacted in 1940 and administered by the USFWS; and
- Migratory birds protected under the Migratory Bird Treaty Act enacted in 1918 and administered by the USFWS.

ERM identified protected species along and near the Project using the following sources:

- USFWS Information for Planning and Consultation (IPaC) online system (USFWS n.d.)
- VDCR NHP (VDCR 2024b)
- VDCR Environmental Review (VDCR 2024c)
- VDWR Wildlife Environmental Review Map Service (WERMS) (VDWR 2024a)
- Virginia Fish and Wildlife Information Service (VaFWIS) (VDWR 2024b)
- Center for Conservation Biology (CCB) Eagle Nest Locator (CCB 2022)
- VDWR Little Brown Bat and Tricolored Bat (TCB) Winter Habitat and Roost Tree Application (VDWR 2024c)
- VDWR Northern Long-ared Bat (NLEB) Regulatory Buffer Interactive Tool (VDWR 2024d)

ERM used database query results from the VDCR NHP, VaFWIS, WERMS, and the UsFWS IPaC to identify federal- and state-listed species that may occur within the study area. ERM obtained digital data from VDCR to identify locations within potential rights-of-way of the route alternatives and switching station (along with an associated 100-foot buffer) that potentially support protected species. Query results from VDCR include species known to occur in the area and communities known to historically or currently contain protected species (VDCR 2024c).

Query results from IPaC include species that may occur in the study area (USFWS n.d.). Query results from VaFWIS include species known to occur or likely to occur within a 2.0-mile radius of the Project study area (VDWR 2024b). Bald eagle nest data and migratory bird information is provided in the CCB database (CCB 2022). WERMS queries provided data for species known to occur within the Project route alternatives rights-of-way.

5.2.5.1 FEDERAL- AND STATE-LISTED THREATENED AND ENDANGERED SPECIES

To protect and recover imperiled species and the ecosystems they depend on, Congress passed the federal ESA in 1973, which states that T&E plant and animal species are of aesthetic, ecological, educational, historic, and scientific value to the U.S., and protection of these species and their habitats is required. The ESA is administered by both the National Oceanic and Atmospheric Administration and USFWS. It protects fish, wildlife, plants, and invertebrates that are federally listed as endangered or threatened by prohibiting the “take” of these species and the interstate or international trade of the species, including their parts and products, unless federally permitted.

To take is defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct” (33 U.S.C. §1532). A federally endangered species is any species that is in danger of extinction throughout all or a significant portion of its range, with exceptions for certain insect pests (33 U.S.C. §1532). A federally threatened species is any species that is likely to become endangered in the near future throughout all or a significant portion of its range (33 U.S.C. §1532).

Virginia has adopted separate codes for protecting animals and plants in the state. The Virginia ESA (Va. Code, §§ 29.1-563 through -570) designates the VDWR as the state agency with jurisdiction over state-listed endangered or threatened fish and wildlife. The Virginia ESA

authorizes the Board of the VDWR to adopt the federal list of endangered and threatened species and to identify and protect state-listed wildlife. The Virginia ESA prohibits the taking, transportation, processing, sale, or offer for sale of those species.

Under the Virginia Endangered Plant and Insect Species Act (2 VAC 5-320-10), the taking or possession of endangered or threatened plant and insect species is prohibited. The VDCR represents the Virginia Department of Agriculture and Consumer Services, which is responsible for state-listed plants and insects, in providing comments regarding potential impacts on these species.

ERM database queries identified multiple federal- and state-listed T&E species within and adjacent to the study area. Federal-listed and federal-proposed species (which are also state-listed) consist of NLEB (*Myotis septentrionalis*), TCB (*Perimyotis subflavus*), Dwarf wedgemussel (*Alasmidonta heterodon*), and Yellow lance (*Elliptio lanceolata*). Four additional state-listed species (which are not also federally listed) identified by the queries include Loggerhead shrike (*Lanius ludovicianus*), Brook floater (*Alasmidonta varicosa*), Torrey's mountain-mint, and Wood turtle (*Glyptemys insculpta*).

ERM reviewed the potential for each federal- and state-listed species to occur within and adjacent to the route alternatives. Table 5.2-3 provides information on the federal- and state-listed species with potential to occur in the study area.

TABLE 5.2-3 FEDERAL- AND STATE-LISTED SPECIES POTENTIALLY OCCURRING IN THE STUDY AREA

Common Name	Scientific Name	Status [a]	Global Rank [b]	Habitat	Source	Confirmed Presence [c]
Mammals						
Northern long-eared bat	*Myotis septentrionalis*	FE, ST	G2	Generally associated with old growth or late successional interior forests. Use partially dead or decaying trees for breeding, summer day roosting, and foraging. Hibernation occurs primarily in caves, mines, and tunnels.	IPaC VDWR—Winter Habitat and Roost Tree Map VDWR—NLEB Regulatory Buffer Interactive Tool	No
Tricolored bat	*Perimyotis subflavus*	FPE, SE	G3	Typically roost in trees near forest edges during summer. Hibernate deep in caves or mines in mountainous areas with warm, stable temperatures during winter.	IPaC VDWR—Winter Habitat and Roost Tree Map	No
Invertebrates						
Brook floater	*Alasmidonta varicosa*	SE	G3	Clean and fast-flowing waters where substrate consists of gravel, rubble, and sand. Found buried in substrate in shallow riffle and shoal areas.	VaFWIS VDCR	Yes
Dwarf wedgemussel	*Alasmidonta heterodon*	FE, SE	G1	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.	IPaC	No
Yellow lance	*Elliptio lanceolata*	FT, ST	G2	Depend on clean, moderately flowing water with high dissolved oxygen; found in medium-sized rivers to smaller streams. Bury deep into coarse to medium sand substrate and sometimes gravel. Move with shifting sand and settles in downstream end of stable sand and gravel bars.	VaFWIS	Yes
Birds						
Loggerhead shrike	*Lanius ludovicianus*	ST	G4	Prefer grazed pastures for nesting purposes and shrub/open forest habitats during winters. For breeding season, the species prefers open country with shrubs, scrub, and scattered trees.	VaFWIS	Yes

Common Name	Scientific Name	Status [a]	Global Rank [b]	Habitat	Source	Confirmed Presence [c]
Reptiles						
Wood turtle	*Glyptemys insculpta*	ST	G2	Although highly terrestrial, must remain in a moist habitat. Primarily in or near clear streams or brooks in deciduous woodlands but also utilize woodland bogs and marshy fields. Hibernates in deep pools or mud/sand bottom waterways, also under submerged logs, beaver lodges, and muskrat burrows. In Virginia specifically, species found in floodplains of creeks and along trout streams.	VaFWIS	No
Plants						
Torrey's mountain-mint	*Pycnanthemum torreyi*	ST	G2	Dry, rocky or sandy woodlands and clearings. Occurs on both extremely acidic and strongly basic substrates.	VDCR	No

Sources: USFWS n.d.; VDCR 2024c; VDWR 2024b, 2024c, 2024d; Digital Atlas of the Virginia Flora 2024.

IPaC = Information for Planning and Consultation; NLEB = Northern Long-eared Bat; VaFWIS = Virginia Fish and Wildlife Information Service; VDCR = Virginia Department of Conservation and Recreation; VDWR = Virginia Department of Wildlife Resources.

[a] Federal/State Status:

FE Federally listed as endangered
FT Federally listed as threatened
SE State listed as endangered
ST State listed as threatened
FPE Federally proposed as endangered

[b] Global Rank:

G1 Critically Imperiled: At very high risk of extinction due to extreme rarity (often five or fewer populations), very steep declines, or other factors
G2 Imperiled: At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors
G3 Vulnerable: At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors
G4 Apparently Secure: Uncommon but not rare; some cause for long-term concern due to declines or other factors
G5 Secure: Common, widespread, and abundant

[c] indicates confirmed presence of the species within the Project study area or within 2.0-mile buffer of the study area.

Federal-Listed Species

As shown in Table 5.2-3, ERM identified three federally listed species and one federally proposed specie that may potentially occur within the study area. While all four of these species were identified by either IPaC or VaFWIS as having potential occurrence within a 2.0-mile search radius of the study area boundary, only the Yellow lance has occurrences confirmed within a 2.0-mile radius of the study area, specifically within Broad Run, which is approximately 0.3 mile southwest of the proposed Hornbaker Switching Station (VDWR 2024b).

Potential summer foraging habitat for the TCB and NLEB includes multiple forested areas along each route. A review of the VDWR winter habitat and roost trees online mapping system did not show summer habitat (i.e., maternity roosts), winter habitat (i.e., hibernacula), or roost trees for NLEB or TCB within the route alternatives (VDWR 2024c, 2024d). Additionally, the VaFWIS and WERMS databases did not show any confirmed occurrences of NLEB or TCB within the route alternatives (VDWR 2024a, 2024b).

State-Listed Species

As shown in Table 5.2-3, ERM identified eight state-listed species including—NLEB, TCB, Loggerhead shrike, Dwarf wedgemussel, Yellow lance, Brook floater, Wood turtle, and Torrey's mountain-mint—as potentially occurring within the study area. Of these eight species, the Yellow lance, Loggerhead shrike, and Brook floater have documented occurrences within the 2.0-mile search radius around the study area. There is no confirmed occurrence of the Wood turtle, but the VaFWIS database listed the Wood turtle as potentially occurring within the 2.0-mile radius because of predicted aquatic habitat.

Potential habitat for both the Yellow lance and Brook floater is present within the Project study area. VaFWIS database confirmed the presence of the Yellow lance and Brook floater within Broad Run. Due to the documented occurrences of the Brook floater, Broad Run has been classified as a Threatened and Endangered Species Waters (T&E Waters). This designation classifies streams and rivers that contain documented occurrences of federal- or state-listed species and their habitat. Most of Broad Run is outside of the study area; however, the waterbody crosses the southern/southwestern portion of the study area. The Loggerhead shrike was observed along the southern boundary of the 2.0-mile search radius.

Impact Assessment

Potentially suitable habitat for all eight species occurs along the route alternatives; however, the VDWR, VaFWIS, WERMS, and VDCR data show that only the Yellow lance, Loggerhead shrike, and Brook floater have been confirmed present within the study area or within a 2.0-mile buffer of the study area boundary.

VDWR data show that occurrences of federal- and state-listed bat hibernaculum (winter habitat) have not been confirmed within a 2.0-mile radius of the study area. However, summer foraging habitat for these species is likely present within forested habitats crossed by each route. The Project would have no impact on these bat species, assuming trees are cleared during the winter, pursuant to VDWR time-of-year restrictions (TOYRs).

The Company is actively monitoring the regulatory changes and requirements associated with the NLEB and how they could potentially impact construction timing associated with TOYRs. On October 15, 2024, the USFWS issued the NLEB Final Guidance for development projects. The USFWS Interim Guidance for the NLEB expired on November 30, 2024, and the Final Guidance took effect.

The Company is also monitoring regulatory changes associated with the potential up-listing of the TCB. The Company anticipates that the TCB will be federally listed; therefore, the Company assumes any regulatory changes associated with the potential listing of the TCB will affect this Project. On September 14, 2022, USFWS proposed listing the TCB as Endangered by the USFWS (USFWS 2022). USFWS extended its Final Rule issuance target from September 2023 to the end of 2024. At this time, the TCB Final Rule has not been issued.

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

Impacts on open areas that may provide habitat for the Loggerhead shrike would be limited to potential structure placement. Outside of structures, open space lands would continue to function as they had prior to construction; therefore, the Project would have no impact on the Loggerhead shrike.

While the Project would not require instream construction, reduction of shade along the streambanks due to right-of-way clearing may cause water temperatures to increase in the area adjacent to the tree-clearing. This could adversely impact the presence of the Yellow lance, Brook floater and Dwarf wedgemussel. Because the presence of Yellow lance and Brook floater have been confirmed within the study area, and Pegasus–Hornbaker Route 1 and Devlin–Pegasus Routes 1 and 2 cross tributaries of Broad Run, the Company would coordinate with VDCR to determine if surveys are warranted prior to construction.

The presence of the Wood turtle and Torrey's mountain-mint was not confirmed within 2.0 miles of the study area. Due to development in the region, it is unlikely that suitable habitat is present for these two species; therefore, the Project would have no impacts on the Wood turtle or Torrey's mountain-mint.

Regardless of the route alternative selected for the Project, Dominion will coordinate with state and federal agencies as needed to determine if surveys, construction TOYRs, or other mitigation would be required for any potential impacts the Project may have on threatened or endangered species.

5.2.5.2 BALD EAGLES

Multiple large river tributary systems that flow into Chesapeake Bay host large populations of Bald Eagles during winter and summer seasons. Eagles across the Atlantic Coast are attracted to habitat in the Chesapeake Bay watershed due to the temperate climate and abundance of fish and

waterfowl prey. Eagles from the southeastern U.S. migrate north to the Chesapeake Bay every spring, and Bald eagles from the northeastern U.S. (and Canada) migrate south to the Bay for the winter. As a result, the Chesapeake Bay watershed supports three populations of Bald eagles, including Chesapeake Bay residents, southeast migrants, and northeast migrants.

While the Bald Eagle is no longer federally listed under the ESA and was de-listed from the Virginia List of T&E Species in 2013, the species remains protected under the federal Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act, as well as Va. Code § 29.1-521 and VDWR regulations (4 VAC 15-30-10). *The Management of Bald Eagle Nests, Concentration Areas, and Communal Roosts in Virginia: A Guide for Landowners*, issued by the then Virginia Department of Game and Inland Fisheries (now VDWR) identifies management practices for avoiding the take of Bald Eagles and outlines restrictions on construction activities within defined management zones. Proposed activities that have the potential to affect Bald eagles are evaluated by the VDWR on a case-by-case basis (Virginia Department of Game and Inland Fisheries 2012).

ERM reviewed current eagle datasets in Virginia, including Eagle Concentration Areas and individual Bald Eagle nests, available from the CCB VaEagles website (CCB 2022) and the CCB's annual eagle nest survey. ERM also reviewed Bald eagle data provided through the VaFWIS and WERMS databases. Current data from the CCB and VDWR show that the study area is not within an Eagle Concentration Area. Moreover, the eagle nest nearest to the Project (Nest ID PW1403) is approximately 0.8 mile south of Hourglass–Hornbaker Route 1 (Hybrid) and was last observed to be occupied in 2017 (CCB 2022).

The VDWR provides activity-specific guidelines for work within 330-foot and 660-foot buffer zones surrounding a known Bald Eagle nest. If eagle nests are identified within 660 feet of the rights-of-way approved by the SCC, Dominion will work with VDWR and other appropriate jurisdictional agencies to minimize any impacts on the species.

5.2.5.3 OTHER SPECIES OF INTEREST

Rare Species

Other species of interest when evaluating projects typically include rare plants and animals that are not afforded the same level of protection as federal- and state-listed T&E species. NatureServe, an international network of NHPs, assigns a global rank to species based on their rarity and conservation status (NatureServe 2024). Species ranked "G1" (global rank 1/critically imperiled) or "G2" (global rank 2/imperiled) are most at risk. State rankings are similar (S1 and S2), but only indicate the status of the species within Virginia. The VDCR continually catalogues, gathers, and analyzes geographic information about Virginia's rare species to develop land conservation data, provide online mapping tools, and help resource agencies make conservation decisions.

As part of their September 2024 review of the Project, VDCR concluded that the Project as planned would not affect any documented state-listed insects and does not cross any state natural area preserves under VDCR's jurisdiction. The VDCR indicated that there is a potential for six rare plant species to occur in the study area if suitable habitat is present (VDCR 2024c). Table 5.2-4 provides a summary of these species and their habitat.

TABLE 5.2-4 RARE SPECIES WITH THE POTENTIAL TO OCCUR IN THE STUDY AREA

Common Name	Scientific Name	Status	State Rank [a]	Global Rank [b]	Habitat
American bluehearts	*Buchnera americana*	None	S1	G5	Seasonally moist to dry soils of barrens, clearings, old fields, meadows, and roadsides. In the Piedmont region, species occurs on calcareous or mafic substrates.
Downy phlox	*Phlox pilosa*	None	S1	G5	Dry to less often mesic open forests, clearings, and road banks. Occurs in rocky or clay hardpan soils.
Earleaf false foxglove	*Agalinis auriculata*	None	S1	G3	Clearings and old fields on soils weathered from diabase. Known only to populate the Culpeper Basin of Fairfax and Prince William counties.
Hairy hedge-nettle	*Stachys arenicola*	None	S1	G5	Fens, wet meadows, power-line clearings, and depression swamps on soils weathered from carbonate or basic intrusive rocks. Moderately shade-intolerant.
Hairy nutrush	*Scleria ciliata var. ciliata*	None	S1	G5	Wet to dry clearings, fields, and woodlands managed by prescribed fire. Rare, but can be found in all physiographic regions; mostly in the southern half of Virginia.
Stiff goldenrod	*Solidago rigida var. rigida*	None	S2	G5	Dry, rocky woodlands, barrens, and outcrops. Also located in clearings and old fields in areas that once supported vegetation with prairie affinities. Strictly located on calcareous or mafic substrates (limestone, dolostone, metabasalt, amphibolite, diabase, and calcareous shales).

Source: VDCR 2024a; Digital Atlas of the Virginia Flora 2024.

[a] State Rank:
S1 Critically Imperiled: At very high risk of extirpation in the jurisdiction due to very restricted range, very few populations or occurrences, very steep declines, severe threats, or other factors
S2 Imperiled: At high risk of extirpation in the jurisdiction due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors
S3 Vulnerable: At moderate risk of extirpation in the jurisdiction due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors
S4 Apparently Secure: At a fairly low risk of extirpation in the jurisdiction due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors
S5 Secure: At very low or no risk of extirpation in the jurisdiction due to a very extensive range, abundant populations or occurrences, with little to no concern from declines or threats

[b] Global Rank:
G1 Critically Imperiled: At very high risk of extinction due to extreme rarity (often five or fewer populations), very steep declines, or other factors
G2 Imperiled: At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors
G3 Vulnerable: At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors
G4 Apparently Secure: Uncommon but not rare; some cause for long-term concern due to declines or other factors
G5 Secure: Common, widespread, and abundant

Impact Assessment

Habitat requirements for most of the rare plant species (Earleaf false foxglove, American bluehearts, Downy phlox, Stiff goldenrod, and Hairy hedgenettle) indicated by VDCR are generally associated with prairie vegetation and semi-open diabase glades. Diabase soils support occurrences of five rare plant species (not including Hairy nutrush) listed in Table 5.2-4. Table 5.2-5 provides a summary of diabase soil impacts from the route alternatives. Pegasus–Hornbaker Route 1 would have the largest impact on diabase soils (approximately 11.6 acres crossed). Figure 5.2-4 shows the location of diabase soils along the route alternatives.

TABLE 5.2-5 DIABASE SOILS CROSSED BY THE ROUTE ALTERNATIVES

Diabase Soils	Unit	Wellington–Pegasus Route 1	Pegasus–Hornbaker Route 1 [a]	Hourglass–Hornbaker Route 1 (Hybrid) [b]	Devlin–Pegasus Route 1	Devlin–Pegasus Route 2
Total	acres	4.4	11.6	0.0	7.8	8.0

Source: VDCR 2024c.

[a] Includes the proposed 2.3-acre Hornbaker Switching Station.

[b] Includes the proposed 3.1-acre transition station.

Site-specific field investigations are necessary for detailed habitat and impact analyses. In suitable habitat types that meet specific requirements for any of these rare plant species, VDCR recommends conducting detailed plant inventories and coordination with VDCR biologists to minimize habitat impacts. If suitable habitat conditions for these species are identified within the Project, the Company will work with the VDCR and appropriate regulatory agencies to minimize impacts on rare plants and/or rare plant habitat.

As discussed in Section 5.2.4.1, Hairy nutrush, Earleaf false foxglove, and Stiff goldenrod are species associated with the Vulcan Gainesville Tract Conservation Site. No route alternatives cross the Vulcan Gainesville Tract Conservation Site; therefore, the Project would have no impact on these rare species.

5.2.6 VEGETATION

5.2.6.1 LOCAL VEGETATION CHARACTERISTICS

The study area is situated within the Northern Piedmont physiographic province. Upland forest vegetation in this province has been extensively altered by clearing as part of ongoing agricultural and silvicultural practices as well as residential and non-residential development occurring since European settlement. As a result, the characteristics of plant species or community types present prior to European settlement are difficult to determine.

More recently, the effects of human development activities on the landscape have resulted in a patchwork of early and late-successional forests. The study area contains extensive tracts of developed land, including and industrial parks (i.e., Hornbaker Industrial Park and Broad Run

Industrial Park) along major roadways (i.e., Rt. 28, Prince William Parkway, and Sudley Manor Road). Forest clearing has occurred across much of the study area in the last 20 years; thus, much of the vegetation in the study area consists of immature mixed pine (*Pinus spp.*), hardwood forest communities, and forested "edge" communities that border larger forested tracts. Small areas of open space within the study area are generally associated with lawns on residential and commercial parcels.

Forested vegetation in the study area generally consists of relatively small contiguous tracts of trees found in upland forests. These forests contain both deciduous hardwood stands and evergreen/mixed forests that include stands of shortleaf pine (*Pinus echinata*), loblolly pine (*Pinus taeda*), and Virginia pine (*Pinus virginiana*) where the land has been altered by human activities. When left unattended, fallow farmlands (which were present in the study area prior to extensive commercial, industrial, and residential development), undergo a successional regeneration process that generally results in a prevalence of early successional tree stands of pines, oaks, American sweetgum (*Liquidambar styraciflua*), and red maple (*Acer rubrum*). Late-successional forests in the Southern Piedmont include stands of mixed oaks, American beech (*Fagus grandifolia*), and tulip-poplar (*Liriodendron tulipifera*) (VDCR 2021b).

As noted in Section 5.1.2, ERM used the VGIN Land Cover data to determine land use cover along the route alternatives. Figure 5.1-2 depicts land use/land cover, including forested areas, along the routes. As shown in Table 5.2-6, the Project would primarily cross forested and open lands.

TABLE 5.2-6 VEGETATION TYPES CROSSED BY THE PROJECT

Vegetation Type	Unit [a]	Wellington–Pegasus Route 1	Pegasus–Hornbaker Route 1 [b]	Hourglass–Hornbaker Route 1 (Hybrid) [c]	Devlin–Pegasus Route 1	Devlin–Pegasus Route 2
Forested	acres	2.2	5.6	1.9	11.5	14.0
Agricultural	acres	0.0	0.0	0.0	0.0	0.0
Open space	acres	1.8	6.6	2.0	11.3	12.2
Total	acres	4.0	12.2	3.9	22.8	26.2

Sources: NAIP 2023, VGIN 2024, with aerial photo interpretation by ERM.

[a] Totals may not match the sum of the addends due to rounding.
[b] Includes the proposed 2.3-acre Hornbaker Switching Station.
[c] Includes the proposed 3.1-acre transition station.

5.2.6.2 FOREST CONSERVATION VALUES

The Forest Conservation Values (FCV) model is a tool designed by the Virginia Department of Forestry to strategically identify the highest priority forestland for conservation in Virginia (VDCR 2023b, VDOF 2020). The intent is to maximize the efficiency of limited resources by focusing conservation efforts on the highest quality, most productive, and most vulnerable forestland statewide. The FCV model identifies five conservation values:

- 5: Outstanding
- 4: Very High
- 3: High
- 2: Moderate
- 1: Average

5.2.6.3 IMPACT ASSESSMENT

The Company would clear forested vegetation from the overhead lines rights-of-way, which would be subsequently maintained with an herbaceous cover during Project operations. Additionally, all land within the underground portion of Hourglass–Hornbaker Route 1 (Hybrid), except for road rights-of-way, would be converted to (as needed) and maintained as herbaceous land—equivalent to the open space category. Vehicle movement associated with construction of the transmission line in open areas would temporarily impact herbaceous vegetation. Impacts on vegetation within open space land would be limited to required structure footprints along the routes, temporary construction impacts, and intermittent mowing required for maintenance access. Disturbed areas resulting from use of temporary workspace would revert to preconstruction vegetative conditions.

Forested Land and Forest Conservation Values

ERM reviewed FCV data to assess the value of forest vegetation along the routes. Upon reviewing recent (2023) aerial photography, ERM found that many recently cleared areas have been ranked using the FCV model data; therefore, the model may be outdated and not reflective of current conditions. Table 5.2-7 summarizes the area of FCV within the right-of-way for each route alternative.

Of the Project route alternatives, Devlin–Pegasus Route 2 would impact the most forest, and Devlin–Pegasus Route 1 would impact the most forested land with a FCV rating—all with a value of Average (1).

TABLE 5.2-7 FOREST CONSERVATION VALUES CROSSED BY THE PROJECT

FCV	Unit [a]	Wellington–Pegasus Route 1	Pegasus–Hornbaker Route 1 [b]	Hourglass–Hornbaker Route 1 (Hybrid) [c]	Devlin–Pegasus Route 1	Devlin–Pegasus Route 2
Average (1)	acres	2.6	7.9	0.0	11.9	11.0
Moderate (2)	acres	0.0	0.0	0.0	0.0	0.0
High (3)	acres	0.0	0.0	0.0	0.0	0.0
Very High (4)	acres	0.0	0.0	0.0	0.0	0.0
Outstanding (5)	acres	0.0	0.0	0.0	0.0	0.0
Total	**acres**	**2.6**	**7.9**	**0.0**	**11.9**	**11.0**

FCV = Forest Conservation Value.
[a] Totals may not equal the sum of addends due to rounding.
[b] Includes the proposed 2.3-acre Hornbaker Switching Station.

[c] Includes the proposed 3.1-acre transition station.

Fragmentation

Loss of habitat presents the greatest risk to biodiversity (VDCR 2023a). When development alters the landscape and fragments large natural tracts of land into smaller, scattered pieces, the biodiversity of the area declines. Large, contiguous patches of land have more benefits than the same area of land among smaller fragmented pieces, including:

- A progressive increase in the number and diversity of species as contiguous habitat size increases;
- Increased habitat diversity and protection from disturbance in adjacent developed areas; and
- Greater ecosystem services (i.e., any direct or indirect benefits that ecosystems provide to people) (VDCR 2023a).

ERM assessed the potential for each route to create new fragments in the forested areas they cross by measuring the length of each route centerline where it crosses the interior of a forest stand and therefore would create a new fragment. Table lists the location of Project-related fragmentation along the route alternatives.

TABLE 5.2-8 LOCATIONS OF FOREST FRAGMENTATION ALONG ROUTE ALTERNATIVES

	Wellington–Pegasus Route 1	Pegasus–Hornbaker Route 1 [b]	Hourglass–Hornbaker Route 1 (Hybrid) [c]	Devlin–Pegasus Route 1	Devlin–Pegasus Route 2
Fragmentation Locations	MPs 0.1 to 0.2	MPs 0.4 to 0.5 MPs 0.6 to 0.7 MPs 0.9 to 1.0 MPs 1.3 to 1.4 MPs 1.4 to 1.5	MPs 0.6 to 0.7 MPs 0.9 to 1.0	MPs 0.0 to 0.1 MPs 0.2 to 0.3 MPs 0.4 to 0.6 MPs 0.7 to 0.8 MPs 1.1 to 1.4 MPs 1.4 to 1.5 MPs 1.5 to 1.7 MPs 1.8 to 1.9 MPs 1.9 to 2.1 MPs 2.2 to 2.3	MPs 0.0 to 0.1 MPs 0.2 to 0.3 MPs 0.4 to 0.6 MPs 0.7 to 0.8 MPs 1.1 to 1.4 MPs 1.8 to 1.9 MPs 2.0 to 2.1 MPs 2.4 to 2.6 MPs 2.6 to 2.7
Total Miles of Fragmentation	**0.1**	**0.2**	**0.1**	**1.4**	**1.4**

MP = milepost.

Wellington–Pegasus Route 1 would result in the smallest overall extent of fragmentation impacts. This route primarily runs through open space and developed lands. The Devlin–Pegasus Routes 2 would create the greatest amount of fragmentation. The study area is significantly developed, so it is unlikely that any areas of fragmentation would have a significant impact on resources within the study area.

5.3 VISUAL RESOURCES

Visual resources capture the combination of natural landforms, vegetation, water features, and human modifications that characterize and contribute to a landscape's visual quality. The visual resource assessment identifies important visual features (e.g., natural and/or cultural resources that contribute to scenic quality) and elements (i.e., forms, lines, colors, textures, etc.) of the surrounding landscape as the basis for determining how and to what degree the Project will affect those scenic resources.

5.3.1 EXISTING CONDITIONS

ERM conducted a visual resource assessment to characterize the existing scenic/landscape conditions and the potential impact from the installation of Project components on these conditions. This assessment included the following activities:

- Identification of VSRs through the review of recent (2024) digital aerial photography and other available mapping resources;
- Site reconnaissance and local outreach;
- Descriptions of existing conditions from key observation points (KOPs) along the route alternatives;
- Definition of potential viewer groups (i.e., groups of people, such as residents or tourists who experience views) within the Project study area;
- Preparation and review of visual simulations or renderings of the proposed transmission infrastructure from KOPs in the study area; and
- Evaluation of the predicted visual impacts from the Project.

The visual impact approach in this section draws on established landscape planning and design techniques for describing existing landscape characteristics and identifying the potential changes or contrasts created by proposed surface-disturbing activities, including (but not limited to) the Bureau of Land Management's Visual Resource Management system (BLM 1984), U.S. Forest Service's Scenery Management System (USFS 1995), and Federal Highway Administration's Visual Impact Assessment for Highway Projects (FHWA 2015).

5.3.1.1 REGULATORY SETTING

The Virginia Outdoors Plan includes guidance on scenic resources in the state (VDCR 2018). In general, VDCR defers to local governments for the protection and management of scenic resources; however, VDCR works with local governments and other stakeholders on scenic resources with statewide importance through the Virginia Scenic Rivers Program and Virginia's Byways. There are no designated Virginia Scenic Rivers within the Project study area. A portion of the Bristow Road Scenic Byway is located southwest of the Project along Bristow Road from Rt. 28 south to Joplin Road. The northern end of the Scenic Byway is about one mile southwest of the proposed Hornbaker Switching Station. The proposed Project does not cross this byway.

The Land Use component of the Comprehensive Plan includes policies related to preserving and enhancing the County's visual and scenic resources. Key initiatives include protecting natural landscapes, promoting green spaces, preserving historic landmarks and cultural sites, and

implementing design guidelines to ensure new developments blend harmoniously with their surroundings (Prince William County 2022). Similarly, the County's Zoning Ordinance highlights the importance of preserving the County's aesthetic character through generalized provisions (Prince William County 2024a). For example, Chapter 32 (Zoning) indicates that the purpose and intent of the associated ordinances is to provide a "more aesthetically pleasing place in which to live," to "preserve open space and scenic views, including contributing to greenways and wildlife corridors," and to "protect lands, resources and structures of aesthetic, architectural, archaeological, and historic significance."

The County's DCSM includes guidelines to preserve scenic views, enhance green spaces with native plants, and regulate signage to avoid visual clutter. It also sets standards for building materials and requires setback and buffer zones to protect natural resources and maintain visual harmony. Additionally, the DCSM emphasizes historic preservation to integrate significant buildings into new developments (Prince William County Government 2014). These guidelines are consistent with the commonly used federal systems and best practices described above that inform ERM's assessment of the Project's impacts on visual resources.

5.3.1.2 VISUALLY SENSITIVE RESOURCES

The Project study area includes portions of central Prince William County. This now suburban area is within the Mesozoic Lowland sub province of the Piedmont physiographic province, which is characterized by low hills and valleys that were formed during the Mesozoic and ecosystems such as deciduous forests, mixed hardwood forests, grasslands and riparian zones along streams and rivers (VDCR 2021b). The Project study area was historically characterized by gently rolling hills and forested areas; however, most of study area has been cleared for commercial, industrial, and residential development (see Section 5.1.2). Existing forested areas, the absence of substantial topographic relief, and current development (e.g., buildings and other built structures) limit panoramic views in the study area and generally constrain most viewsheds to the foreground (less than 0.5-mile from the viewer) and middle ground (within approximately 2.0 miles of the viewer).

Table 5.3-1 lists the VSRs in the study area (within approximately 1-mile of proposed Project infrastructure), including locations or features where views contain unique scenic qualities, sensitive viewsheds, and/or areas where a project's components and any associated vegetation clearing would likely contrast with the surrounding landscape. Common examples of VSRs include designated scenic resources (e.g., scenic byways, rivers, overlooks, and landscapes), residential areas, parks and other recreational sites, historic sites, conservation areas and other open spaces, natural features, cultural destinations, road corridors, and areas of high public concentration. Figure 5.3-1 depicts the location of each VSR relative to the proposed Project components.

5.3.1.3 VIEWER GROUPS

The perception of visual resources by the primary viewer groups in a study area provides additional context in assessing a project's potential impacts on the visual elements and features of a landscape. A viewer group is a population potentially affected by a project and is defined by that population's relationship to or familiarity with the existing landscape, their visual preferences, and their sensitivity to changes in visual resource conditions. These factors tend to vary by setting and result in a list of project-specific viewer groups (e.g., those viewer populations who may potentially be affected by a project). In general, users with static, direct, frequent, or longer duration views (e.g., area residents, some workers), as well as those viewers engaged in setting-dependent activities (e.g., some types of recreation or tourism where there is an increased expectation of scenic quality) tend to have higher levels of sensitivity to change compared to others.

Viewer groups identified for the Project area include the following:

- **Local/area residents**: These viewers live in the area and are more likely to be highly sensitive to potential changes in landscape characteristics, because they tend to value the scenic integrity of the landscape and may have more frequent and longer duration views from their residences. In addition, area residents tend to be most familiar with the area landscape and are therefore more perceptive of changes over time.
- **Workers**: These viewers work in the area and thus have a higher degree of awareness of the landscape compared to some other viewing groups (e.g., motorists). While more aware (based on time spent in the Project region), the sensitivity of workers is variable depending on the type and location of work being done (e.g., office workers may be less sensitive to landscape change than employees who primarily work outdoors).
- **Motorists, commuters, and other travelers**: These viewers primarily travel through the study area and have multiple opportunities to view the area landscape as they travel along the primary travel corridors. This means that their potential exposure to views of a proposed project changes based on speed, direction of travel, and length of trip, as well as viewing angles and screening, among other factors. Due to this variability, these viewers are typically less sensitive to changes in scenic conditions.
- **Recreationists and tourists**: These viewers select area parks, recreation areas, and other tourist attractions in part based on the scenic setting and quality of these areas. As such, they tend to be more sensitive to changes in the landscape.

Table 5.3-1 lists the primary viewer groups at each VSR. While aggregated into general viewer groups, individuals may fall into one or more viewer group categories depending on the context of the view. For example, a local resident may also be considered a commuter while they travel to their job and a worker while at their job (if in the study area).

TABLE 5.3-1 VISUALLY SENSITIVE RESOURCES AND VIEWER GROUPS

VSR Number and Name		VSR Description	Viewer Groups [a]
Scenic Resources			
1	Bristow Road Scenic Byway	Virginia scenic byway located between Joplin Road and Rt. 28.	L, M, R
Educational Resources			
2	Gainesville High School and Middle School and Athletic Fields	Adjacent High school (grades 9 through 12) and Middle School (Grades 6 through 8) east of University Boulevard. The campus includes athletic fields and two ponds.	L
3	Chris Yung Elementary School	School for pre-Kindergarten thr[ou]gh 5th grade, east of Placid Lake Court and the Sheffield Manor community, north of Fog Light Way. The campus includes outdoor playgrounds.	L
4	Victory Elementary School	School for pre-Kindergarten thr[ou]gh 5th grade, south of Tygard Lake Drive and the Bristow neighborhood. The campus includes outdoor playgrounds and an athletic field.	L
Recreation Resources			
5	Piedmont Trail (GMU)	A 1.2-mile nature trail on the GMU Prince William Campus adjacent to academic buildings and the Freedom & Aquatic Fitness Center.	L, R
6	EG Smith Baseball Complex	Eight outdoor baseball fields with associated bleachers, restrooms, a concession stand, and lighting, managed by the City of Manassas Neighborhood Services. Located at the northeast corner of the intersection of Rt. 28 and Godwin Drive.	L, R
7	Sweeney Barn (private event space)	Renovated barn/event venue with an outdoor lawn, south of University Boulevard, between Hornbaker Road and Discovery Boulevard.	L
8	Brentville Hall (private event space)	A 12-acre event space including an event hall, three restaurants, and an outdoor live music stage. Located on the northeast corner of the intersection of Rt. 28 and Prince William Parkway.	L, R
9	Canon Branch Fort	Historic American Civil War fort and public park with an associated short trail. Located west of Prince William Parkway and south of Gateway Boulevard.	L, R
10	Broad Run Greenway	A 6-mile scenic walking and cycling trail, intended for commuters and recreationalists, east of the Regency Apartment Homes. Part of a planned 17-mile multi-use trail connecting community resources and using existing Department of Parks & Recreation trails.	L, M, R
Places of Worship and Cemeteries			
11	Rose Hill Cemetery	Cemetery south of Rt. 28 and west of Foster Drive.	L
Primary Road Corridors			
12	Wellington Road	Four-lane paved, striped, partially divided roadway with a paved shoulder and occasional left and right turn lanes and AADT of 12,000 to 17,000 VPD	L, M

VSR Number and Name		VSR Description	Viewer Groups [a]
13	Devlin Road	Two-lane paved, striped, roadway with occasional left and right turn lanes and AADT of 14,000 VPD	L, M
14	Lexington Valley Drive	Four-lane paved, striped, divided roadway with occasional left and right turn lanes. No AADT data available	L, M
15	Prince William Parkway (Rt. 234)	Four-lane paved, striped, partially divided highway running north-south with paved shoulders, occasional left and right turn lanes, and landscaped vegetation along the roadway and AADT of 40,000 to 44,000 VPD	L, M
16	University Boulevard	Four-lane paved, striped, divided roadway running east-west with occasional left and right turn lanes and AADT of 6,400 VPD	L, M
17	Hornbaker Road	Four-lane paved, striped, partially divided roadway running north-south with occasional left and right turn lanes and AADT of 4,900 VPD	L, M
18	Rt. 28 (Nokesville Road)	Six-lane paved, striped, partially divided roadway running east-west with occasional left and right turn lanes and AADT of 34,000 to 39,000 VPD west of Godwin Drive (20,000 VPD east of Godwin Drive)	L, M
Residential Neighborhoods and Areas of High Public Concentration			
19	Jennell Estates	Residential community east of Devlin Road, south of Jennell Drive.	L
20	Sheffield Manor	Residential community including outdoor athletic courts, walking trails, an outdoor swimming pool, a two-acre fishing pond, and 673 total homes. The site is north of University Boulevard and spans both sides of Devlin Road.	L
21	Independence Homeowners	Residential community north of University Boulevard, bisected by Lexington Valley Drive, with a swimming pool, two playgrounds, a basketball court, outdoor shared spaces, and 492 total homes.	L
22	Arcadia Run	Luxury apartment community with an outdoor pool and athletic court, west of Wellington Road and east of Lexington Valley Drive.	L
23	Abberly Avera Apartment Homes	Apartment community with an outdoor pool, north of University Boulevard and east of Sudley Manor Drive.	L
24	Bristow	Unincorporated suburban community east of Sudley Manor Drive.	L
25	Regency Apartment Homes	Apartment community with an outdoor pool and outdoor basketball courts, west of Hornbaker Road.	L

Source: VDOT 2023 (AADT data).

AADT = annual average daily traffic; GMU = George Mason University; Rt. = Virginia State Route; VSR = visually sensitive resource; VPD = vehicles per day.

[a] viewer group types: L = local/area residents; M = motorists, commuters, and other travelers; R = recreationists and tourists; W = workers.

5.3.2 KEY OBSERVATION POINTS

In addition to considering the existing landscape characteristics across broader geographic areas through the lens of VSRs, ERM identified 15 specific KOPs to document location-specific existing conditions and anticipated changes due to Project construction and operation. These KOPs are described in and shown on Figure 5.3-2. The KOPs for the Project were selected because they:

- Illustrate visibility from specific VSRs (not every VSR has a corresponding KOP; rather, the KOPs represent typical viewpoints in the study area from which Project infrastructure would be visible);
- Illustrate representative views that would be available to identified user groups;
- Illustrate the route alternatives and switching stations; and
- Provide views of Project structures and vegetative clearing.

The remainder of this section provides descriptions of the existing visual conditions and the anticipated changes to these conditions for each KOP. Appendix F provides photographs of existing conditions, as well as visual simulations of the proposed Project infrastructure from each KOP. Not every VSR has a corresponding KOP; rather, the KOPs represent typical viewpoints in the study area from which Project infrastructure would be visible.

TABLE 5.3-2 KEY OBSERVATION POINTS

KOP Number and Location [a]		Reason for Inclusion	Viewer Group(s) Represented [b]	Project Component Represented [c]
101	View looking south from the northeast corner of the Wellington Road/Hansen Farm Road intersection	Example of proposed right-of-way crossing a local road through a primarily suburban/commercial landscape with some natural/forested areas. Representative of the Wellington Road VSR.	M	DP1, DP2
102A	View looking north from the southeast corner of the Devlin Road/Jennell Drive intersection	Example of proposed right-of-way crossing a local road through a suburban area with residences and areas of natural vegetation/ trees. Representative of Devlin Road and Jennell Estates VSRs.	L, M	DP1, DP2
103B	View looking north from the south end of the Jennell Drive/Dearmey Creek Way intersection	Example of proposed right-of-way crossing a local road through a suburban area with residences and trees along the roadway. Representative of Jennel Estates VSR.	L	DP1, DP2
104	View looking southeast from the north end of Lexington Valley Drive/Wellington Road intersection	Example of proposed right-of-way crossing a local road through an industrial landscape with commercial buildings and trees along a roadway. Representative of Wellington Road VSR.	M	DP2
106	View looking north of from the southeast corner of the Webster Tavern Way/Lexington Valley Drive intersection	Example of proposed right-of-way crossing a local road with residences and wooded areas along the roadway. Representative of Independence Homeowners VSR.	L	DP1
107	View looking northeast from the southwestern corner of the Wellington Road/Wellington Glen Drive intersection	Example of proposed right-of-way crossing a local road through a residential and industrial area with trees along the roadway. Representative of Wellington Road and Arcadia Run VSRs	L, M	DP2
108	View looking southwest from the parking lot between Acadia Leaf Drive and Rose Mallow Drive	Example of proposed right-of-way crossing a forested buffer separating two residential areas. Representative of Arcadia Run VSR.	L	DP1
109	View looking west from the eastern corner of the Sudley Manor Drive/Wellington Road intersection	Example of proposed right-of-way crossing a local road through a suburban landscape with trees along the roadway. Representative of Wellington Road VSR.	M	DP1, DP2

KOP Number and Location [a]		Reason for Inclusion	Viewer Group(s) Represented [b]	Project Component Represented [c]
112	View looking southeast from the northeast corner of the University Boulevard and Patriot Hill Drive	Example of proposed right-of-way crossing a local road through a suburban landscape with trees along the roadway. Representative of University Boulevard and Abberly Avera Apartment Homes VSRs.	L, M	PH
114	View looking southeast from the northeastern corner of the intersection of Wellington Road/Prince William Parkway intersection	Example of proposed right-of-way crossing a major road corridor and a densely wooded area along the roadway. Representative of Prince William Parkway and Wellington Road VSRs.	M	WP
115	View looking northwest from the northern corner of the Robertson Drive/Mike Garcia Drive intersection	Example of proposed right-of-way crossing a local road through an industrial landscape with commercial buildings and trees along a roadway. Representative of commercial/industrial area views.	M, W	PH
119C	View looking north from the parking lot at the southern end of Hawkins Drive	Example of proposed right-of-way paralleling a local road through an industrial landscape with light industrial/commercial buildings, roadside trees, and wooded areas. Representative of industrial area views.	W	PH
120	View looking south from the northern side of Hornbaker Road	Example of proposed right-of-way crossing a local road through an industrial landscape with commercial buildings. Representative of Hornbaker Road VSR.	M, W	HH, PH
121	View looking southwest from the northern side of University Boulevard	Example of proposed right-of-way crossing a local road through an industrial landscape with sparsely wooded areas and commercial buildings. Representative of University Boulevard VSR.	M	HH
127	View looking northeast from the cul-de-sac on Challenger Court	Example of proposed right-of-way through an industrial landscape with commercial buildings. Representative of industrial area views and Prince William Parkway VSR.	M, W	HH

KOP = key observation point; VSR = visually sensitive resource.

[a] The KOPs represent the visual resource area and are used for multiple resources; therefore, KOP numbering is not sequential.

[b] viewer group types: L = local/area residents; M = motorists, commuters, and other travelers; R = recreationists and tourists; W = workers.

c Project facilities: DP1 = Devlin–Pegasus Route 1; DP2 = Devlin–Pegasus Route 2; HH = Hourglass–Hornbaker Route 1 (Hybrid) (including the proposed transition station); PH = Pegasus–Hornbaker Route 1 (including the proposed Hornbaker Switching Station); WP = Wellington–Pegasus Route 1.

5.3.2.1 KOP 101

Existing Conditions

KOP 101 faces south from the northeastern corner of the Wellington Road and Hansen Farm Road intersection, less than 0.2 mile from the western terminus of the Project. The view from KOP 101 centers on a large, paved intersection with multiple lanes and prominent traffic markings. The foreground is dominated by dark asphalt with smooth textures, a mix of neutral black and grey tones, and bright white striping. Traffic lights extend into the intersection on horizontal arms supported by tall vertical poles. These structures introduce strong vertical and linear elements, with vibrant yellow traffic lights and blue-and-white street signs that stand out against the muted tones of the roadway.

The intersection transitions into roads bordered by safety barriers, including metallic guardrails and temporary black construction fencing with blue signage. These barriers create repetitive, linear elements that visually separate the roads from the surrounding natural and disturbed areas. Vegetation, consisting of patches of trees and grass, adds a softer, organic contrast to the hardscape, with medium green hues and moderately rough textures. A dense line of mature, dark green trees forms a continuous wall of vegetation along the lefthand side of the view, providing a visual buffer to the partially visible adjacent development. An active construction site for the Devlin Switching Station present at the time of photography occupies the southwestern corner of the intersection and has exposed soil in warm, orange-brown tones forming irregular mounds, with orange and white construction fencing. These disturbed areas contrast with the clean lines and uniform surfaces of the roadways. Construction equipment and materials are visible, contributing additional angular forms and bright colors. Overhead transmission and distribution lines stretch across the view, introducing thin, linear features that traverse the landscape horizontally with regularly spaced strong vertical lines.

The primary viewer groups at KOP 101 are motorists traveling through the intersection and nearby residents and workers. Motorists typically have lower sensitivity to visual changes compared to area residents and others with more familiarity with existing conditions. Area residents and workers may have greater sensitivity to changes in visual conditions, although their sensitivity may be influenced by the existing level of development in an area. There is already a high degree of development and visual intrusions along both Wellington and Hansen Farm roads. As such, viewer expectations for scenic quality and sensitivity to changes may be lower in this context. In aggregate, the viewer groups at KOP 101 would have low to medium sensitivity to changes in visual conditions at this location.

Visual Simulations

The Devlin Switching Station is less than 0.2-mile to the southwest, while Devlin–Pegasus Routes 1 and 2 (which share a common alignment in this area) cross Hansen Farm Road about 0.2-mile to the south of KOP 101 before terminating at the switching station. The new transmission line infrastructure would be prominent in the currently disturbed area of the view, particularly where it runs from the station to the southeast where it crosses Hansen Farm Road. In addition to the tall, vertical, linear poles at the switching station, two new monopoles are fully visible to the north of

Hansen Farm Road and the top of a third pole is partially visible across the street above the tree line. The route's transmission poles add more tall, vertical features that are especially prominent on the landscape due to their size and scale. The thin, elevated conductors introduce additional horizontal lines to the existing distribution and transmission lines. These lines are most noticeable in the foreground and are less perceptible at farther distances. Vegetation clearing along Hansen Farm Road would be noticeable, but a dense cluster of trees would remain behind the new transmission line infrastructure. While the existing view at KOP 101 already exhibits a high degree of modification, the new transmission line route would further alter the landscape character and result in a moderate to high degree of change.

5.3.2.2 KOP 102A

Existing Conditions

KOP 102A is located at the southeastern corner of the intersection of Devlin Road and Jennell Drive. The view faces north and is centered on Devlin Road, a paved roadway with smooth textures and neutral gray and black tones accented by bright yellow double centerlines and intermittent white markings. A stop sign and directional signage introduce small, vibrant pops of red and yellow, which contrast with the more muted surrounding colors. To the left of Devlin Road, several homes are partially visible through adjacent vegetation. The homes add geometric forms and matte colors that contrast with the irregular, amorphous forms and deep greens in the surrounding dense clusters of mature trees. Between the road and the homes and trees, a gentle slope with patches of green grass and dry, light brown ground vegetation is visible.

On the righthand side of Devlin Road, the roadside transitions into a grassy area with taller shrubs and mature trees. Homes are also partially visible through the shrubs and trees. The combination of built structures and vegetation on the right-hand side of the road add similar forms, lines, and colors as those on the left-hand side. Distribution poles and lines parallel and cross Hansen Farm Road and a traffic light structure extends over the roadway. These structures introduce thin linear and tall vertical elements to the landscape along this suburban roadway.

The primary viewer group at KOP 102A is area residents who live along Devlin Road and in adjacent neighborhoods. Other viewer groups at this KOP may include motorists on Devlin and other connecting roads. These viewer groups would have medium to high sensitivity to changes in visual conditions at KOP 102A.

Visual Simulations

Devlin–Pegasus Routes 1 and 2 cross Devlin Road in a shared alignment approximately 0.2-mile to the north of KOP 102A. Only the horizontal conductors of the proposed transmission route would be visible from this location. These thin, slightly undulating lines cross over the road and add to the linear complexity already present on the landscape at KOP 102A. The transmission poles would be screened by existing trees on both sides of Devlin Road; however, they may be partially visible during leaf-off conditions and would likely be visible from portions of Devlin Road closer to the route crossing. The additional horizontal lines of the conductors contribute to the altered landscape but would only represent a minor change in the scenic conditions at this location.

5.3.2.3 KOP 103B

Existing Conditions

KOP 103B is located along Jennell Drive at the intersection with Dearmey Creek Way. The view faces north along Dearmey Creek Road, a paved cul-de-sac that curves to the left. The light gray road is smooth and bordered by concrete curbs that appear white. Multiple two-story homes with manicured lawns, shrubs, and small trees are visible in the foreground. A low brown fence around the periphery of the corner property on the left-hand side of Dearmey Creek Way adds short, repetitive vertical and horizontal lines, and nearby street signs (green, white, metallic), mailboxes (black and brown), and a fire hydrant (yellow) add other colors and short, vertical structures to the view. The homes add large geometric forms to the landscape and generally block more distant views. The subdued colors of the homes (light blue, tan, light gray, white, etc.) are similar to the colors of the landscaped vegetation (lawns, trees, etc.) and contribute to the aesthetic character of the neighborhood. A line of tall, mature evergreen trees interspersed with shorter evergreens obscures the views on the right side of Dearmey Creek Way and Jennell Drive. The bottom portion of two light poles, which add tall vertical lines to the view, are visible on each corner of the intersection.

The primary viewer group at KOP 103B is area residents who live in the Jennell Estates neighborhood (primarily along Jennell Drive). These residents may have higher expectations of scenic quality from and around their homes and neighborhoods. As such, area residents in this neighborhood would have medium to high sensitivity to changes in visual conditions at this KOP.

Visual Simulations

The proposed alignment for both Devlin–Pegasus Routes 1 and 2 share a common alignment in this area and are located about 0.1-mile to the north of KOP 103B. The routes generally parallel the northern extent of the Jennell Estates neighborhood. Several sets of overhead conductors span the sky across the center of the view. The conductors add new, thin linear elements to the landscape. The lower conductors are partially screened by adjacent homes. A small portion of a single transmission line pole is somewhat visible through the cluster of trees that parallels the righthand side of Dearmey Creek Road, however, the height and density of the trees screens most of the pole and the conductors as cross to the right (east). The addition of the conductors adds new horizontal lines to the view from KOP 103B and would result in minor changes to visual resource conditions at this location.

5.3.2.4 KOP 104

Existing Conditions

KOP 104 is located on the north side of Wellington Road at the intersection with Lexington Valley Drive. The view from this location faces the southeast and features an intersection with a mix of natural and built elements. Both roadways provide more distant views along the flat landscape but then are limited by trees in the distance. The uniform neutral gray tone of the roads is broken by bright yellow centerlines and other white markings. In the foreground, a sloped grassy embankment leads from the road from a large commercial building. The pale gray building features a long, uninterrupted façade punctuated by evenly spaced windows and entryways. The

clean, geometric lines of the structure contrast sharply with the organic shapes of the adjacent trees.

Several young trees are planted along the corner property with the commercial building. These trees, with their smaller canopies of medium green leaves, provide a repeating vertical element that contrasts with the more robust, irregular trees visible further back along each road. A traffic signal pole and streetlight extend upward and contribute both vertical and horizontal lines to the view. A series of three regularly spaced distribution line poles add additional tall, vertical elements to the left of the large commercial building. The wide canopy of a tree partially obscures several other distribution poles. Thin, horizontal lines connect these poles and then cross above Wellington Road on the left-hand side of the view. A red construction crane rises from the site behind the commercial building, adding a dynamic element (which likely is no longer present) to the view while signaling ongoing development in the area.

The primary viewer group at KOP 104 is motorists on both Wellington Road and Lexington Valley Drive. In general, motorists tend to be less sensitive to changes in visual resource conditions. Additionally, a high degree of development and visual intrusions are present along Wellington Road in this area. In this context, viewer expectations for scenic quality and sensitivity to changes may also be lower in this area. Due to these factors, overall viewer sensitivity to changes in visual resource conditions would be low at KOP 104.

Visual Simulations

KOP 104 is located about 0.1-mile north of Devlin–Pegasus Route 2. The new transmission line would be highly visible and add dominant structures to the landscape in this location. The tall, vertical poles with short, horizontal crossarms are significantly taller than the traffic light poles, industrial/commercial building, and other landscape features. Multiple parallel conductors span the area between the poles and cross over the roadway in several areas. The elevated, horizontal conductors increase the number of linear elements across the view and add prominent, repeating lines above the natural and built features of the landscape. While the proposed infrastructure's forms and lines would dominant the view, the light grey color of the transmission poles and darker hues of the conductors complement the existing colors of the built environment. Due to the height, scale, and placement of the transmission line within the viewshed of KOP 104, the changes in visual conditions would be moderate to high.

5.3.2.5 KOP 106

Existing Conditions

KOP 106 is located on the southwestern corner of the intersection of Lexington Valley Drive and Western Tavern Way. The view from this location generally faces north and is centered on a suburban neighborhood bisected by a curving road (Lexington Valley Drive). The roadway sweeps gently into the distance from the center of the image toward the right. Its smooth asphalt surface with yellow centerlines and white edge markings is bordered by a curb and sidewalk. The road is flanked by two-story residential homes in the foreground, with trees and other dense vegetation beyond the neighborhood. Light-colored houses dominate the left and right sides of Lexington Valley Drive and add distinct geometric forms with hard horizontal lines to the landscape.

Landscaped lawns with short, trimmed trees and low shrubs contribute small, amorphous green forms to the primarily geometric and linear elements in the foreground of this view. Tall light poles, street signs, and low green utility boxes add additional developed features with distinct forms and lines to the landscape. In the distance, a mix of dense young and mature trees border Lexington Valley Drive and creates a buffer between the street and the surrounding area. The vibrant green foliage of these trees provide visual variety compared to the mostly monotone colors of the adjacent roadway and residential homes.

The primary viewer group at KOP 106 is area residents. These residents may have higher expectations of scenic quality from their homes and neighborhoods. As such, area residents in this neighborhood would have medium to high sensitivity to changes in visual conditions at this KOP.

Visual Simulations—Devlin–Pegasus Route 1

Devlin–Pegasus Route 1 is about 0.1 mile north of this KOP. The point at which Devlin–Pegasus Routes 1 and 2 diverge from their shared alternative (Route 1 continuing to the south and Route 2 continuing to the north) is about 0.3 mile north-northwest of KOP 106.

Devlin–Pegasus Route 1 will add a series of elevated, parallel conductors running horizontally across the middle of the foreground of the view, behind the houses on both sides of Lexington Valley Drive. The conductors create new linear features that are visually prominent due to their position across the open sky. The conductors are also partially visible above the existing vegetation on the lefthand (west) side of Lexington Valley Drive. These conductors connect to a set of transmission poles that are visible in the distance extending above the trees. While less dominant than the nearby conductors, the poles are still prominent given their height and scale. The top of another transmission pole is visible above the house in the foreground on the righthand side of Lexington Valley Drive. The existing line of vegetation along the righthand side of Lexington Valley Drive would be thinned in areas to accommodate the new transmission line. This would open additional gaps in the vegetation and increase the visibility of the large, geometric buildings in the middle ground. Overall, the changes from the construction and installation of Devlin–Pegasus Route 1 at KOP 106 would be moderate to high.

Visual Simulations—Devlin–Pegasus Route 2

Devlin–Pegasus Route 2 is nearly 0.5 mile north of this KOP and also adds new conductors and poles to the view from KOP 106. These elements are less prominent on the landscape than Route 1 due to their distance from the KOP. A series of thin, undulating conductors would be visible above the vegetation on the lefthand side of Lexington Valley Drive. These conductors create new linear features across the sky, but would be less dominant against the sky at this greater distance. Several tall, vertical transmission poles would also be visible extending above the treeline along Lexington Valley Road. While this route option would add similar features and elements to the landscape as Devlin–Pegasus Route 1, the changes from the construction and installation of Devlin–Pegasus Route 2 at KOP 106 would be moderate due to their distance from viewers.

5.3.2.6 KOP 107

Existing Conditions

KOP 107 faces north-northeast from Wellington Glen Drive immediately south of its intersection with Wellington Road. The view from KOP 107 is centered on a commercial area north of Wellington Road. Similar to other views that feature roads, Wellington Road presents a smooth asphalt surface with yellow lane markings, curbs, and a sidewalk that contribute muted colors and flat, linear elements to the view. A broad-canopy deciduous tree is prominent on the lefthand side of the view. It is surrounded by a vibrant green landscaped lawn, other ground vegetation, multiple short utility boxes, and several tall light poles and street signs. Two large, geometric commercial buildings are visible beyond a thin line of low trees that parallels the north side of Wellington Road. The irregular line of trees creates a buffer that partially obscures the bottoms of the buildings and other landscape features in the distance. Several tall, vertical transmission and distribution lines are visible near the commercial buildings. The thin, horizontal conductors that connect these poles are slightly visible, but are generally absorbed into the sky at this distance.

The primary viewer groups at KOP 107 include both area residents and motorists. Area residents are typically more sensitive to changes in visual resource conditions compared to motorists. Motorists on Wellington Road will also have views at this location as they travel along this primary travel corridor. In aggregate, these viewer groups would have medium to high sensitivity to changes in visual conditions at this KOP.

Visual Simulations

KOP 107 is located less than 0.1 mile from Devlin–Pegasus Route 2. The new transmission line would be prominent in the foreground spanning the entire width of the view. The conductors would add multiple parallel layers of thin, horizontal lines above Wellington Road and other landscape features (e.g., vegetation, built structures). The new horizontal lines are highly visible against the open sky and increase the level of visual clutter in the area. A single, tall transmission pole is visible on the right side of the view. The pole introduces a dominant vertical feature in the foreground that competes with the trees, buildings, and existing transmission line visible behind the new route. Construction and installation of the route would require removal of much of the vegetation within the right-of-way. This removes some of the vibrant green color from the landscape and opens gaps in the vegetation that allow previously screened features to be more visible. The large, geometric building in the middle to right-hand side of the view takes on more prominence and more of the exiting transmission line in the background, including an additional pole, is visible in the background without the screening vegetation. Due to the height, scale, and placement of the transmission line within the foreground of KOP 107, as well as the increase in visibility of other built structures from the removal of vegetation, the changes in visual conditions at this location would be high.

5.3.2.7 KOP 108

Existing Conditions

KOP 108 is located at the southern end of the Arcadia Run apartment complex. The view is from an internal road and parking area and faces the southwest. The primary landscape features visible

from this KOP include a multi-story residential complex with a paved parking area and a mix of landscaped areas and naturally vegetated buffers. The foreground features a light black parking area with smooth surfaces and curved lines defined by curbs painted in bright yellow. Landscaped lawn areas, trees, and flower beds with vibrant red blooms border the parking lot and fill in the area between the parking lot and apartment building. A large, rectangular apartment structure with a pitched roof and neutral light beige, light brown, and white tones dominates the righthand side of the view. The structure is characterized by repeating vertical and horizontal lines created by evenly spaced windows, balconies with railings and columns, and other visual transitions from one material to another. To the left of the apartment building, a line of trees forms a vegetative buffer along the edge of the parking area. The irregular forms and lines where the tops of the trees meet the sky contrasts with the primarily geometric and straight lines in the rest of the view. The mix of greens and browns of the trees complements the colors in the built environment. Streetlamps with a black finish and street signs provide shorter, vertical elements that break up the view's primarily horizontal orientation.

Area residents are the primary viewer group at this KOP. These viewers will be moderately to highly sensitive to changes in visual conditions at and near their residences.

Visual Simulations

KOP 108 is less than 0.1 mile north of Devlin–Pegasus Route 1. The new transmission line would introduce overhead conductors and at least one partially visible pole into the primarily residential view in this location. The thin, dark conductors cross the view horizontally above the parking lot, adjacent vegetation, and the roof of the housing complex on the right-hand side of the view. The lines are especially visible on the lefthand side of the view where they fill the gaps between a single taller tree and the residential building to the right and edge of the view to the left. The upper lines, as well as the top of a pole, extend above the residential building on the righthand side of the view. Vegetative thinning to facilitate construction and installation of the transmission line would also slightly increase the visibility of homes behind the remaining vegetation on the left-hand side of the view. Devlin–Pegasus Route 1 would result in moderate to high changes in visual conditions at KOP 108.

5.3.2.8 KOP 109

Existing Conditions

KOP 109 faces west from the eastern corner of the intersection of Wellington Road and Sudley Manor Drive. The view captures a broad roadway intersection surrounded by low trees and other vegetation. The foreground is dominated by the smooth, gray, paved surfaces of the intersection and multi-lane roads with white markings. Traffic signals mounted on light gray/metallic poles with horizontal crossbars introduce angular lines and bright yellow and blue accents. Road signs and distribution lines run parallel to the road, creating additional vertical and horizontal lines to the view. Dense clusters of mixed deciduous and evergreen trees form a contiguous green wall along the roads leading into the intersection and limit more distant views. The dominant colors in the vegetated areas are vibrant shades of green, which contrast with the neutral gray tones of the road and other infrastructure.

The primary viewer group at KOP 109 is motorists traveling along Wellington Road or Sudley Manor Drive. These motorists may include through-travelers, area residents, and workers. Motorists at KOP 109 would likely have low to moderate sensitivity to changes in visual conditions.

Visual Simulations—Devlin–Pegasus Route 1

Devlin–Pegasus Route 1 is slightly more than 0.1 mile from this KOP. The point at which Devlin–Pegasus Routes 1 and 2 converge into a shared alignment is less than 0.2 mile southwest of this location.

From KOP 109, the new transmission line would be highly visible above the existing vegetation to the southwest of this location and as it crosses Sudley Manor Drive. The long, thin conductors add multiple parallel lines that horizontally cross most of the view and are apparent in the foreground above the tree line. The lower conductors are partially screened by the tops of existing trees. The conductors connect a series of taller transmission poles that extend above the existing trees. The poles are substantially taller than other features on the landscape making then a dominant vertical feature on the landscape. The metallic grey poles contrast with the green vegetation but are similar to the existing traffic poles and other built features. Overall, Devlin–Pegasus Route 1 would result in moderate changes in visual resource conditions at KOP 109.

Visual Simulations—Devlin–Pegasus Route 2

Devlin–Pegasus Route 2 is less than 0.1 mile from this KOP. As with Route 1, the Route 2 conductors add multiple sets of new, thin, horizontal lines above the roadways and existing vegetation. The tall poles increase the presence of straight vertical lines on the landscape. The colors of the poles and conductors contrast with the natural green vegetation but generally complement the other built features present in the view. Due to the route alignment, the Devlin–Pegasus Route 2 transmission poles and conductors would be prominent on the landscape. In particular, a pole near the intersection would dominate the view due to its height and bulk (size). Due to visual changes and closer viewing distances, Devlin–Pegasus Route 2 would result in a high degree of change in visual resource conditions at KOP 109.

5.3.2.9 KOP 112

Existing Conditions

KOP 112 faces east along University Boulevard from near the entrance to Abberly Avera Apartment Homes. The view features a suburban roadside setting that is characterized by gently sloping, grassy areas that transition into a dense backdrop of deciduous vegetation. The foreground features a neatly maintained green lawn on either side of a multi-lane road that curves slightly to the right, creating a smooth, horizontal line that guides the viewer's eye toward the background. A large, rectangular, white building is visible where the road curves to the right. A paved path parallels the left side of the road while a metallic guardrail is visible on the right side. The surface of the road and path are smooth and gray with painted white arrows demarking lanes in the road. The dominant vegetation is a mix of dark green trees, shrubs, and undergrowth that forms a continuous, irregular line of vegetation both to the left and right of the road. The trees add vertical elements and coarse textures to the otherwise low, flat, and smooth landscape. A low

fence and multiple signs also add smaller vertical elements to the view. The bright colors of the signs contrast with the more subdued hues of the vegetation and pavement.

The primary viewer groups at KOP 112 are area residents and motorists. For area residents, familiarity with current landscape conditions may increase their sensitivity to changes in visual resource conditions. Motorists would be less sensitive to changes in visual resource conditions compared to area residents. Overall, the viewer groups at KOP 112 would have moderate to high sensitivity to changes in visual resource conditions at this location.

Visual Simulations

Pegasus-Hornbaker Route 1 is less than 0.1 mile east of KOP 112 and adds new linear features to the landscape. Multiple parallel conductors cross the view and create a layered effect that bisects the sky. The thin, horizontally aligned conductors add prominent overhead horizontal lines to the view. Some of the lower lines are partially screened by existing vegetation. The poles add prominent vertical lines to the landscape that are taller than the surrounding trees and other landscape features and dominate the skyline, due to their industrial design and height. Thinned vegetation on the lefthand side of the view, required to accommodate the transmission line, results in a loss in color and texture. The clearing also creates new gaps through which more of the new transmission line infrastructure and other background features are visible. Overall, the tall poles and horizontal conductors are intrusive and visually prominent on the landscape at KOP 112. Along with the decrease in vegetation and new, more extensive views into the middle ground, the Project would result in moderate to high changes in visual conditions at this location.

5.3.2.10 KOP 114

Existing Conditions

KOP 114 faces southeast from the western corner of the intersection of Wellington Road and Prince William Parkway. The view from KOP 114 is of a large intersection where two multi-lane roads converge at a signalized intersection. The asphalt roadways dominate the foreground with bold, linear, white crosswalk and other lane markings creating strong horizontal and diagonal lines and geometric shapes. The pavement texture appears smooth and contrasts with the medium to coarse textures of the vegetation along the roadsides. Traffic signals and road signs mounted on vertical metal poles with horizontal crossarms that extend over multiple lanes introduce bright colors that stand out against the otherwise muted color palette of the landscape. Regularly spaced distribution poles parallel the road and larger transmission poles are visible in the distance. These poles add multiple tall, vertical elements, as well as thin, horizontal lines and contribute to the overall level of human presence and development on the landscape. Vegetation generally lines the roadways and includes flat, grassy areas and lines of trees and shrubs. The clusters of dense shrubs and small to medium-sized trees create irregular horizontal lines against the sky and offer a contrast to the simple, regular lines and textures present on the roadways and other visible infrastructure. The varied green hues of the vegetation are similar to the neutral gray of the adjacent roads and help to soften the overall character of the landscape at this KOP.

The primary viewer group at KOP 114 is motorists, who would be less sensitive to changes in existing visual resource conditions compared to other types of viewers. Due to the existing high

degree of development and visual intrusions in and around this intersection, viewer expectations for scenic quality and sensitivity to changes may also be lower. Overall, motorists at this KOP would have low sensitivity to changes in visual conditions at this location.

Visual Simulations

Wellington–Pegasus Route 1 is less than 0.1 mile south of KOP 114. The new transmission line is prominent in the foreground where it crosses both Wellington Road and Prince William Parkway and adjacent areas. The tall, vertical poles with short, horizontal crossarms extend substantially above the existing vegetation and roads. The conductors create a series of strong, horizontal lines that span the areas between the poles and are prominent against the sky. In the foreground, the height and scale of the transmission poles and number of additional horizontal lines amplifies their visual prominence and adds to the dominance of built features on the landscape. The current level of development and similar types of forms, lines, and colors in the view from KOP 114 mitigate the contrast of the new transmission line infrastructure to some degree. As such, Wellington–Pegasus Route 1 would result in moderate changes in visual resource conditions in this location.

5.3.2.11 KOP 115

Existing Conditions

KOP 115 is located within a commercial/industrial area on Mike Garcia Drive west of Robertson Drive and faces northwest. The view from KOP 115 focuses on a short, paved road that opens into a clearing. The dominant feature in the foreground is a medium grey, flat, smooth paved road that is bordered by a mix of green vegetation. A subtle curb line separates the road from adjacent grassy strips and landscaping, creating clean angular lines between these landscape features. On the left, the façade of a white building with rectangular windows adds a partially visible geometric form that contrasts with the organic forms of the adjacent vegetation. Medium height trees line both sides of the road and a row of compact, finely textured shrubs fills in the gaps between trees on the left-hand side of the road. The full, dense canopies of the trees form rounded, irregular shapes that generally obscure views beyond and enclose the foreground. The roadway leads into an open area that is being used as a work zone. Low fencing, white construction barriers, and orange signs are visible in this area. Several streetlights add vertical elements to this area, although they are partially absorbed into the taller trees behind them making them somewhat difficult to discern at this distance. Beyond the work area, a multi-layered line of vegetation forms a barrier along the back of the view and prohibits more distant views. Several thin, tall trees feature prominently, while a shorter, denser line of trees is visible behind them and frames the back of the view from this KOP.

The primary viewer groups at KOP 115 are workers and motorists. In both cases, these viewer groups tend to be less sensitive to changes in visual resource conditions compared to other types of viewer groups. Accordingly, these viewer groups would have low sensitivity to changes in visual resource conditions at KOP 115.

Visual Simulations

KOP 115 is less than 0.1 mile south of Pegasus–Hornbaker Route 1. The enclosed nature of the foreground of KOP 115 limits broader views of the new transmission line at this location. The new transmission line would introduce multiple new horizontal lines that cross the open area above the road. The conductors would also be partially visible above the vegetation on the lefthand side of the view. These new linear features are prominent and create visual clutter against the sky. While the existing vegetation on both sides of the road screen the transmission poles, they may be partially visible during leaf-off conditions or from different parts of the road. The construction and installation of Pegasus–Hornbaker Route 1 would result to minor to moderate changes in visual resource conditions at KOP 115.

5.3.2.12 KOP 119C

Existing Conditions

KOP 119C faces north from Hawkins Drive within an industrial area to the west of Hornbaker Road. The foreground of KOP 119C is dominated by a white warehouse-style building with associated parking and storage, surrounded by a low fence and vegetation. A smooth, flat, light gray roadway delineates the edge of the warehouse property. The geometric warehouse building has a long, smooth, linear roofline. The boxy form contrasts with the rounded, amorphous forms in the surrounding vegetation. The straight, horizontal lines of the warehouse roofline and roadway dominate and help guide the viewer's eye across the view. Distribution poles along Hawkins Drive and the low, light brown fence in front of the warehouse create some weak, vertical lines. The surrounding vegetation is predominately green with subtle variations in tone. The green accent paint on the warehouse building complements these colors. A flowering shrub in the foreground adds small pops of vibrant magenta. The trees and shrubs exhibit medium textures with dense foliage creating a rough, layered appearance. The trees behind the warehouse and along the roadway provide a sense of enclosure and add depth to the view. The vegetation's texture contrasts with the smooth, hard surfaces of the road and building.

The primary viewer group at KOP 119C is workers. Workers tend to be less sensitive to changes in visual resource conditions compared to other types of viewer groups. Accordingly, workers at this KOP would have low sensitivity to changes in visual resource conditions.

Visual Simulations

KOP 119C is a view to the north and is located directly adjacent to Pegasus-Hornbaker Route 1. The proposed route would be visible and prominent in the foreground of this location. The route would be visible as it crosses Hawkins Drive in the distance near the intersection with Industrial Road and then as it parallels the lefthand (west) side of Hawkin Drive. The route would add additional tall, vertical, linear features along with multiple thin, horizontal overhead lines to the view. The poles and conductors generally extend above the modified tree line on the left side of the road. Several of the trees along this side of the road would be removed or heavily trimmed to facilitate the route. This change would be perceptible and partially reduce the textures, layered forms, and screening role of the existing vegetation in this area. While the new transmission line infrastructure would be prominent in the foreground and require the removal of some of the trees

along Hawkins Drive, Pegasus–Hornbaker Route 1 would only result in minor changes in visual resource conditions at KOP 119C because of the general level of industrial development, as well as the existing vertical and horizontal lines that are characteristic of the area.

5.3.2.13 KOP 120

Existing Conditions

KOP 120 is located on Hornbaker Road approximately 0.6 mile to the north of the intersection with Rt. 28. The view faces the southwest toward the proposed Hornbaker Switching Station, which is less than 0.1 mile from this location. The landscape at KOP 120 features significant human development and ongoing construction set against a backdrop of a contiguous line of trees and other vegetation. The foreground is defined by a smooth, paved, gray roadway bordered by a thin strip of green grass. To the left, a large rectangular data center building with a modern, industrial design dominates the view. The building features strong horizontal and vertical lines, neutral colors (gray, tan/light brown, cream), and repetitive, rectangular elements. Another large, rectangular data center building with vertical lines and alternating colors (white, gray, and black) is visible and frames the right side of the view. The area between the existing buildings is dominated by an active construction site, as evidenced by boxy portable office trailers, mounds of dirt, construction vehicles, and orange construction fencing. These elements introduce irregular, coarse textures and earth tones (light brown, tan, and white) accented by vibrant colors (orange). These elements create visual contrast with the smoother textures and defined lines of the adjacent buildings and roadway. Behind the construction area, a low line of trees with rounded canopies forms a solid wall that limits more distant views. These trees feature fine textures and deep green hues, which serve to frame the developed areas and construction activities.

The primary viewer groups at KOP 120 are workers and motorists. These viewer groups tend to be less sensitive to changes in visual conditions, particularly in areas that already exhibit a high degree of human modifications and development. Accordingly, these viewer groups would have low sensitivity to changes in visual resource conditions at KOP 120.

Visual Simulations

Hourglass–Hornbaker Route 1 (Hybrid) would be installed in an underground configuration entering the proposed Hornbaker Switching Station. As a result, this route alternative would not require any visible aboveground changes in the view from KOP 120.

There are also two potential configurations for Pegasus-Hornbaker Route 1 in this area with slight visual differences between the two. With Option 1, a single, tall monopole would be visible in front of the lefthand side of the proposed Hornbaker Switching Station. With Option 2, three monopoles would parallel the front side (i.e., the side facing Hornbaker Road) of the Hornbaker Switching Station. The monopoles associated with Option 2 are more numerous but shorter than the single monopole associated with Option 1. Otherwise, their changes to existing visual conditions would be similar, as noted below.

From KOP 120, the Pegasus–Hornbaker Route 1 transmission line and Hornbaker Switching Station would dominate the middle of the view, replacing the current visible construction site. The switching station and perimeter fence introduce a visually complex assemblage of vertical and

horizontal lines ranging in lengths and heights. The internal vertical poles with horizontal crossbars and lightning arrestors (tall poles roughly in the middle of the switching station site) are the tallest features within the switching station. Due to their height and visibility against background vegetation and the sky, these features stand out on the landscape despite the presence of adjacent large, solid building shapes.

In addition to the proposed Hornbaker Switching Station, the new transmission line also adds tall, vertical features, as well as a series of horizontal lines to the view, in front of the switching station. The conductors introduce thin, linear elements that run horizontally across the view and stand out in the sky above the switching station. Under Option 1, a new transmission pole that defines the turning point of the conductors into the switching station is the tallest feature on the landscape and serves as a focal point in the view, drawing the viewer's attention. Under Option 2, three new transmission poles run along the front of the switching station. While prominent, the three poles are slightly shorter than the single under Option 1 and are partially absorbed into the visible infrastructure of the adjacent switching station. Under both options, the silver-grey hues of the switching station and transmission routes are consistent with the industrial aesthetic of the nearby buildings and other built features.

Due to the scale and introduction of multiple new linear components, Pegasus–Hornbaker Route 1 and the proposed Hornbaker Switching Station would introduce new dominant features to the landscape. The resulting changes in visual resource conditions under both options would be moderate and partially tempered by the existing level of development in this area.

5.3.2.14 KOP 121

Existing Conditions

KOP 121 faces southwest from University Boulevard, approximately 0.3 mile west of the intersection with Godwin Drive. The view from KOP 121 is dominated by a wide expanse of paved road with a smooth gray surface and vibrant yellow and white painted traffic markings. A paved access road, perpendicular to University Boulevard and directly across from the viewer, is blocked by light gray concrete barriers, which introduce simple, rectilinear forms in the foreground. Vegetated areas on both sides of the access road break up the smooth, paved surfaces. These areas are characterized by tall, coarse-textured grasses interspersed with shrubs and small trees. The vegetation exhibits varying green hues intermixed with subtle brown and tan hues. The amorphous forms and irregular heights of the vegetation contrast with the regular, straight lines of the paved surfaces and nearby buildings. Behind the vegetation, the rectangular tops of large industrial buildings are visible. These buildings are characterized by flat roofs, neutral gray tones, and simple geometric forms. These structures are partially obscured by vegetation and form the back of the view from this location.

The primary viewer group at KOP 121 is motorists. These viewers tend to be less sensitive to changes in existing visual resource conditions since their focus tends to be on driving. This area already exhibits a high degree of modifications to the natural environment; therefore, expectations of scenic quality are likely lower. Accordingly, motorists at KOP 121 would have low sensitivity to visual resource changes.

Visual Simulations

KOP 121 is less than 0.2 mile from the overhead portion of Hourglass–Hornbaker Route 1 (Hybrid). Multiple parallel, slightly undulating conductors run horizontally between tall transmission poles and form a prominent, repetitive pattern across the view. The conductors add thin lines across most of the field of view, although some of the lines are screened by tall vegetation in the foreground. The transmission poles introduce strong, vertical forms that punctuate the flat terrain and geometric buildings in this area. Both the poles and conductors are visually distinct from the nearby industrial buildings and add another layer of built features to the landscape. The scale of the vertical poles and horizontal lines makes them prominent above the nearby buildings. The light grey color of the poles somewhat complements the existing color palette of the built environment in this area. Based on these changes, the construction and installation of Hourglass–Hornbaker Route 1 (Hybrid) would result in moderate changes to the existing visual resource conditions at KOP 121.

5.3.2.15 KOP 127

Existing Conditions

KOP 127 faces northeast from a cul-de-sac at the end of Challenger Court, adjacent to an existing commercial/warehouse complex. The viewpoint is approximately 0.1 mile from the proposed transition station for Hourglass–Hornbaker Route 1 (Hybrid). The vegetated shoulders along Prince William Parkway dominate the view from KOP 127. The clean, smooth-textured, neutral gray of the cul-de-sac pavement and tan concrete curb create a strong horizontal line across the lower portion of the view. A band of vegetation adds another horizontal element across the view. The flat, gray roadway of Prince William Parkway bisects the horizontal bands of grasses, shrubs, and trees and is visible through several breaks in the vegetation from the slightly elevated location of this KOP. The horizontally layered vegetation includes short clumps of grasses and other ground plants that transition into rounded shrubs and dense trees with irregular forms and heights. The vegetation provides a range of green hues and soft to medium textures that form a continuous visual barrier that partially limits more distant views. The variation in tree heights adds an irregular line that contrasts with the distinct, slightly curving line of the pavement. The flat, geometric forms of several large buildings are partially visible above the trees on the right-hand side of the view.

The primary viewer groups at KOP 127 are workers and motorists. Both types of viewers are likely less sensitive to changes in visual conditions, especially in areas with a high degree of existing development. As such, these viewer groups would have low sensitivity to changes in visual resource conditions.

Visual Simulations

The proposed transition station and a small segment of the aboveground portion of Hourglass–Hornbaker Route 1 (Hybrid) are visible through a gap in the trees along the east side of Prince William Parkway. This gap marks the route of the underground portion of Hourglass–Hornbaker Route 1 (Hybrid) as it exits the transition station. A single transmission pole adds a tall, vertical form to the view. The tops of a couple of other poles are visible above the tree line both to the left

and right of the transition station. The overhead conductors add thin, repetitive linear features that terminate in the transition station. The transition station's perimeter fence introduces a thin, gray horizontal strip that generally extends across the new gap in vegetation. Due to the new gap in vegetation, the transmission line and transition station serve as a focal point for views from this KOP, although similar views may not be available from other parts of Challenger Court or other roads. The gap also increases the visibility of the rectangular, gray buildings adjacent to the transition station. Overall, the removal of screening vegetation and the addition of multiple new forms and lines associated with Hourglass–Hornbaker Route 1 (Hybrid) would have moderate changes on existing visual conditions at KOP 127.

5.3.3 IMPACT ASSESSMENT

5.3.3.1 VISUALLY SENSITIVE RESOURCES

The degree to which overhead transmission lines influence and are visible on a landscape depends on a number of factors, including (but not limited to) structure height and color, existing landscape features (e.g., topography, vegetation, human-made development), and distance from the viewer. The specific combination of these factors changes from location to location, which contributes to a range of potential influences and impacts across the study area from the proposed Project. Table 5.3-3 describes the anticipated changes from the Project to the existing visual resource conditions in each VSR. In addition to degree or level of change, this table also indicates typical viewer sensitivity to changes in visual resource conditions at each VSR.

5.3.3.2 ROUTE ALTERNATIVES

Table 5.3-4 summarizes the overall impacts of the route alternatives on visual conditions. This table provides an impact rating (major, moderate, minor, or negligible) that accounts for the Project's anticipated change to the existing landscape, as well as the estimated viewer sensitivity to this change for each route.

TABLE 5.3-3 SUMMARY OF ANTICIPATED IMPACTS BY VISUALLY SENSITIVE RESOURCE AND KEY OBSERVATION POINT

VSR # and Name		KOP #	Relevant Route(s)[a]	Description of Impact	Degree of Visual Change / Visual Sensitivity
Scenic Resources					
1	Bristow Road Scenic Byway	NA	HH, PH	The Hornbaker Switching Station is slightly more than one mile northeast of the northern end of the Bristow Road Scenic Byway. Due to distance and landscape features (e.g., buildings, structures, trees, etc.), the Project would not change the landscape as viewed from this VSR.	Degree of Visual Change: Negligible Viewer Sensitivity: Moderate to High
Educational Resources					
2	Gainesville High School and Athletic Fields	NA	DP1, DP2	Devlin–Pegasus Routes 1 and 2 (which share a common alignment in this area) are about one mile east of this VSR. Due to distance and landscape features (e.g., buildings, structures, trees, etc.), the Project would not change the landscape as viewed from this VSR.	Degree of Visual Change: Negligible Viewer Sensitivity: Low
3	Chris Yung Elementary School	102A	DP1, DP2	Devlin–Pegasus Routes 1 and 2 (which share a common alignment in this area) are approximately 0.4 mile north of Chris Yung Elementary School. A dense, forested area north of the school limits more distant views in the direction of the Project. As such, the Project would not change the landscape as viewed from this VSR.	Degree of Visual Change: Negligible Viewer Sensitivity: Low
4	Victory Elementary School	NA	PH	Pegasus–Hornbaker Route 1 is approximately 0.4 mile east/northeast from Victory Elementary School. The Project would not change the landscape as viewed from this VSR, because a combination of existing houses and forested areas screen more distant views from the school grounds.	Degree of Visual Change: Negligible Viewer Sensitivity: Low

VSR # and Name		KOP #	Relevant Route(s)[a]	Description of Impact	Degree of Visual Change / Visual Sensitivity
Recreation Resources					
5	Piedmont Trail (GMU)	NA	WP	Wellington–Pegasus Route 1 is approximately 0.5 mile north/northwest of the Piedmont Trail. This trail primarily crosses a forested area on the GMU Campus. A portion of the trail crosses an open area on campus and provides some unobstructed views of the surrounding landscape; however, forest cover, topography, and existing and ongoing development screen broader landscape views from the trail toward the Project. Overall, the Project would not change the landscape as viewed from this VSR.	Degree of Visual Change: Negligible Viewer Sensitivity: Moderate to High
6	EG Smith Baseball Complex	NA	HH	Hourglass-Hornbaker Route 1 (Hybrid) is approximately 0.1 mile west of the EG Smith Baseball Complex. The athletic complex is surrounded by major roadways, existing transmission lines, substations/switching stations, and other industrial development. The Project may be partially visible from the baseball fields but would not substantially change the existing landscape.	Degree of Visual Change: Negligible Viewer Sensitivity: Low
7	Sweeney Barn (private event space)	NA	PH	Pegasus–Hornbaker Route 1 is less than 0.3 mile southwest of Sweeney Barn. The Project would potentially be visible from this VSR, particularly from the entrance road off of Hornbaker Road. The Project would add vertical structures (poles) and horizontal lines (conductors) to the landscape that may be visible from the outdoor areas of the event facility.	Degree of Visual Change: Minor Viewer Sensitivity: Moderate
8	Brentville Hall (private event space)	NA	HH	Hourglass-Hornbaker Route 1 (Hybrid) is approximately 0.3 mile north of Brentville Hall (part of The Yard commercial area). Because portion of Hourglass-Hornbaker Route 1 (Hybrid) visible from this VSR is underground, it would not add structures to the landscape. Permanent removal of trees and woody vegetation (if any) above the underground right-of-way may decrease the complexity of the vegetation visible on the landscape. These alterations would not substantially change the existing landscape.	Degree of Visual Change: Minor Viewer Sensitivity: Moderate

VSR # and Name		KOP #	Relevant Route(s)[a]	Description of Impact	Degree of Visual Change / Visual Sensitivity
9	Canon Branch Fort	NA	HH	Hourglass–Hornbaker Route 1 (Hybrid) is approximately 0.7 mile north of Canon Branch Fort. Given distance and existing landscape features (e.g., buildings, highways and other roads, trees, etc.), and because this portion of the route is underground, the Project would not change the landscape as viewed from this VSR.	Degree of Visual Change: Negligible Viewer Sensitivity: Moderate to High
10	Broad Run Greenway	NA	HH, PH	The Hornbaker Switching Station and the associated endpoint of Pegasus–Hornbaker Route 1 are approximately 0.3 mile from the Broad Run Greenway at the closest point (Hourglass-Hornbaker Route 1 (Hybrid) would be underground in this area). This trail primarily runs through a densely forested area along Broad Run creek. The forest cover likely screens most wider landscape views from the trail. Periodic breaks in the trees may allow some views of Project components. In these areas, the Project's vertical poles and/or horizontal conductors would potentially be visible and would add additional forms and lines to the landscape.	Degree of Visual Change: Minor Viewer Sensitivity: Moderate to High
Places of Worship & Cemeteries					
11	Rose Hill Cemetery	NA	HH	Hourglass-Hornbaker Route 1 (Hybrid) is approximately 0.5 mile west of Rose Hill Cemetery. The cemetery is surrounded by trees with commercial and industrial buildings, roads, and other development between the cemetery and the Project. These features limit views from within the cemetery. As such, the Project would not change the landscape as viewed from this VSR.	Degree of Visual Change: Negligible Viewer Sensitivity: Moderate

VSR # and Name		KOP #	Relevant Route(s)[a]	Description of Impact	Degree of Visual Change / Visual Sensitivity
Primary Road Corridors					
12	Wellington Road	101 104 107 109 114	DP1, DP2, WP	Wellington Road generally runs southeast to northwest through the study area. The existing landscape along the road is highly modified. The 4-lane (2 lanes in each direction) road passes through industrial, commercial, and residential areas and is bordered by trees in some areas. Devlin–Pegasus Route 2 parallels and crosses Wellington Road in two locations. Wellington–Pegasus Route 1 also crosses the road in one location. The northwestern terminus of both Devlin–Pegasus Routes 1 and 2 (the Devlin Switching Station) is adjacent to and visible from the intersection of Wellington Road and Hansen Farm Road. The Project would change the vegetation along portions of Wellington Road by adding linear, repetitive structures and lines to the landscape.	Degree of Visual Change: Minor to Moderate Viewer Sensitivity: Low to Moderate
13	Devlin Road	102A	DP1, DP2	Devlin Road run generally runs northeast to southwest through the northern portion of the study area. The existing landscape along Devlin Road is highly modified with a mix of industrial, commercial, and residential development. Devlin–Pegasus Routes 1 and 2 (which share the same alignment in this area) would cross the road, adding overhead horizontal lines and tall, vertical poles to landscape. Vegetation clearing would be noticeable and would potentially increase visibility into areas adjacent to the road that are currently screened.	Degree of Visual Change: Moderate Viewer Sensitivity: Low to Moderate
14	Lexington Valley Drive	104 105 106	DP1, DP2	Lexington Valley Road generally runs northeast to southwest. The road links a large residential development (Independence Homeowners) and a light industrial area near the intersection with Wellington Road to the broader road network. Trees and other vegetation create a buffer along northern portions of the road. Devlin–Pegasus Routes 1 and 2 cross Lexington Valley Drive in separate locations. In both cases, the Project would add a series of new overhead horizontal lines and tall, vertical poles to the landscape. Due to their height and scale, the poles would likely be visible from a substantial extent of the road.	Degree of Visual Change: Moderate Viewer Sensitivity: Low to Moderate

VSR # and Name		KOP #	Relevant Route(s)[a]	Description of Impact	Degree of Visual Change / Visual Sensitivity
15	Prince William Parkway (SR 234)	114	HH, WP	Prince William Parkway runs northwest to southeast through the eastern side of the study area. This multi-lane highway is a major transportation corridor characterized by a high level of primarily industrial and commercial existing development. Much of the road through the Project area is bordered on both sides by trees and other vegetation that help partially screen existing development. Wellington–Pegasus Route 1 and the underground segment of Hourglass-Hornbaker Route 1 (Hybrid) cross Prince William Parkway approximately 1.5 miles apart. The Wellington–Pegasus Route 1 crossing would add tall vertical forms and overhead, horizontal lines above the highway (a distribution line crosses the highway in the same general area). This route would require vegetation clearing that would decrease the vegetated buffer in this area. Although the portion of Hourglass-Hornbaker Route 1 (Hybrid) within view of this KOP is underground, the proposed switching station would be adjacent to the east side of the road and would likely be partially visible. The transition station would also add horizontal and vertical elements to the landscape	Degree of Visual Change: Moderate Viewer Sensitivity: Low
16	University Boulevard	112 121	HH, PH	University Boulevard runs primarily east-west corridor through the study area. The road primarily crosses areas of industrial and commercial development in the east and then transitions into more residential areas to the west. Pegasus–Hornbaker Route 1 crosses the roadway and would add large, vertical structures and a series of thin, horizontal overhead lines at the crossing. The size and height of the structures would make them visible beyond the immediate road crossing. Some vegetation clearing for the route would reduce the existing screening features on the landscape. The aboveground portion of Hourglass-Hornbaker Route 1 (Hybrid) parallels a portion of University Boulevard. In this area, the route would enhance the existing level of industrial development by adding repeating linear forms and lines to the landscape.	Degree of Visual Change: Low to Moderate Viewer Sensitivity: Low

VSR # and Name		KOP #	Relevant Route(s)[a]	Description of Impact	Degree of Visual Change / Visual Sensitivity
17	Hornbaker Road	120	DP1, DP2, HH, PH, WP	Hornbaker Road generally runs north to south through the middle of the study area. The road corridor is primarily characterized by a series of industrial and commercial areas interspersed with landscaped and naturally vegetated areas. Wellington-Pegasus Route 1, Pegasus–Hornbaker Route 1, and Devlin–Pegasus Routes 1 and 2 converge on the Pegasus Switching Station at the northern end of the road. Short segments of these routes cross and parallel the road in this area. Near the southern end of the road, Pegasus–Hornbaker Route 1 and the underground portion of Hourglass-Hornbaker Route 1 (Hybrid) converge at the proposed Hornbaker Switching Station and a portion of Pegasus–Hornbaker Route 1 would parallel Hornbaker Road. These routes would decrease the amount of vegetation cover and screening where they cross or collocate with the road. The routes would add large, vertical structures and multiple series of overhead horizontal lines to the landscape. The Hornbaker Switching Station would be prominent on the landscape in this highly developed area along Hornbaker Road.	Degree of Visual Change: Moderate Viewer Sensitivity: Low
18	Rt. 28 (Nokesville Road)	None	HH	Rt. 28 generally runs southwest to northeast along the southern edge of the study area. Hourglass-Hornbaker Route 1 (Hybrid) runs parallel to and approximately 0.5 mile north of the road. Large existing and proposed industrial buildings screen most of the overhead portion of this route from Rt. 28, although the proposed overhead structures may be partially visible above or between buildings, adding vertical features to the landscape. The underground portion of the route may alter the vegetation in the ROW, but any changes would be barely perceptible from the roadway due to of viewing angles, distance, the speed of travel, and other built features on the landscape.	Degree of Visual Change: Low Viewer Sensitivity: Low

VSR #	and Name	KOP #	Relevant Route(s)[a]	Description of Impact	Degree of Visual Change / Visual Sensitivity
Residential Neighborhoods / Areas of High Public Concentration					
19	Jennell Estates	102A 103B	DP1, DP2	Jennell Estates is a residential neighborhood at the northwestern end of the study area, comprising single family, two-story homes with landscaped lawns and planting beds. Mature trees and shrubs grow throughout the neighborhood and add texture and color. Clusters of dense, mature trees partially screen some views into adjacent commercial and industrial areas. Devlin–Pegasus Routes 1 and 2 (which share an alignment in this area) are within 0.1 mile of the northern edge of the neighborhood. While views of the Project from most homes in Jennell Estates would be obstructed, the residences along Jennell Drive would have direct or partially obscured views of the Project. The tall, vertical poles and thin, horizontal overhead conductors would add built features and contribute to the increased level of development on the landscape.	Degree of Visual Change: Moderate Viewer Sensitivity: High
20	Sheffield Manor	NA	DP1, DP2	The Sheffield Manor neighborhood is south of Jennell Estates at the northwestern end of the study area. Similar to Jennell Estates, this neighborhood is characterized by single-family, two-story homes with landscaped properties and denser stands of mature trees. The mature trees generally screen views from the neighborhood into adjacent areas. The mix of screening trees and taller, geometric homes obscures views in the direction of Devlin–Pegasus Routes 1 and 2, which are approximately 0.3 mile north of the neighborhood. Given this distance, as well as the existing landscape features (e.g., homes, trees, etc.), the Project would not change the landscape as viewed from this VSR.	Degree of Visual Change: Negligible Viewer Sensitivity: High

VSR # and Name		KOP #	Relevant Route(s)[a]	Description of Impact	Degree of Visual Change / Visual Sensitivity
21	Independence Homeowners	106	DP1, DP2	The Independence Homeowners neighborhood is along Lexington Valley Road east of Sheffield Manor. The neighborhood contains single-family, two-story homes and multistory townhomes. Landscaped lawns, shrubs, and trees add to the character of the neighborhood. The existing homes and mature trees help obscure views from the neighborhood into adjacent areas. Devlin–Pegasus Route 1 parallels the northern end of the neighborhood and is within 0.1 mile of the nearest homes. Devlin–Pegasus Route 2 is approximately 0.4 mile north of Independence Homeowners. Views of either route would likely be minimal due to screening from existing vegetation and structures; however, the proximity of structures (foreground) and vegetation removal will make portions of both routes visible to residents at the northern end of the neighborhood. In these areas, the Project will add new, tall, vertical forms and long, thin, horizontal lines to the landscape.	Degree of Visual Change: Moderate Viewer Sensitivity: High
22	Arcadia Run	107 108	DP1, DP2	The Arcadia Run neighborhood is between Independence Homeowners to the south and Wellington Road to the north. The neighborhood includes several multi-story apartment buildings surrounded by parking areas and small landscaped areas with a mix of lawns, planting beds, shrubs, and trees. Denser stands of mature trees border the neighborhood and obscure some views into adjacent areas. Devlin–Pegasus Route 1 passes along the southern edge of the neighborhood. Construction and installation of this line would require noticeable vegetation removal and would increase views of the Independence Homeowners neighborhood to the south. Devlin–Pegasus Route 2 parallels Wellington Road at the northern end of the Arcadia Run neighborhood. Vegetation removal in this area would increase views to the north. Both routes would add prominent vertical towers and a series of parallel, horizontal overhead lines to the landscape.	Degree of Visual Change: Moderate Viewer Sensitivity: High

VSR # and Name		KOP #	Relevant Route(s)[a]	Description of Impact	Degree of Visual Change / Visual Sensitivity
23	Abberly Avera Apartment Homes	112	DP1, DP2, PH	The Abberly Avera Apartment Homes neighborhood is accessed via University Boulevard. The area contains several multi-story apartment buildings surrounded by parking lots and landscaped areas. Dense stands of mature trees encircle the property, except along its southern edge. An existing pipeline right-of-way bisects the property. Devlin–Pegasus Routes 1 and 2 (which share an alignment in this area) are approximately 0.2 mile north of the neighborhood. The tall, dense stands of existing trees along the northern edge of the property would likely limit most views of these routes. The cleared pipeline right-of-way would provide views of a small segment of the routes where they cross the pipeline to the north. These views would result in minimal changes to the landscape as viewed from this VSR. Pegasus–Hornbaker Route 1 crosses the eastern edge of the neighborhood. The construction and installation of this route would require the removal of the screening vegetation along the east side of the neighborhood, allowing unobstructed views of the route and areas beyond. These changes would add tall vertical poles and extensive, thin, horizontal overhead lines to the landscape, all of which be prominent in views for residents throughout the neighborhood, especially those that live in the eastern side of the property.	Degree of Visual Change: Moderate to High Viewer Sensitivity: High
24	Bristow	NA	PH	The Bristow community lies southwest of the Abberly Avera Apartment Homes on the southern side of University Boulevard (although there is no access to the neighborhood from this road). The community includes a mix of single-family, two-story homes and two-story townhomes. These homes and townhomes are surrounded by landscape lawns, small shrubs, and trees. Tall, dense, forested areas obstruct most views from this neighborhood toward adjacent areas to the east, including Pegasus–Hornbaker Route 1. The neighborhood is on a slight rise, which provides some views of the broader landscape. While small portions of some Project structures may visible in the distance above the trees, the Project would not result in substantial changes to the landscape as viewed from this neighborhood.	Degree of Visual Change: Negligible Viewer Sensitivity: High

VSR # and Name		KOP #	Relevant Route(s)[a]	Description of Impact	Degree of Visual Change / Visual Sensitivity
25	Regency Apartment Homes	122	HH, PH	The Regency Apartment Homes neighborhood is south of the proposed Hornbaker Switching Station, the terminus of Pegasus–Hornbaker Route 1 and Hourglass-Hornbaker Route 1 (Hybrid). The residential neighborhood comprises two-story apartment buildings. Tall, mature trees border the property and fully or partially screen views into adjacent areas. This vegetation, in addition to other existing features (e.g., large buildings) would obstruct most views from the residential area toward the Project. The tops of equipment at the proposed Hornbaker Switching Station and transmission poles for Pegasus–Hornbaker Route 1 may be visible above the treeline and would add small features to the view; however, these additional elements would not substantially change the landscape as viewed from this neighborhood.	Degree of Visual Change: Negligible Viewer Sensitivity: High

GMU = George Mason University; KOP = key observation point; NA = not applicable; VSR = visually sensitive resource.
[a] Project facilities: DP1 = Devlin–Pegasus Route 1; DP2 = Devlin–Pegasus Route 2; HH = Hourglass-Hornbaker Route 1 (Hybrid) (including the proposed transition station); PH = Pegasus–Hornbaker Route 1 (including the proposed Hornbaker Switching Station); WP = Wellington–Pegasus Route 1.

TABLE 5.3-4 IMPACT ASSESSMENT

Route Alternative	Potentially Impacted VSRs	Impacted Areas and Viewer Groups	Potential Impact Rating
Devlin–Pegasus Route 1	• Gainesville High School and Athletic Fields • Chris Yung Elementary School • Wellington Road • Devlin Road • Lexington Valley Drive • Hornbaker Road • Jennell Estates • Sheffield Manor • Independence Homeowners • Arcadia Run • Abberly Avera Apartment Homes	Road Crossings—6 total: • Hansen Farm Road • Devlin Road • Virginia Meadows Drive • Lexington Valley Drive • Sudley Manor Drive • Zelkovia Drive Sensitive VSRs (impacts > negligible): • Wellington Road • Devlin Road • Lexington Valley Drive • Hornbaker Road • Jennell Estates • Independence Homeowners • Arcadia Run • Abberly Avera Apartment Homes Impacted Viewer Groups: • Local residents • Motorists	Degree of Visual Change: Moderate Viewer Sensitivity: Moderate to High Overall Impact: Moderate/Major
Devlin–Pegasus Route 2	• Gainesville High School and Athletic Fields • Chris Yung Elementary School • Wellington Road • Devlin Road • Lexington Valley Drive • Hornbaker Road • Jennell Estates • Sheffield Manor • Independence Homeowners • Arcadia Run • Abberly Avera Apartment Homes	Road Crossings—8 total: • Hansen Farm Road • Devlin Road • Virginia Meadows Drive • Lexington Valley Drive • Wellington Road (2 crossings) • Sudley Manor Drive • Zelkovia Drive Sensitive VSRs (impacts > negligible): • Wellington Road • Devlin Road • Lexington Valley Drive • Hornbaker Road • Jennell Estates	Degree of Visual Change: Moderate Viewer Sensitivity: Moderate to High Overall Impact: Moderate

Route Alternative	Potentially Impacted VSRs	Impacted Areas and Viewer Groups	Potential Impact Rating
		• Independence Homeowners • Arcadia Run • Abberly Avera Apartment Homes Impacted Viewer Groups: • Local residents • Motorists	
Wellington–Pegasus Route 1	• Piedmont Trail • Wellington Road • Prince William Parkway (SR 234) • Hornbaker Road	Road Crossings—3 total: • Wellington Road • Prince William Parkway • Hornbaker Road Sensitive VSRs (impacts > negligible): • Wellington Road • Prince William Parkway (SR 234) • Hornbaker Road Impacted Viewer Groups: • Motorists	Degree of Visual Change: Moderate Viewer Sensitivity: Low Overall Impact: Minor
Pegasus–Hornbaker Route 1	• Bristow Road Scenic Byway • Victory Elementary School • Sweeney Barn • Broad Run Greenway • University Boulevard • Hornbaker Road • Abberly Avera Apartment Homes • Bristow • Regency Apartment Homes	Road Crossings—5 total: • Mike Garcia Drive • University Boulevard • Industrial Court • Industrial Road • Hawkins Drive (2 locations) Sensitive VSRs (impacts > negligible): • Sweeney Barn • Broad Run Greenway • University Boulevard • Hornbaker Road • Abberly Avera Apartment Homes Impacted Viewer Groups: • Local residents • Motorists • Workers	Degree of Visual Change: Low to Moderate Viewer Sensitivity: Low to High Overall Impact: Minor

Route Alternative	Potentially Impacted VSRs	Impacted Areas and Viewer Groups	Potential Impact Rating
Hourglass-Hornbaker Route 1 (Hybrid)	• Bristow Road Scenic Byway • EG Smith Baseball Complex • Brentville Hall • Canon Branch Fort • Broad Run Greenway • Rose Hill Cemetery • Prince William Parkway (SR 234) • University Boulevard • Hornbaker Road • Nokesville Road (SR 28) • Regency Apartment Homes	Road Crossings—3 total but all would be underground: • Prince William Parkway • Discovery Boulevard • Hornbaker Road Sensitive VSRs (impacts > negligible): • Brentville Hall • Broad Run Greenway • Prince William Parkway (SR 234) • University Boulevard • Hornbaker Road • Nokesville Road (SR 28) Impacted Viewer Groups: • Motorists • Workers	Degree of Visual Change: Low Viewer Sensitivity: Low Overall Impact: Minor

VSR = visually sensitive resource; SR = State Road.

Devlin–Pegasus Route 1

The transmission line infrastructure installed along Wellinton-Pegasus Route 1 primarily passes through vegetated buffers (undeveloped, forested areas) and light industrial/commercial development. It parallels several areas of residential development but does not directly cross any existing neighborhoods. The route would be most visible to the greatest number of viewers where it crosses primary travel corridors in the area including Hansen Farm Road, Devlin Road, Virginia Meadows Drive, Lexington Valley Drive, and Sudley Manor Drive. The eastern portion of the route would also be visible to motorists and others on Hornbaker Road between the intersections with Willington Road and Zelkovia Drive. Through currently vegetated areas, the route would require significant vegetation removal, which would increase its visibility to nearby viewers including local residents. Through industrial/commercial areas, as well as several of the primary road crossings, the new infrastructure would generally be compatible with the existing level of development in the area. However, the height and scale of the new structures would make them more prominent on the landscape. Overall, Devlin-Pegasus Route 1 would have moderate impacts on visual resources in the Project study area.

Devlin–Pegasus Route 2

Devlin-Pegasus Route 2 follows much of the same route corridor as Devlin-Pegasus Route 1 except for a section that is generally between Virginia Meadows Drive and Sudley Manor Drive. In the shared corridor, the changes to and impacts on visual conditions would be the same as previously described for Devlin-Pegasus Route 1. In the area of the corridor that is unique to Devlin-Pegasus Route 2, the route deviates from the Route 1 by crossing and paralleling Wellington Road before rejoining the shared corridor to the east of Virginia Meadows Drive. This area has a mix of existing vegetated buffers and light industrial development. A significant amount of vegetation would be removed to facilitate construction and installation of the route, which would not only decrease the positive contributions of vegetation to the landscape but would also open views into neighboring areas that are currently screened by vegetation. Since much of this portion of the route parallels Wellington Road, it would be highly visible to motorists and also local residents living in the area (specifically residents of Arcadia Run). Similar Devlin-Pegasus Route 1, the new infrastructure associated with Devlin-Pegasus Route 2 would also generally be compatible with the existing level of development in the area, but the height and scale of the new structures would make them more prominent on the landscape compared to existing structures and other facilities. Overall, Devlin-Pegasus Route 2 would have moderate impacts on visual resources in the Project study area.

Wellington–Pegasus Route 1

Wellington-Pegasus Route 1 crosses an area that is primarily characterized by its road corridors. The route crosses and parallels portions of both Wellington Road and Hornbaker Road and also crosses Prince William Parkway. Vegetation would be cleared to facilitate construction and installation of the route. This would reduce the contribution of vegetation to the landscape and increase visibility of not only the route but also adjacent areas. While the height and scale of the new infrastructure would make the route prominent in the foreground, it is generally compatible with existing development in the area and motorists would be less sensitive to the new visual

intrusions on the landscape. Correspondingly, Wellington-Pegasus Route 1 would have minor impacts on visual resources in the Project study area.

Pegasus–Hornbaker Route 1

The transmission line infrastructure installed along Pegasus-Hornbaker Route 1 primarily passes through areas of light industrial/commercial development and through existing vegetated buffers. A small section passes next to a residential development (Abberly Avera Apartment Homes). The route would be most visible where it parallels or crosses through existing industrial complexes, as well as where it crosses University Boulevard and parallels Hornbaker Road. A significant amount of vegetation would be removed to facilitate construction and installation of the route. This would decrease the contributions of existing vegetation to the landscape and would also open views into neighboring areas that are currently screened by vegetation. The height and scale of the new transmission infrastructure will be prominent in the foreground but generally compatible with the existing level of development in the area. Additionally, viewer sensitivity to the changes from the route will likely be low since workers and motorists will make up most of the viewers and they tend to be less sensitive to visual change compared to other types of viewers. Overall, Pegasus-Hornbaker Route 1 would have minor impacts on visual resources in the Project study area.

Hourglass-Hornbaker Route 1 (Hybrid)

Hourglass-Hornbaker Route 1 includes an aboveground segment and transition station that is located along an existing light industrial/warehouse building and an underground segment that crosses two primary road corridors (Prince William Parkway and Hornbaker Road) and a light industrial/commercial area. Some existing vegetation would be cleared to facilitate construction and installation of both the above and underground segments of the route. This would slightly decrease the contributions of vegetation to the visual character of the area and would open views into adjacent areas, in particular along Prince William Parkway. The height and scale of the new aboveground infrastructure, including the transition station, would make them highly visible on the landscape but compatible with the adjacent warehouse building and other area development. Visual changes along the underground segment of the route will be minimal and primarily associated with vegetation removal. Overall, Hourglass-Hornbaker Route 1 would have minor impacts on visual resources in the Project study area.

Summary

Devlin-Pegasus Routes 1 and 2 would have moderate impacts while Wellington-Pegasus Route 1, Pegasus-Hornbaker Route 1, and Hourglass-Hornbaker Route 1 would have minor impacts on visual resources in the Project study area. The difference in impact level is primarily a factor of the increased viewer sensitivity along both Devlin-Pegasus routes. These routes pass by and would be visible to more residential areas compared to the other three routes. Local residents tend to have higher levels of sensitivity to visual changes and new visual intrusions on the landscape compared to other types of viewers. In general, the visual changes from all five routes would be most perceptible to the greatest number of viewers where they cross and/or parallel major road corridors in the Project study area.

Overall, while the transmission line infrastructure is anticipated to result in changes to existing visual conditions, the adverse impacts from construction and installation of the routes would range from minor to moderate because:

- Human influences and built structures (modifications to the landscape), including existing utility infrastructure, are common in the area;
- The Project study area has and continues to grow with a mix of commercial, industrial, and residential development and related infrastructure (e.g., roads, distribution lines, lights, signs, cell towers); and
- As noted previously, foreground views where the transmission route structures are most noticeable occur most frequently along major travel corridors. These areas already have a higher level of visual disturbance (i.e., human development) and also lower viewer sensitivity to additional changes in visual conditions.

5.4 CULTURAL RESOURCES

5.4.1 EXISTING CONDITIONS

ERM conducted a pre-application analysis (the analysis) of potential impacts on known cultural resources along and near the route alternatives under consideration (inclusive of the proposed Hornbaker Switching Station and the proposed transition station) in accordance with VDHR's *Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia* (Guidelines) (VDHR 2008). The analysis identified and considered previously recorded resources within the following study tiers as specified in the Guidelines:

- National Historic Landmarks (NHLs) within a 1.5-mile radius of each route centerline, including the variation;
- National Register of Historic Places (NRHP)–listed properties, NHLs, battlefields, and historic landscapes within a 1.0-mile radius of each route centerline, including the variation;
- NRHP-eligible and NRHP-listed properties, NHLs, battlefields, and historic landscapes within a 0.5-mile radius of each route centerline, including the variation; and
- Each of the above qualifying resource types and archaeological sites within the rights-of-way for each alternative route and the variation.

ERM collected data on previously recorded cultural resources within each study tier from VCRIS as well as the Prince William Historic Preservation Foundation (2024), Prince William County Historical Commission (2024), Prince William's Historic Landmarks (2025a), and Prince William County African-American History Trail (Prince William County Historic Landmarks 2025b) to find locally significant resources within a 1.0-mile radius of each route centerline and aboveground facility.

Many previously recorded aboveground cultural resources near the route alternatives have not been assessed to determine their NRHP eligibility, and therefore, are not included in the analysis per the Guidelines. These resources should be considered potentially eligible for listing in the NRHP until they are assessed and a determination of eligibility made by VDHR. Additionally, there

could be (likely are) unreported historic and archaeological resources along or near the route alternatives which could be affected by construction or operation of the Project. Any such resources would be addressed during an intensive cultural resources survey to be conducted along the routes certificated by the SCC in a subsequent phase of investigation to support Project permitting.

Along with the records review, ERM conducted field assessments of the applicable previously recorded aboveground historic resources in the study area as required by the Guidelines. ERM captured digital photographs of each resource with views toward the applicable route alternatives and/or aboveground facilities. ERM then prepared visual simulations (Appendix G) depicting the proposed Project infrastructure as it would appear in views from the architectural and historic resources to assess potential visual effects. For the previously recorded archaeological sites under consideration, ERM examined aerial photographs to assess the current land condition and spatial relationship between the sites and any existing or planned Project facilities. The remainder of this section presents the results of these assessments.

As discussed in more detail below, ERM identified five previously recorded archaeological sites within the rights-of-way of the route alternatives, and five previously recorded architectural/ historic resources within the study tiers described above.

5.4.2 ARCHAEOLOGICAL SITES AND FINDINGS

ERM considered crossings of archaeological sites to be a routing constraint due to the potential for the installation of electric transmission line infrastructure to impact archaeological deposits from structure placement, tree clearing, or equipment traffic within a site. Table 5.4-1 lists the known archaeological sites in the right-of-way for each route alternative and the associated switching station and transition station sites. A complete assessment of the integrity of each site would require archaeological field investigations, which as noted above, would be completed in a subsequent phase of studies for the Project along the routes certificated by the SCC.

Wellington–Pegasus Route 1 and Devlin–Pegasus Route 1 do not cross any previously recorded archaeological sites. The other route alternatives cross a combined total of five archaeological sites. A confident evaluation of the nature of archaeological deposits at each previously recorded site and impacts from prior land use activities would require a field survey to verify the desktop analysis. The subsections below provide an assessment of potential impacts on the sites by route alternative.

TABLE 5.4-1 ARCHAEOLOGICAL SITES WITHIN THE PROJECT RIGHTS-OF-WAY

Route Alternative [a]	Site Number	Description	NRHP Status
Pegasus–Hornbaker Route 1	44PW1221	Prehistoric lithic workshop	Unevaluated
Hourglass-Hornbaker Route 1 (Hybrid)	44PW1208	Prehistoric lithic workshop	Unevaluated
Devlin–Pegasus Route 2	44PW1454	Prehistoric lithic scatter/Historic (late 19th to mid-20th century) trash scatter	Unevaluated
	44PW1455	Historic (20th century) trash scatter	Unevaluated
	44PW1456	Historic (19th and 20th century) trash scatter	Unevaluated

NRHP = National Register of Historic Places.
[a] Devlin–Pegasus Route 1 and Wellington–Pegasus Route 1 do not cross previously recorded archaeological sites.

5.4.2.1 PEGASUS–HORNBAKER ROUTE 1

Pegasus–Hornbaker Route 1 crosses previously recorded archaeological Site 44PW1221, a prehistoric lithic workshop with an undetermined temporal affiliation whose NRHP-eligibility has not been determined (VDHR 2024a). A 2001 survey identified a non-diagnostic lithic artifact scatter with some subsurface integrity (Crowl 2001). Review of aerial photography, however, indicates the site area was cleared for use as a contractor yard and for data center construction sometime between 2019 and 2021 and continues to be used as such. Due to the extensive disturbance to the site area as documented in aerial photography, it is likely the site has been destroyed.

5.4.2.2 HOURGLASS-HORNBAKER ROUTE 1 (HYBRID)

The overhead segment of Hourglass–Hornbaker Route 1 crosses previously recorded archaeological Site 44PW1208, a prehistoric lithic workshop with an undetermined temporal affiliation whose NRHP-eligibility has not been determined (VDHR 2024b). A 2001 Phase I identified a non-diagnostic lithic artifact scatter with some subsurface integrity (Crowl 2001). Based on review of aerial photography, the site is beneath and likely was destroyed by construction of a data center facility.

5.4.2.3 DEVLIN–PEGASUS ROUTE 2

Devlin–Pegasus Route 2 crosses three previously recorded archaeological sites. Site 44PW1454 consists of a prehistoric lithic scatter with an unidentified temporal affiliation and historic (late 19th to mid-20th century) trash scatter whose NRHP-eligibility has not been determined (VDHR 2024c). A 2003 survey characterized the historic component of the site as a secondary dump noting that 44PW1454 is largely destroyed (Bryant 2003). Historic aerial photography shows that the site was plowed from at least 1937 to sometime between 2004 and 2006, after which it was converted to and currently remains planted pine. The previous survey and observations of aerial photography suggest the site may be destroyed.

Site 44PW1455 is a historic (20th century) trash scatter which has not been assessed to determine its eligibility for listing in the NRHP (VDHR 2024d). A 2003 Phase I survey associated the site with a former 20th century house but characterized 44PW1455 as largely destroyed (Bryant 2003). Review of aerial photography found that the site contained an apparent residential structure from at least 1937 to sometime between 2004 and 2006, after which the site was converted to and currently remains planted pine. The previous survey and observations of aerial photography suggest may be destroyed.

Site 44PW1456 is a historic (19th and 20th century) artifact scatter which has not been assessed to determine its eligibility for listing in the NRHP (VDHR 2024e). A 2003 Phase I survey characterized the site as a light surface trash scatter in a sod field noting that 44PW1456 is largely destroyed (Bryant 2003). Historic aerial photography shows the site was plowed from at least 1937 to sometime between 2004 and 2006, after which it was converted to and currently remains planted pine. The previous survey and observations of aerial photography suggest the site may be destroyed.

5.4.3 ABOVEGROUND HISTORIC RESOURCES AND ARCHITECTURAL SITES AND FINDINGS

Each route alternative reviewed in this study has the potential to affect aboveground historic sites. This section presents information on known aboveground cultural resources in the vicinity of each route alternative, using the VDHR's tiered study area model described above. Figure 5.4-1 depicts the locations of aboveground resources relevant to the route alternatives. The Appendix G, the Pre-application Analysis Report, provides individual descriptions of the resources. Some of the resources could be affected regardless of the solution selected by the SCC for the Project.

Table 5.4-2 provides a comparison of the number of resources impacted and the degree of impact on these resources for each route alternative. Based on desktop analysis and visual simulations prepared for the routes (see Appendix G), Wellington–Pegasus Route 1 passes near one historic resource meeting the VDHR criteria for inclusion in the study, Pegasus–Hornbaker Route 1 passes near two historic resources, Hourglass-Hornbaker Route 1 (Hybrid) passes near five historic resources, and Devlin–Pegasus Routes 1 and 2 each cross the same historic resource. None of the five routes pass within 1.5 mile of an NHL; therefore, this resource type is not further discussed.

As explained in more detail below, ERM recommends that:

- Wellington–Pegasus Route 1 would have a Moderate Impact on one resource.
- Pegasus–Hornbaker Route 1 (inclusive of the proposed Hornbaker Switching Station) would have No Impact on one resource and a Moderate Impact on one resource.
- Hourglass-Hornbaker Route 1 (Hybrid) would have No Impact on five resources.
- Devlin–Pegasus Route 1 would have a Moderate Impact on one resource.
- Devlin–Pegasus Route 2 would have a Moderate Impact on one resource.

The subsections below discuss the specific resources affected by each route alternative.

TABLE 5.4-2 NUMBER OF ABOVEGROUND HISTORIC RESOURCES AFFECTED BY ROUTE ALTERNATIVES

Route Alternative	No Impact	Minimal Impact	Moderate Impact	Severe Impact	Total
Wellington–Pegasus Route 1	0	0	1	0	1
Pegasus–Hornbaker Route 1	1	0	1	0	2
Hourglass-Hornbaker Route 1 (Hybrid)	5	0	0	0	5
Devlin–Pegasus Route 1	0	0	1	0	1
Devlin–Pegasus Route 2	0	0	1	0	1

5.4.3.1 WELLINGTON–PEGASUS ROUTE 1

One previously recorded historic resource (Second Battle of Manassas, 076-5190) meeting criteria specified in the Guidelines lies within the VDHR study tiers for Wellington–Pegasus Route 1 (Table 5.4-3). Analysis of visual simulations (see Appendix G) indicates that installation and operation of the transmission line would be visible from the resource resulting in a Moderate Impact on 076-5190, which covers an extensive area (about 17,000 acres) in Prince William County, as well as portions of Fairfax and Loudoun counties.

Transmission structures installed along this route would be highly visible from certain vantage points within the resource. The new transmission line would add prominent modern infrastructure to the viewshed. Although existing transmission lines and modern industrial, commercial, and residential development have altered the landscape and compromised its setting, use of Wellington–Pegasus Route 1 would introduce prominent, new, modern infrastructure to the viewshed from within the resource boundaries. Overall, however, the new transmission line would not significantly alter the resource due to the route's location within an area heavily altered by existing development, the large size of the resource, and the distance (approximately 2 miles) from the route to the portions of the battlefield where major action occurred during the battle. Thus, ERM recommends that use of Welling-Pegasus Route 1 for the Project would result in a Moderate Impact on 076-5190.

TABLE 5.4-3 HISTORIC RESOURCES IN VDHR TIERS FOR WELLINGTON–PEGASUS ROUTE 1

Buffer (miles)	Resource Category	Resource Number	Description	Impact
0.5 to 1.0	National Register Properties (listed)	NA	None Recorded	NA
	Locally Significant	NA	None Recorded	NA
0.0 to 0.5	National Register—eligible	NA	None Recorded	NA
	Locally Significant	NA	None Recorded	NA
	National Register—Potentially Eligible (Battlefields/Historic Landscapes)	076-5190	Second Battle of Manassas	Moderate

Buffer (miles)	Resource Category	Resource Number	Description	Impact
0.0 (within ROW)	National Register Properties (listed and eligible)	NA	None Recorded	NA

NA = not applicable; ROW = right-of-way; VDHR = Virginia Department of Historic Resources.

5.4.3.2 PEGASUS–HORNBAKER ROUTE 1

Two previously recorded historic resources (Manassas Station Operations Battlefield, 076-5036, and Second Battle of Manassas, 076-5190) meeting criteria specified in the Guidelines lie within the VDHR study tiers for Pegasus–Hornbaker Route 1 (Table 5.4-4). Based on simulations, transmission infrastructure installed along the route would not be visible from the Manassas Station Operations Battlefield (076-5036) due to intervening vegetation and distance—the resource lies approximately 0.8 mile south of the route. Consequently, use of Pegasus–Hornbaker Route 1 for the new Project transmission line would have No Impact on the resource.

The southwestern boundary of the Second Battle of Manassas (076-5190) is approximately 700 feet north of Pegasus–Hornbaker Route 1 at MP 0.0. Based on simulations, ERN concluded the route's transmission line structures would likely only be visible from the resource during leaf off seasons. Although existing transmission lines and modern industrial, commercial, and residential development have altered the landscape and compromised the southern viewshed of the resource, the route would introduce prominent, new, modern infrastructure to the landscape. Overall, however, due to the location of the route within an area already heavily altered by development, the size of the resource (about 17,000 acres), and the distance (approximately 2 miles) from the route to the portions of the battlefield where major action occurred, the new transmission line would not significantly alter the resource. Thus, ERM recommends that there would be a Moderate Impact on this resource from use of Pegasus–Hornbaker Route 1 for the new transmission line.

TABLE 5.4-4 HISTORIC RESOURCES IN VDHR TIERS FOR PEGASUS–HORNBAKER ROUTE 1

Buffer (miles)	Resource Category	Resource Number	Description	Impact
0.5 to 1.0	National Register Properties (listed)	NA	None Recorded	NA
	National Register—Potentially Eligible (Battlefields/Historic Landscapes)	076-5036	Manassas Station Operations Battlefield	No Impact
0.0 to 0.5	National Register—eligible	NA	None Recorded	NA
	Locally Significant	NA	None Recorded	NA
	National Register—Potentially Eligible (Battlefields/Historic Landscapes)	076-5190	Second Battle of Manassas	Moderate
0.0 (within ROW)	National Register Properties (listed and eligible)	NA	None Recorded	NA

NA = not applicable; ROW = right-of-way; VDHR = Virginia Department of Historic Resources.

5.4.3.3 HOURGLASS-HORNBAKER ROUTE 1 (HYBRID)

Five previously recorded historic resources that meet the criteria specified in the Guidelines lie within the VDHR study tiers for Hourglass-Hornbaker Route 1 (Hybrid) (Table 5.4-5): Thomasson Barn (076-0285), Manassas Station Operations Battlefield (076-5036), Second Battle of Manassas (076-5190), First Battle of Manasses (076-5335), and Cannon Branch Fort (155-5020). Use of the route for the new transmission line would have No Impact on all five resources.

Hourglass-Hornbaker Route 1 would be installed in an underground configuration from just east of Prince William Parkway west to the Hornbaker Switching Station. None of the infrastructure associated with this segment of the route would be visible from any architectural or historic resources. The remaining segment of Hourglass-Hornbaker Route 1 would be installed in an overhead configuration. Although the overhead segment of Hourglass-Hornbaker Route 1 (Hybrid) would introduce new and modern infrastructure to the landscape within the resource boundaries, existing transmission lines and modern industrial, commercial, and residential development have altered the landscape and compromised the southern viewshed of this resource. Moreover, as shown in the simulations prepared for this resource, no Project infrastructure would be visible from the resources based on the simulations. Thus, ERM recommends that construction and operation of the Project along Hourglass-Hornbaker Route 1 would have No Impact on the five resources.

TABLE 5.4-5 HISTORIC RESOURCES IN VDHR TIERS FOR HOURGLASS-HORNBAKER ROUTE 1 (HYBRID)

Buffer (miles)	Resource Category	Resource Number	Description	Impact
0.5 to 1.0	National Register Properties (listed)	155-5020	Cannon Branch Fort	None
	National Register—Potentially Eligible (Battlefields/Historic Landscapes)	076-5190	Second Battle of Manassas	None
		076-5335	First Battle of Manassas	None
	Locally Significant	NA	None Recorded	NA
0.0 to 0.5	National Register—eligible	076-0285	Thomasson Barn	None
	Locally Significant	NA	NA	NA
	National Register—Potentially Eligible (Battlefields/Historic Landscapes)	076-5036	Manassas Station Operations Battlefield	None
0.0 (within ROW)	National Register Properties (listed and eligible)	NA	None Recorded	NA

NA = not applicable; ROW = right-of-way; VDHR = Virginia Department of Historic Resources.

5.4.3.4 DEVLIN–PEGASUS ROUTES 1 AND 2

One previously recorded historic resource, the Second Battle of Manassas (076-5190), meeting the criteria specified in the Guidelines lies within the VDHR study tiers for Devlin–Pegasus

Routes 1 and 2, which share a common alignment in this area (Table 5.4-6). The common alignment runs parallel to, outside of, and within the southeastern boundary of the resource. The areas transected by the route currently consist of commercial and residential developments and some areas with tall trees. The routes would require noticeable tree clearing, making transmission structures highly visible from some areas within the resource. Although existing transmission lines and modern industrial, commercial, and residential development have altered the landscape and compromised the southern portion and resource's viewshed, use of the route for the new transmission line route would introduce prominent, new, modern infrastructure to the landscape. Existing development would obstruct some views of the routes within the resource.

Overall, due to the location of the routes within an area already heavily altered by development, the size of the resource (17,000 acres), and the distance (approximately 2 miles) from the route to the portions of the battlefield where major action occurred, the new transmission line would not significantly alter the resource or its viewshed. Therefore, ERM recommends that use of Devlin–Pegasus Routes 1 or 2 for the new transmission would result in a Moderate Impact on the resource.

TABLE 5.4-6 HISTORIC RESOURCES IN VDHR TIERS FOR DEVLIN–PEGASUS ROUTE 1

Buffer (miles)	Resource Category	Resource Number	Description	Impact
0.5 to 1.0	National Register Properties (Listed)	NA	None Recorded	NA
0.0 to 0.5	National Register—Eligible	NA	None Recorded	NA
	Locally Significant	NA	None Recorded	NA
0.0 (within ROW)	National Register Properties (Listed and Eligible)	NA	None Recorded	NA
	National Register—Potentially Eligible (Battlefields/Historic Landscapes)	076-5190	Second Battle of Manassas	Moderate

NA = not applicable; ROW = right-of-way; VDHR = Virginia Department of Historic Resources.

5.4.4 SUMMARY OF EXISTING DATA COLLECTED UNDER SECTION 106 OR 110 OF THE NATIONAL HISTORIC PRESERVATION ACT

Some portions of the routes and associated facilities were previously surveyed for cultural resources. Research indicates that 30 prior Phase I cultural resource surveys have been conducted within 0.5 mile of the route alternatives, including 10 that overlap portions of the route alternatives. Because some route alternatives share common alignment segments or are located near each other, some of the previous surveys have covered portions of multiple routes. Table 5.4-7 provides information on the previous surveys crossed by one or more of the route alternatives. Figure 5.4-2 depicts locations of these survey areas.

TABLE 5.4-7 CULTURAL RESOURCE SURVEYS COVERING PORTIONS OF THE PROJECT

VDHR Survey #	Title	Author(s)	Date
PW-041	Phase I Cultural Resources Survey of the Proposed Manassas Bypass, Route 234, Prince William County, Virginia	Douglas C. McLearen, Katharine E. Harbury	1988
PW-067	Supplemental Phase I Archaeological Survey of Design Changes in Ramps and Cloverleaf in Four Locations Along Rt. 234 in Manassas	Robin L. Ryder, F.T. Barker	1992
PW-158	Prince William Innovation: Phase I Archaeological Survey and Architectural History Reconnaissance Survey of the Proposed PWC Innovation Business Park, Prince William County, Virginia	Heather Crowl, David Rotenstein, Susan Travis, Richard Vidutis	2002
PW-228	Phase I Archaeological Survey for the Proposed Sudley Manor Drive Public-Private Transportation Act (PPTA) Project, Prince William County, Virginia	Michael B. Hornum, Martha Williams	2005
PW-303	Phase I Archeological Investigations of the Circa 9 Acre Ziegler Property, Prince William County, Virginia	Curt Breckenridge	2006
PW-380	Cultural Resources Survey for the Proposed University Boulevard Extension Project, Prince William County, Virginia	Joe B. Jones, Jerrell Blake, Jr.	2011
PW-442	Archaeological Survey of the 22.9 Acre Buckeye Timber, LLC Property, Prince William County, Virginia	Kerry Schamel-González	2008
PW-560	Independence Parcels A and B, Prince William County, Virginia, Phase I Cultural Resources Investigation	Jeremy Smith, Thomas Cuthbertson, Vincent Gallacci	2018
PW-561	Phase I Cultural Resources Survey of the ±42.8-Hectare (106-Acre) Wellington Road (Innovation Town Center) Property, Prince William County, Virginia	Arthur Striker, Cara Metz, Dara Friedberg	2016
PW-613	11951 Sudley Manor Drive, Prince William County, Virginia: Phase I Cultural Resources Investigation	Jeremy Smith, Rebekah Yousaf, Edward McMullen	2019

VDHR = Virginia Department of Historic Resources.

5.5 ENVIRONMENTAL JUSTICE

The purpose of an EJ desktop review is to determine if construction or operation of the Project could result in disproportionate and adverse impacts on environmental justice (EJ) populations, including populations of color (inclusive of linguistically isolated communities) or low-income populations. This review is consistent with federal and state guidance and statutes as well as the 2018 *Guidance for Electric Transmission's Implementation of Dominion's Environmental Justice Policy* document.

5.5.1 EJ METHODOLOGY

Federal guidelines for EJ analyses (USEPA 2016a) require identification and evaluation of disproportionately high or adverse impacts on populations of color (i.e., who are non-white, or who are white but have Hispanic ethnicity) when these populations represent over 50 percent of the population of an affected area; or when the percentage of populations of color or low-income populations in the affected area is "meaningfully greater" than the population of color percentage or low-income population percentage in the "reference population." Low-income populations are those that fall within the annual statistical poverty thresholds from the U.S. Bureau of the Census, Population Reports, Series P-60 on Income and Poverty (USEPA 2016b). The "meaningfully greater" criterion is usually interpreted as a population 10–20 percent greater than the minority or low-income population of the state or county (the "reference" population) where the subject population resides.[5]

The Commonwealth of Virginia has its own EJ guidelines, which supersede federal guidelines. The guidelines established in the Virginia Environmental Justice Act (VEJA) of 2021 (Va. Code § 2.2-234 through 2.2-235) are more stringent than federal guidelines. As such, this report uses the Commonwealth's guidelines. The VEJA defines "Environmental Justice" and "Environmental Justice Community" as follows (Va. Code § 2.2-234):

- "Environmental Justice" means the fair treatment and meaningful involvement of every person, regardless of race, color, national origin, income, faith, or disability, regarding the development, implementation, or enforcement of any environmental law, regulation, or policy.
- "Fair treatment" means the equitable consideration of all people whereby no group of people bears a disproportionate share of any negative environmental consequence resulting from an industrial, governmental, or commercial operation, program, or policy.
- "Meaningful involvement" means the requirements that (i) affected and vulnerable community residents have access and opportunities to participate in the full cycle of the decision-making process about a proposed activity that will affect their environment or health and (ii) decision makers will seek out and consider such participation, allowing the views and perspectives of community residents to shape and influence the decision. "Environmental Justice Community" means any low-income community, population of color, or community of color.

Based on the VEJA guidelines, EJ communities are identified in this report using the criteria described below.

Racial/Ethnic Composition:

- The percent of population of color in the analysis area is over the Commonwealth average of 41 percent; OR

[5] For more information on the federal guidelines for EJ analysis, please see the March 2016 report from the Federal Interagency Working Group on Environmental Justice and NEPA Committee "Promising Practices for EJ Methodologies in NEPA Reviews" accessible at: https://www.epa.gov/sites/default/files/2016-08/documents/nepa_promising_practices_document_2016.pdf.

- The percent of any racial or ethnic group that is not “white alone” in the population for the analysis area is greater than the Commonwealth average for that racial or ethnic group (i.e., “community of color”); OR
- The percent of the population in the analysis area considered linguistically isolated is greater than the Commonwealth average of 3 percent.

Low-Income:

- The share of households making less than 200 percent of the Federal Poverty level and less than or equal to 80 percent of the median household income of the analysis area is greater than 30 percent (Va. Code § 2.2-234).

ERM used the Census Block Group (CBG) as the primary geographic unit for this EJ analysis, because it is the smallest unit for which U.S. Census Bureau demographic data are available, providing information at a sub-county level. ERM collected demographic data from the U.S. Census Bureau American Community Survey, 5 Year Estimates (2018–2022) (U.S. Census Bureau 2023d and 2023e). Demographic and socioeconomic data for CBGs in the study area are depicted on Figure 5.5-1.

While the Commonwealth of Virginia is the reference population for this analysis, ERM also considered data for Prince William County and the Independent City of Manassas in the review to assess regional demographic variations. ERM compared Commonwealth-wide demographic data with individual CBGs to help identify the presence of potential EJ populations. For example, if the reported percentage of population of color within an individual CBG is greater than the percentage of population of color in Virginia as a whole (40 percent), then ERM identified a potential EJ population in that CBG.

This EJ analysis also assesses the potential for other socioeconomic indicators to identify areas that may have higher environmental burdens and vulnerable populations when considered in combination with demographic and socioeconomic information meeting the EJ criteria and definition under the VEJA. These other indicators include education attainment (the percent of people over age 25 in a CBG with less than a high school education) and age-based vulnerabilities (i.e., the percent of people in a CBG under age 5 or over age 64). There is no equivalent VEJA definition for these groups; therefore, ERM used the Federal guidance of a meaningfully greater threshold to identify these communities. Specifically, a CBG is considered to contain a potential age-based vulnerable community (or community with low education attainment) when the percentage of the population either below age 5 or above age 64 (or with less than a high school education) exceeds twice the corresponding state averages.

5.5.2 EXISTING CONDITIONS

The EJ study area for all the routes extends beyond the areas where Project components directly intersect with communities. ERM’s desktop review suggests that construction and operation of the Project components could potentially affect EJ communities within approximately 1.0 mile of proposed Project facilities (including those directly within the footprint). This 1.0-mile radius is the EJ study area for each route alternative and for Project as a whole. Table 5.5-1 summarizes demographic data for CBGs and identifies potential EJ communities within this radius. Of the

27 CBGs within 1.0 mile of Project facilities, 23 contain at least one community that meets the EJ criteria described in Section 5.5.1. The Project's footprint overlaps 7 CBGs, 5 of which contain potential EJ communities.

The route evaluation relies on the VEJA criteria; however, some CBGs that are not officially classified as EJ communities may still contain smaller pockets of these populations. For example, a CBG may not exceed the VEJA thresholds but could come very close to them. These communities may also warrant consideration as the Project progresses.

5.5.3 IMPACT ASSESSMENT

Based on the EJ criteria thresholds for race, ethnicity, income, and limited English-speaking households described in Section 5.5.1, ERM identified potential EJ communities crossed by or within the EJ study area for each of the Project's route alternatives. This includes 23 CBGs (out of 27 in the 1.0-mile radius), of which 8 are crossed by one or more route alternatives.

Table 5.5-2 summarizes the relationship of the route alternatives to these potential EJ communities, as well as the specific EJ considerations for each route, and the potential public perception of each route's EJ impact.

As part of the regulatory review process, Dominion will complete an evaluation of potential environmental, cultural, and historical impacts of the Project on the selected route for the Project. Dominion will continue to engage with local and state agencies to complete these evaluations and mitigate any impacts from construction. In addition, Dominion will obtain all required environmental permits and comply with applicable permit conditions. Dominion anticipates that environmental impacts generally will be mitigated through design and construction best practices.

In assessing whether a community would bear a disproportionate impact of the Project, ERM considered temporary construction impacts, visual impacts, property devaluation, and health impacts related to electromagnetic fields (EMF), as discussed in the subsections below.

TABLE 5.5-1 DEMOGRAPHC AND SOCIOECONOMIC INDICATORS IN THE 1-MILE EJ ANALYSIS AREA

Area of Analysis	Population	Total Populations of Color (%)	White, non-Hispanic (%)	Black or African American (%)	American Indian and Alaska Native (%)	Asian (%)	Pacific Islander (%)	Some Other Race Alone (%)	Two or More Races (%)	Hispanic or Latino (%)	Low-Income Population (%)	Limited English-Speaking Household (%)	Population with Less than High School Education (%)	Population Under Age 5 (%)	Population Over Age 64 (%)	Route Alternatives Within 1.0 mile
Virginia	8,657,499	41	59	18	0.1	7	0.1	0.5	4	11	23	3	9	6	16	
Prince William County	481,114	60	40	20	0.1	10	0.1	0.3	5	25	17	6	10	7	10	
Manassas City	42,620	62	38	13	0.1	6	0.0	0.4	4	39	16	9	14	8	11	
CT 9014.03 BG 2	720	24	76		0.0	3	0.0	1.8	0	14	0	4	6	1	8	DP1, DP2, HH
CT 9014.03 BG 2	1,619	66	34	33	0.0	23	0.0	1.4	5	3		6	4	1	3	PH, WP
CT 9014.03 BG 4	1,753	68	32	22	0.0	6	0.0	1.5	3	35	3	14	3	9	2	DP1, DP2, PH, WP
CT 9014.04 BG 2	1,004	56	44	3	0.0	9	0.0	0.0	15	29	22	4	8	10	14	HH
CT 9014.07 BG 2	1,962	78	22	11	0.0	14	0.0	0.0	13	3	27	14	17	8	5	WP
CT 9014.09 BG 1	**34**	**12**	**88**	**12**	**0.0**	**0**	**0.0**	**0.0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**DP1, DP2, HHU, PH, WP**
CT 9014.09 BG 2	2,927	48	52	10	0.0	10	0.0	0.0	3	24	9	11	17	5	4	DP1, DP2, HH, PH, WP
CT 9014.09 BG 3	16	100	0	100	0.0	0	0.0	0.0	0	0	10	0	0	0	100	PH, HH
CT 9014.09 BG 4	1,333	54	46	33	0.0	11	0.0	0.0	4	5	4	5	0	8	3	PH, HH
CT 9014.09 BG 5	**0**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**DP2, PH, WP**

Area of Analysis	Population	Total Populations of Color (%)	White, non-Hispanic (%)	Black or African American (%)	American Indian and Alaska Native (%)	Asian (%)	Pacific Islander (%)	Some Other Race Alone (%)	Two or More Races (%)	Hispanic or Latino (%)	Low-Income Population (%)	Limited English-Speaking Household (%)	Population with Less than High School Education (%)	Population Under Age 5 (%)	Population Over Age 64 (%)	Route Alternatives Within 1.0 mile
CT 9014.09 BG 6	**2,078**	**65**	**35**	**39**	**0.0**	**9**	**0.0**	**0.0**	**16**	**2**	**41**	**0**	**5**	**5**	**7**	**HHU, PH**
CT 9014.09 BG 7	**2,374**	**65**	**35**	**26**	**0.0**	**13**	**0.0**	**0.0**	**2**	**24**	**13**	**11**	**6**	**5**	**9**	**DP1, DP2, PH, WP**
CT 9014.09 BG 8	**284**	**78**	**22**	**24**	**0.0**	**42**	**0.0**	**0.0**	**9**	**4**	**7**	**0**	**0**	**0**	**0**	**DP1, DP2, HH, mod PH, WP**
CT 9014.15 BG1	1,495	44	56	8	0.0	4	0.0	0.0	2	30	0	0	7	9	3	PH
CT 9014.16 BG 2	2,240	26	74	13	0.0	6	0.0	0.4	2	4	41	28	0	9	2	PH
CT 9014.16 BG 3	960	31	69	6	2.5	2	0.0	0.0	4	16	3	0	0	6	7	PH
CT 9014.18 BG 2	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	DP1, DP2, WP
CT 9014.18 BG 3	3,057	83	17	39	0.0	0	0.0	0.0	2	41	13	6	14	12	9	DP1, DP2, PH, WP
CT 9014.19 BG 1	3,837	87	13	19	0.0	7	0.0	0.0	2	59	49	22	26	12	5	WP
CT 9014.20 BG 1	2,207	53	47	28	0.0	8	0.0	0.0	4	14	3	2	5	6	5	DP1, DP2, PH, WP
CT 9014.20 BG 2	**2,121**	**34**	**66**	**8**	**0.0**	**12**	**0.0**	**0.0**	**1**	**13**	**15**	**3**	**8**	**6**	**5**	**DP1, DP2, PH, WP**
CT 9014.21 BG 1	2,848	45	55		0.0	5	0.0	0.0	5	29	3	0	6	11	5	DP1, DP2, PH
CT 9014.21 BG 2	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	DP1, DP2
CT 9014.21 BG 3	**2,568**	**38**	**62**	**18**	**0.0**	**10**	**0.0**	**0.0**	**1**	**10**	**1**	**2**	**3**	**13**	**5**	**DP1, DP2**
CT 9104.02 BG 5	734	47	53	14	0.0	21	0.0	0.0	2	10	8	0	3	5	8	PH

Area of Analysis	Population	Total Populations of Color (%)	White, non-Hispanic (%)	Black or African American (%)	American Indian and Alaska Native (%)	Asian (%)	Pacific Islander (%)	Some Other Race Alone (%)	Two or More Races (%)	Hispanic or Latino (%)	Low-Income Population (%)	Limited English-Speaking Household (%)	Population with Less than High School Education (%)	Population Under Age 5 (%)	Population Over Age 64 (%)	Route Alternatives Within 1.0 mile
CT 9104.02 BG 4	2,773	50	50	8	0.0	3	0.0	0.0	1	38	6	0	11	5	15	HH
CT 9104.02 BG 5	734	47	53	14	0.0	21	0.0	0.0	2	10	8	0	3	5	8	HH

Sources: U.S. Census Bureau 2023a, 2023b, and 2023c (Tables B01001, B3002, B15002, C17002, C16002).

BG = census block group; CT = census tract; DP1 = Devlin–Pegasus Route 1; DP2 = Devlin–Pegasus Route 2; EJ = environmental justice; HH = Hourglass–Hornbaker Route (Overhead); HHU = Hourglass–Hornbaker Route (Underground); NA= not applicable: no population in the CBG (open space, industrial, or other non-residential area); PH = Pegasus–Hornbaker Route; WP = Wellington–Pegasus Route.

Bold text indicates a CBG crossed by one or more of the Project's route alternatives. **Bold-underline** text in the Route Alternatives Within 1.0 Mile column indicate which route alternatives cross the CBG directly.

Gray shaded cells indicate reference population.

Blue shaded cells indicate populations of color, including communities of color composed primarily of one of the groups listed in the VEJA definition of "population of color" or the analysis area has a greater percentage of a community of color than the state as a whole.

Green shaded cells indicate low-income populations.

Yellow shaded cells indicate populations with language barriers.

Orange shaded cells indicate populations over age 24 with less than high school education.

Purple shaded cells indicate under age 5 or over age 64 population.

TABLE 5.5-2 SUMMARY OF EJ IMPACTS BY ROUTE ALTERNATIVE

Route Alternative	CBGs Within 1.0 mile (EJ Communities) [a]	Potentially Impacted EJ Communities [b c]	Special Considerations	Potential Impact Perception
Wellington–Pegasus Route 1	13 (10)	• 9 population of color • 1 community of color • 1 low income • 7 limited English-speaking • 1 less than High School Education	The 1.0-mile buffer for this route includes all 7 CBGs with limited English-speaking households, as well as the only CBG that meets education attainment criteria for EJ.	Perception of impacts could be higher due to language constraints.
Pegasus–Hornbaker Route 1	18 (16)	• 13 population of color • 2 community of color • 2 low income • 6 limited English-speaking	This route affects (but does not cross) the only CBG in the EJ study area that has 100% people of color.	Largest number of CBGs that meet EJ criteria. Perceptions of impacts could be as a result.
Hourglass-Hornbaker Route 1 (Hybrid)	10 (9)	• 8 population of color • 1 community of color • 1 low income • 1 limited English-speaking	This route affects (but does not cross) the only CBG in the EJ study area that has 100% people of color.	The potential EJ communities affected by this route would be crossed by the underground segment of the route, which could reduce perceived impacts
Devlin–Pegasus Route 1	14 (10)	• 10 population of color • 1 community of color • 4 limited English-speaking • 1 age-related (<5 years old)		
Devlin–Pegasus Route 2	14 (10)	• 7 population of color • 3 communities of color • 4 limited English-speaking • 1 age-related (<5 years old)		This route crosses the fewest CBGs that meet EJ criteria, which could reduce perceived impacts.

CBG = U.S. Census block group; EJ = environmental justice.

[a] "EJ Communities" means a CBG that meets at least one EJ criterion (Table 5.5-1).

[b] Includes all CBGs with potential EJ populations within 1.0 mile of the route alternative. Some CBGs meet more than one EJ criterion (Table 5.5-1).

[c] A population of color is a CBG where at least one racial, ethnic, or limited English-speaking population exceeds EJ criteria. A community of color is a CBG where the Total Population of Color exceeds EJ criteria.

5.5.3.1 CONSTRUCTION ACTIVITIES

Impacts associated with Project construction would be temporary, lasting less than a year. Regardless of the route selected, Construction activity and crews would be present at a particular location during daytime hours for a few to several days at a time, on multiple occasions throughout the construction period between initial right-of-way clearing and final restoration.

Various regulations, industry standards, and BMPs will guide construction and restoration of the right-of-way. The short-term impacts of construction could include equipment noise, dust, potential changes in traffic patterns, and general ground disturbance. All these impacts would be short term and temporary.

Noise is generally defined as unwanted sound. The primary noise receptors in the study area would be any residences within 500 feet of the centerline of the routes (see Section 5.1.5), Chris Yung Elementary School, and Victory Elementary School. During construction, temporary, localized noise from heavy equipment and increased vehicle traffic may occur during daytime hours. Exceedances of daytime noise limits are not expected; if they occur, the exceedances would be temporary.

During construction, Dominion would minimize ground-disturbing activities to the extent practicable. Following construction, Dominion would remove construction-related equipment and debris from the right-of-way and restore the land within the right-of-way as closely as possible to preconstruction conditions. Dominion would maintain the right-of-way with herbaceous cover during operations.

5.5.3.2 VISUAL IMPACTS

Section 5.3 assesses the Project's visual impacts. Because nearly of the CBGs in the EJ study area contain sensitive populations, many of the KOPs used in the analysis of visual impacts represent views from potential EJ communities. Dominion minimized visual impacts by identifying route alignments that are most compatible with the landscape. Mitigation measures include avoiding unique viewsheds, placing structures to take advantage of natural screening (e.g., tall trees), and avoiding the placement of structures directly in front of residences. Overall, visual impacts from the Project would be overall minor to moderate although the visual impacts from some individual locations would be more substantial (see Section 5.3).

5.5.3.3 PROPERTY VALUES

Affected communities and landowners often express concern that the presence of transmission lines in the viewshed of homes could adversely affect aesthetics, resulting in the reduction of property values and deterring potential buyers. Indirect impacts on property values caused by direct visual impacts from high-voltage transmission lines (i.e., lines carrying more than 69 kV) depend on proximity, visibility, size, and type of transmission structures; easement landscaping; and surrounding topography. Peer-reviewed articles and industry research published in peer-reviewed journals and trade journals find that residential property values and sales prices are primarily affected by factors unrelated to the presence of a transmission line. Specifically, this research found that factors such as location, type, and condition of improvements to the property;

neighborhood characteristics; and broader local real estate market conditions have a greater influence on the value of residential property than the presence of a transmission line (Jackson and Pitts 2010; Anderson et al. 2017).

5.5.3.4 HEALTH IMPACTS

The conclusions of multidisciplinary scientific review panels assembled by national and international scientific agencies during the past three decades are the foundation of Dominion's opinion that no adverse health impacts are anticipated to result from the operation of transmission infrastructure, including the Project. The general scientific consensus of agencies that have reviewed this research, relying on generally accepted scientific methods, is that common sources of EMFs in the environment, including from transmission lines and other parts of the electric system, appliances, etc., are not a cause of any adverse health impacts.[6]

Dominion relies on information about EMF from state, federal, and international health and scientific agencies. Research on EMF and human health varies widely in approach. Some studies evaluate the impacts of high, short-term EMF exposures not typically found in people's day-to-day lives on biological responses, while others evaluate the impacts of common, lower EMF exposures found throughout communities. Studies also have evaluated the possibility of impacts (e.g., cancer, neurodegenerative diseases, and reproductive impacts) of long-term exposure. Altogether, this research includes well over 100 epidemiologic studies of people in their natural environment, and many more laboratory studies of animals (in vivo) and isolated cells and tissues (in vitro).

Numerous scientific and health agencies have conducted reviews of EMF-related biological and health research, such as the European Health Risk Assessment Network on Electromagnetic Fields Exposure, the International Commission on Non-Ionizing Radiation Protection, the World Health Organization, the Institute of Electrical and Electronics Engineers International Committee on Electromagnetic Safety, the Scientific Committee on Emerging and Newly Identified Health Risks of the European Commission, and the Swedish Radiation Safety Authority (formerly the Swedish Radiation Protection Authority) (WHO 2007; SCENIHR 2009, 2015; ICNIRP 2010; SSM 2015, 2016, 2018, 2019, 2020, 2021, 2022; ICES 2019).

Expert panels, such as those above, that are assembled by agencies to identify, review, and summarize the result of this large and diverse research use standard scientific procedures, such as weight-of-evidence methods. The general scientific consensus of the agencies and panels that have reviewed this research, relying on generally accepted scientific methods, is that the scientific evidence does not confirm that common sources of EMF in the environment—including electric transmission lines and other parts of the electric system, appliances, etc.—are a cause of any adverse health impacts (WHO 2007; SCENIHR 2009, 2015; ICNIRP 2010; SSM 2015, 2016, 2018, 2019, 2020, 2021, 2022; ICES 2019).

All the routes in this study contain EJ communities. While this consensus suggests that EMF exposure from transmission infrastructure does not pose health hazards, Dominion recognizes the importance of addressing community concerns, particularly in EJ communities. These communities

[6] More information on Dominion's opinion can be found at https://www.dominionenergy.com/projects-and-facilities/electric-projects/emf (Dominion Energy 2024).

may face heightened sensitivity to infrastructure projects due to historical inequities of cumulative environmental burdens.

5.6 GEOLOGICAL AND MINERAL RESOURCES

5.6.1 GEOLOGICAL RESOURCES

The study area is within the Piedmont geologic province, which lies between the mountainous Blue Ridge province to the west and the terraced slopes of the Coastal Plain province to the east. The Piedmont province is characterized by rolling topography, thick soils, and heavily weathered bedrock primarily caused by the region's humid climate. The Piedmont province consists of several complex geologic terranes where faults separate the rock units with variable igneous and metamorphic histories. Based on review of the Geologic Map of Virginia, the Project is situated within the Chopawamsic-Milton Terrane, near the transitional boundary of the Coastal Plain province to the east (William and Mary Department of Geology 2024).

Each of the Project route alternatives are within areas of bedrock composed of interbedded shale and siltstone belonging to the Newark Supergroup and Jurassic-aged volcanics (diabase). The only route alternative that does not transect both geologic units is the Wellington–Pegasus Route 1, which only encounters the diabase bedrock unit.

5.6.2 MINERAL RESOURCES

ERM reviewed publicly available Virginia Department of Energy datasets (2023), USGS topographic quadrangles, and recent (2023) digital aerial photographs to identify mineral resources in the study area. Based on this review, one active mining site, the Manassas Quarry, was identified within 0.25 mile of the Project. The Manassas Quarry is located approximately 700 feet northeast of Wellington–Pegasus Route 1 at MP 0.0.

5.6.3 IMPACT ASSESSMENT

Although Manassas Quarry is within 0.25 mile of the Project, none of the route alternatives cross or are within 500 feet of this mine. As a result, the Project would have no impact on the mine.

6. ANALYSIS OF ALTERNATIVE SOLUTIONS

ERM identified the route alternatives discussed in this report based on the geography of major constraints and routing opportunities in the study area relative to the Project's purpose and need. As discussed in Section 4.5, the routes can be combined into two electrical solutions each of which would serve the Project need. Within each solution, the Company identified two options (each a grouping of three route alternatives), listed below.

- Solution 1A: Wellington–Pegasus Route 1, Pegasus–Hornbaker Route 1, and Devlin–Pegasus Route 1
- Solution 1B: Wellington–Pegasus Route 1, Pegasus–Hornbaker Route 1, and Devlin–Pegasus Route 2
- Solution 2A: Hourglass-Hornbaker Route 1 (Hybrid), Pegasus–Hornbaker Route 1, and Devlin–Pegasus Route 1
- Solution 2B: Hourglass-Hornbaker Route 1 (Hybrid), Pegasus–Hornbaker Route 1, and Devlin–Pegasus Route 2

Figures 6.1-1 through 6.1-4 identifies the two options for each solution.

The Features Crossing Table, provided as Appendix C, lists the resources crossed by each solution. The subsections below provide a comparative discussion of resource impacts by solution.

6.1 LAND USE

The Project's impacts on land use include the placement of transmission structures on private property, visual impacts on residences within proximity of the transmission facilities, visual and other impacts on recreational resources, changes in land cover types (especially the conversion of forest to open land), and temporary road closures due to construction at road crossings. Potential impacts on land use from each route alternative are assessed below.

6.1.1 LENGTHS, FOOTPRINTS, AND PARCELS CROSSED

Table 6.1-1 summarizes the lengths, right-of-way footprints, and number of parcels crossed by each solution. Solution 1A is the shortest overall route and similarly requires the smallest. Solutions 1A and 1B each cross 7 fewer parcels than Solutions 2A and 2B. Thus, Solution 1A is shortest, has the smallest footprint, and crosses the fewest parcels, whereas Solution 2B is longest with the largest footprint and most parcels crossed.

TABLE 6.1-1 LENGTH, FOOTPRINT, AND PARCELS CROSSED FOR EACH SOLUTION

Environmental Feature	Unit	Solution 1A	Solution 1B	Solution 2A	Solution 2B
Centerline Length	miles	4.9	5.3	5.6	6.0
Construction Footprint [a]	acres	60.5	65.4	70.2	75.1
Parcels Crossed	number	71	71	78	78

[a] Inclusive of the proposed Hornbaker Switching Station and Hourglass–Hornbaker transition station (Solutions 2A and 2B only).

6.1.2 LAND OWNERSHIP

The Project would not cross any federal- or state-owned lands; however, each solution crosses County-owned parcels, including 7 each by Solutions 1A and 1B and 10 each by Solutions 2A and 2B. All County owned land crossed by Solutions 1A and 1B consists of planned road rights-of-way, which would be deeded to VDOT in the future. The underground segment of Solutions 2A and 2B would cross four County-owned parcels administered by the County's Economic Development Department. The County is marketing—or plans to market—these parcels for future development.

6.1.3 LAND USE AND LAND COVER

Except for the placement of transmission structures, the Project would have no direct impacts on open space, developed land, or open water. The primary impact on land use/cover types would be the conversion of forest to herbaceous land in the maintained right-of-way for the solution chosen for the Project. Based on recent (2023) aerial imagery, Solution 1A crosses the least forested land (19.4 acres)—2.5 acres, 1.4 acres, and 3.9 acres less than Solutions 1B, 2A, and 2B, respectively. Section 6.2 discusses impacts on forests.

6.1.4 RESIDENTIAL AND NON-RESIDENTIAL BUILDINGS

The Project would not directly impact any residences. There are substantially more residences within 250 feet and 500 feet of the Solution 2A and 2B centerlines (26 and 98, respectively) than the Solution 1B and 2B centerlines (8 and 40, respectively).

No residences are within 100 feet of the route centerlines for Solutions 1B and 2B, while three are within 100 feet of the route centerlines for Solutions 1A and 1B. This occurs along the common alignment of the solutions where the route passes between Acacia Leaf Drive to the north and Webster Tavern Way to the south, east of the crossing of Lexington Valley Drive. The right-of-way in this area overlaps a portion of Acacia Leaf Drive and adjacent parking associated with the Arcadia Run apartment complex. An apartment building within this complex is one of the dwellings within 60 feet of the right-of-way. The other three are single-family homes to the south that front on Webster Tavern Way.

The SCC prohibits rights-of-way within 60 feet of residences on parcels crossed by the right-of-way except in cases where there are no feasible alternatives. Due to the density of existing and planned future developments in this area, there are no feasible adjustments to the alignment that would avoid passing within 60 feet of the dwellings, other than the alignment used by Solutions 1B and 2B.

The main impact on residences would be changes in visual conditions from homes due to tree removal and the heights of installed transmission structures and conductors. Section 6.3 summarizes the visual impacts of the solutions.

6.1.5 PLANNED DEVELOPMENTS

As discussed in Sections 4.5, 4.6, and 5.1.5, planned developments were a significant constraint for routing, due to the urban nature of the study area and limited supply of undeveloped land. Where the potential for conflict was identified, the Company met with developers to coordinate

crossings and avoid planned infrastructure where possible. As shown in Table 6.1-2, Dominion anticipates minimal conflict with nearly all of the planned developments crossed by the solutions.

The potential for conflict at two planned developments (crossed by all four solutions) is undetermined due to their development status. The JK Redstone Data Center Campus and Truck Enterprises Inc. planned developments occupy the same parcel which has commercial buildings in active use at present. The site plan for the JK Redstone Data Center Campus subsumes the area included in the Truck Enterprises, Inc. development plan. The Company has and continues to coordinate with the developer of the data center campus (the more recently proposed development) to avoid conflict between the campus, should it be developed, and the Project. Currently, all solutions would avoid impacting the proposed data center buildings on the JK Redstone Data Center Campus. A portion of the right-of-way for all solutions would overlap a proposed switching station for approximately 0.1 mile. Dominion will continue coordinating with the data center developer to ensure no impacts to the operations of the switching station would occur, or if the location needs to be adjusted. If the campus is not developed and Truck Enterprises Inc. moves forward with its planned redevelopment (i.e., demolishing an existing building and constructing a new one),no direct impacts to the Truck Enterprises Inc. project are anticipated. .

Based on the above discussion, and except for the JK Redstone Data Center Campus (or Truck Enterprises, Inc. development), Solutions 1A, 1B, 2A, and 2B each avoid conflicts with future buildings on planned developments. Outstanding concerns from developers for each solution are limited to coordination of construction activities and allowable uses within the transmission right-of-way.

6.1.6 RECREATIONAL RESOURCES

Each solution would cross (and in certain places parallel and overlap short segments of) three existing trails and between 5 and 8 planned trails. The Project's transmission lines would not impact use of existing trails but would modify existing conditions at crossings due to vegetation clearing and the introduction of structures and conductors. Similarly, the transmission lines likewise would not impact construction or use of planned trails but would be visible to trail-users. The Project would not cross any other recreational resources. Impacts on recreational resources would therefore be similar regardless of the solution chosen for the Project.

As discussed in Section 5.1.6, the planned Innovation Park Recreational Trail runs through the proposed Hornbaker Switching Station site for about 500 feet. The site plan for the Avanti Data Center Campus, which includes the switching station site, has been approved by the County. Therefore, a reroute of the planned future trail is required. Dominion will coordinate with the County regarding the planned trail and its realignment.

6.1.7 CEMETERIES, SCHOOLS, AND PLACES OF WORSHIP

There are no cemeteries, schools, or places of worship within 500 feet of Solutions 1A, 1B, 2A, or 2B; therefore, none would be impacted by the Project, regardless of the solution selected.

TABLE 6.1-2 SUMMARY OF CROSSINGS OF PLANNED DEVELOPMENTS

Solution	No Conflicts Expected	No Conflicts Expected, Consultation Ongoing [a]	Undetermined Potential for Conflict [b]
1A	• Avanti Data Center Campus • Cambria Lexington Valley • Firestone Park Center • Hornbaker Testfit • Independence Parcel A1A and A1B • Innovation Town Center • Microsoft Bristow Data Center • Wellington Glen Technology Park	• Amazon Data Center • Black Chamber Group Development • Millwood Market Fuel Station • Southpoint Phase II • Wellington Glen Data Center and Pegasus Switching Station	• JK Redstone Data Center Campus • Truck Enterprises Inc.
1B	• Avanti Data Center Campus • Firestone Park Center • Hayden Road Public Improvement Plan • Hornbaker Testfit • Independence Parcel A1A and A1B • Innovation Town Center • Microsoft Bristow Data Center • Wellington Glen Technology Park	• Amazon Data Center • Black Chamber Group Development • Iron Mountain Data Center Campus • Millwood Market Fuel Station • Southpoint Phase II • Wellington Glen Data Center and Pegasus Switching Station	
2A	• Cambria Lexington Valley • Firestone Park Center • Independence Parcel A1A and A1B • Innovation Covance Data Center Campus • Microsoft Bristow Data Center • Wellington Glen Technology Park	• Amazon Data Center • Avanti Data Center Campus • Black Chamber Group Development • Southpoint Phase II • Wellington Glen Data Center and Pegasus Switching Station	
2B	• Firestone Park Center • Microsoft Bristow Data Center • Wellington Glen Technology Park • Hayden Road Public Improvement Plan • Independence Parcel A1A and A1B • Innovation Covance Data Center Campus	• Firestone Park Center • Hayden Road Public Improvement Plan • Independence Parcel A1A and A1B • Innovation Covance Data Center Campus • Microsoft Bristow Data Center • Wellington Glen Technology Park	

Section 5.1.5 provides descriptions of the planned developments listed in this table.

[a] Consultation with developers is ongoing to resolve the potential for issues during construction (e.g., due to operating equipment) or operations (such as sign placement or landscaping in the right-of-way).

[b] The potential for conflict is undetermined, due to uncertainty about the development status of these proposed projects.

6.1.8 CONSERVATION EASEMENTS

Each solution would pass adjacent to but would not cross a conservation easement near the intersection of Industrial Road and Industrial Court along Pegasus–Hornbaker Route 1. The Project would not impact the easement, which prohibits the development or use of the easement without approval from the Prince William County Department of Public Works. The solutions do not cross any other conservation easements.

All four solutions cross three resource protection areas (4 total crossings). Solutions 1A and 2A each parallel one resource protection area for 0.2 mile, while Solutions 1B and 2B run parallel to two resource protection areas for 0.4 mile. As noted in Section 5.1.8, construction and operation of electric transmission lines through resource protection areas are conditionally exempt from the CBPA; therefore, crossings of these features do not meaningfully differentiate the solutions.

6.1.9 TRANSPORTATION INFRASTRUCTURE

All four solutions cross between 18 and 21 roads and each solution crosses Balls Ford Road, Sudley Manor Drive, Prince Willaim Parkway, and Hornbaker Road. Solutions 1A and 1B cross Wellington Road, while Solutions 2A and 2B cross Discovery Boulevard.

VDOT and County transportation staff prefer perpendicular road crossings, which reduce the distance spanned, where feasible. VDOT also prefers keeping transmission structures outside their rights-of-way to avoid conflicts with future road improvement projects. The solutions include perpendicular road crossings where feasible; however, perpendicular road crossings are not feasible in many locations due to existing and/or planned future developments. None of the solutions would require placing transmission structures within VDOT right-of-way. Solutions 1A and 1B would each cross two planned future road projects identified by VDOT, whereas Solutions 2A and 2B would only cross one planned future road project identified by VDOT.

Project construction may require temporary road or lane closures or detours; however, none of the solutions would result in permanent impacts on traffic or the use of existing or planned roads in the study area.

6.1.10 AIRPORTS

As discussed in Section 5.1.10, each of the Project's route alternatives pass beneath imaginary surfaces associated with Manassas Regional Airport, in an area where ground elevations AMSL are up to 100 feet higher than at the airport surface. Based on the Company's submittal of a notice of proposed construction or alteration to the FAA, the Company determined that some of the structures installed along each route would penetrate imaginary surfaces and TERPs surfaces. As a result, it is likely that some of the Project's structures will require lighting and marker balls to receive a "no effect to air navigation" determination from the FAA, regardless of the solution selected for the Project. The Company will continue to coordinate with the FAA on structure heights and lighting/marking requirements as the Project progresses to final engineering.

6.2 NATURAL RESOURCES

Each solution crosses natural resources, including wetlands, waterbodies, a SCS, and habitats with vegetation potentially supporting protected species. Table 6.2-1 summarizes the natural resources crossed by each solution.

TABLE 6.2-1 NATURAL RESOURCES CROSSED BY EACH SOLUTION

Natural Resource	Unit	Solution 1A	Solution 1B	Solution 2A	Solution 2B
Wetlands Total	Acres	7.4	6.4	8.0	7.1
Palustrine Forested Wetlands	Acres	5.0	4.4	5.7	5.0
Perennial Waterbodies	Number	7	7	8	8
Stream Conservation Sites	Acres	6.0	6.0	7.0	7.0
Forested Areas	Acres	19.4	21.9	19.1	21.6

The Project's direct impacts on natural resources would include placement of structures and tree clearing within the right-of-way of the selected solution. Tree clearing in wetlands would result in the permanent conversion of PFO wetlands to PEM wetlands, which would or could impact functions such as peak flow reduction, water filtration, and habitat diversity; remove riparian buffer and associated functions at waterbody crossings; and remove forested habitat. Clearing of vegetation has the potential to impact habitat supporting protected species.

6.2.1 WETLANDS

The Solution 1B rights-of-way would cross the smallest extent of total wetlands at 6.4 acres and would result in the smallest forested wetland conversion impacts at 4.4 acres. The Solutions 1A, 2A, and 2B rights-of-way would cross 1.0 acre, 1.6 acres, and 0.7 acre more total wetlands, and result in 0.6 acre, 1.3 acres, and 0.6 acre more forested wetland conversion impacts, respectively. Solution 1B would therefore have the least wetland impacts followed by Solutions 2B, 1A, and 2A.

6.2.2 WATERBODIES

The solutions each cross three perennial streams (Dawkins Branch and tributaries to Dawkins Branch and Broad Run), between 10 and 12 intermittent waterbodies, between 4 and 5 perennial ponds, and three water features which are not mapped in the NHD. Moreover, the Project would impact many of the same waterbodies, regardless of the solution selected for the Project. Therefore, waterbody crossings do not meaningfully differentiate the solutions.

6.2.3 STREAM CONSERVATION SITE

Each solution would affect the Broad Run-Cannon Branch SCS as shown in Table 6.2-1, with Solutions 1A and 1B each impacting 6.0 acres and Solutions 2A and 2B each impacting 7.0 acres, a difference of 1.0 acres. The alignments through the conservation site largely occur in developed areas or areas under active construction. New tree clearing for the Project would be limited to

existing forest fragments in otherwise developed areas if the site. The additional acreage impacted by Solutions 2A and 2B would be entirely within a developed area lacking vegetation. Therefore, crossings of the SCS do not meaningfully differentiate the solutions.

6.2.4 VEGETATION (FOREST)

The primary impact on vegetation resources would be the loss of forested land due to tree clearing in the right-of-way of the solution selected for the Project. Solution 1A would cross the least forested land at 19.4 acres, followed by Solution 2A at 19.1 acres, Solution 1B at 21.9 acres, and Solution 2B at 21.6 acres. The difference in forest impacts is notable, but the range is narrow (a difference of up 2.2 acres) and doesn't meaningfully differentiate the solutions.

To assess potential differences in impacts on forest quality, ERM consulted the Virginia Department of Forestry's FCV model. None of the land classified in the FCV model along the solutions is rated higher than average (the lowest classification). ERM also consulted the VDCR's ecological core data, which can be used as a proxy to assess the quality of vegetation within the habitat comprising the core. None of the land along the solutions classified as ecological cores is rated higher than C5 (general; the lowest classification). ERM concluded based on these data that there would be no substantive differences in impacts on forest quality between the solutions.

To assess potential differences in fragmentation impacts, ERM measured the length of forest fragmentation (defined as a new cut in a wooded area not adjacent to an existing cut) for each solution. All four solutions would result in about 1.7 miles of new fragmentation impacts.

Overall, the differences in impacts on vegetation in general and forest in particular do not meaningfully differentiate the solutions.

6.2.5 PROTECTED SPECIES

As discussed in Section 5.2.5, ERM identified eight federal-listed and/or state-listed species as potentially occurring within the study area and within a 2.0-mile radius of the study area. The presence of three species—Yellow lance, Loggerhead shrike, and Brook floater—have been confirmed in this area, while habitat for other species is known to be present. Conclusions regarding the potential for impacts on these species are as follows:

- **NLEB and TCB:** No bat hibernacula have previously been identified, although summer foraging habitat is present in the study area along each solution. The Project solutions would have no impact on bat species if trees are cleared outside of VDWR TOYRs.
- **Loggerhead Shrike:** The Project would not reduce the habitat for this species (agricultural and open lands); therefore, none of the solutions would impact this species.
- **Brook Floater, Dwarf Wedgemussel, and Yellow Lance:** The Project would not directly impact these species, because instream construction would not be required. The loss of shade at waterbody crossings due to tree clearing along each solution could increase water temperatures, potentially impacting the presence of the species. The Company will coordinate with VDCR to determine if surveys for the species prior to construction are warranted.
- **Wood Turtle and Torrey's Mountain Mint:** Due to development, it is unlikely that suitable habitat is present for these species, which have not previously been confirmed in the study

area. Therefore, the Project would have no impact on these species, regardless of the solution selected.

Based on the findings above and due to the similar nature of habitats crossed, the potential for impacts on protected species does not meaningfully differentiate the solutions. Additionally, regardless of the solution selected, Dominion will coordinate with state and federal agencies as needed to determine if surveys, construction TOYRs, or other mitigation would be needed to address impacts.

6.3 VISUAL RESOURCES

Based on the analysis provided in Section 5.3, visual impacts would be similar for each solution. The overall impact ratings for the component routes of each solution are described below.

- Solution 1A comprises Wellington–Pegasus Route 1, Pegasus–Hornbaker Route 1, and Devlin–Pegasus Route 1, which have impact ratings of minor, minor, and moderate, respectively.
- Solution 1B comprises Wellington–Pegasus Route 1, Pegasus–Hornbaker Route 1, and Devlin–Pegasus Route 2, which have impact ratings of minor, minor, and moderate, respectively.
- Solution 2A comprises Hourglass–Hornbaker Route 1 (Hybrid), Pegasus–Hornbaker Route 1, and Devlin–Pegasus Route 1, which have impact ratings of minor, minor, and moderate, respectively.
- Solution 2B comprises Hourglass–Hornbaker Route 1 (Hybrid), Pegasus–Hornbaker Route 1, and Devlin–Pegasus Route 2 which have impact ratings of minor, minor, and moderate, respectively.

In summary, each solution comprises two component routes with impact ratings of minor and one with an impact rating of moderate. The solutions would each have moderate or greater visual impacts on four VSRs, as described below.

- **VSR 19—Jennell Estates:** The common alignment of Devlin–Pegasus Routes 1 and 2 each pass within 0.1 mile of the northern edge of this subdivision, south of Jennell Drive east of the drive's intersection with Devlin Road. While views from most homes in Jennell Estates towards the right-of-way would be obstructed, residences along Jennell Drive would have direct or partially obscured views of the new transmission line. Because each solution includes either Devlin–Pegasus Routes 1 or 2, impacts on the resource would be same regardless of the solution selected for the Project.
- **VSR 21—Independence Homeowners:** Devlin–Pegasus Route 1 parallels the northern end of the subdivision north of Webster Tavern Way passing within 0.1 mile of the nearest homes. Devlin–Pegasus Route 2 passes about 0.4 mile to the north. Views of transmission infrastructure installed along either route would be limited from most houses in the subdivision due to screening, but portions of both routes would be visible from some homes. The impacts of Devlin–Pegasus Route 1 would be incrementally larger than Devlin–Pegasus Route 2, due to proximity. Because each solution includes either Devlin–Pegasus Routes 1 or 2, impacts on the subdivision would occur regardless of the solution selected.
- **VSR 22—Arcadia Run:** Devlin–Pegasus Route 1 passes along the southern edge of this apartment complex (which is north of the Independence subdivision) and would be within

60 feet of the southernmost apartment building. Devlin–Pegasus Route 2 parallels Wellington Road at the northern end of the complex. Use of either route would require vegetation removal and introduce transmission infrastructure to viewsheds from within the complex, while also expanding views of the Project from the Independence subdivision to the south. Due to the proximity to an existing building, Devlin–Pegasus Route 1—and thus Solutions 1A and 2A would have meaningfully greater visual impacts on the apartment complex than Solutions 1B and 2B.

- **VSR 23—Abberly Avera Apartment Homes:** This apartment complex is north of the intersection of University Boulevard and Academic Loop. The common alignment of Devlin–Pegasus Routes 1 and 2 passes about 0.2 mile north of the complex. Views from most of the complex toward the route would be blocked by existing vegetation, but transmission structures and conductors would be minimally visible from some places. Pegasus–Hornbaker Route 1 passes just south of the southern edge of the complex. Vegetation removal for this route would open views from the complex allowing for partially obstructed views of transmission structures and conductors. Because each solution requires Pegasus–Hornbaker Route 1 and either Devlin–Pegasus Routes 1 or 2, impacts to this resource would occur regardless of the solution selected for the Project.

Based on the above discussion, Solutions 1A and 2A would have greater visual impacts than Solutions 1B and 2B, primarily due to the proximity to the Arcadia Run apartment complex.

6.4 CULTURAL RESOURCES

6.4.1 ARCHAEOLOGICAL SITES

ERM identified previously recorded archaeological sites 44PW1208, 44PW1221, 44PW1454, 44PW1455, and 44PW1456 within the rights-of-way of the various routes comprising the four solutions (including the proposed Hornbaker Switching Station and Hourglass-Hornbaker Route 1 (Hybrid) transition station). None of the sites have been evaluated to determine their eligibility for listing in the NRHP. ERM's analysis relative to these five sites is summarized below.

- **44PW1221**: This site, located along Pegasus-Hornbaker Route 1 (included in all Solutions), is a prehistoric lithic workshop with an undetermined cultural affiliation. Based on review of aerial photography, the site area was cleared for use as a contractor yard and data center sometime between 2019 and 2021 and continues to be used as such. Due to the extensive disturbance to the site area as documented in aerial photography, it is likely the site has been destroyed.
- **44PW1208:** This site, located along Hourglass-Hornbaker Route 1 (Hybrid) (included in Solutions 2A and 2B), is a prehistoric lithic workshop with an undetermined cultural affiliation. Based on review of aerial photography, the site is beneath and likely was destroyed by construction of a data center facility.
- **44PW1454:** This site, located along Devlin–Pegasus Route 2 (included in Solutions 1B and 2B), consists of a prehistoric lithic scatter with an unidentified cultural affiliation and a late 19th to mid-20th century trash artifact scatter. A previous survey (Bryant 2003) found much of the site to be destroyed. The site area was plowed from at least 1937 to sometime between

2004 and 2006 based on aerial photography. Thereafter, the site was planted in, maintained as, and remains pine forest.

- **44PW1455:** This site, located along Devlin–Pegasus Route 2 (included in Solutions 1B and 2B), consists of a 20th century artifact scatter which a previous investigator (Bryant 2003) associated with a 20th century house. Review of aerial photography found that the site contained an apparent residential structure from at least 1937 to sometime between 2004 and 2006. After removal of the structure, the area was planted in, maintained as, and remains pine forest.
- **44PW1456:** This site, located along Devlin–Pegasus Route 2 (included in Solutions 1B and 2B), consists of a 20th century artifact scatter which a previous investigator (Bryant 2003) characterized as trash. The site area was plowed from at least 1937 to sometime between 2004 and 2006 based on aerial photography. Thereafter, the site was planted in, maintained as, and remains pine forest.

While review of site records and aerial photography provides insight into site conditions, a confident evaluation of the nature of the archaeological deposits at each previously recorded site and impacts from prior land use activities would require a field survey.

More previously recorded archaeological sites were documented along Devlin–Pegasus Route 2 (three) than the other alternative routes (one each for Pegasus-Hornbaker Route 1 and Hourglass-Hornbaker Route 1 (Hybrid) and none for Wellington-Pegasus Route 1 and Devlin–Pegasus Route 1). Because previous archaeological surveys have not been completed along the routes in their entirety, additional as-yet-unrecorded sites could be present. Therefore, the distribution of known sites along the routes is not predictive of undiscovered sites. To ensure that impacts on archaeological resources are adequately addressed, the Company would conduct an identification phase survey of the solution selected by the SCC for the Project.

6.4.2 ABOVEGROUND CULTURAL RESOURCES

ERM identified five aboveground resources within the study tiers required by the VDHR Guidelines along the routes comprising each solution. ERM's analysis relative to each resource is summarized below.

- **076-0285—Thomasson Barn:** This resource, located within the study tiers for Hourglass-Hornbaker Route 1 (Hybrid) (included in Solutions 2A and 2B), is a circa 1929 dairy barn situated on a 6-acre parcel. It was determined eligible for listing in the NRHP by VDHR in 2016.
- **076-5036—Manassas Station Operations Battlefield:** This resource, located within the study tiers for Pegasus–Hornbaker Route 1 and Hourglass-Hornbaker Route 1 (Hybrid) (included in all Solutions), contains land associated with battlefield operations occurring at Bristoe Station, Kettle Run, Bull Run Bridge, and Union Mills as part of the Second Battle of Manassas. The site was determined eligible for listing in the NRHP by VDHR in 2018.
- **076-5190—Second Battle of Manassas:** This resource, located within the study tiers for Wellington–Pegasus Route 1, Pegasus–Hornbaker Route 1, Hourglass-Hornbaker Route 1 (Hybrid), Devlin–Pegasus Route 1, and Devlin–Pegasus Route 2 (included in all Solutions),

contains lands associated with the Second Battle of Manassas. It was determined potentially eligible for listing in the NRHP by VDHR in 2020.

- **076-5335—First Battle of Manasses:** This resource, located within the study tiers for Hourglass-Hornbaker Route 1 (Hybrid) (included in Solutions 2A and 2B), contains lands associated with the First Battle of Manassas. It was determined potentially eligible for listing in the NRHP by VDHR in 2018.
- **155-5020—Cannon Branch Fort:** This resource, located within the study tiers for Hourglass-Hornbaker Route 1 (Hybrid) (included in Solutions 2A and 2B), is a Civil War era fort on an 11-acre parcel. It was listed in the VLR in 1996 and the NRHP in 1999.

Based on the desktop analysis and visual simulations described in Section 5.4, ERM found that transmission infrastructure installed along:

- Wellington–Pegasus Route 1 (Solutions 1A and 1B) would result in a moderate impact on 076-5190.
- Pegasus-Hornbaker Route 1 (all Solutions) would result in no impact on 076-5036 and a moderate impact on 076-5190.
- Hourglass-Hornbaker Route 1 (Hybrid) (Solution 2A and 2B) would result in no impact on 076-0285, 076-5036, 076-5190, 076-5335, and 155-5020.
- Devlin–Pegasus Route 1 (Solution 1A and 2A) would result in a moderate impact on 076-5190.
- Devlin–Pegasus Route 2 (Solution 1B and 2B) would result in a moderate impact on 076-5190.

Given the above, and excluding resources that would not be affected, ERM concludes that each solution would have a moderate impact on the same resource, 076-5190. Therefore, impacts on aboveground cultural resources do not meaningfully differentiate the solutions.

6.5 ENVIRONMENTAL JUSTICE

As discussed in Section 5.5, ERM's EJ assessment found that nearly all the EJ study area (within 1.0 mile of route alternatives) met at least one criterion for identification as an EJ community and that all route alternatives crossed at least one CBG that meets such criteria. Therefore, each of the solutions has the potential to impact EJ communities. Devlin–Pegasus Route 2 crosses fewer EJ communities than Devlin–Pegasus Route 1; therefore, Solutions 2A and 2B would have incrementally smaller direct impacts on potential EJ communities than Solutions 1A and 2A.

To mitigate these impacts, the Company would implement the following regardless of the solution chosen for the proposed transmission line:

- Comply with applicable regulations and industry standards;
- Implement construction and restoration BMPs;
- Minimize ground-disturbing activities to the extent practicable;
- Remove construction equipment and debris from the right-of-way;
- Restore the land within the right-of-way as closely as possible to preconstruction contours with an herbaceous cover;

- Position structure to leverage existing cover and changes in topography to minimize visual impacts; and
- Continue its multi-lingual engagement with stakeholders, including EJ communities, in culturally appropriate ways to communicate information about the Project.

6.6 CONCLUSIONS AND RECOMMENDATIONS

As discussed in Section 4, and in consideration of the routing constraints and opportunities in the study area, ERM and Dominion identified, developed, and assessed multiple potential route alternatives that:

- Meet the purpose and need of the Project;
- Reasonably minimize adverse impacts on the scenic assets, historic and cultural resources, and environment of the area concerned; and
- Address feedback from stakeholders.

After identifying route alternatives, ERM and Dominion continuously optimized these routes based on new information collected through research, field reconnaissance, and stakeholder engagement. The routes and solutions discussed in Sections 5 and 6 are the result of this process, which uses routing as a tool for avoiding or minimizing impacts on sensitive constraints where practicable. Dominion and ERM eliminated from further consideration route alternatives with unresolvable issues or that do not minimize impacts on constraints (see Section 4.6) and further developed and assessed the remaining routes (see Sections 4.5 and 5).

Based on the assessment summarized in Sections 6.1 to 6.5, ERM and the Company recommend Solution 1B as the preferred alternative, and this solution is proposed for the Project. This recommendation is informed by the following:

- Solution 1B has the second-shortest alignment, the second-smallest construction footprint, and crosses the fewest parcels. The differences in length and footprint between Solution 1A (the shortest/smallest option) and Solution 1B are small at 0.4 mile and 4.9 acres, respectively.
- Solutions 1A and 1B each cross three fewer County-owned parcels than Solutions 2A and 2B, all of which are road rights-of-ways that will be deeded to VDOT in the future.
- With one possible exception, all four solutions avoid conflicts with future buildings on planned developments or are likely to avoid such conflicts pursuant to coordination with developers on regarding construction staging and allowable uses within the operational transmission right-of-way. The possible exception, which applies equally to all four solutions, involves the JK Redstone Data Center Campus and Truck Enterprises Inc. planned developments, both proposed to occur in the same area. Dominion Energy Virginia will engage in additional coordination with the developer as site control and development progress.
- Solutions 1A and 2A pass near more than three times as many residences as Solutions 1B and 2B. Moreover, three residences are within 100 feet of the centerline of Solutions 1A and 2A, compared to none for Solutions 1B and 2B. Similarly, four dwellings within 60 feet of the rights-of-way for Solutions 1A and 2A compared to none for Solutions 1B and 2B.

- Generally, for condemnation under Virginia law within 60 feet of residences requires there to be no other practicable alternative. Due to existing and planned future developments, there are no feasible route adjustments to Solutions 1A and 2A to avoid passing within 60 feet of the dwellings, other than the alignment used by Solutions 1B and 2B.
- Impacts on recreational resources (trails) would be similar for each solution.
- None of the solutions pass near cemeteries, schools, or places of worship.
- None of the solutions cross conservation easements.
- Impacts on road infrastructure would be similar and do not meaningfully differentiate the solutions.
- Transmission infrastructure installed along each solution would require notice to the FAA and likely would require marker balls and/or lighting.
- Solution 1B would have the least impact on wetlands overall and least impact on forested wetlands. Solution 2B, which would have the second least impact, would affect 0.7 acre more wetlands overall and 0.6 acre more forested wetland.
- Crossings of waterbodies are similar for each solution.
- Each solution would impact the Broad Run-Cannon Branch SCS. While Solutions 1A and 2A would affect 1.2 fewer acres than Solutions 1B and 2B, nearly the entire area impacted by each solution is developed. Therefore, impacts on the SCS do not meaningfully differentiate the solutions.
- Solution 1B would require the second least amount of forest clearing. The difference in forest clearing from Solution 1A (requiring the least amount of forest clearing) is 2.5 acres.
- There would be no meaningful difference in impacts on forest quality and no difference in fragmentation impacts for each solution.
- Potential impacts on protected species would be similar for each solution and do not meaningfully differentiate the solutions.
- Visual impacts would be similar for each solution, except that Solutions 1A and 2A pass within 60 feet of residences in the Arcadia Run apartment complex and would thus have more substantial visual impacts on this VSR. Although portions of Solutions 2A and 2B would be underground, thereby eliminating visual impacts, the area crossed is industrial and commercial (i.e., lacking in visually sensitive traits).
- While each solution crosses previously recorded archaeological sites, review of aerial photography suggests the sites have been previously impacted by agriculture and/or development. Moreover, because relatively little of each solution has been surveyed for archaeological sites, there is potential for as-yet-undocumented resources along each solution. Therefore, the potential for impacts on archaeological sites does not meaningfully differentiate the solutions.
- Impacts on aboveground cultural resources would be the same for each solution.
- Solutions 2A and 2B would cross slightly fewer EJ communities than Solutions 1A and 2A; however, each solution has the potential to impact EJ communities.

In conclusion, after evaluating numerous routing constraints and opportunities identified through desktop study, stakeholder outreach, and fieldwork, ERM and the Company recommend Solution 1B as the preferred solution for this Project, because it avoids or reasonably minimizes adverse impacts to the greatest extent reasonably practicable on the scenic assets, historic and cultural resources, and environment of the area concerned. ERM and the Company recommend Solutions 1A, 2A, and 2B as alternative solutions for this Project.

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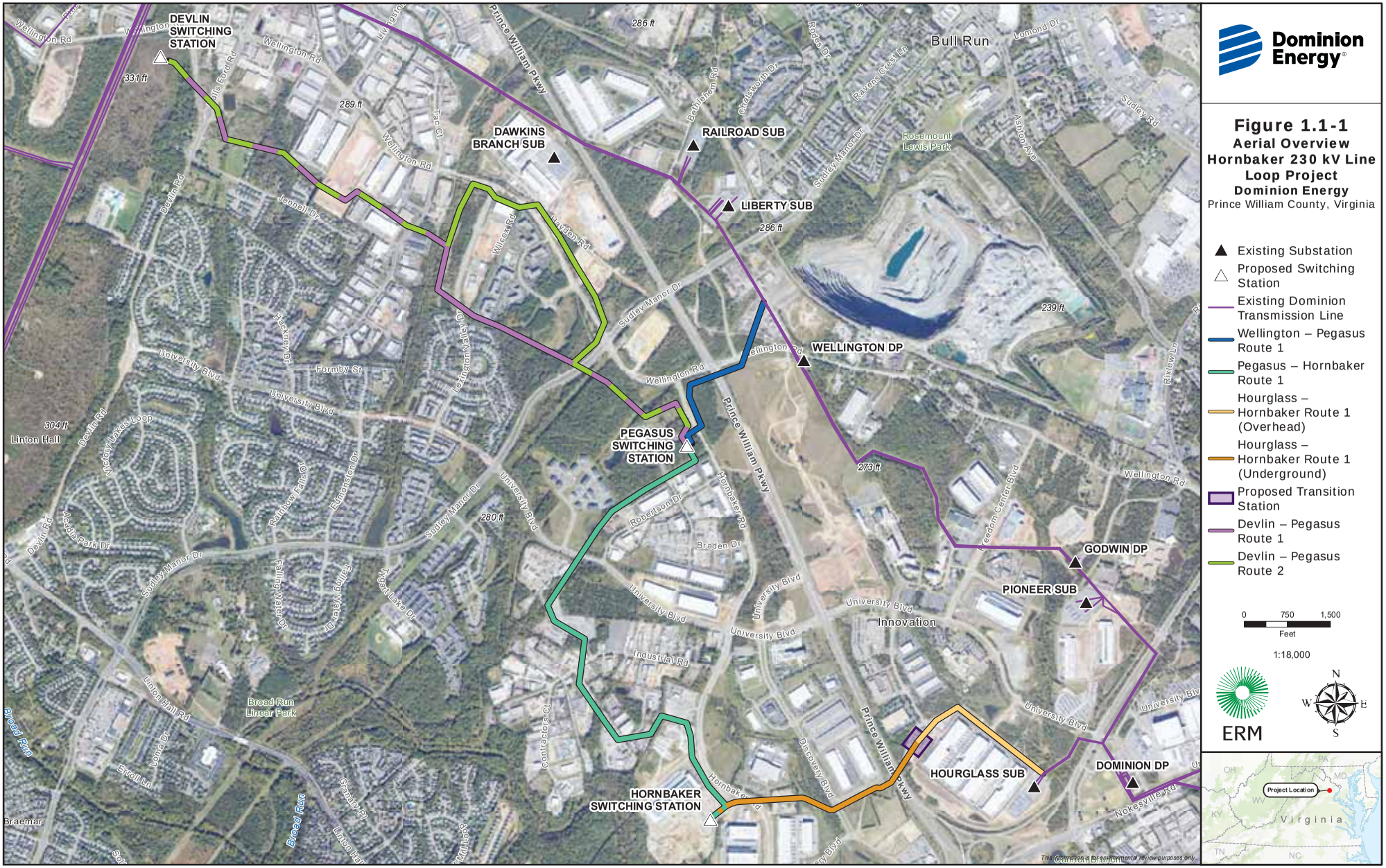
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APPENDIX A FIGURES



Dominion Energy

Figure 1.1-1

Aerial Overview
Hornbaker 230 kV Line Loop Project
Dominion Energy
Prince William County, Virginia

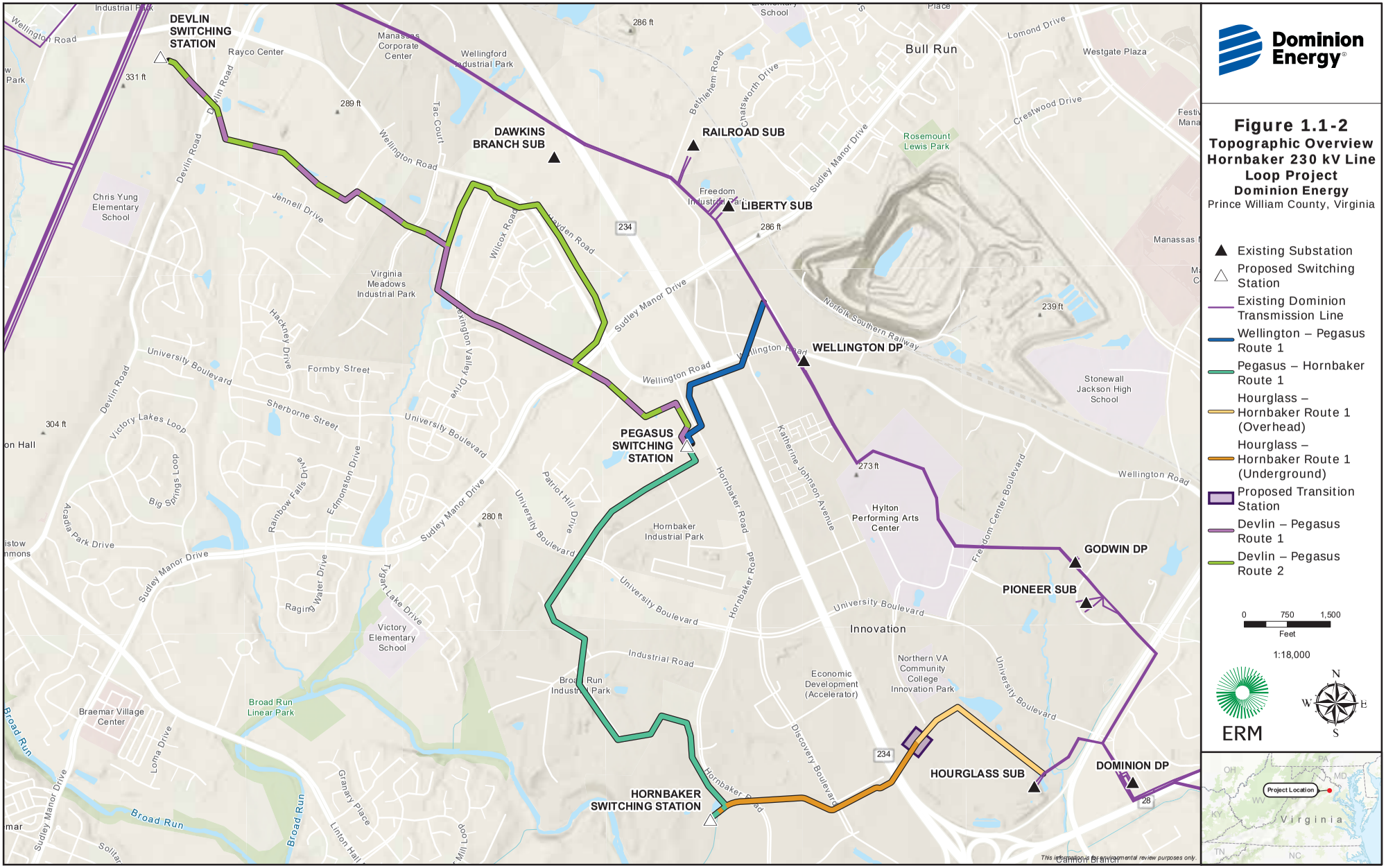
- Existing Substation
- Proposed Switching Station
- Existing Dominion Transmission Line
- Wellington – Pegasus Route 1
- Pegasus – Hornbaker Route 1
- Hourglass – Hornbaker Route 1 (Overhead)
- Hourglass – Hornbaker Route 1 (Underground)
- Proposed Transition Station
- Devlin – Pegasus Route 1
- Devlin – Pegasus Route 2

0 750 1,500
Feet

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Dominion Energy

Figure 1.1-2
Topographic Overview
Hornbaker 230 kV Line Loop Project
Dominion Energy
Prince William County, Virginia

- Existing Substation
- Proposed Switching Station
- Existing Dominion Transmission Line
- Wellington – Pegasus Route 1
- Pegasus – Hornbaker Route 1
- Hourglass – Hornbaker Route 1 (Overhead)
- Hourglass – Hornbaker Route 1 (Underground)
- Proposed Transition Station
- Devlin – Pegasus Route 1
- Devlin – Pegasus Route 2

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Feet

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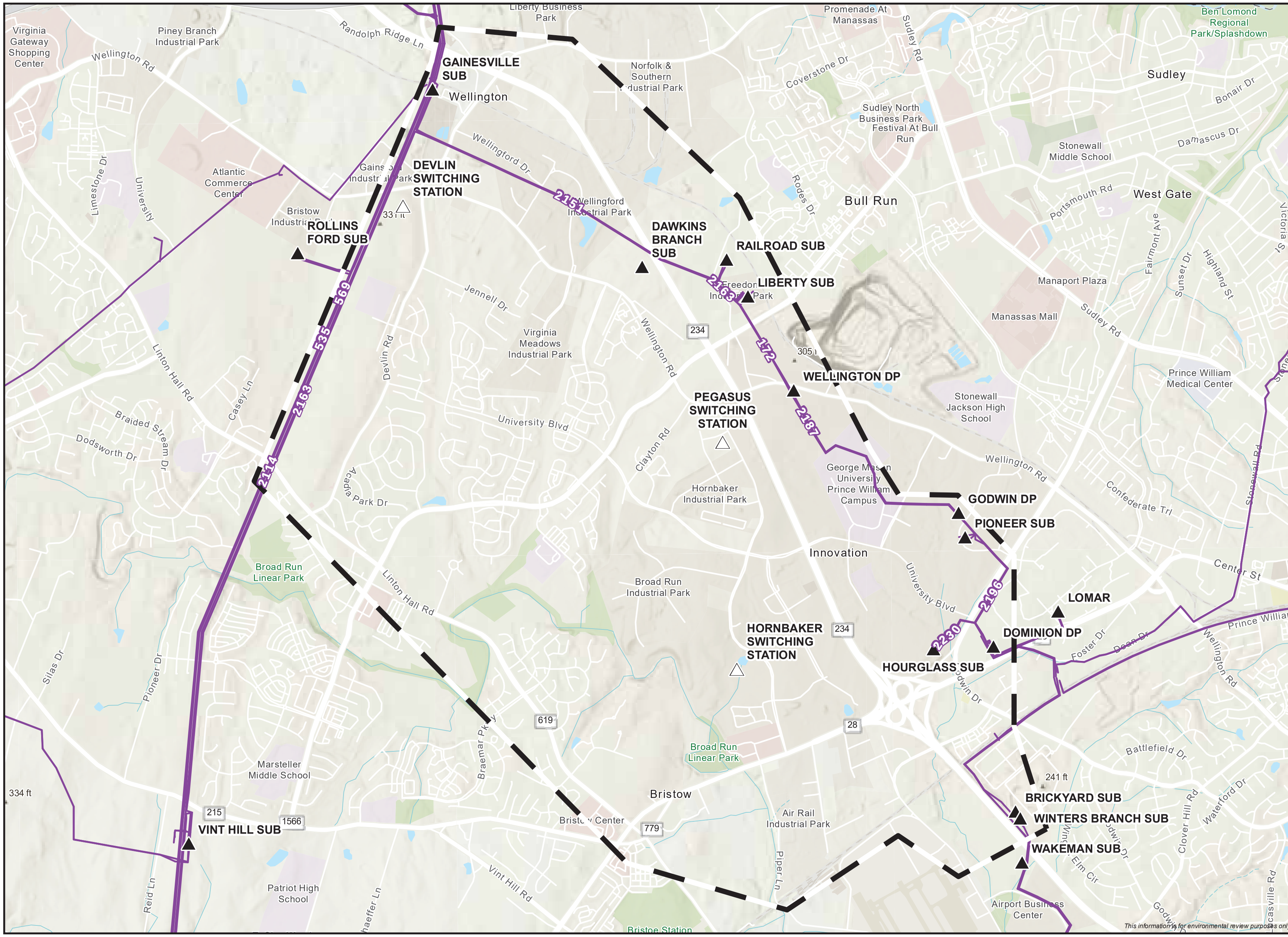


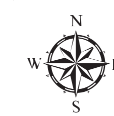


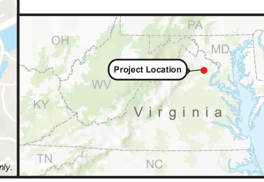
Figure 4.1-1
Study Area Overview
Hornbaker 230 kV Line Loop Project
Dominion Energy
Prince William County, Virginia

- ▲ Existing Substation
- △ Proposed Switching Station
- Existing Dominion Transmission Line
- Study Area

0 1,500 3,000 Feet
1:32,000

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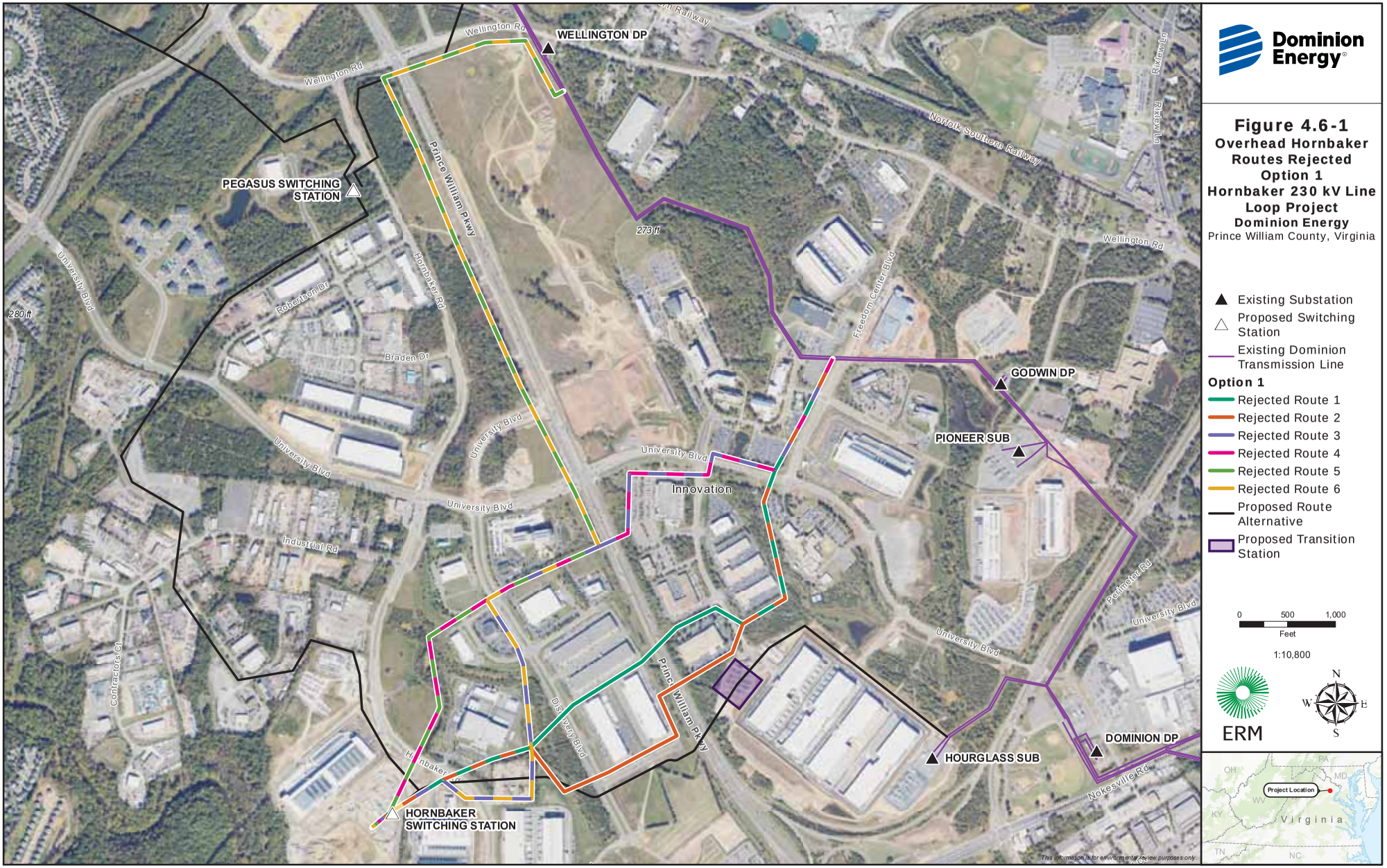




Dominion Energy

Figure 4.2-1

Constraints Map
Hornbaker 230 kV Line Loop Project
Dominion Energy
Prince William County, Virginia



Dominion Energy®

Figure 4.6-1
Overhead Hornbaker Routes Rejected Option 1
Hornbaker 230 kV Line Loop Project
Dominion Energy
Prince William County, Virginia

- ▲ Existing Substation
- △ Proposed Switching Station
- Existing Dominion Transmission Line

Option 1

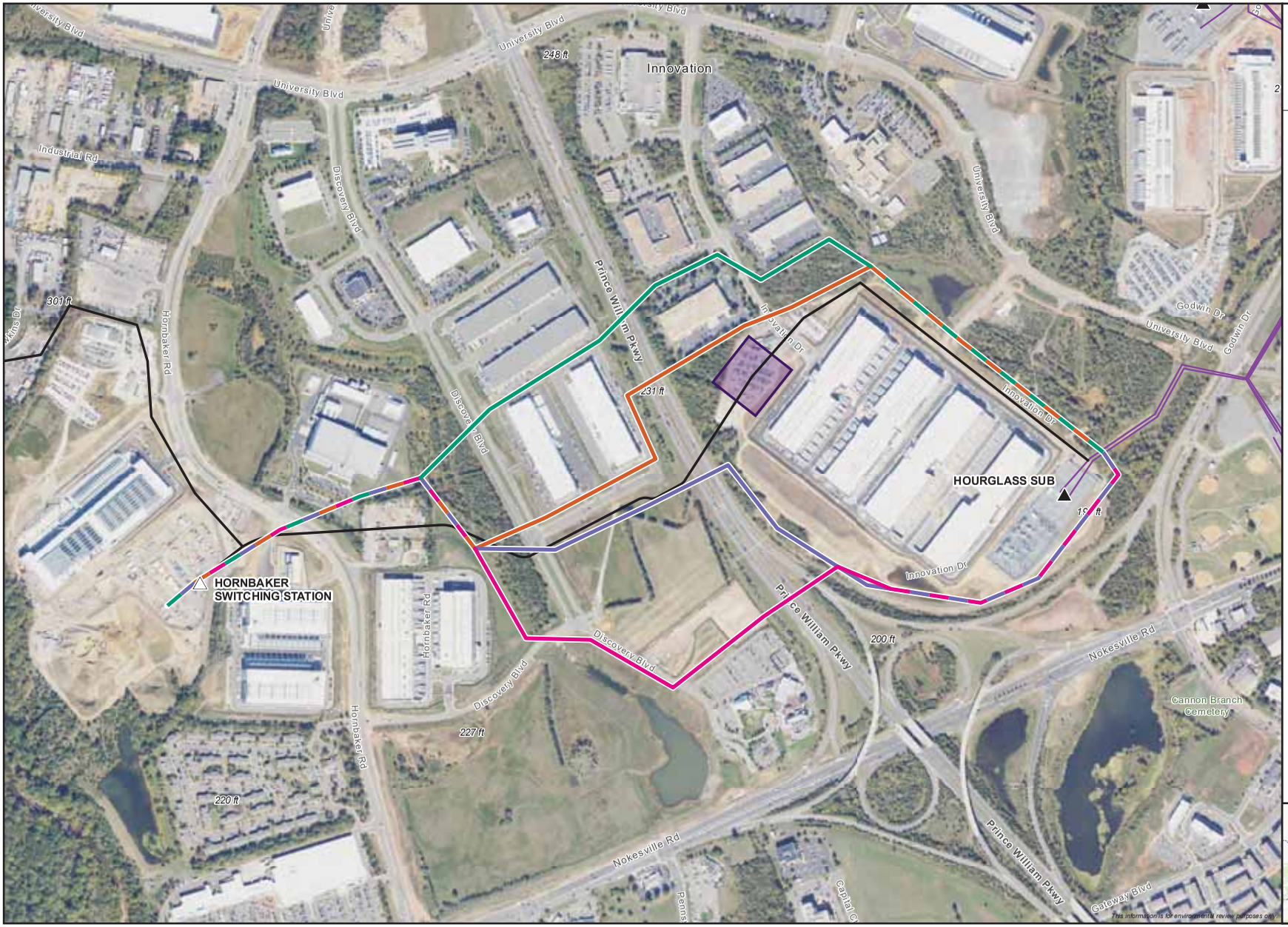
- Rejected Route 1
- Rejected Route 2
- Rejected Route 3
- Rejected Route 4
- Rejected Route 5
- Rejected Route 6
- Proposed Route Alternative
- Proposed Transition Station

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Feet

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Dominion Energy®

Figure 4.6-1
Overhead Hornbaker Routes Rejected Option 2
Hornbaker 230 kV Line Loop Project
Dominion Energy
Prince William County, Virginia

- ▲ Existing Substation
- △ Proposed Switching Station
- Existing Dominion Transmission Line

Option 2

- Rejected Route 1
- Rejected Route 2
- Rejected Route 3
- Rejected Route 4
- Proposed Route Alternative
- Proposed Transition Station

0 500 1,000
Feet

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Dominion Energy®

Figure 4.6-1
Overhead Hornbaker Routes Rejected Option 4
Hornbaker 230 kV Line Loop Project
Dominion Energy
Prince William County, Virginia

- ▲ Existing Substation
- △ Proposed Switching Station
- Existing Dominion Transmission Line

Option 4

- Rejected Route 1
- Rejected Route 2
- Rejected Route 3
- Rejected Route 4
- Proposed Route Alternative
- Proposed Transition Station

0 500 1,000
Feet

1:7,200

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Dominion Energy

Figure 4.6-1
Overhead Hornbaker Routes Rejected Option 5
Hornbaker 230 kV Line Loop Project
Dominion Energy
Prince William County, Virginia

- Existing Substation
- Proposed Switching Station
- Existing Dominion Transmission Line

Option 5

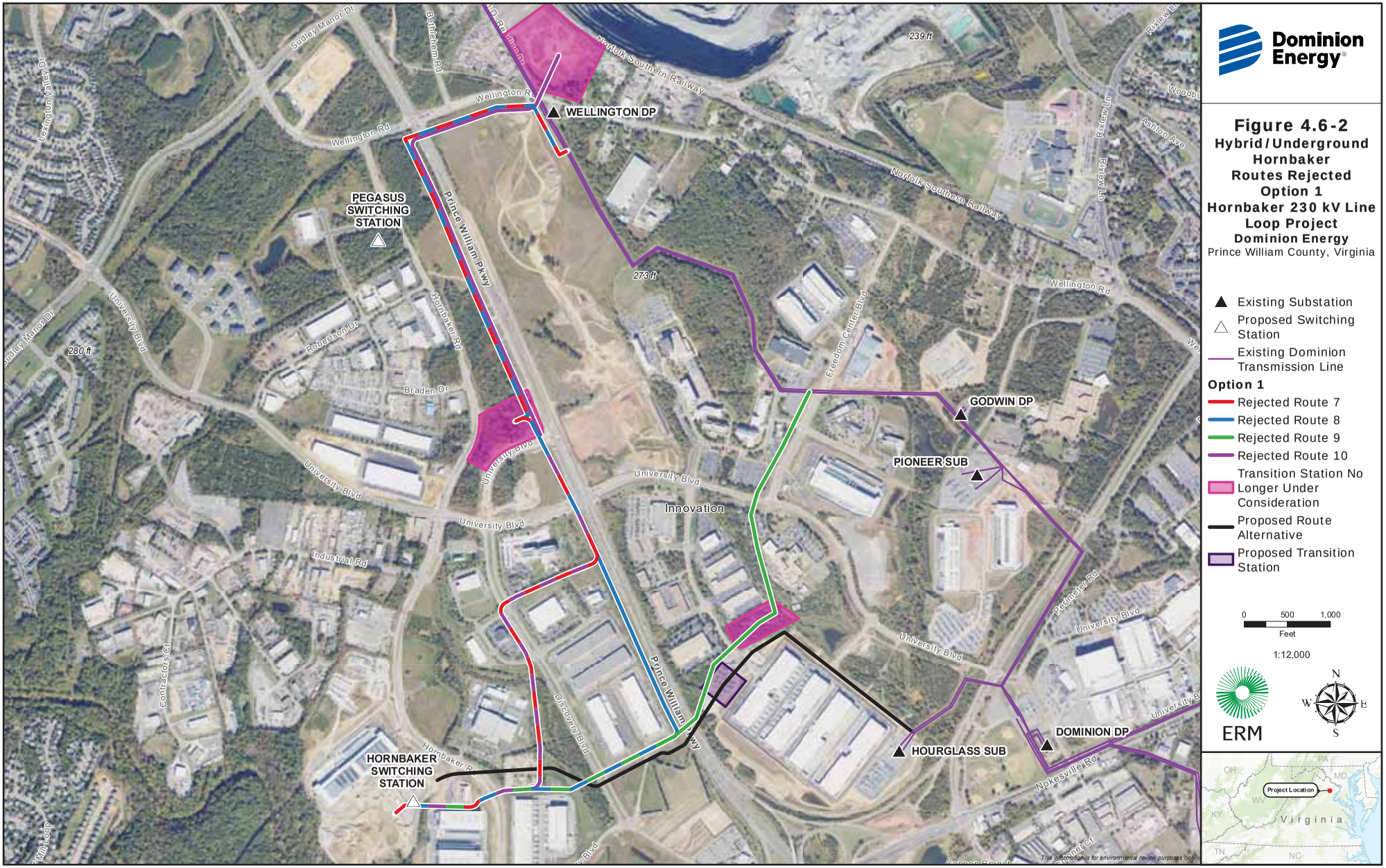
- Rejected Route 1
- Rejected Route 2
- Rejected Route 3
- Proposed Route Alternative
- Proposed Transition Station

0 500 1,000
Feet

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Dominion Energy

Figure 4.6-2

Hybrid/Underground Hornbaker Routes Rejected Option 1
Hornbaker 230 kV Line Loop Project
Dominion Energy
Prince William County, Virginia

- Existing Substation
- Proposed Switching Station
- Existing Dominion Transmission Line

Option 1

- Rejected Route 7
- Rejected Route 8
- Rejected Route 9
- Rejected Route 10
- Transition Station No Longer Under Consideration
- Proposed Route Alternative
- Proposed Transition Station

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Feet

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Dominion Energy

Figure 4.6-2

Hybrid / Underground Hornbaker Routes Rejected Option 3
Hornbaker 230 kV Line Loop Project
Dominion Energy
Prince William County, Virginia

- ▲ Existing Substation
- △ Proposed Switching Station
- Existing Dominion Transmission Line

Option 3

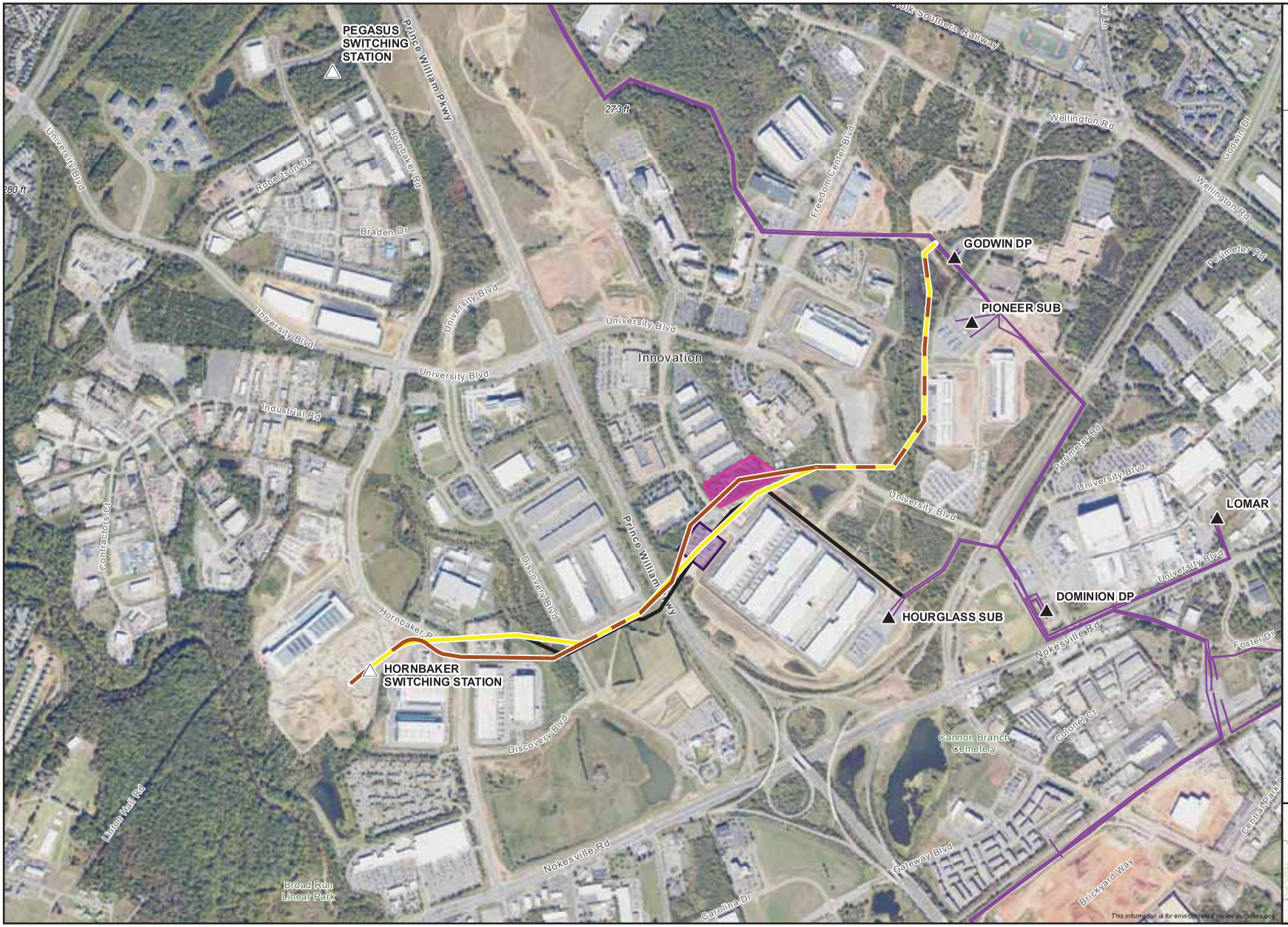
- Rejected Route 1
- Transition Station No Longer Under Consideration
- Proposed Route Alternative
- Proposed Transition Station

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Feet

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Dominion Energy

Figure 4.6-2

Hybrid/Underground Hornbaker Routes Rejected Option 4
Hornbaker 230 kV Line Loop Project
Dominion Energy
Prince William County, Virginia

- Existing Substation
- Proposed Switching Station
- Existing Dominion Transmission Line

Option 4

- Rejected Route 5
- Rejected Route 6
- Transition Station No Longer Under Consideration
- Proposed Route Alternative
- Proposed Transition Station

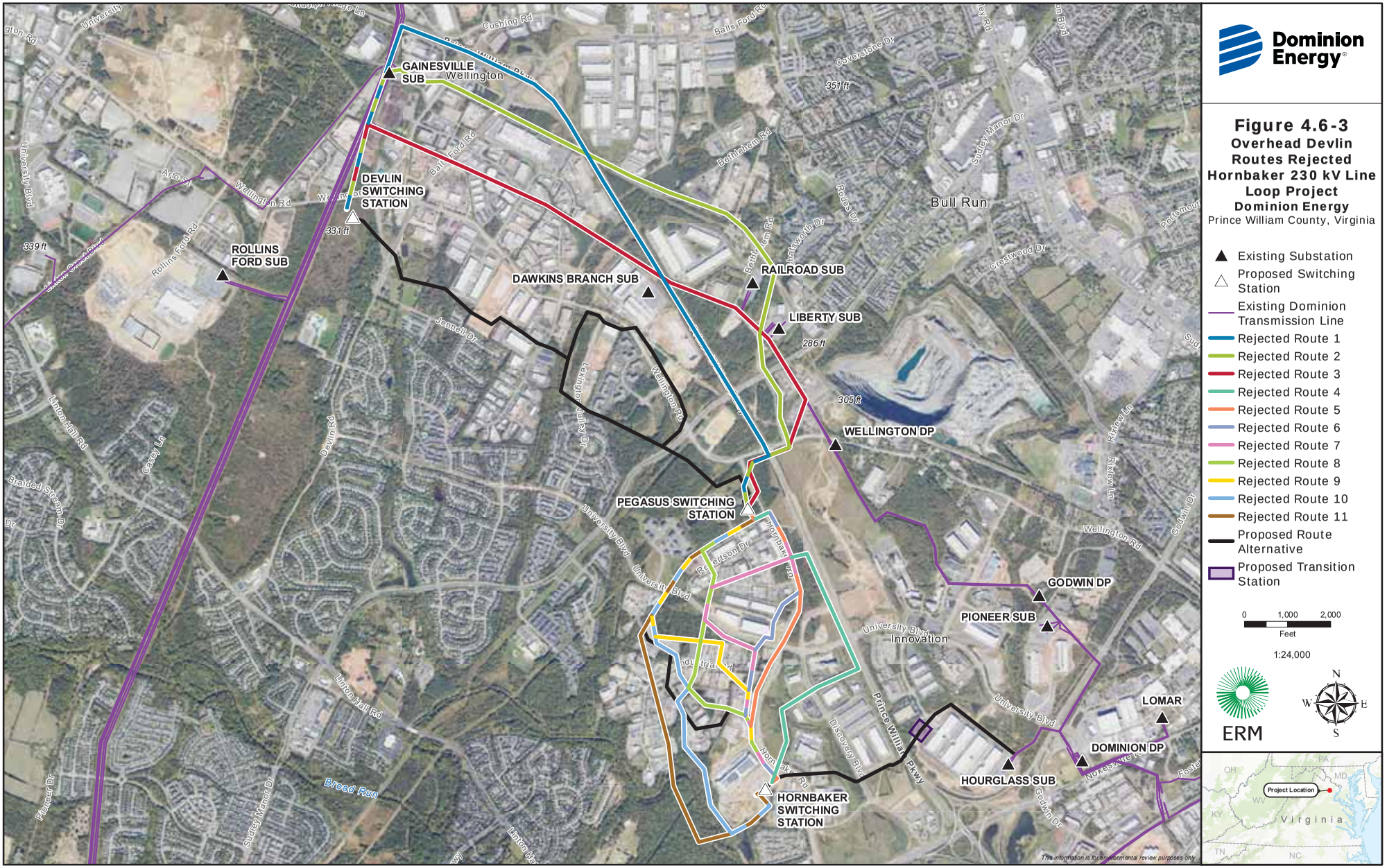
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Dominion Energy

Figure 4.6-3

Overhead Devlin Routes Rejected Hornbaker 230 kV Line Loop Project

Dominion Energy

Prince William County, Virginia

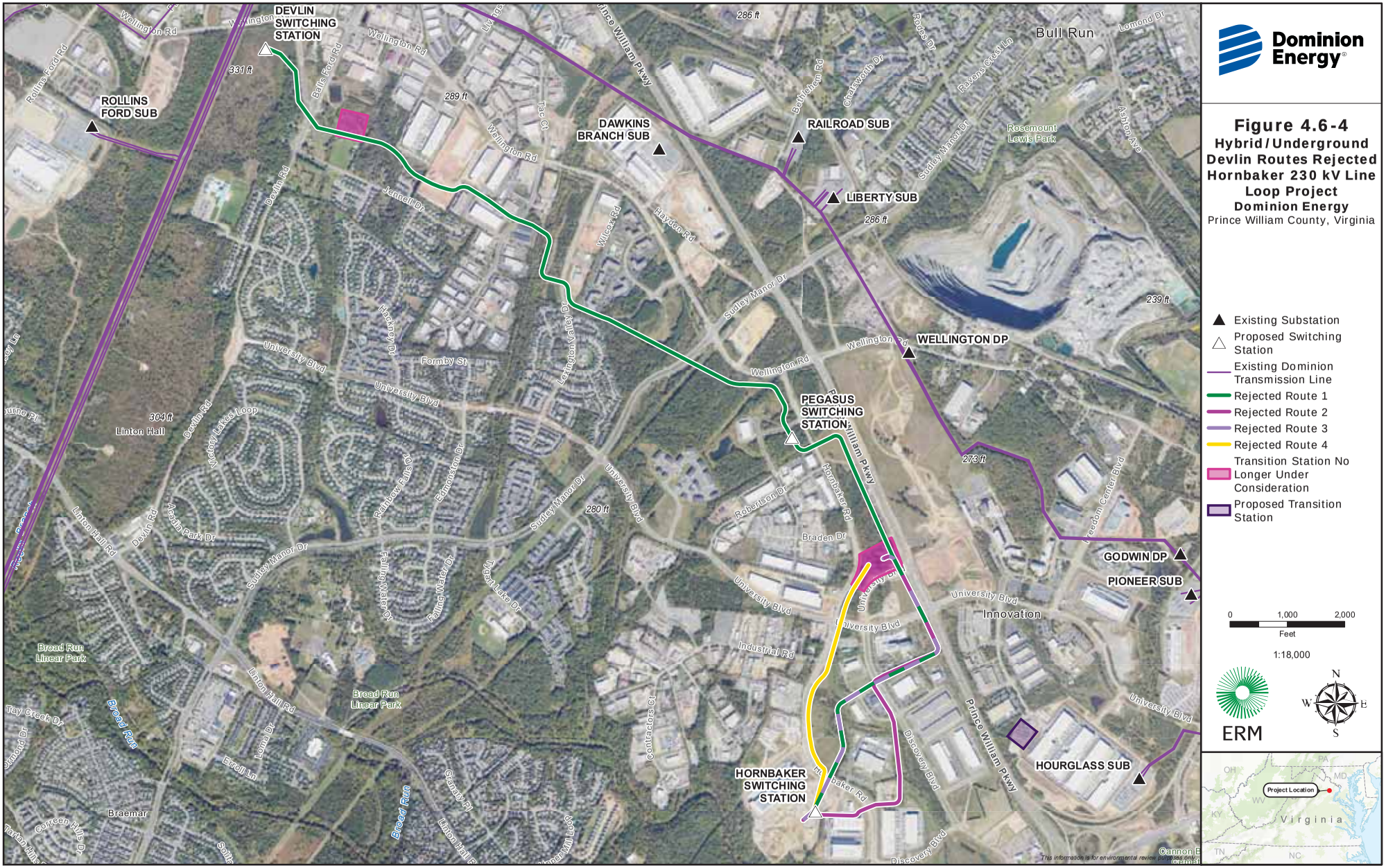
- Existing Substation
- Proposed Switching Station
- Existing Dominion Transmission Line
- Rejected Route 1
- Rejected Route 2
- Rejected Route 3
- Rejected Route 4
- Rejected Route 5
- Rejected Route 6
- Rejected Route 7
- Rejected Route 8
- Rejected Route 9
- Rejected Route 10
- Rejected Route 11
- Proposed Route Alternative
- Proposed Transition Station

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Dominion Energy

Figure 4.6-4

Hybrid/Underground Devlin Routes Rejected Hornbaker 230 kV Line Loop Project

Dominion Energy

Prince William County, Virginia

- Existing Substation
- Proposed Switching Station
- Existing Dominion Transmission Line
- Rejected Route 1
- Rejected Route 2
- Rejected Route 3
- Rejected Route 4
- Transition Station No Longer Under Consideration
- Proposed Transition Station

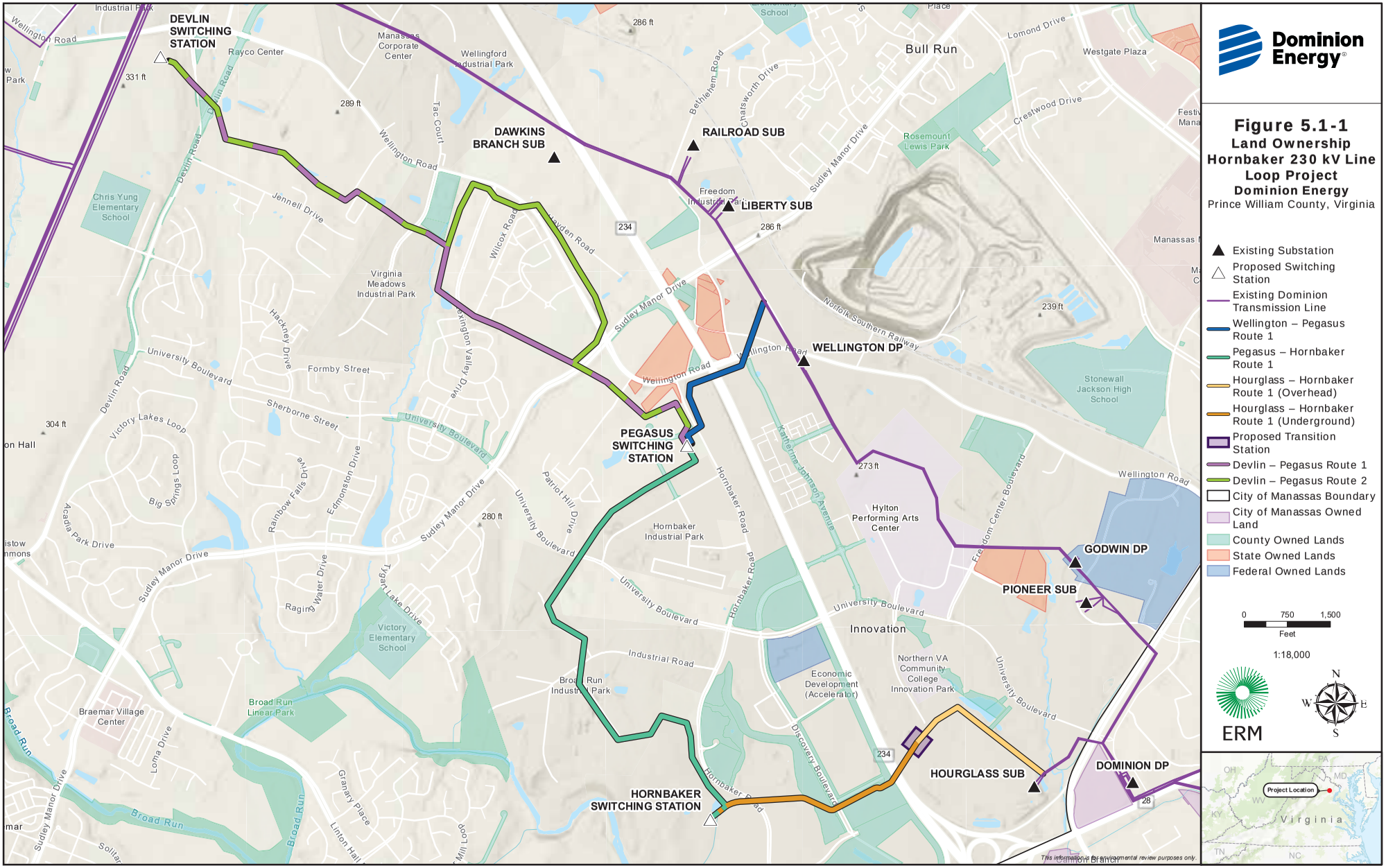
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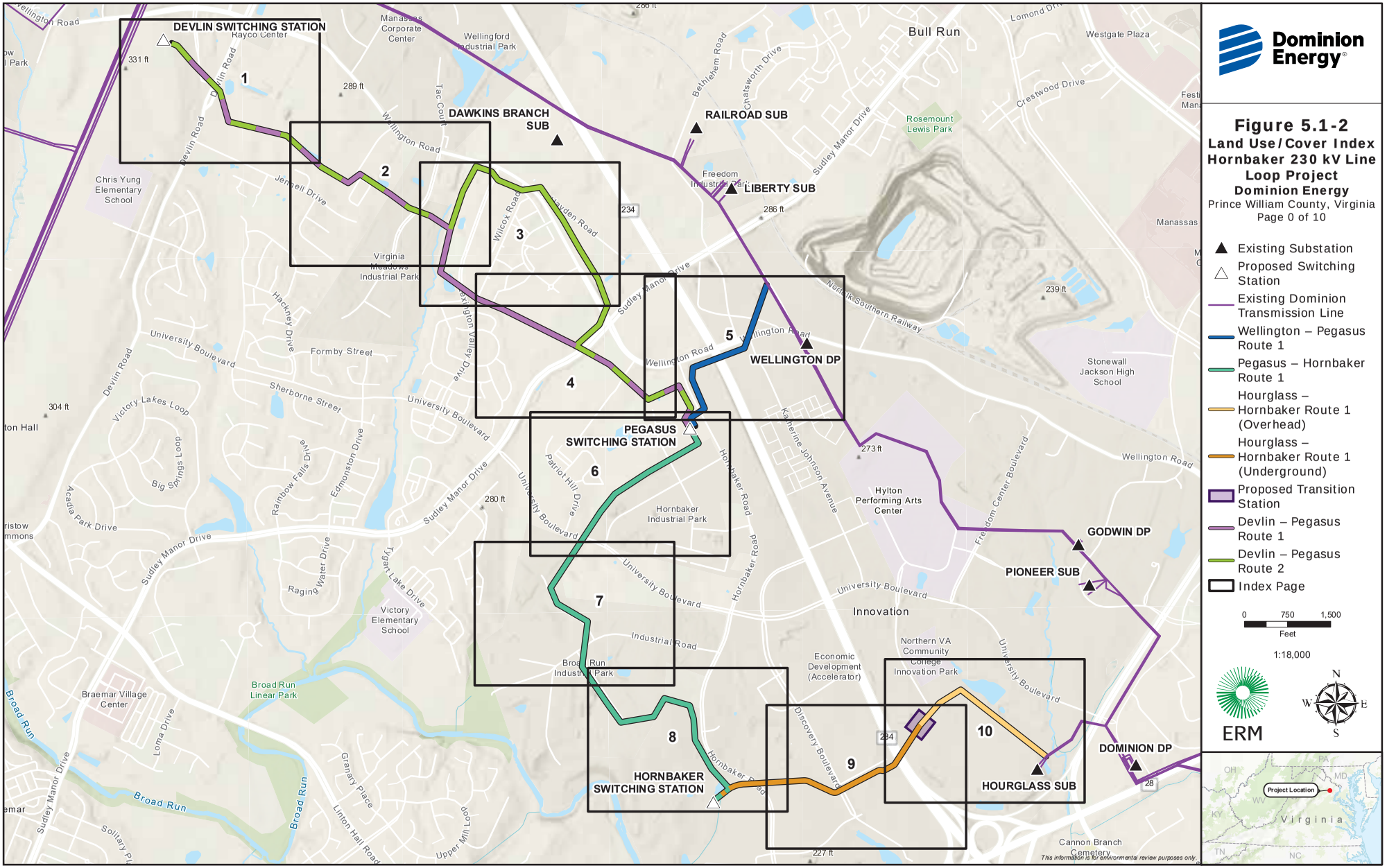
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This information is for environmental review purposes only.


DEVLIN SWITCHING STATION
DAWKINS BRANCH SUB
RAILROAD SUB
LIBERTY SUB
WELLINGTON DP
PEGASUS SWITCHING STATION
GODWIN DP
PIONEER SUB
HOURGLASS SUB
DOMINION DP
HORNBAKER SWITCHING STATION
Bull Run
Innovation
Hylton Performing Arts Center
Hornbaker Industrial Park
Broad Run Industrial Park
Virginia Meadows Industrial Park
Wellington Road
University Boulevard
Sudley Manor Drive
Devlin Road
Norfolk Southern Railway
Dominion Energy
Figure 5.1-1
Land Ownership
Hornbaker 230 kV Line Loop Project
Dominion Energy
Prince William County, Virginia
Existing Substation
Proposed Switching Station
Existing Dominion Transmission Line
Wellington – Pegasus Route 1
Pegasus – Hornbaker Route 1
Hourglass – Hornbaker Route 1 (Overhead)
Hourglass – Hornbaker Route 1 (Underground)
Proposed Transition Station
Devlin – Pegasus Route 1
Devlin – Pegasus Route 2
City of Manassas Boundary
City of Manassas Owned Land
County Owned Lands
State Owned Lands
Federal Owned Lands
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Project Location
Virginia
This information is for environmental review purposes only.



Dominion Energy

Figure 5.1-2

Land Use/Cover Index
Hornbaker 230 kV Line Loop Project
Dominion Energy
Prince William County, Virginia
Page 0 of 10

- Existing Substation
- Proposed Switching Station
- Existing Dominion Transmission Line
- Wellington – Pegasus Route 1
- Pegasus – Hornbaker Route 1
- Hourglass – Hornbaker Route 1 (Overhead)
- Hourglass – Hornbaker Route 1 (Underground)
- Proposed Transition Station
- Devlin – Pegasus Route 1
- Devlin – Pegasus Route 2
- Index Page

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Dominion Energy

Figure 5.1-2

Land Use/Cover
Hornbaker 230 kV Line Loop Project
Dominion Energy
Prince William County, Virginia

- Proposed Switching Station
- Existing Dominion Transmission Line
- Devlin – Pegasus Route 1 MP
- Devlin – Pegasus Route 2 MP
- Devlin – Pegasus Route 1
- Devlin – Pegasus Route 2
- Devlin Switching Station Boundary

Land Cover

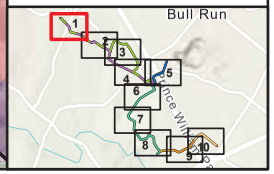
- Developed
- Forest
- Open Space
- Water

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Dominion Energy

Figure 5.1-2
Land Use/Cover
Hornbaker 230 kV Line Loop Project
Dominion Energy
Prince William County, Virginia

- Devlin – Pegasus Route 1 MP
- Devlin – Pegasus Route 2 MP
- Devlin – Pegasus Route 1
- Devlin – Pegasus Route 2

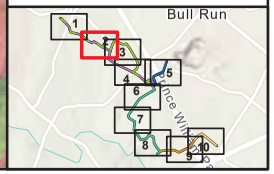
Land Cover
- Developed
- Forest
- Open Space
- Water

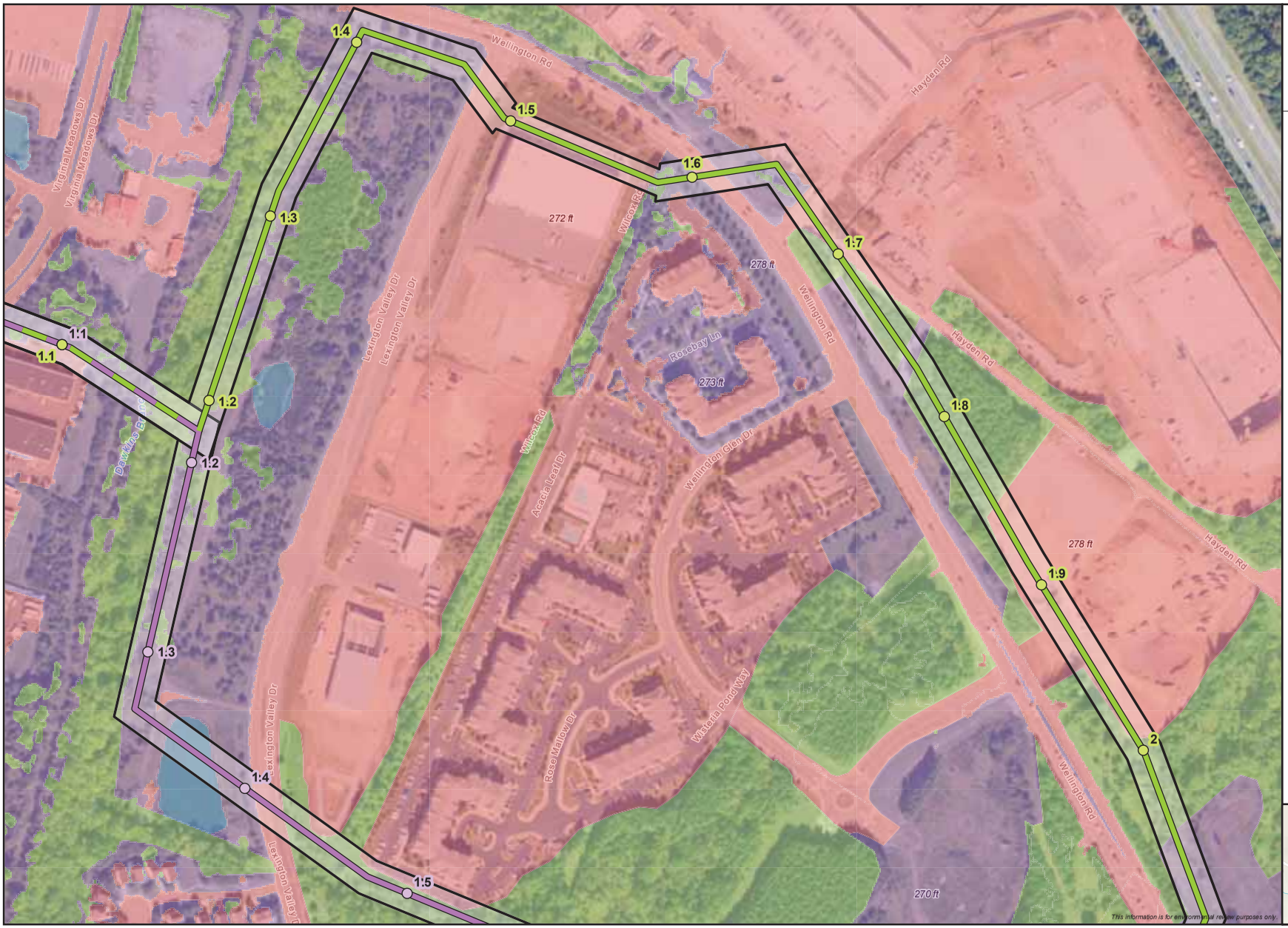
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Dominion Energy

Figure 5.1-2
Land Use/Cover
Hornbaker 230 kV Line Loop Project
Dominion Energy
Prince William County, Virginia
Page 3 of 10

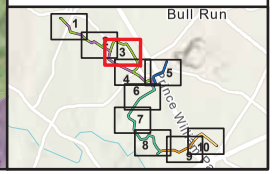
Devlin – Pegasus Route 1 MP
Devlin – Pegasus Route 2 MP
Devlin – Pegasus Route 1
Devlin – Pegasus Route 2

Land Cover
Developed
Forest
Open Space
Water

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Feet
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Dominion Energy

Figure 5.1-2

Land Use/Cover
Hornbaker 230 kV Line Loop Project
Dominion Energy
Prince William County, Virginia

- Devlin – Pegasus Route 1 MP
- Devlin – Pegasus Route 2 MP
- Devlin – Pegasus Route 1
- Devlin – Pegasus Route 2

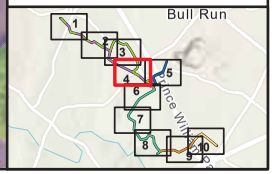
Land Cover
- Developed
- Forest
- Open Space

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Dominion Energy

Figure 5.1-2

Land Use/Cover
Hornbaker 230 kV Line Loop Project
Dominion Energy
Prince William County, Virginia

- Existing Substation
- Existing Dominion Transmission Line
- Wellington – Pegasus Route 1 MP
- Devlin – Pegasus Route 1 MP
- Devlin – Pegasus Route 2 MP
- Wellington – Pegasus Route 1
- Devlin – Pegasus Route 1
- Devlin – Pegasus Route 2
- Pegasus Switching Station Boundary

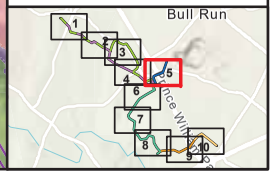
Land Cover
- Developed
- Forest
- Open Space

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Feet

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Dominion Energy

Figure 5.1-2

Land Use/Cover
Hornbaker 230 kV Line Loop Project
Dominion Energy
Prince William County, Virginia
Page 6 of 10

- Proposed Switching Station
- Wellington – Pegasus Route 1 MP
- Pegasus – Hornbaker Route 1 MP
- Devlin – Pegasus Route 1 MP
- Devlin – Pegasus Route 2 MP
- Wellington – Pegasus Route 1
- Pegasus – Hornbaker Route 1
- Devlin – Pegasus Route 1
- Devlin – Pegasus Route 2
- Pegasus Switching Station Boundary

Land Cover

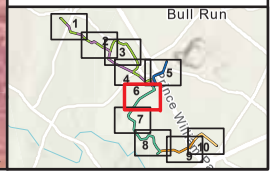
- Developed
- Forest
- Open Space
- Water

0 125 250
Feet

1:3,000

ERM

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Dominion Energy

Figure 5.1-2

Land Use/Cover
Hornbaker 230 kV Line Loop Project
Dominion Energy
Prince William County, Virginia

Pegasus – Hornbaker Route 1 MP
Pegasus – Hornbaker Route 1

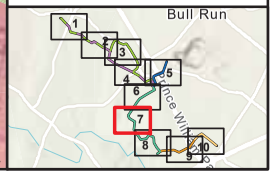
Land Cover
- Developed
- Forest
- Open Space
- Water

0 125 250
Feet

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Dominion Energy

Figure 5.1-2

Land Use/Cover
Hornbaker 230 kV Line Loop Project
Dominion Energy
Prince William County, Virginia

- Proposed Switching Station
- Pegasus – Hornbaker Route 1 MP
- Hourglass – Hornbaker Route 1 MP
- Pegasus – Hornbaker Route 1
- Hourglass – Hornbaker Route 1 (Underground)
- Proposed Hornbaker Switching Station Boundary

Land Cover

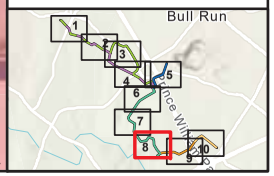
- Developed
- Forest
- Open Space
- Water

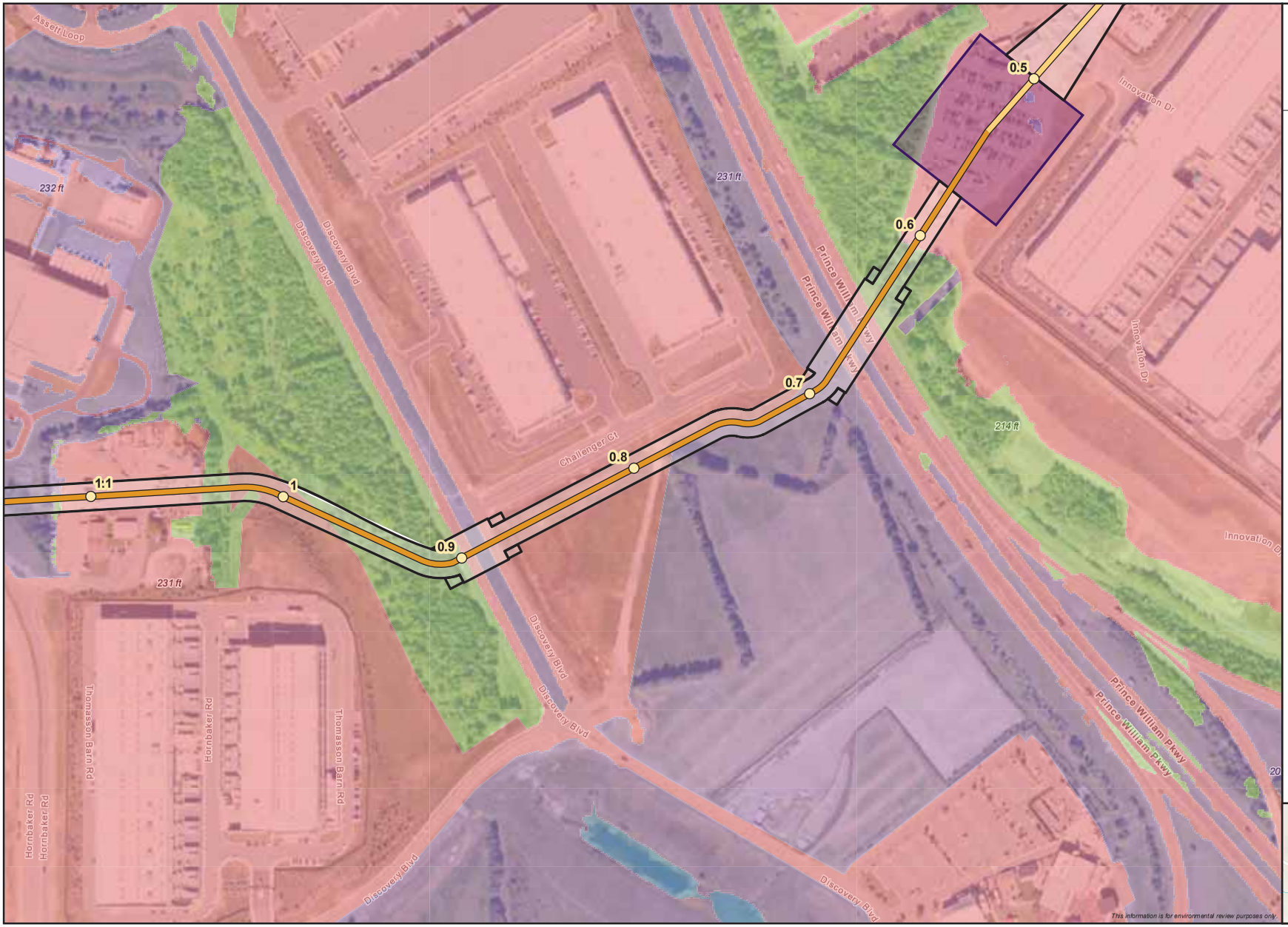
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Feet

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Dominion Energy

Figure 5.1-2

Land Use/Cover
Hornbaker 230 kV Line Loop Project
Dominion Energy
Prince William County, Virginia

- Hourglass – Hornbaker Route 1 MP
- Hourglass – Hornbaker Route 1 (Overhead)
- Hourglass – Hornbaker Route 1 (Underground)
- Proposed Transition Station

Land Cover

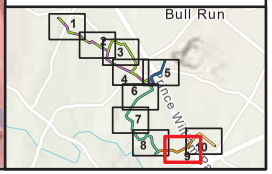
- Developed
- Forest
- Open Space
- Water

0 125 250
Feet

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Dominion Energy

Figure 5.1-2

Land Use/Cover
Hornbaker 230 kV Line Loop Project
Dominion Energy
Prince William County, Virginia

- Existing Substation
- Existing Dominion Transmission Line
- Hourglass – Hornbaker Route 1 MP
- Hourglass – Hornbaker Route 1 (Overhead)
- Hourglass – Hornbaker Route 1 (Underground)
- Proposed Transition Station

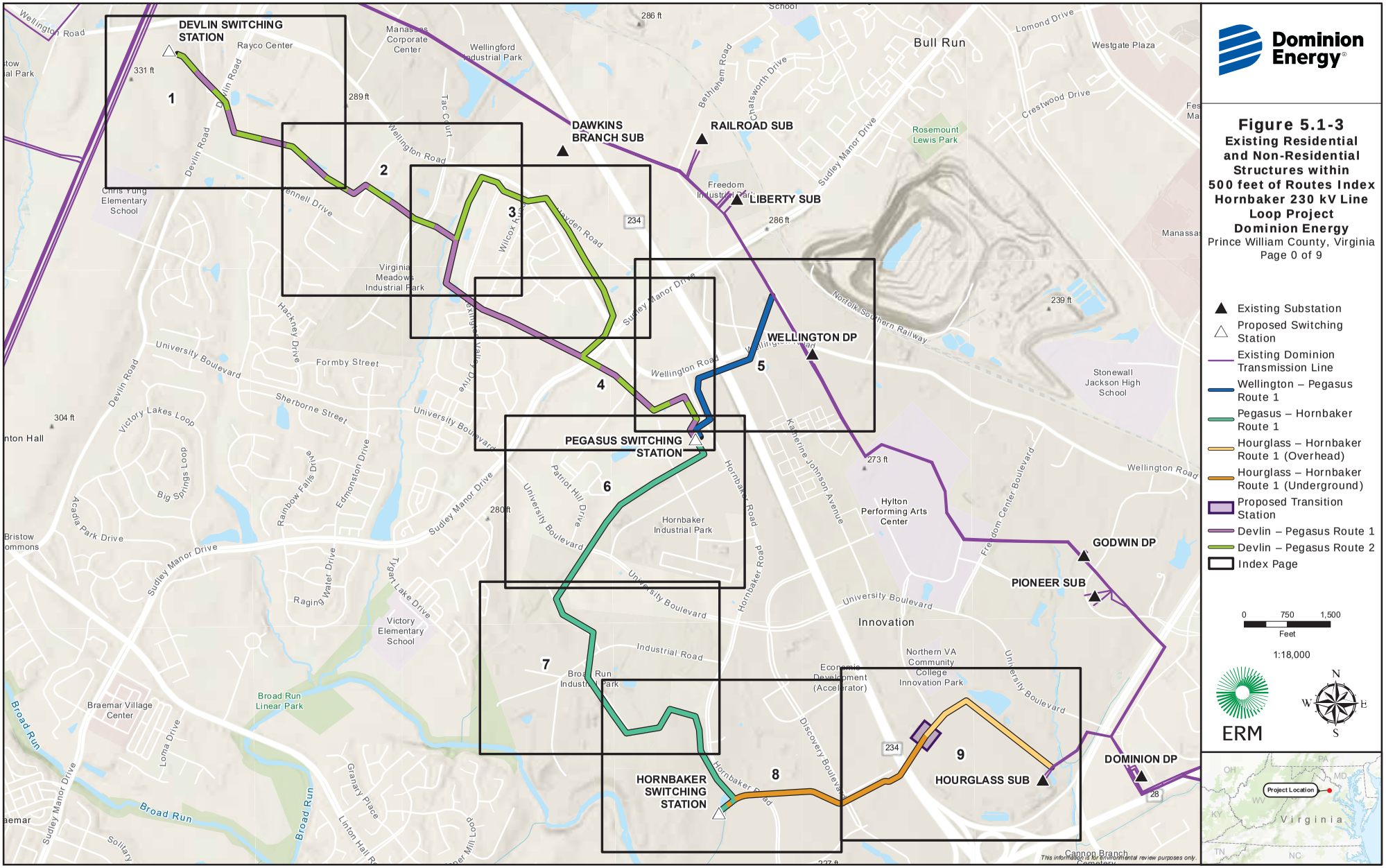
Land Cover
- Developed
- Forest
- Open Space
- Water

0 125 250
Feet

1:3,000

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Dominion Energy

Figure 5.1-3
Existing Residential and Non-Residential Structures within 500 feet of Routes Index
Hornbaker 230 kV Line Loop Project
Dominion Energy
Prince William County, Virginia
Page 0 of 9

- Existing Substation
- Proposed Switching Station
- Existing Dominion Transmission Line
- Wellington – Pegasus Route 1
- Pegasus – Hornbaker Route 1
- Hourglass – Hornbaker Route 1 (Overhead)
- Hourglass – Hornbaker Route 1 (Underground)
- Proposed Transition Station
- Devlin – Pegasus Route 1
- Devlin – Pegasus Route 2
- Index Page

0 750 1,500
Feet

1:18,000

ERM

This information is for environmental review purposes only.



Dominion Energy

Figure 5.1-3

Existing Residential and Non-Residential Structures within 500 feet of Routes
Hornbaker 230 kV Line Loop Project
Dominion Energy
Prince William County, Virginia

- Proposed Switching Station
- Existing Dominion Transmission Line
- Devlin – Pegasus Route 1 MP
- Devlin – Pegasus Route 2 MP
- Devlin – Pegasus Route 1
- Devlin – Pegasus Route 2
- Devlin Switching Station Boundary

Structure Type

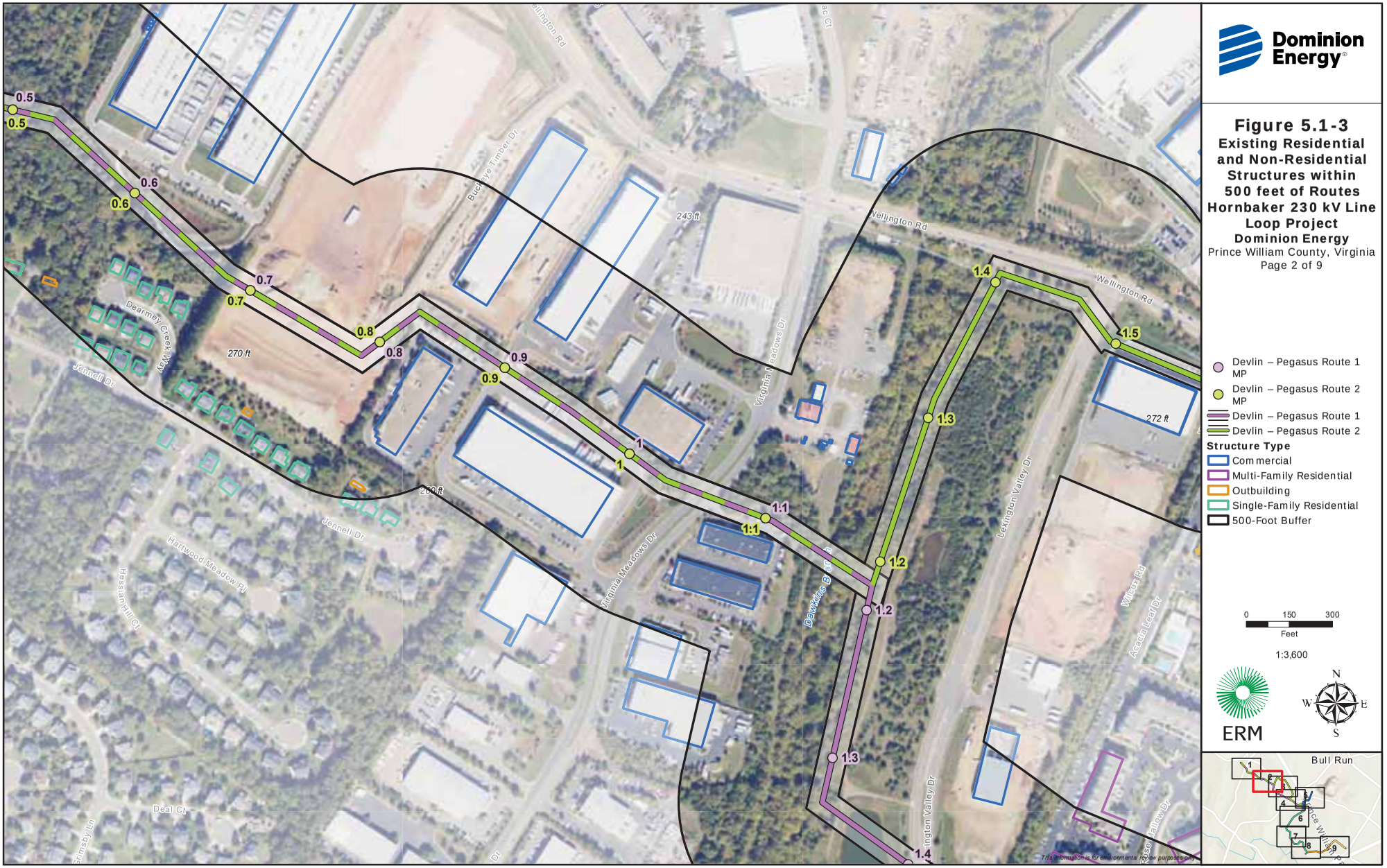
- Commercial
- Outbuilding
- Single-Family Residential
- 500-Foot Buffer

0 150 300
Feet

1:3,600

ERM

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Dominion Energy

Figure 5.1-3
Existing Residential and Non-Residential Structures within 500 feet of Routes
Hornbaker 230 kV Line Loop Project
Dominion Energy
Prince William County, Virginia


Dominion Energy
Figure 5.1-3
Existing Residential and Non-Residential Structures within 500 feet of Routes
Hornbaker 230 kV Line Loop Project
Dominion Energy
Prince William County, Virginia
Page 3 of 9
Devlin – Pegasus Route 1 MP
Devlin – Pegasus Route 2 MP
Devlin – Pegasus Route 1
Devlin – Pegasus Route 2
Structure Type
Commercial
Multi-Family Residential
Outbuilding
Single-Family Residential
500-Foot Buffer
0 150 300
Feet
1:3,600
ERM
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Bull Run
This information is for environmental review purposes only.
Wellington Rd
Hayden Rd
Prince William Pkwy
Lexington Valley Dr
Wilcox Rd
Rosebay Ln
Wellington Glen Dr
Acacia Leaf Dr
Wisteria Pond Way
Rose Mallow Dr
Webster Tavern Way
Raybarn Creek Dr
Dawkins Branch Dr
Virginia Meadows Dr
272 ft
278 ft
273 ft
270 ft


Dominion Energy
Figure 5.1-3
Existing Residential and Non-Residential Structures within 500 feet of Routes
Hornbaker 230 kV Line Loop Project
Dominion Energy
Prince William County, Virginia
Page 4 of 9
Proposed Switching Station
Wellington – Pegasus Route 1 MP
Pegasus – Hornbaker Route 1 MP
Devlin – Pegasus Route 1 MP
Devlin – Pegasus Route 2 MP
Wellington – Pegasus Route 1
Pegasus – Hornbaker Route 1
Devlin – Pegasus Route 1
Devlin – Pegasus Route 2
Pegasus Switching Station Boundary
Structure Type
Commercial
Multi-Family Residential
Outbuilding
Single-Family Residential
500-Foot Buffer
0 150 300
Feet
1:3,600
ERM
N
W
E
S
Bull Run
PEGASUS SWITCHING STATION
Wellington Rd
Sudley Manor Dr
Prince William Pkwy
Five Forks Rd
Hornbaker Rd
Webster Tavern Way
Molly Pitcher Cir
Flatbush Ct
Harlsow Grove Ct
Mike Garcia Dr
270 ft
310 ft
301 ft
This information is for environmental review purposes only.



Dominion Energy

Figure 5.1-3

Existing Residential and Non-Residential Structures within 500 feet of Routes
Hornbaker 230 kV Line Loop Project
Dominion Energy
Prince William County, Virginia

- Existing Substation
- Existing Dominion Transmission Line
- Wellington – Pegasus Route 1 MP
- Devlin – Pegasus Route 1 MP
- Devlin – Pegasus Route 2 MP
- Wellington – Pegasus Route 1
- Devlin – Pegasus Route 1
- Devlin – Pegasus Route 2
- Pegasus Switching Station Boundary

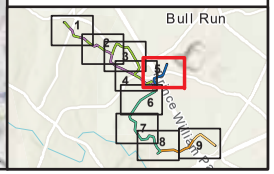
Structure Type
- Commercial
- Outbuilding
- 500-Foot Buffer

0 150 300
Feet

1:3,600

ERM

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Dominion Energy

Figure 5.1-3

Existing Residential and Non-Residential Structures within 500 feet of Routes
Hornbaker 230 kV Line Loop Project
Dominion Energy
Prince William County, Virginia

- Proposed Switching Station
- Wellington – Pegasus Route 1 MP
- Pegasus – Hornbaker Route 1 MP
- Devlin – Pegasus Route 1 MP
- Devlin – Pegasus Route 2 MP
- Wellington – Pegasus Route 1
- Pegasus – Hornbaker Route 1
- Devlin – Pegasus Route 1
- Devlin – Pegasus Route 2
- Pegasus Switching Station Boundary

Structure Type

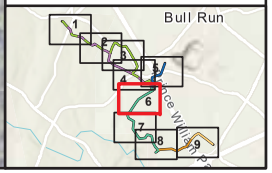
- Commercial
- Multi-Family Residential
- 500-Foot Buffer

0 150 300
Feet

1:3,600

ERM

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Dominion Energy

Figure 5.1-3

Existing Residential and Non-Residential Structures within 500 feet of Routes
Hornbaker 230 kV Line Loop Project
Dominion Energy
Prince William County, Virginia

Pegasus – Hornbaker Route 1 MP
Pegasus – Hornbaker Route 1

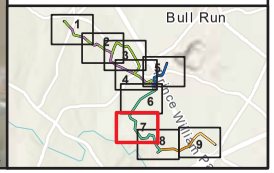
Structure Type
Commercial
Outbuilding
500-Foot Buffer

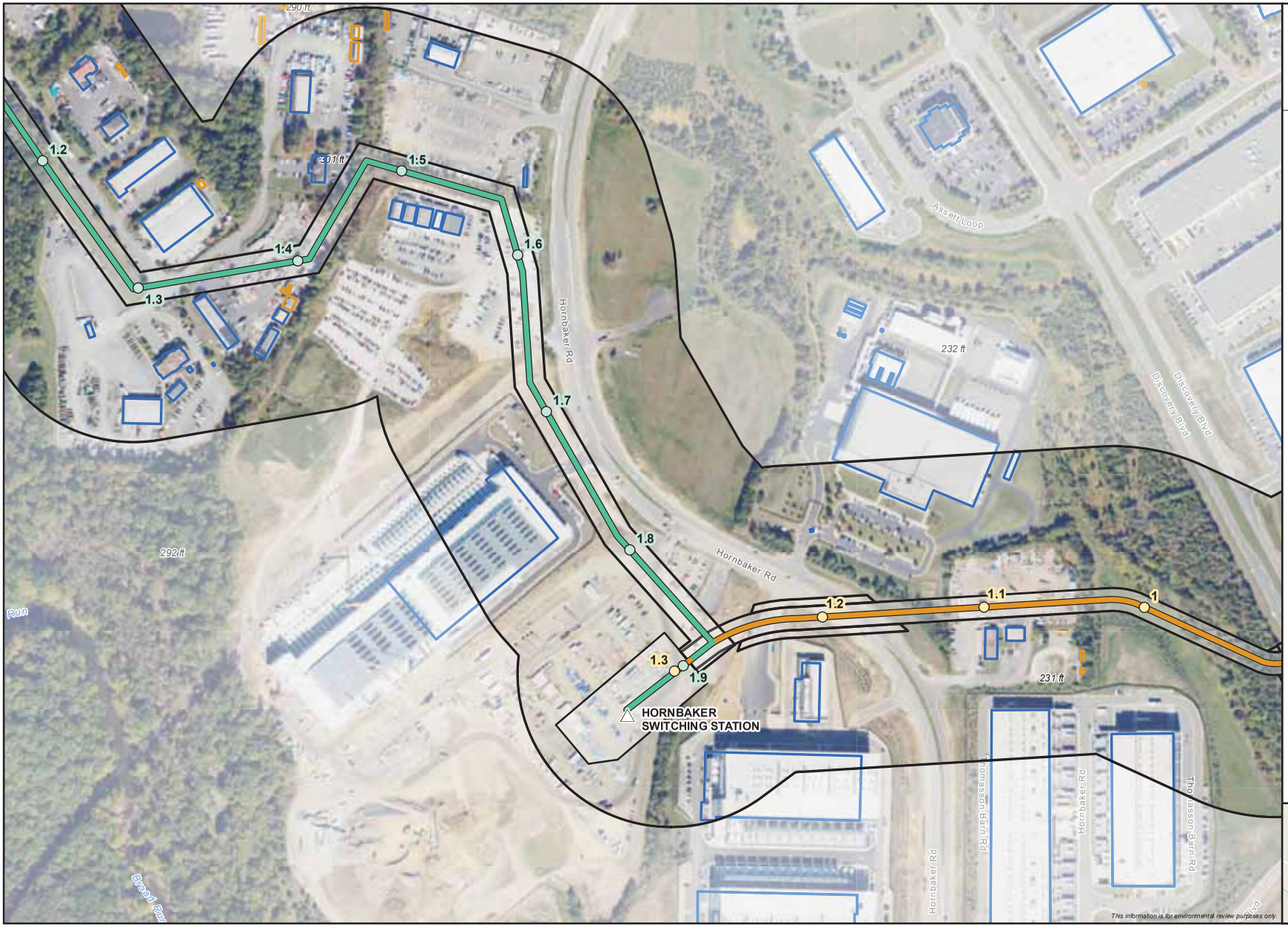
0 150 300
Feet

1:3,600

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Dominion Energy

Figure 5.1-3

Existing Residential and Non-Residential Structures within 500 feet of Routes
Hornbaker 230 kV Line Loop Project
Dominion Energy
Prince William County, Virginia

- Proposed Switching Station
- Pegasus – Hornbaker Route 1 MP
- Hourglass – Hornbaker Route 1 MP
- Pegasus – Hornbaker Route 1
- Hourglass – Hornbaker Route 1 (Underground)
- Proposed Hornbaker Switching Station Boundary

Structure Type

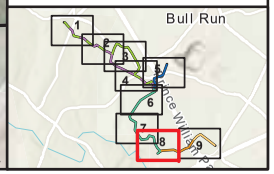
- Commercial
- Outbuilding
- 500-Foot Buffer

0 150 300
Feet

1:3,600

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Dominion Energy

Figure 5.1-3

Existing Residential and Non-Residential Structures within 500 feet of Routes Hornbaker 230 kV Line Loop Project

Dominion Energy

Prince William County, Virginia

- Existing Substation
- Existing Dominion Transmission Line
- Hourglass – Hornbaker Route 1 MP
- Hourglass – Hornbaker Route 1 (Overhead)
- Hourglass – Hornbaker Route 1 (Underground)
- Proposed Transition Station

Structure Type

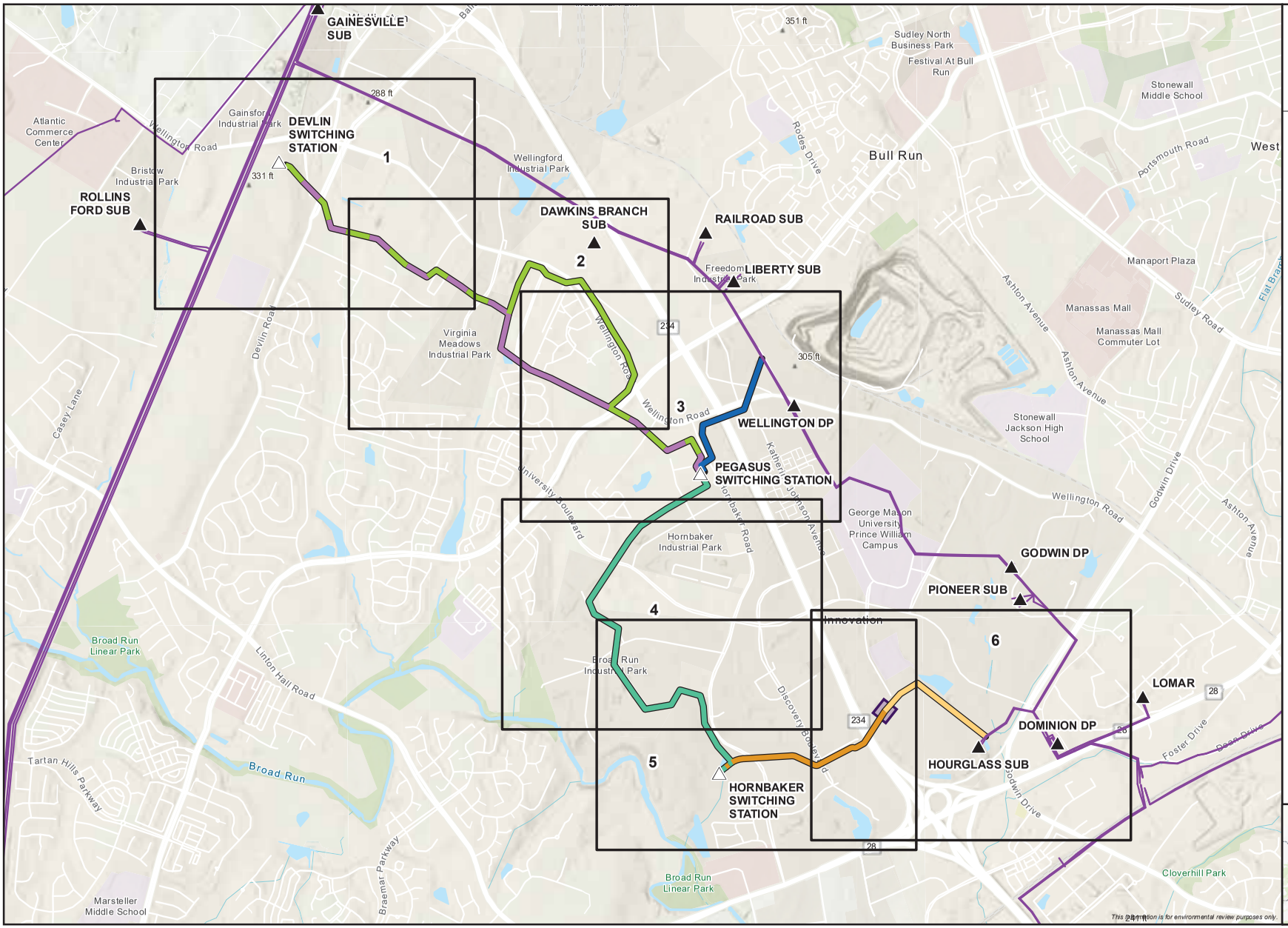
- Commercial
- Outbuilding
- 500-Foot Buffer

0 150 300
Feet

1:3,600

ERM

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Dominion Energy

Figure 5.1-4

Planned Developments within 0.25 Miles of Routes Index Hornbaker 230 kV Line Loop Project

Dominion Energy

Prince William County, Virginia

- Existing Substation
- Proposed Switching Station
- Existing Dominion Transmission Line
- Wellington – Pegasus Route 1
- Pegasus – Hornbaker Route 1
- Hourglass – Hornbaker Route 1 (Overhead)
- Hourglass – Hornbaker Route 1 (Underground)
- Proposed Transition Station
- Devlin – Pegasus Route 1
- Devlin – Pegasus Route 2
- Index Page

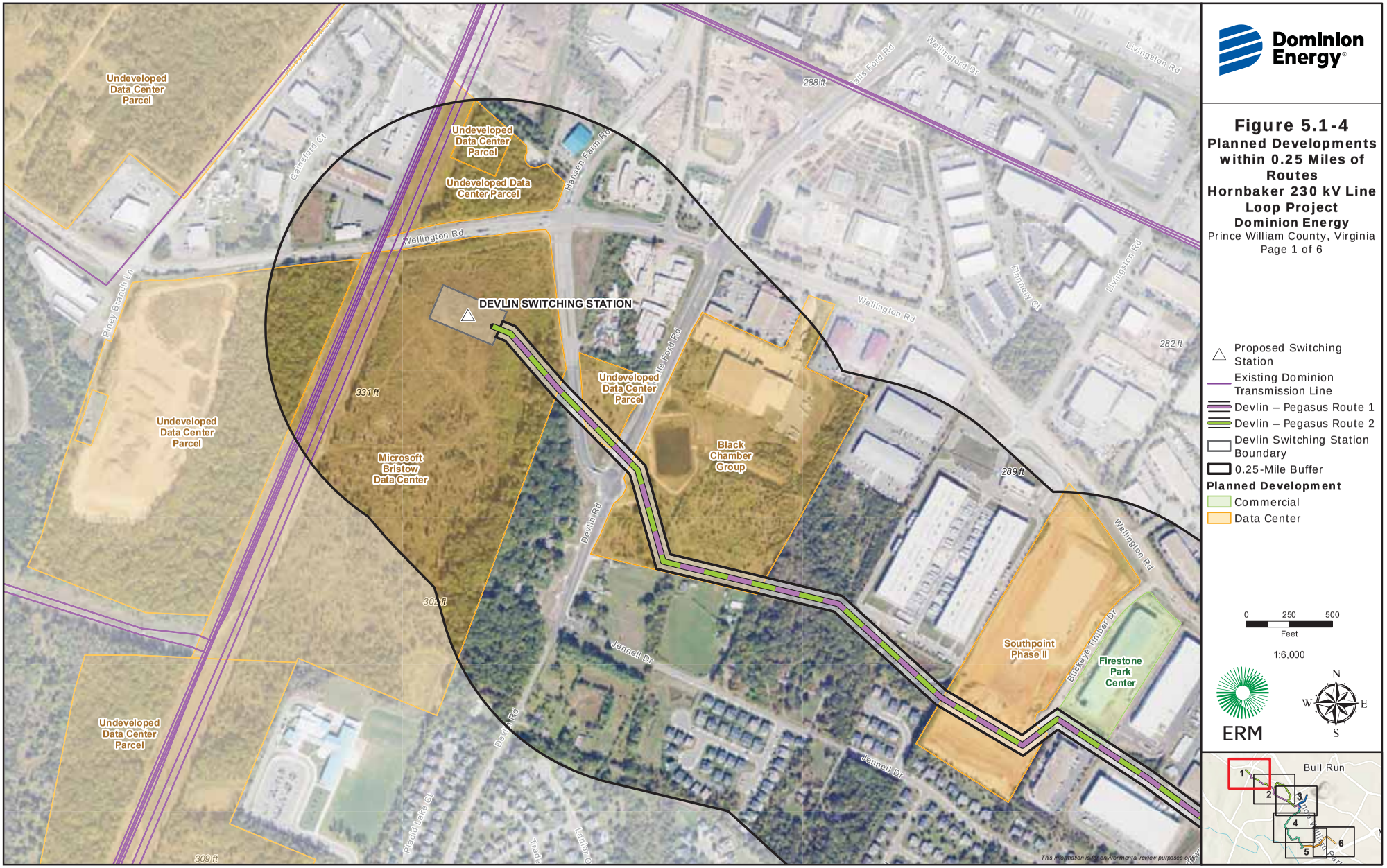
0 1,000 2,000 Feet

1:24,000

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This information is for environmental review purposes only.



Dominion Energy

Figure 5.1-4
Planned Developments within 0.25 Miles of Routes
Hornbaker 230 kV Line Loop Project
Dominion Energy
Prince William County, Virginia



Dominion Energy

Figure 5.1-4

Planned Developments within 0.25 Miles of Routes
Hornbaker 230 kV Line Loop Project
Dominion Energy
Prince William County, Virginia

- Existing Substation
- Existing Dominion Transmission Line
- Devlin – Pegasus Route 1
- Devlin – Pegasus Route 2
- 0.25-Mile Buffer

Planned Development
- Commercial
- Data Center

0 250 500
Feet

1:6,000

ERM

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